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Note: Explanation of terms (A-Z) is provided in "Definitions" section.

State of Aggregate Resources in Halton Region

Overview

Policy 110(12) of the Halton Region Official Plan (ROP) requires a State of Aggregate Resources Report to be prepared on a biennial basis. This report prepared for the 2019 and 2020 reporting period provides information on the following:

- A. Number of active, new, suspended, revoked and surrendered licences;
- B. An overview of active extractive operations in Halton;
- C. History of complaints on the extractive operations and transportation of aggregate products;
- D. History of violations of Site Plan or conditions of licence under the *Aggregate Resources Act*;
- E. Status of the implementation of approved rehabilitation plans;
- F. Status of the operation and implementation of approved adaptive management plans;
- G. An assessment of the cumulative impact of extraction operations on both the Greenbelt and Regional Natural Heritage System; and,
- H. Number and status of active and potential applications for Mineral Resource Extraction Areas.

A. Active, New, Suspended, Revoked and Surrendered Licences

In the Province of Ontario, all aggregate licences are issued by the Ministry of Natural Resources and Forestry (MNRF), currently part of Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNR), under the *Aggregate Resources Act* 1990 (the *ARA*). In Halton Region, licensed quarries (rock extraction) and licensed pits (clay, sand and gravel extraction) are located in Halton Hills, Milton, and Burlington. There are no licensed quarries or pits in Oakville. Between 2018 and mid-2020, there were 22 licensed sites in Halton Region. There are currently 20 *ARA* licensed sites in the Region due to MNRF's acceptance of two licence surrenders in 2020, in June and November. The locations of *ARA* sites and *ARA* applications are shown on Map 1, and the site locations and ownership are identified in Table 1. *ARA* licences and the operational status of each site are described in Appendix 1.

As noted in Table 2, there were eleven licensed sites with approved resource available for extraction during this 2019 and 2020 reporting period. Nine sites were under active aggregate extraction and two sites were on hold due to operational shift to remove remaining aggregate from other sites owned by an operator.

No active extraction occurred at a number of licensed sites where resources had been depleted or operations completed. However, some sites continued with other permitted activities (e.g., aggregate processing, shipment, infilling, corrective actions and rehabilitation).

Map 1: Location of Aggregate Sites in Halton Region

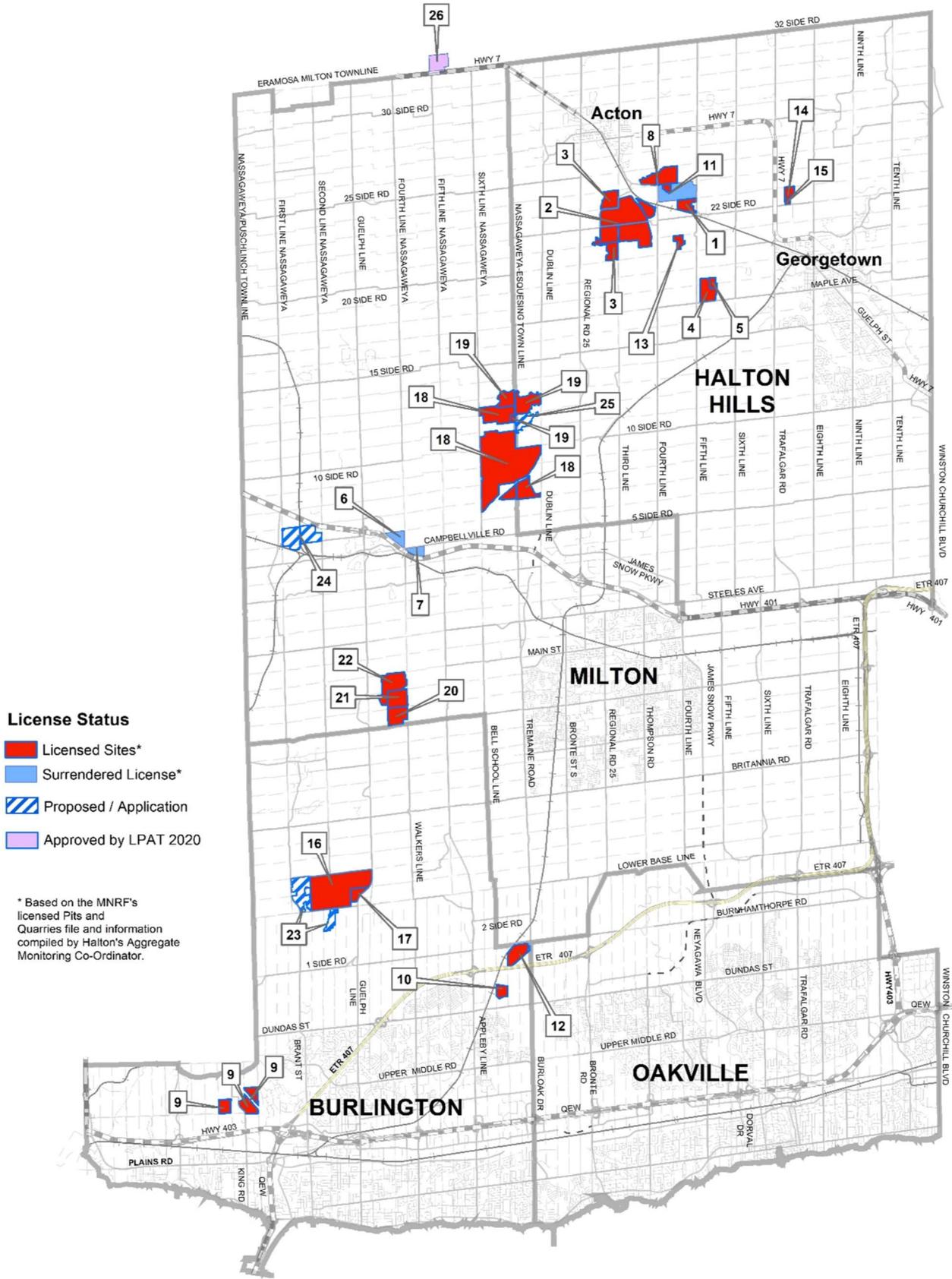


Table 1: Licensed Sites and Aggregate Applications/Proposals in and Bordering Halton Region					
Map ID*	ARA Licence #	Site Name	Current Owner (Application)	Location Lot/Concession	Town (Former Township)
1	5480	Acton Limehouse Pit	Fountain Green South Inc. since May 31, 2018; formerly St Marys Cement.	Lot 23, Con. (Concession) 5	Halton Hills (Esquesing)
2	5492	Acton Quarry - Phases: 1, 2, 3	Dufferin Aggregates, a Division of CRH Canada Group Inc.	Part of Lots 22 and 23; Con. 3; and Part of Lots 21 and 24, Con. 4	Halton Hills (Esquesing)
3	625003	Acton Extension Quarry - Phases: 4, 5E, 5/6W	Dufferin Aggregates, a Division of CRH Canada Group Inc.	Part of Lots 21, 22 and 24, Con.3; and Part of Lots 21 and 22, Con. 4	Halton Hills
4	20660	Brockton Farms Quarry	Brockton Farms	Lot 18 and Part Lot 19; Con. 6	Halton Hills
5	5720	Hilltop Quarry	Hilltop Stone and Supply Inc.	Part East and West half Lot 18, Part West half Lot 19, Conc. 6	Halton Hills (Esquesing)
6	5479*	Campbellville Pit-north	555816 Ontario Inc.	Part of Lot 6, Conc. 4	Milton (Nassagaweya)
7	5478**	Campbellville Pit-south	4000 Campbellville Rd. Inc.	Part of Lot 5, Con. 5	Milton (Nassagaweya)
8	5616	Bot Holdings Pit	Bot Holdings Ltd. since November 2017; formerly Bot Duff Resources Ltd.)	Parts of east half and west half of Lot 25, Con. 4 and 5	Halton Hills (Esquesing)
9	5500	Aldershot Quarries	Meridian Brick Canada Ltd.	Part of Lots 2 and 3; Con. 1 and Part of Lots 1, 2, 3; Con. 2	Burlington (E. Flamborough)
10	5605	Burlington Pit/Quarry	Meridian Brick Canada Ltd.	Lot 3, Conc. 1 North Dundas Street (NDS)	Burlington (Nelson)
11	5546***	Wilroy Brooks Pit	Fountain Green North Inc.	Part of Lot 24, Con. 5	Halton Hills (Esquesing)
12	613081	Tansley Quarry	Meridian Brick Canada Ltd.	Part of Lots 1 and 2, Conc. 1, NDS	Burlington
13	5716	Rice and McHarg Quarry	Rice and McHarg Quarries Ltd.	Part of east half and Part of west half of Lot 21, Con. 5	Halton Hills (Esquesing)
14	5614	Limehouse Clay Products – north	Limehouse Clay Products Ltd.	Part of Lot 23, Con. 8	Halton Hills (Esquesing)
15	5711	Limehouse Clay Products – south	Limehouse Clay Products Ltd.	Part of west half of Lot 23, Con.8	Halton Hills (Esquesing)
16	5499	Burlington Quarry- The Majority	Nelson Aggregates Co.	Lot 2, Con 3; west half of Lot 1, Con. 3; and east half of Lots 1 and 2, Con. 2	Burlington (Nelson)
17	5657	Burlington Quarry- The Minority	Nelson Aggregates Co.	Part east half of Lot 1, Con. 3 (N.S.)	Burlington (Nelson)
18	5481	Milton Quarry - Main and North	Dufferin Aggregates, a Division of CRH Canada Group Inc.	Part of Lots 7-13, Con. 7 (Milton) and Part of Lots 8-10, Con. 1 (Halton Hills)	Milton (Nassagaweya) and Halton Hills(Esquesing)
19	608621	Milton Quarry Extension: Phases 1, 2, 3	Dufferin Aggregates, a Division of CRH Canada Group Inc.	Part of Lots 13-14; Con. 1 (Halton Hills) and Part of Lots 12-14; Con. 7 (Milton)	Milton and Halton Hills

Table 1: Licensed Sites and Aggregate Applications/Proposals in and Bordering Halton Region					
Map ID*	ARA Licence #	Site Name	Current Owner (Application)	Location Lot/Concession	Town (Former Township)
20	5484	Milton Pit	368574 and 579813 Ontario Inc.	Northeast half of Lot 11, Con. 4	Milton (Nelson)
21	5507	Hayward Pit	Springbank Sand and Gravel Ltd.	Northeast half of Lot 12, Con. 4	Milton (Nelson)
22	5619	Leaver Pit	Springbank Sand and Gravel Ltd.	Part of Lots 12 and 13, Con. 4	Milton (Nelson)
Active Aggregate Application/Proposal in Halton Region (2019-2020)					
23	-	Burlington Quarry Expansion Application	Nelson Aggregates Co.	Part Lot 1 and 2, Concession 2 and Part Lot 17 and 18, Concession 2, NDS	Burlington
24	-	Reid Road Reservoir Quarry Application	James Dick Construction Limited (JDCL)	Part of Lots 6 and 7, Con. 2	Milton
Anticipated Expansion Proposals					
25		Milton Quarry East Expansion Proposal	Dufferin Aggregates, a division of CRH Canada Group Inc.	Part of Lots 11 and 12, Con. 1	Halton Hills
Approved by LPAT (adjacent to Halton Region)					
26		Hidden Quarry	James Dick Construction Ltd.	Part of Lot 6, Con. 1	Township of Guelph Eramosa
Notes: *ARA 5479 was surrendered in November 2020. **ARA 5478 was surrendered in June 2020. ARA5546*** - licensed area was reduced by 72.18 ha in 2020].					

Table 2: Licensed Aggregate Sites in Halton Region with Active Extraction			
Area	Operation/Site Name (ARA Licence No.)	Current Owner/Operator	*Tonnes/ year (max)
Town of Halton Hills	¹ Acton Quarry (5492)***	Dufferin Aggregates/CRH	4,000,000***
	¹ Acton Extension Quarry (625003)***	Dufferin Aggregates/CRH	4,000,000***
	² Brockton Farms Quarry (20660)	Brockton Farms	20,000
	² Hilltop Quarry (5720)	Hilltop Stone and Supply Inc.	20,000
	³ Limehouse Clay Quarry-north (5614)	Limehouse Clay Products	20,000
	² Rice and McHarg Quarry (5716)	Rice and McHarg Quarries	20,000
Town of Milton	¹ Milton Quarry – Main and North (5481)	Dufferin Aggregates, a Division of CRH Canada Group Inc.	Unlimited
	¹ Milton Quarry Extension (608621)		Unlimited
City of Burlington	³ Aldershot Quarry (5500)	Meridian Brick Canada Ltd.	Unlimited
	³ Tansley Quarry (613081)	Meridian Brick Canada Ltd.	300,000**
	¹ Burlington Quarry – The Majority (5499)	Nelson Aggregates Co.	Unlimited
Notes: ¹ Dolostone Quarry, ² Sandstone Quarry, ³ Shale Quarry. Information sources: ARA Licences, ARA Site Plans, and Compliance Assessment Reports (CARs). *Max tonnes per year indicates extraction limit per year under the ARA licence. ** Maximum permitted extraction at Tansley Quarry is 150,000 tonnes/year until Tremaine Road is upgraded. *** Maximum permitted at Acton Quarry is 4,000,000 tonnes/year in total for ARA 5492 and ARA 625003. Extraction at Acton Quarry was on hold in 2019 and 2020; Dufferin/CRH focussed their extractive activities at the Milton Extension Quarry.			

New ARA Licence:

There were no new ARA licences issued in Halton Region during this 2019-2020 reporting period.

ARA Licence Suspensions:

There were no new suspensions of ARA licences in Halton Region during this 2019-2020 reporting period.

ARA Licence Surrenders:

The MNRF accepted two licence surrenders in the Town of Milton in 2020: Campbellville Pit-south (ARA 5478) on June 25, 2020, and Campbellville Pit-north (ARA 5478) on November 20, 2020.

The MNRF accepted partial surrender of Wilroy Brooks Pit licence (ARA 5546) in Halton Hills on May 25, 2020, reducing the licensed area from 79.18 hectares (ha) to 7 ha.

B. Overview of Active Extractive Operations in Halton

Discussion on the active operations in Halton Region includes areas under extraction, the amount of aggregate produced, as well as extraction trends in the Region, Local Municipalities in Halton and other jurisdictions in Ontario.

Areas under Extraction

As of 2020, the total licensed area within Halton Region was 1,600 ha, of which the permitted extraction area totalled 1,279 ha (Table 4). This total licensed area includes the Campbellville Pits (ARA 5478 and ARA 5479 surrendered on June 5, 2020 and November 20, 2020, respectively) and the original licensed area for Wilroy Brooks Pit (ARA 5546) which was reduced from 79.18 ha to 7 ha on May 25, 2020.

Based on the 2019-2020 CARs, approved resources have been depleted or nearly depleted at 10 of the 20 existing (as of December 2020) licensed ARA sites in Halton Region (Table 4 and Appendix 1).

Aggregate Production in Halton Region and Local Municipalities

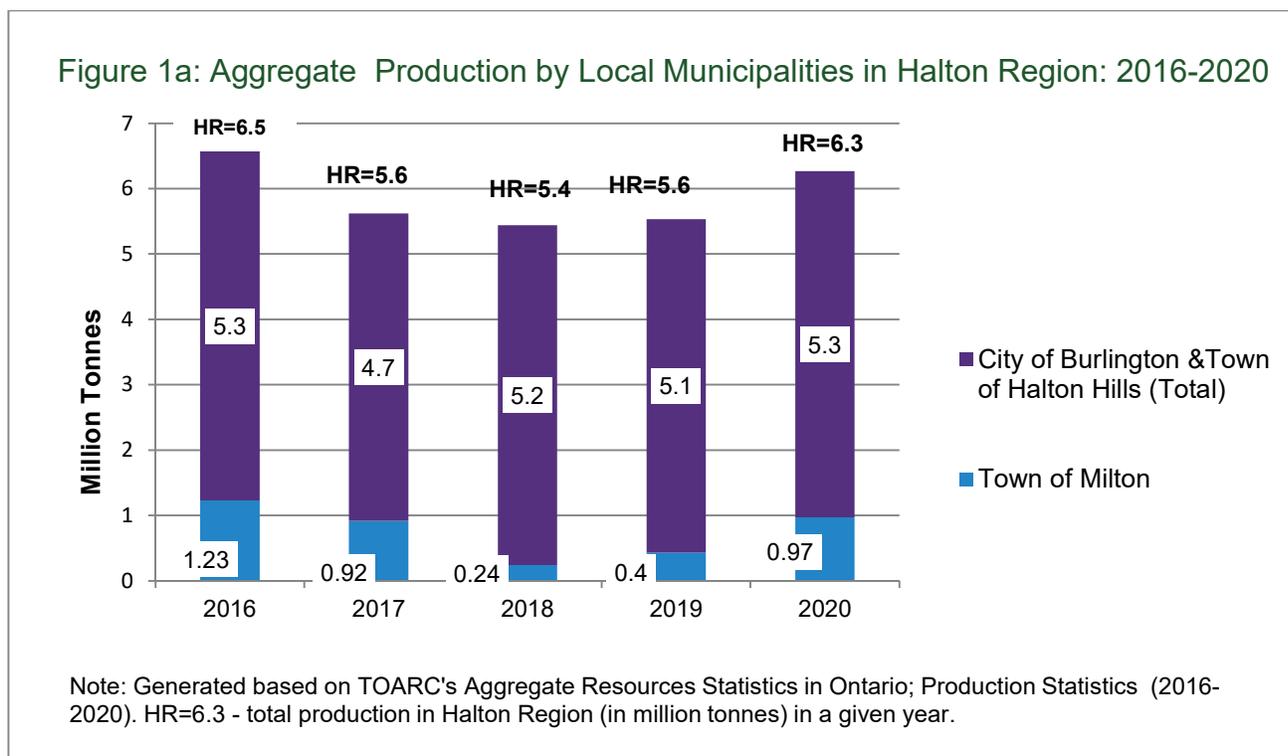
Annual extraction volumes for the Province and upper- and lower-tier municipalities are provided in the Mineral Aggregates of Ontario Statistical Update reports prepared by The Ontario Aggregate Resources Corporation (TOARC). Table 3 displays production tonnage statistics for the 2019 and 2020 period for Halton Region and Local Municipalities.

Municipality	2019	2020
Town of Halton Hills and City of Burlington (total)	5,143,487	5,280,254.50
Town of Milton	432,640	971,331
Halton Region	5,576,127	6,251,585.50

Up to 2015, most of the production occurred in the Town of Milton. Since 2016, the Town of Halton Hills and the City of Burlington (reported together) have had higher total production in Halton Region. The

change occurred due to shift in extraction activities at the Milton Extension Quarry intercepting a local municipal boundary.

Figure 1a displays aggregate production by Local Municipalities in Halton Region for the 2016-2020 period.



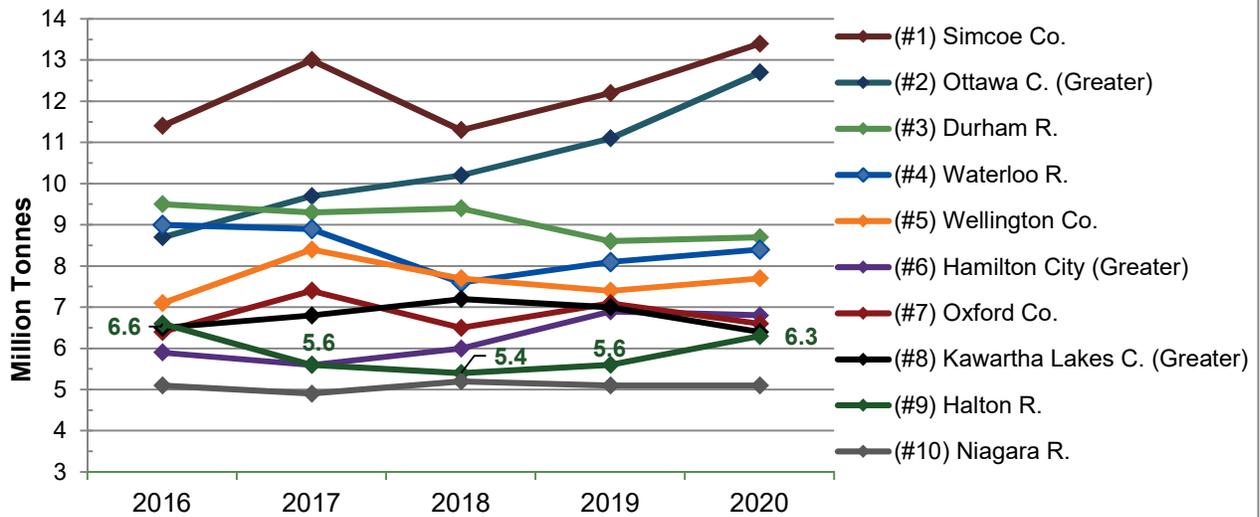
Aggregate Production in Upper/Single-Tier Municipalities

Halton Region has consistently been among the highest producers in Ontario since annual production data became available in 1990. Halton Region was the ninth highest aggregate producing municipality in Ontario in both 2019 and 2020.

The top ten upper-and-single tier producing municipalities in 2020 were as follows (production rounded to nearest million [M] tonnes): Simcoe County (13.4 M), City of Ottawa - Greater (12.7 M), Durham Region (8.7 M), Waterloo Region (8.4 M), Wellington County (7.7 M), Hamilton City – Greater (6.8 M), Oxford County (6.6 M), City of Kawartha Lakes (6.4 M), Halton Region (6.3 M), and Niagara Region (5.1 M). The ten top municipalities produced about 52 percent (82.1 M) of total aggregate produced in Ontario in 2020 (157.9 M).

Figure 1b displays the production trend for top upper- and single-tier municipalities for the 2016-2020 period.

Figure 1b: Top Aggregate Producers in Ontario by Upper and Single-Tier Municipalities (2016-2020)



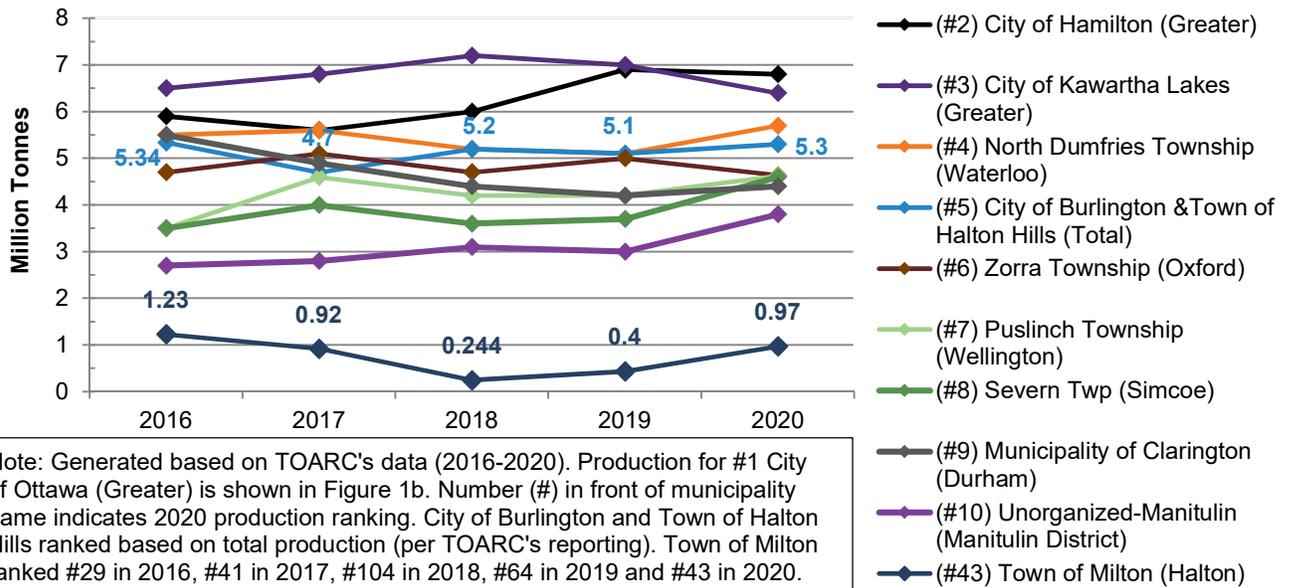
Note: Generated based on TOARC data (2016-2020). Number in front of municipality name indicates 2020 production ranking.

Aggregate Production in Lower-Tier Municipalities

Among the lower-tier municipalities, the City of Burlington and the Town of Halton Hills were ranked by TOARC within the highest producers in the Province since 2016. Based on the total (amalgamated) extraction tonnage (TOARC does not separate tonnage for these municipalities in Halton), they ranked #6 in 2016, #7 in 2017, #4 in 2018, and #5 in 2019 and 2020.

The Town of Milton was among the highest producers in the Province between 1993 (when production data became first available) and 2015 (ranked #6 that year). It was ranked #29 in 2016, #41 in 2017, #104 in 2018, #64 in 2019, and #43 in 2020. The change in ranking for Local Municipalities in Halton Region was due to shift in extraction activities at the Milton Extension Quarry intercepting a local municipal boundary (i.e. from Milton to Halton Hills) in 2016. Figure 1c displays the production trend for top lower- and single-tier municipalities for the 2016-2020 period.

Figure 1c: Top Aggregate Producers in Ontario by Lower (and Single-Tier) Municipalities (2016-2020)



Disturbed and Rehabilitated Areas at ARA Sites in Halton Region

The available Compliance Assessment Reports (CARs) submitted by aggregate operators to MNRF (with copies to municipalities) annually, provide a checklist of compliance with ARA Site Plans, including reporting on disturbed and rehabilitated areas. Based on the recent CARs, total disturbed areas at ARA sites in Halton Region were 738.25 ha (2019) and 745.9 ha (2020), and total rehabilitated areas were 604.8 ha (2019) and 597.65 ha (2020). The total sums of disturbed and rehabilitated areas (1,343 ha in 2019 and 1,343.6 ha in 2020) are higher than the total area permitted for extraction (1,279.5 ha for both years) and this is in part due to different methodologies in reporting by operators.

As of 2019-2020, three ARA sites in Halton were over 100 ha in size: Acton Quarry (ARA 5492), Milton Main and North Quarry (ARA 5481), and Nelson Burlington Quarry (ARA 5499). The approximate total disturbed and rehabilitated areas at these three sites were 430 ha and 395 ha, respectively, in 2020. For further information, refer to Table 4.

Figure 2 shows total areas in Halton Region since 2016.

Figure 2: Total Permitted, Disturbed and Rehabilitated Areas for ARA Sites in Halton Region (2016-2020) in hectares

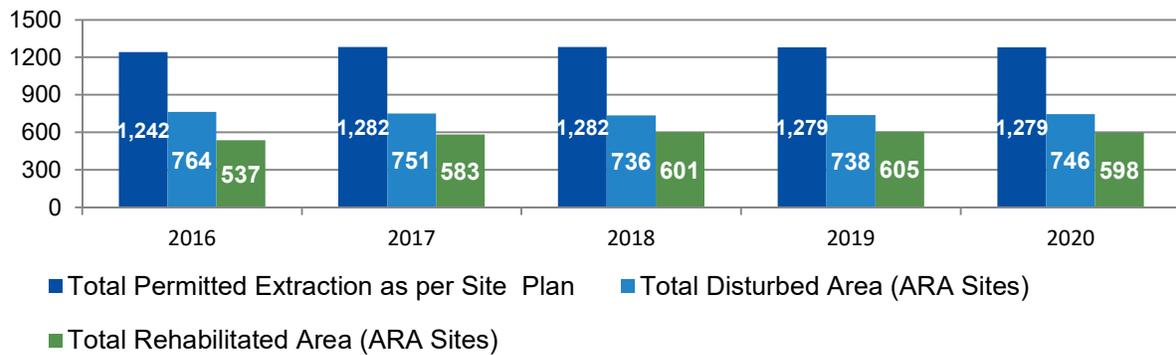


Table 4 identifies licensed, permitted for extraction and rehabilitation areas at ARA sites in Halton Region as of 2020.

Table 4: Licensed, Permitted, Disturbed and Rehabilitated Areas at ARA Sites in Halton Region (2020)

Site Name, Owner, ARA Licence Number	¹ ARA Licensed Area (ha)	² Permitted Extraction (ha)	³ Total Disturbed Area (ha) as of 2020	³ Total Rehabilitated Area (ha) as of 2020
1. Acton Limehouse Pit; Fountain Green South Inc. (5480)*	26.3	22.6	6.9	6.75
2. Acton Quarry - Dufferin Aggregates, a Division of CRH Canada Group Inc. (5492)*	222.3	193.25	112.45	85.85
3. Acton Extension Quarry - Dufferin Aggregates, a Division of CRH Canada Group Inc. (625003)	65.6	49.3	7.1	1.3
4. Brockton Farms; Brockton Farms (20660)	36.8	25.7	1	0.6
5. Hilltop Quarry; Hilltop Stone and Supply Inc. (5720)	9.4	6.9	5	0.7
6. Campbellville Pit-north; 55816 Ontario Inc.(5479)**	22.2	8.3	16.7	16.7
7. Campbellville Pit-south; 4000 Campbellville Road** Inc. (5478) [formerly: 55816 Ontario Inc.]	15.9	12.8	15.9	15
8. Bot Holdings Pit; Bot Holdings Ltd. (5616)*	58.6	49.2	38.1	26
9. Aldershot Quarries; Meridian Brick Canada Ltd. (5500)	62.4	62.1	22.1	8
10. Burlington Pit/Quarry; Meridian Brick Canada Ltd. (5605)*	17.1	16	12.3	12.3
11. Wilroy-Brooks Pit; Fountain Green North Inc. (5546) ^{5*}	79.2 ⁵	28.3	7	7
12. Tansley Quarry; Meridian Brick Canada Ltd. (613081)	37.8	28.9	17.2	8
13. Rice and McHarg Quarry; Rice and McHarg Quarries Ltd. (5716)	12.9	1.9	3.35	6.25
14. Limehouse Clay Products – north; Limehouse Clay Products Ltd. (5614)	12.8	10.6	2.7	0.3
15. Limehouse Clay Products - south; Limehouse Clay Products Ltd. (5711)	3.2	3.2	1.7	0.8
16. Burlington Quarry - The Majority; Nelson Aggregates Co. (5499)	202.5	193.8	123.8	121.5
17. Burlington Quarry - The Minority; Nelson Aggregates Co. (5657)*	16.2	16.2	16.2	16.2

Table 4: Licensed, Permitted, Disturbed and Rehabilitated Areas at ARA Sites in Halton Region (2020)

Site Name, Owner, ARA Licence Number	¹ ARA Licensed Area (ha)	² Permitted Extraction (ha)	³ Total Disturbed Area (ha) as of 2020	³ Total Rehabilitated Area (ha) as of 2020
18. Milton Quarry - Main and North; - Dufferin Aggregates, a Division of CRH Canada Group Inc.(5481)*	467.7	382	193.7	187.8
19. Milton Quarry-Expansion - Dufferin Aggregates, a Division of CRH Canada Group Inc. (608621)	84.5	70.6	64.2	4.3
20. Milton Pit; 368574 Ontario Ltd. and 5798813 Ontario Inc. (5484) [formerly The Warren Paving Group Ltd.]*	40.7	25.5	5	2.5
21. Hayward Pit; Springbank Sand and Gravel Ltd. (5507)*	52.0	19.5	20.9	17.2
22. Leaver Pit; Springbank Sand and Gravel Ltd. (5619)*	54.3	52.6	52.6	52.6
Total Areas for ARA Sites in Halton	1600.4⁴	1279.25⁴	745.9⁴	597.65⁴
<p><i>Notes:</i> Site numbers reflect locations on Map 1. ¹Licensed Area is derived from ARA licences. ²Permitted Extraction Area is derived from latest approved Site Plans; where permitted extraction area is not available, the licensed area is used as an equivalent. ³Total Disturbed Area and Total Rehabilitated Area - based on Compliance Assessment Reports (2020), or prior, where recent data is not available. ⁴Total Areas inclusive of Campbellville Pits (ARA 5478 and ARA 5479, surrendered in May and November 2020) and ⁵Wilroy Brooks Pit - licence area reduced from 79. 2 to 7ha in May 2020. *ARA sites with resources depleted or near depletion. **ARA licence surrendered in 2020.</p>				

C. History of Complaints on Extractive Operations and Transportation of Aggregate Products

In accordance with a MNR-MOE Agreement (2008), MNRF (currently part of MNDMNRF) is the first responder to public complaints on extractive operations and aggregate transportation. MNRF has an administrative role under the ARA, while the Ministry of Environment, Conservation and Parks (MECP) has roles under the *Environmental Protection Act (EPA)* and the *Ontario Water Resources Act (OWRA)*. The Ministry of Transportation (MTO) has delegated authority under the ARA to administer wayside permits and aggregate permits. The Niagara Escarpment Commission (NEC) has roles related to NEC's development permits, including inspection and compliance with conditions of the permits. Since August 2016, all third-party complaints must be reported directly to the applicable Provincial Ministry - MECP Spills Action Centre for water related concerns, and MNRF for operational and other complaints.

Occasionally, the Region receives complaints on water quality and quantity from local residents living adjacent to aggregate operations. Water quality complaints are directed to Halton Region Health Department where follow-up is carried out by a Public Health Inspector. Issues are sometimes directed to MNRF/MECP if they require further investigation. When a complaint pertains to water quantity, Public Health refers the complaint to the MECP. Following an inspection, the Ministry provides feedback directly to the resident regarding the water quantity issue.

Summary of 2019 and 2020 Complaints/Notifications

During this reporting period, Halton Region was copied on communication from local residents/coalition groups and provincial representatives regarding Meridian Brick's Aldershot (East) Quarry (ARA 5500) and Nelson Aggregates' Burlington Quarry (ARA 5499).

Some of the earlier concerns regarding the Aldershot (East) Quarry were summarized in LPS103-19.

Aldershot Quarries (ARA 5500) – East Quarry

In early 2019, the Region was copied on two letters from Provincial Ministries/representatives responding to concerns from Tyandaga Environmental Coalition's (TEC's) regarding the Aldershot Quarry-East; one from the MECP to the MNRF (March 19, 2019) and one from Burlington MPP to TEC (April 8, 2019). The Region also received a letter from Meridian Brick (March 25, 2019) regarding updated studies and planned tree-cutting activities at the East quarry. In December 2020, the Region was copied on the MNRF's Inspection Report documenting results of a scoped examination of the Aldershot Quarries with particular focus on the East quarry activities. Information received by the Region during this reporting period is summarized next:

- The March 19, 2019, letter from the MECP to the MNRF referred to the MECP's review of updated air quality and noise assessment studies completed by Meridian Brick's consulting experts in 2018 and 2019. The MECP indicated that: the revised reports addressed previous comments from the Ministry, the noise report was in line with the MECP's assessment and reporting requirements, the predicted air quality limits were below the Local Air Quality Regulation (Ontario Regulation No. 419/05), the proposed controls were applicable, and the licensee had committed to carrying future monitoring program to verify the results of predictive modeling. The MECP offered their technical assistance to MNRF in reviewing future monitoring reports regarding these matters at the Aldershot Quarry.
- The April 8, 2019, letter from Burlington MPP informed TEC of the scoped review undertaken by MNRF in regards to the ARA licence (#5500) and a portion of site plan showing the East quarry, with emphasis on species regulated under the Endangered Species Act (particularly salamanders) and mitigation measures identified in the updated noise study. It further noted that the site plan had been updated to reflect more stringent requirements for aggregate operations and that, considering all approvals under the ARA are in place, Meridian Brick is entitled to continue all operations while the Environmental Bill of Rights' (EBR) [now Environmental Registry of Ontario (ERO)] reviews are underway [Ref. EBR 013-2264]. The MPP's letter indicated that the Government of Ontario encourages residents to discuss their concerns with Meridian Brick directly, with the goal of finding agreeable resolutions.
- The March 25, 2019, letter from Meridian Brick notified the Region of their planned commencement of tree cutting in Stage 1 (western portion) of the Aldershot East quarry, and provided an update on studies undertaken at the request of Burlington MPP and the MECP, including Air Quality Assessment, Short Term Predictive Ambient Air Quality Monitoring Program, and Environmental Noise Study. Meridian Brick noted that air and noise studies had been revised based on comments provided by the MECP and that the Ministry had signed off on these studies. Additionally, Meridian Brick indicated that Goodban Ecological Consultants, together with three other salamander experts, had visited the site a number of times over the preceding three-year period and found no evidence of any salamanders on the endangered species list. Meridian Brick submitted the final report on the matter to the MNRF's ERO Manager and was anticipating signoff on the report. According to

Meridian Brick, Stage 3 Archeological Assessment of the Aldershot East quarry site found no significant artifacts and that the Ministry of Tourism, Culture and Sport (currently Ministry of Heritage, Sport, Tourism and Culture Industries) had signed off on the study. In regards to Meridian's notification concerning tree-cutting in the East quarry, the Region's tree by-law does not apply to the approved quarry matters.

- In December 2020, the Region received a copy of the MNRF's scoped Inspection Report under ARA concerning the Aldershot East quarry. The Report did not identify any out-of-compliance matters within the scoped inspection, which was restricted by seasonal access issues. The Inspection Report concluded that "it is the licensee's responsibility to ensure they are in compliance with all aspects of the Act, Regulations, licence and site plan that were not inspected and/or spoken about" during the site visit by MNRF.
- Based on Meridian Brick's 2020 CAR (September 2020), extraction occurred within the West and Center quarries, and preparation for extraction continued in the East quarry, including completion of a ramp to the western part of the East quarry, installation of fencing and salamander screens, removal of 1.8 ha of trees (activity registered in 2018 under O. Reg. 242/08 Endangered Species Act in regards to American Columbo, Eastern Flowering Dogwood, Mottled Dusky Wind Butterfly, and Bats), and completion of mitigation plan. The CAR also indicates that, as construction due diligence, noise, dust, human health assessment, archeological investigations (stages 1, 2 and 3), and salamander studies had been completed (<http://aldershotquarry.ca/>). Majority of activity-related comments in the annual CARs had been denoted "as per operational plan". All inspection items in the 2019 and 2020 CARs were denoted in compliance or not applicable.

Burlington Quarry – The Majority (ARA 5499)

- On October 24, 2019, the Region received a forwarded request from a Burlington resident (October 4, 2019) regarding historical water-supply complaints and restoration records related to the Nelson Quarry (ARA 5499). The Region noted a receipt of three complaints over the last decade, one in 2014 regarding water quality concern (summarized in LPS96-15) and two in 2016 regarding water quantity concerns (summarized in LPS69-17). The 2014 complaints were investigated by the Region's Public Health Inspector and the MOECC [currently MECP]; the 2016 complaints were directed by the Region to MNRF. No water quality or quantity complaints, related to a specific water supply well near the Burlington Quarry, have been received by the Region since 2016.
- On November 9, 2020, the Region was copied on an enquiry from a representative of Protecting Escarpment Rural Land (PERL) to Niagara Escarpment Commission (NEC) and the MNRF concerning an asphalt plant located at the Nelson Aggregates' Burlington Quarry and operated by Halton Asphalt Supply Ltd. [HASL]. PERL's enquiry referred to ERO No. 019-1500 concerning HASL's application for Environmental Compliance Approval (air) for the on-site asphalt plant. PERL's letter noted that "only quarry licensees are allowed 'accessory uses', only for related aggregate facilities, and only for as long as the license is in effect. PERL also noted that a third party industrial operator/corporation that is not an aggregate-licensee, is not allowed to operate in a quarry." PERL posed a number of questions to the NEC and the MNRF in terms of legality and compliance of the associated land uses at the Burlington Quarry site. As approval and oversight of ARA-related 'accessory uses' fall under provincial domain, responses to applicable comments are administered by the Province.
- Additional complaints have been raised in 2021, which will be documented and summarized in the next State of Aggregate Report.

The Region is not aware of any other quarry-related complaints received by other agencies or operators during this reporting period.

D. History of Violations of Site Plan or Conditions of Licence under the *Aggregate Resources Act*

Two adjacent Campbellville Pits (ARA 5478 – south of Campbellville Road, and ARA 5479 – north of Campbellville Road), which had been subject to corrective actions in regards to infilling/final rehabilitation activities over the years, were deemed to have met their final rehabilitation requirements during this reporting period. The licensees' requests for surrender of ARA licences were accepted by the MNRF in 2020.

Bot Holding Pit (ARA 5616), which was subject to the MNRF's Notice of Suspension in June 2018, while progressive and final rehabilitation using imported material was under review, had received the MNRF's consent under Section 16(2) of the ARA for Minor Site Plan Amendment in relation to operator's Rehabilitation Master Plan (May 2019) and continued with rehabilitation actions in 2020.

The 2019-2020 compliance and resolutions matters concerning these sites are summarized next.

Summary of 2019 and 2020 Compliance/Issue Resolution

Campbellville Pit-south (ARA 5478)

The ARA licence No. 5478, which had been subject of several MNRF's orders for corrective actions pertaining to the site infilling, was surrendered in June 2020, upon acceptance of final rehabilitation by the MNRF.

- Infilling and rehabilitation activities at the Campbellville Pit-south (ARA 5478), which is partially located within the current wellhead protection area of the Kelso municipal wells, concluded in 2019. As part of these activities, the licensee (most recently 4000 Campbellville Road Inc.) was to comply with ARA Site Plan, OMB Decision #2688, and "MOE/CS&GS Off-Site Fill Acceptance Protocol". In the prior years, MNRF reported some non-compliance matters concerning material importation and infilling at this site, and ordered corrective actions by the operator (LPS103-19).
- On October 25, 2019, the MNRF's Aggregate Technical Specialist completed final inspection of the site and noted that "The rehabilitation was in accordance with the final site plans and is suitable for surrender. MNRF will begin the surrender process as per Policy and Procedure #2.06.00."
- On June 5, 2020, the MNRF informed the landowner that the Ministry accepted the site rehabilitation and the operator's request to surrender ARA Licence No. 5478. The MNRF acknowledged receipt of the Inspection Report (October 25, 2019) confirming completion of final rehabilitation, and receipt of a written correspondence from 4000 Campbellville Road Inc. (December 9, 2019) requesting surrender of ARA Licence No. 5478. The MNRF indicated that 4000 Campbellville Road Inc. no longer had any obligations for this property under the ARA as of June 5, 2020.

In early 2021, the NEC notified the landowner (4000 Campbellville Rd. Inc.) that an Amendment was being initiated by the NEC to address the land use designation on the subject property. An amendment will propose re-designation of the subject lands from Mineral Resource Extraction Area to a more

appropriate land use designation(s), as determined under the Designation Criteria of the Niagara Escarpment Plan (NEP). The new land use designation(s) would then inform future potential land uses at this site. That process will be detailed in the next State of Aggregate Report, and in separate update reports to Council.

Campbellville Pit - north (ARA 5479)

- The ARA licence No. 5479, which was suspended in 2012 for contravention of Section 15 of the ARA, remained suspended in 2019.
- On June 8, 2020, the MNRF granted consent under Section 16(2) to remove reference to ARA 5478 (surrendered in June 2020), from the shared (ARA 5478 and ARA 5479) site plan, and issued an amended MNRF-approved site plan for ARA 5479.
- On November 6, 2020, MNRF's Aggregate Technical Specialist completed final inspection of the site and noted that "The unauthorized material mentioned in the October 25, 2019 inspection appears to have been removed", "This licence appears to be in a state of rehabilitation as close to the rehabilitation plan as can be expected", etc.
- On November 20, 2020, MNRF informed the landowner that the Ministry accepted the site rehabilitation and the operator's request to surrender ARA Licence No. 5479. The MNRF acknowledged receipt of the Inspection Report (November 6, 2020) confirming completion of final rehabilitation, and receipt of written correspondence from 555816 Ontario Inc. (August 23, 2020) requesting the surrender of ARA Licence No. 5479. The MNRF indicated that 555816 Ontario Inc. no longer had any obligations for this property under the ARA as of November 20, 2020.

In early 2021, the NEC notified the landowner (555816 Ontario Inc.) that an amendment was being initiated by the NEC to address the land use designation on the subject property. An amendment will propose the re-designation of the subject lands from Mineral Resource Extraction Area to a more appropriate land use designation(s), as determined under the Designation Criteria of the NEP. The new land use designation(s) would then inform future potential land uses. That process will be detailed in the next State of Aggregate Report.

Bot Holding Pit (ARA 5616)

- Progressive and final rehabilitation using imported material was under review at this pit in 2018, per the MNRF's Notice of Suspension of July 2018. The rehabilitation activities were to be reinstated upon removal of the suspension by the MNRF.
- On June 6, 2019, MNRF granted consent, under Section 16(2) of the ARA, for Minor Site Plan Amendment in relation to the Bot Holdings' Rehabilitation Master Plan (May 2019).
- Based on the 2019 CAR, replacement of previously-removed setback and progressive rehabilitation were in progress "per letter of agreement". The 2020 CAR [base-map] notes indicated that West Pit's eastern setback filling was completed and that portion of the south slope was to be rehabilitated.

In early 2021, the MNRF's Technical Specialist confirmed that the Notice of Suspension for this site had been lifted and that rehabilitation at ARA 5616 had continued during this reporting period.

For the remaining active ARA sites, most operators or their consultants have checked off in compliance or not applicable in their annual CAR submittals. The "remedial action" notes and/or "general comments" in some of the 2019-2020 CARs refer to site maintenance, such as:

- minor fence repairs
- additional screening
- setbacks management
- relocation of site-identification signage
- installation of marker posts at unfenced boundaries
- stone relocation from unlicensed areas of the site

The “remedial actions” section in CARs includes due-dates for completion of the required actions, as applicable. The MNRF (currently part of MNDMNRF) oversees implementation of CARs’ directives and compliance matters by operators.

There were no posts on MNRF’s website on violations, enforcements, or rehabilitation orders related to aggregate operations in the Province.

E. Status of the Implementation of Approved Rehabilitation Plans

Rehabilitation at Licensed Sites

Progressive and final rehabilitation of aggregate sites are regulated under ARA (1990) and the nature of rehabilitation is governed by approved ARA Site Plans. Compliance with approved site plans is administered by the MNRF (currently MNDMNRF). Appendix 2 provides post-rehabilitation end-use descriptions for licensed sites in Halton, as per the individual site plan notes. For older (legacy) disturbed areas at these sites, rehabilitation was perpetuated by older standards (i.e., former Pits and Quarries Control Act (P&QCA), 1971). Sites licensed under the 1971 Act had been required to prepare replacement site plans in accordance with the ARA (1990) and Provincial Standards. The ARA-licensed sites are subject to the requirements for progressive and final rehabilitation in accordance with site plans amended under the 1990 ARA.

Historically, some degree of progressive rehabilitation has occurred at all licensed sites. Appendix 1 contains information on the 2019-2020 total rehabilitation areas for all licensed sites in Halton Region. Descriptions of the status of the implementation of approved rehabilitation plans are provided in Appendix 2. A number of former aggregate sites, licensed under P&QCA (1971) and then ARA (1990), are no longer licensed; their rehabilitation status is discussed in Section G in relation to the Regional NHS.

According to the CARs, a total of 605 ha had been rehabilitated as of 2019 and 598 ha as of 2020. Overall, total rehabilitated areas increased by 4 ha in 2019 (relative to 2018) and decreased by 7 ha in 2020 (relative to 2019). The annual fluctuation in total rehabilitated area is contingent on a number of active licences, nature of extraction progression (lateral versus vertical), demand for resource in a given year, rehabilitation area availability (e.g., if within a developing quarry), and different approaches to rehabilitation area reporting by operators.

Of the sites that reported some progress in rehabilitation during the 2019-2020 period, Burlington Quarry-The Majority (ARA 5499) identified about 4.5 ha in 2019 and about 9.5 ha in 2020, Milton Quarry (ARA 5481) reported about 4.4 ha in 2019, Bot Holdings Pit (ARA 5616) identified 2.45 ha in 2020 including “setback replacement”, and Milton Extension Quarry (ARA 608621) reported 2.9 ha in

2020 including “pillars construction”. Acton Extension Quarry (ARA 625003) reported about 1 ha under rehabilitation in 2019-2020.

No changes to rehabilitated and disturbed areas had been reported for a number of years at Brockton Farms Quarry (ARA 20660), Hilltop Quarry (ARA 5720), Limehouse Clay Products Pit (ARA 5711 and ARA 5614), Rice and McHarg Quarry (ARA 5716) and Aldershot Quarry (ARA 5500). No changes to rehabilitation area was reported at Tansley Quarry (ARA 613081) since 2015, where extraction continued within the sinking cut stage and stripping was taking place within the Initial Stage. Annual CAR notes for Aldershot Quarry have indicated that grades/contours had been completed “as per rehabilitation plans”, and that areas of West and Centre Quarry had been backfilled and slopes had been seeded. Burlington Pit (ARA 5605) and Burlington Quarry-the Minority (ARA 5657) have been considered rehabilitated for a number of years, with licences being maintained by the licensees. Some additional rehabilitation occurred at Acton Limehouse Pit (ARA 5480) in 2018 and the site has been inactive since. On-going rehabilitation was reported within Hayward Pit (ARA 5507) and Leaver Pit (ARA 5619). The Anderson Pit (ARA 5462 surrendered in 2018) was deemed rehabilitated by MNRF in 2018 and is excluded from the 2019-2020 area reporting. Final rehabilitation at two Campbellville Pits (ARA 5478 and ARA 5479) was accepted by MNRF in 2020 and the rehabilitated areas are included in the 2020 totals.

Former/Abandoned Aggregate Sites

Part of the mandate of TORAC’s Management of Abandoned Aggregate Properties (MAAP) program is rehabilitation of former pits and quarries deemed to be abandoned (i.e., former sites that have not had a valid licence issued under the ARA since 1990) in the ARA-designated areas of the province. This work is funded by the aggregate industry (i.e., through fee payable per tonne of aggregate removed from each ARA-licensed site). According to TOARC, these former extraction sites are generally less than 2 ha, were created as a result of small-scale operations, and remain the property of individuals, corporate entities, or other parties. The MAAP’s program aims to provide rehabilitation on an equitable basis, and targets counties and regions on a rotating basis each year. Site prioritisation for rehabilitation under MAAP is based on composite ranking (e.g., safety concerns, visibility, size, susceptibility to erosion), and requires landowners’ approval. MAAP works directly with landowners to develop site plans that match future property goals. Based on the 2020 TOARC Annual Report of May 27, 2021, one site in Halton Hills (i.e. “Cyganek Pit”, 0.89 ha in size), was rehabilitated to “agriculture” in 2020. TOARC does not provide information on more specific location of sites rehabilitated under MAAP.

According to TOARC’s Online Reporting Tool, Halton has 68 abandoned former aggregate extraction sites, including 40 closed and two LNI (Landowner not Interested). This number includes 15 legacy sites added by TOARC in February 2019.

TOARC’s classification of abandoned former aggregate extraction sites in Halton Region:

Two - classified LNI (Landowner Not Interested)

40 - designated as “closed” for various reasons:

- five had been developed
- five had been rehabilitated by landowners
- two were rehabilitated by MNR in 1994 and 1995

- four were rehabilitated under the MAAP program: two to natural and recreational areas (1999, 2011) and two to agriculture (the latest in 2020)
- 18 had become naturalized, including one alvar, one forest, two regenerating forests, seven meadows, and six water bodies
- four became licensed; and
- three were classified as other (no historical aggregate extraction was reported in the past)

Of the remaining open files, TOARC had previously recommended two for closure, five for rehabilitation, and five for re-assessment. The 15 new files added by TOARC in the recent years (based on review of MNRF's documented legacy sites since 1985) will require assessment (TOARC, February 2019).

Table 5 summarizes the status of former/abandoned aggregate extraction sites by district in Halton Region. The location of sites is shown in Map 2.

Table 5: Status of Former/Abandoned Aggregate Extraction Sites by District in Halton Region											
Former district	LNI	Closed (Total)	Developed (file closed)	Rehabilitated (file closed)	Naturalized (file closed)	Other* (closed)	Licensed (file closed)	To be closed	To be rehabilitated	File open **	New*** File (as of 2018)
Esquesing (31)	2	17	1	3-Landowner 2-MAAP (*) (agriculture)	8	1	3	2	3	5	3
Nassagaweya (16)	0	8		1 – MNR 1-Landowner	4	1	1	0	2	0	6
Nelson (13)	0	8	3	1 – MNR 2 – MAAP	2	0	0	0	0	0	5
Trafalgar (8)	0	7	1	1-Landowner	4	1	0	0	0	0	1
Halton Region (68)	2	40	5	11	18	3	4	2	5	5	15

Notes: MAAP = Management of Abandoned Aggregate Properties
MNR = Former Ministry of Natural Resources, later became MNRF, currently MNDMNRF
LNI = Landowner Not Interested (as per TOARC's designation)
* Other = no historical aggregate extraction had taken place
**File Open = re-assessment required
***New File = assessment required
(*) Though TOARC's legacy sites' reporting tool refers to 10 rehabilitated sites, one more site (referred to as "Cyganek Pit") was rehabilitated under MAAP in 2020. Thus, the sum of rehabilitated sites is assumed to be 11 as of 2020.

According to TOARC's Online Reporting Tool, current land use at surrendered sites in Halton Region, defined in percentage total of surrendered area, is as follows:

- Water - Pond (25.7 per cent)
- Recreational - Conservation Area (22.4 per cent)
- Open - Natural (13.6 per cent)
- Natural - Meadow/Grassland/Prairie (10.6 per cent)
- Agriculture - Livestock (8.3 per cent)
- Natural - Cultural Thicket (6.1 per cent)
- Residential - Single Family Housing (3.6 per cent)

- Natural - Woodland (3.3 per cent)
- Open - Exposed Sand, Stone, Gravel (2.9 per cent)
- Multiple land uses (3.5 per cent)

Map 2: Former and Abandoned Pits and Quarries in Halton Region

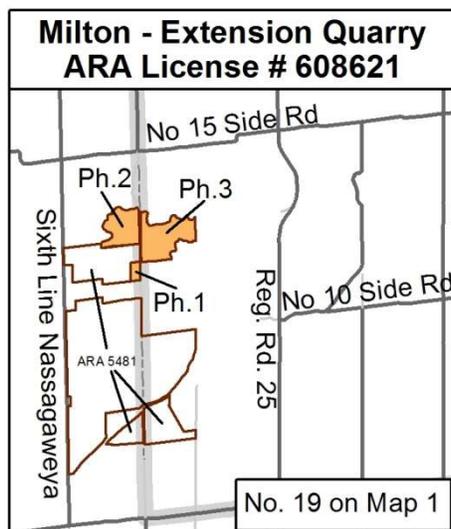


F. Status of the Operation and Implementation of Approved Adaptive Management Plans

The objective of Adaptive Management Plans (AMPs) is to protect water resources and ecological features and functions. There are currently three active Adaptive Management Plans in Halton Region: Dufferin's Milton Extension Quarry (ARA 608621) AMP, Dufferin's Acton Quarry Extension (ARA 625003) AMP, and Meridian Brick's (formerly Forterra's and Hanson Brick's) Tansley Quarry (ARA 613081) AMP.

While the AMPs are part of the operating licences and the associated site plan conditions, the Region has an on-going oversight role as per the AMP (and related) Agreements with the proponents relating to each operation.

Dufferin Aggregates Milton Quarry AMP



The Milton Quarry in the Towns of Milton and Halton Hills consists of the Main Quarry and North Quarry (ARA 5481), and Extension areas (ARA 608621) encompassing Phases 1, 2, 3. Dufferin Aggregates, a Division of CRH Canada Group Inc. (Dufferin Aggregates) is the current owner and holder of ARA licenses for the Milton Quarry. The AMP (2003) applies to the Milton Extension Quarry (85 ha), which was licensed in 2007 (ARA 608621).

The Milton Extension Quarry AMP contains implementation requirements for the protection, mitigation and monitoring of water resources and groundwater-dependent ecological features adjacent to the quarry. Under the AMP Agreement (2003), Halton Region and Conservation Halton (CH) are to perform an ongoing role of overseeing the effectiveness of the water management system implemented under the AMP.

In 2019 and 2020, Halton staff conducted the following reviews as part of the Milton Quarry AMP-related oversight:

- Review of North Quarry Rehabilitation Lake Level Assessment report (2020).
- Review of 5-Year AMP Review reports (2020).
- Review of water targets for 2020 and 2021 winter and spring seasons
- Review of the 2018 and 2019 Annual Monitoring Reports (2019 and 2020).

- Regular reviews of on-line (WebDT) monitoring data to assess performance and effectiveness of the quarry's water management system.
- Review of the 2019 and 2020 annual reports pertaining to the Cox Tract Haul Route; and
- AMP-related administrative reviews (2019 and 2020).

Below-water extraction in the West Cell (Phase 2 of the Extension Quarry) commenced in June 2013 and in the East Cell (Phase 3 of the Extension Quarry) in 2017. Full mitigation and monitoring provisions of the AMP came into effects in June 2013. Phase 3 of the Extension was the primary area of extraction during this 2019-2020 reporting period.

5-Year AMP Review

The 5-Year AMP Review reports (2019), covering the period from 2013 to 2018, was one of the milestone technical reports required for the Milton Extension Quarry under the AMP. The comprehensive submission (February 2020) consisted of six thematically distinct reports, each referring to "5-Year AMP Review" including:

- Water Quality Assessment
- Wetland Ecology
- Groundwater Modeling
- Surface Water Modeling and Groundwater Recharge Assessment
- Aquatic Monitoring
- Rock Pillar Performance Monitoring Report
- West Cell Final Extraction Conditions
- North Quarry Rehabilitation Lake Level Assessment

Halton Region technical staff completed the reviews of applicable reports and provided comments to Dufferin between April and June 2020. Engineering and ecological reviews were referred to Conservation Halton (CH), who commented directly to Dufferin.

The results of 5-Year AMP Review were found to be largely consistent with findings presented in the applicable annual monitoring reports for the Milton Quarry. Halton staff had no major issues with the implementation of the proposed changes and agreed with the proponent that there was no need for amendment to the Adaptive Environmental Management and Protection Plan (2011) arising from the 5-Year AMP Review.

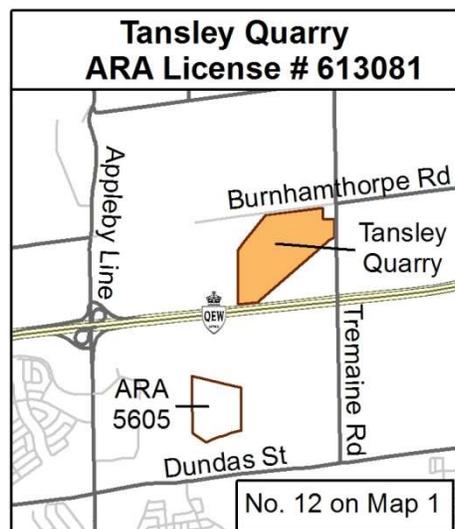
Milton Extension-Quarry Status

Based on the 2019 CAR, extraction continued in Phases 2 and 3. Stripping material was utilized for progressive rehabilitation and for construction of pillars along the Milton-Halton Hills' Townline and within the Phase 2 (West Cell). Topsoil from the 2019 stripping was used for tree-planting in ARA 5481 (Main-North Quarry), with the remaining material stockpiled for future use. All blasts were being monitored internally and by third party. The 2019 disturbed area increased by 10.45 ha to a total of 67.09 ha (based on review of survey/AutoCAD files). No importation of material (inert fill) occurred in 2019 and no increase in rehabilitation area was reported for that year. Based on the 2020 CAR, extraction of aggregate continued in Phases 2 and 3, and overburden stripping continued in Phase 3 (East Cell). The stripped material was utilized in the construction of Townline pillar. No increase in disturbed area was reported in 2020; the total disturbed area was given at 64.18 ha (based on review of

survey/AutoCAD files). The 2020 rehabilitation was reported at 2.91 ha, and at 4.32 ha in total (as of 2020). There was no importation of (inert) material to ARA 608621 in 2020.

Based on the Region's review of the WebDT up-to-date data and technical monitoring reports, dewatering and mitigation activities continued throughout this 2019-2020 reporting period, with no notable deviations from the seasonal targets established/adjusted per the AMP protocols.

Meridian Brick Tansley Quarry AMP



The Tansley Quarry in Burlington (licensed in 2007) is owned by Meridian Brick Canada Ltd. (Meridian Brick) in Burlington. In May 2007, Hanson Brick Ltd. (original licensee) entered into an Adaptive Groundwater Management Plan (AMP) Agreement and a Private Communal Water System (PCWS) Agreement with the Region of Halton.

Adaptive Groundwater Management Plan

The Adaptive Groundwater Management Plan (AMP) for the Tansley Quarry sets out a program to monitor the potential effects of the quarry and ensure that affected property owners have uninterrupted access to potable water. This is further guaranteed by the AMP Agreement and Private Communal Water System (PCWS) Agreement. These Agreements obligate Meridian Brick (previously Forterra Brick and Hanson Brick) to undertake actions set out in the AMP, including construction, operation and maintenance of the PCWS. Halton staff oversees, reviews, and keeps track of deliverables associated with the AMP and PCWS Agreements, including technical, financial, and insurance matters.

Private Communal Water System

Hanson Brick Ltd. (currently Meridian Brick) constructed a PCWS and related infrastructure between December 2011 and February 2013. Since May 2013, the PCWS, classified as Non-municipal Year-round Residential Drinking Water System, provides potable water to 11 private residences and six vacant lots (referred to as Eligible Properties) adjacent to the Tansley Quarry. The System has been "fully operational" since July 15, 2013 (Hanson Brick Ltd., 2013). As per the PCWS Agreement, Meridian Brick is responsible to own, maintain, repair and replace the PCWS and is required to file annual financial and operating reports with the Commissioner of Legislative and Planning Services by April 30 of each year. The Ontario Clean Water Agency (OCWA) operates, maintains, and monitors the Tansley PCWS facility on behalf of Meridian Brick.

Halton Region received the 2019 Tansley PCWS - Operations, Maintenance and Financial Report in April 2020 and provided comments to Meridian Brick in May 2020. The Region received the 2020 Tansley PCWS report in late April 2021 and provided comments in spring-summer 2021. Based on the 2019 and 2020 Reports and Meridian's responses to Region's comments, staff had no issues that could affect the on-going PCWS operation.

The first five-year review of the PCWS operational securities was completed in mid-2018, and resulted in adjustments to the current five-year period (July 2018 to July 2023). The financial security adjustments are administered by Meridian Brick on an annual basis, with records of adjustments (communication and bank records) maintained by Halton Region.

AMP Monitoring and Reporting

The AMP requires the quarry operator to submit annual monitoring reports by April 30 of each year, for the preceding calendar year, to the MNRF (currently MNDMNRF), MECP and the Region of Halton, and to report on any unusual water level and water quality data within 30 days of detection. Meridian Brick is also required to submit pumping and discharge reports to the MECP by March 31 of each year, in accordance with water taking and discharge permits (PTTW and C of A for Industrial Sewage Works). As per the AMP, the Region also has a role in reviewing and approving Annual Monitoring Reports. In accordance with the AMP, the Region, along with Meridian Brick and the MECP, have a role in reviewing well restoration options if dewatering activities affect properties beyond the PCWS-serviced zone. In their annual monitoring reports submitted to date, the licensee reported that there were no well interference complaints within or beyond the servicing zone since quarry operation started.

Regional staff reviewed the AMP-related annual monitoring reports, submitted by the operator in April 2019 and April 2020, and provided comments on respective reports in August 2019 and August 2020, respectively. No amendments to the AMP or additional contingency actions have been required since commencement of the PCWS operation at this site.

Some modifications to the off-site private well monitoring were introduced by the operator over the years due to provision of water supply to the Eligible Properties, and some wells were decommissioned by the operator as requested by the well owners connected to the PCWS. Several on-site monitoring locations north of the sinking cut had been decommissioned to allow for continued stripping and progression of the quarry face to the north. The Region provides comments and recommendation on the adequacy of the groundwater monitoring network through annual monitoring report reviews.

Staff will continue to review and comment on monitoring reports, including monitoring network adequacy and water level targets as extraction progresses to the north to ensure that dewatering cone expansion does not affect private wells beyond the current PCWS servicing corridors.

Tansley Quarry Status

Based on the 2019 Tansley Quarry Annual Monitoring Report (AMR), pumping from the quarry sump has been carried on as needed basis since 2009. Operational progress outlined in the AMRs refers to exclusive extraction within the sinking cut limits until 2015, initiation of stripping in the northwest direction (beyond the sinking cut) in 2016 in relation to berm expansion adjacent to CNR, and initiation of extraction within the initial stage in 2017 to accommodate removal of remaining sources within the steep slopes of the sinking cut. The extractive activities in these areas appear to have continued since.

Based on the 2020 CAR, the disturbed area of 17.2 ha included about an 8.55 ha excavated area and an 8.4 ha berm. These areas have not changed since 2018. The rehabilitation area of 8 ha has not changed since 2015 within this relatively new site. Meridian Brick demolished a wooden barn in April

2018 (registered activity under *O. Reg. 242/08 Endangered Species Act* (for Barn Swallow)) and had constructed alternate nesting structure, approved by consulting ecologist and MNRF. The most recent CARs indicated that while the existing overburden stockpile had been seeded, the new stockpiles had not been seeded as further stripping was in progress and was to continue in foreseeable future.

Dufferin Aggregates Acton Extension Quarry AMP



The Acton Quarry in the Town of Halton Hills consists of an existing Acton Quarry - Phases 1, 2 and 3 (ARA 5492), and an Extension Quarry - Phases 4, 5E, and 5W/6 (ARA 625003). Dufferin Aggregates, a Division of CRH Canada Group Inc. (Dufferin Aggregates) is the current owner and holder of ARA licenses for Acton existing and Extension Quarry. The AMP (2014) applies to the Acton Extension Quarry (65.6 ha), which was licensed in 2017 (ARA 625003). The AMP implementation is a condition in the ARA licence and the ARA Site Plan.

The Acton Extension Quarry AMP (November 2014) is the key document to guide implementation and operation of mitigation and rehabilitation measures for the protection of water resources and related ecological features. The AMP includes requirements for comprehensive monitoring and includes procedures for actions that must be taken in the event that Performance-Based Targets (PBTs) are not met. Comprehensive data collection, system testing, and reporting (annual, on-line, pre-extraction, verification, etc.) are required for Phases 4 and 5/6 West of the Extension Quarry.

Under the AMP Agreement (April 2016), Halton Region, Conservation Halton (CH), and Credit Valley Conservation (CVC) are to oversee the effectiveness of the water management system implemented under the AMP on an on-going basis. Halton Region has a lead oversight role under the AMP and Ecological Enhancement Plan (EEP) Agreements. The EEP Agreement ensures that Dufferin implements the EEP for ecological restoration and natural feature enhancement, including on-and-off site enhancement, and progressive and final rehabilitation. The EEP technical document identifies types of enhancements, implementation schedules, and timelines for submission of planting-prescriptions' for review by the Region in advance of enhancement works linked to the Acton Extension EEP.

In 2019-2020, Halton staff conducted the following reviews as part of the AMP- and EEP-related oversight:

- Review of Update on Ecological Enhancement Plan Implementation report (2019), including final EEP prescriptions for two off-site enhancement areas near Phase 4.
- Review of the AMP-related 2018 Annual Monitoring Report (2019).
- Review of the AMP-related 2019 Annual Monitoring Report (2020).
- Review of Private Well Baseline Survey report (2020) in relation to Phase 4; and
- AMP-related administrative reviews (2019 and 2020).

Under the AMP, a pre-extraction report is required prior to aggregate removal from below the water table in Phase 4. As extractive activities at the Acton Quarry were on hold during the 2019-2020 period, submission of a complete pre-extraction report was delayed by Dufferin. In the interim, Dufferin submitted Private Well Baseline Survey report (April 2020) to the Region, MECP, and MNRF, documenting survey carried by Dufferin along RR#25, between 22 Sideroad and 25 Sideroad in 2017-2018, to establish baseline conditions in relation to future below-water extraction in Phase 4. A network of observation wells, representing clusters of private wells along RR#22, was established by Dufferin along this corridor prior to 2019. This network is part of long-term water monitoring program and annual reporting to the Region and other agencies.

Review of the Annual Monitoring Reports for the Acton Quarry revealed no issues affecting the AMP and EEP-related implementation at the extension cells, aside from delayed pre-extraction reporting, which is anticipated prior to below-water extraction in Phase 4.

Acton Quarry Status

Based on the 2019-2020 CARs and the 2019 water monitoring report, no stripping, blasting, or other extraction-related activities took place in the Acton Quarry in 2019-2020. No dewatering occurred in the Expansion Phases 4 and 5/6West (ARA 625003) in 2019-2020. Some infrastructure-related works were carried in Phase 1 (ARA 5492) in fall 2019 to accommodate off-site discharge required under the existing (ARA 5492) and the Extension (ARA 625003) quarry permits. These works involved modifications to the Phase 1 Pumping Station operations' discharge lines to replace components of existing operational pumping capacity. The modifications serve simultaneous discharge from the Phase 1 Pumping Station to the Fourth Line weir and ultimately to the Black Creek, to the Phase 2 Seeps at the Escarpment edge, and to the wetland south of Phase 3 and ultimately to 16 Mile Creek. Off-site dewatering and internal transfers originating in Phases 2 and 3 (ARA 5492) have continued through portable pumps.

G. Assessment of the Cumulative Impact of Extraction Operations on both the Greenbelt and Regional Natural Heritage System

Active licences require some level of rehabilitation (in accordance with the approved site plans, and policies including the Provincial Policy Statement, the Greenbelt Plan, and the Regional Official Plan) to be compatible with the surrounding land.

Policy Context

The Provincial Policy Statement, 2020 (PPS) is consolidated statement on the government's policies on land use planning, including among other things, protecting the natural environment and natural resources. Section 2.5.3.1 of PPS indicates: "Progressive and final rehabilitation shall be required to accommodate subsequent land use compatibility, to recognize the interim nature of extraction, and to

mitigate negative impacts to the extent possible. Final rehabilitation shall take surrounding land use and approved land use designations into consideration.”

Section 4.3.2.4 in the former provincial Greenbelt Plan (2005), called for the MNRF’s determination of the maximum allowable disturbed area of each mineral aggregate operation (i.e. “Any excess disturbed area, above the maximum, will be required to be rehabilitated. Existing operations have 10 years of the approval of the Greenbelt Plan to complete rehabilitation, with 50 per cent requiring completion within six years. For new operations, including expansions, the total disturbed area shall not exceed an established maximum allowable disturbed area.”)

In the new provincial Greenbelt Plan (effective as of July 1, 2017), Section 4.3.2.5 refers to rehabilitation of new and existing operations:

- “5. New and existing mineral aggregate operations and wayside pits and quarries, within the Protected Countryside shall ensure that:
- a. The rehabilitated area will be maximized and disturbed area minimized on an ongoing basis during the life-cycle of an operation;
 - b. Progressive and final rehabilitation efforts will contribute to the goals of the Greenbelt Plan;
 - c. Any excess disturbed area above the maximum allowable disturbed area, as determined by the Ministry of Natural Resources and Forestry, will be rehabilitated. For new operations, the total disturbed area shall not exceed an established maximum allowable disturbed area; and
 - d. The applicant demonstrates that the quantity and quality of groundwater and surface water will be maintained as per Provincial Standards under the Aggregate Resources Act.
6. For rehabilitation of new mineral aggregate operation sites in the Protected Countryside, the following policies apply:
- a. The disturbed area of a site shall be rehabilitated to a state of equal or greater ecological value and, for the entire site, long-term ecological integrity shall be maintained or enhanced;
 - b. If there are key natural heritage features or key hydrologic features on the site, or if such features existed on the site at the time of an application:
 - i. The health, diversity and size of these key natural heritage features and key hydrologic features shall be maintained or enhanced; and
 - ii. Any permitted extraction of mineral aggregates that occurs in a feature shall be completed, and the area shall be rehabilitated, as early as possible in the life of the operation;
 - c. Aquatic areas remaining after extraction are to be rehabilitated to aquatic enhancement, which shall be representative of the natural ecosystem in that particular setting or ecodistrict, and the combined terrestrial and aquatic rehabilitation shall meet the intent of section 4.3.2.6 (b); and
 - d. Outside the Natural Heritage System, and except as provided in sections 4.3.2.6 (a), (b) and (c), final rehabilitation shall appropriately reflect the long-term land use of the general area, taking into account applicable policies of this Plan and, to the extent permitted under this Plan, existing municipal and provincial policies. In prime agricultural areas, the site shall be rehabilitated in accordance with section 2.5.4 of the PPS.
7. Final rehabilitation for new mineral aggregate operations in the Natural Heritage System shall meet these additional policies:

- a. Where there is no extraction below the water table, an amount of land equal to that under natural vegetated cover prior to extraction, and no less than 35 per cent of the land subject to each license in the Natural Heritage System, is to be rehabilitated to forest cover, which shall be representative of the natural ecosystem in that particular setting or ecodistrict. If the site is also in a prime agricultural area, the remainder of the land subject to the license is to be rehabilitated back to an agricultural condition;
- b. Where there is extraction below the water table, no less than 35 per cent of the non-aquatic portion of the land subject to each license in the Natural Heritage System is to be rehabilitated to forest cover, which shall be representative of the natural ecosystem in that particular setting or ecodistrict. If the site is also in a prime agricultural area, the remainder of the land subject to the license is to be rehabilitated in accordance with section 2.5.4 of the PPS; and
- c. Rehabilitation shall be implemented so that the connectivity of the key natural heritage features and the key hydrologic features on the site and on adjacent lands shall be maintained or enhanced. “

Section 48 in the ARA [last amendment, 2019] contains original (1990) and newer (2017) requirements concerning rehabilitation of aggregate sites, including provisions under “Duty to rehabilitate site” (1990) and “Rehabilitation report” (per Bill 39 - Schedule 1; May 10, 2017). Specifically:

“(1) Every licensee and every permittee shall perform progressive rehabilitation and final rehabilitation on the site in accordance with this Act, the regulations, the site plan and the conditions of the licence or permit to the satisfaction of the Minister. R.S.O. 1990, c.A.8, s.48(1); and

(1.1) Every licensee and every permittee shall submit reports on the progressive rehabilitation and final rehabilitation of the site at the prescribed times and shall prepare and submit the reports in accordance with the regulations. 2017, c.6, Schedule 1, s. 39).”

Ontario Regulation 244/97 [last amendment O. Reg. 466/20; September 1, 2020] contains new rehabilitation-related provisions, under Control and Operation of Pit or Quarry; Section 0.13 (1), Items 18 to 22, which came into effect on April 21, 2021. The new provisions provide for some standardized rehabilitation-related requirements in regards to on-site stripping, storage and utilization of overburden and topsoil; sloping of excavation faces; erosion control in newly rehabilitated areas; and on-site drainage and soil-compaction controls. These provisions appear to formalize conditions/requirements which had been typically specified in *ARA* site-plans.

Rehabilitation Status of Sites Adjacent to/Intersecting the Regional Natural Heritage System

All *ARA* sites in in Halton Region (Table 1) were either within or adjacent to the Regional Natural Heritage System (RNHS), as shown on Map 1 of the 2009 ROP (Office Consolidation, June 19, 2018), and on Map 3 in this document. Historically, rehabilitation progress was reported at most of these sites. Rehabilitation status at all currently licensed *ARA* sites adjacent to or intersecting the RNHS, is provided in Appendices 1 and 2, based on the recent 2019-2020 CARs (or earlier, where no recent CARs were available). The rehabilitation end-use descriptions (Appendix 2) are based on the approved Site Plans.

During the 2019-2020 period, a rehabilitation area increase of about 9.5 ha was reported at *ARA* 5499 (Burlington Quarry-the Majority), 4.4 ha at *ARA* 5481 (Milton Quarry), 2.9 ha at *ARA* 608621 (Milton Extension Quarry), 2.45 ha at *ARA* 5616 (Bot Holdings Pit), and 1.3 ha at *ARA* 625003 (Acton Extension Quarry). Rehabilitation-related activities with no increase in rehabilitation area were reported

at ARA 5507 (Hayward Pit) and ARA 5619 (Leaver Pit). Final rehabilitation at two Campbellville Pits (ARA 5478 and ARA 5479) was accepted by MNRF in 2020.

Rehabilitation Status of Sites Adjacent to/Intersecting the Greenbelt Natural Heritage System

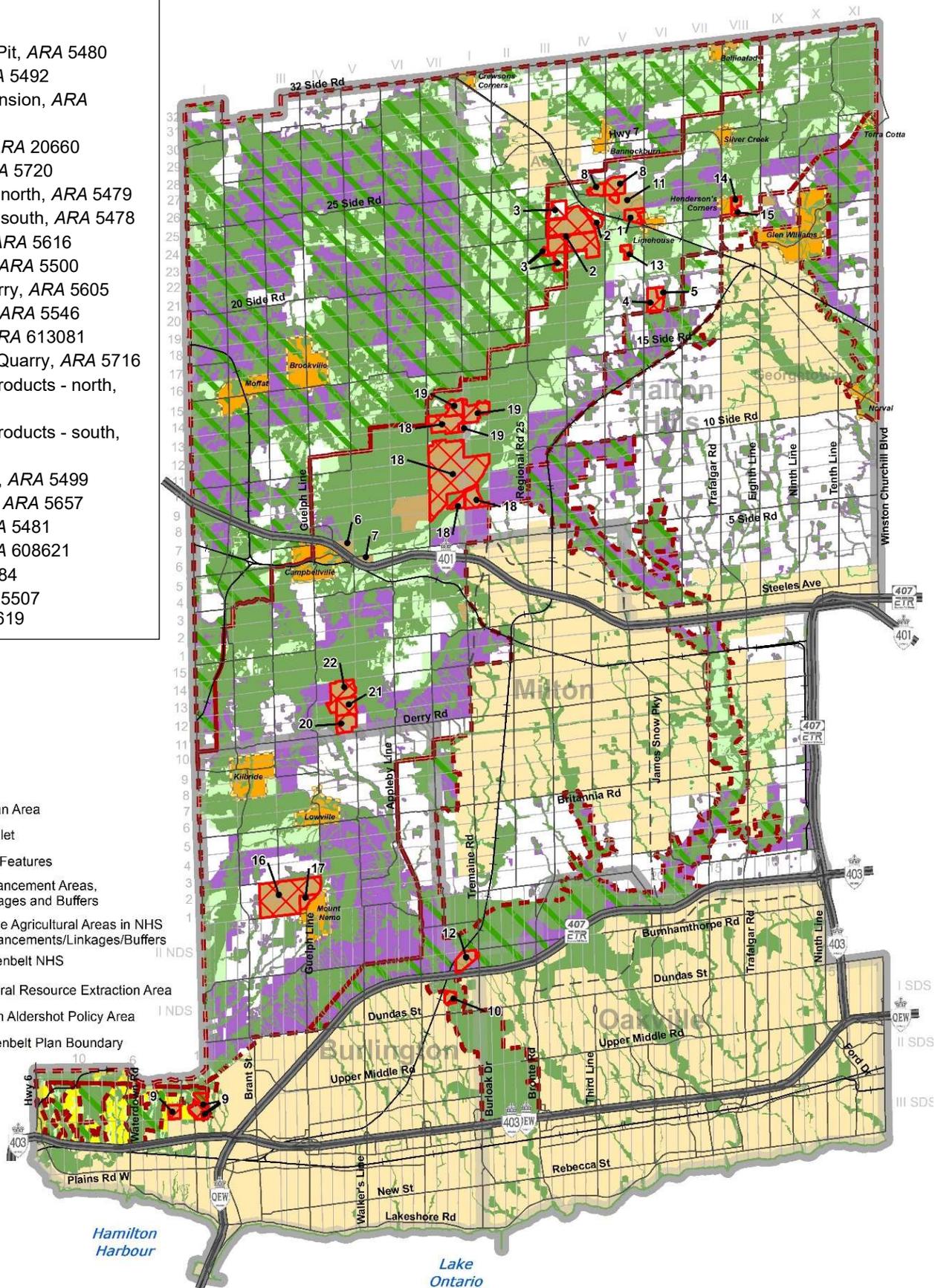
Six ARA sites are either within or adjacent to the Greenbelt Plan NHS including Acton Quarry (ARA 5492), Acton Extension Quarry (ARA 625003), and Brockton Farms (ARA 20660) in Halton Hills, and the Aldershot Quarry (ARA 5500), Tansley Quarry (ARA 613081), and Burlington Quarry (ARA 5605) in Burlington. A total licensed area for these sites is about 442 ha and a total permitted extraction area (as per the approved Site Plans) is about 375 ha. As of 2020, about 116 ha had been rehabilitated and the total disturbed at these sites was approximately 172 ha. The Milton's North Quarry and Extension Quarry were not included in the total areas given the partial adjacency to Greenbelt NHS.

Map 3: ARA Sites Located in the Greenbelt and Regional Natural Heritage System

Licensed Sites

1. Acton Limehouse Pit, ARA 5480
2. Acton Quarry, ARA 5492
3. Acton Quarry Extension, ARA 625003
4. Brockton Farms, ARA 20660
5. Hilltop Quarry, ARA 5720
6. Campbellville Pit - north, ARA 5479
7. Campbellville Pit - south, ARA 5478
8. Bot-Holdings Pit, ARA 5616
9. Aldershot Quarry, ARA 5500
10. Burlington Pit/Quarry, ARA 5605
11. Wilroy Brooks Pit, ARA 5546
12. Tansley Quarry, ARA 613081
13. Rice and McHarg Quarry, ARA 5716
14. Limehouse Clay Products - north, ARA 5614
15. Limehouse Clay Products - south, ARA 5711
16. Burlington Quarry, ARA 5499
17. Burlington Quarry, ARA 5657
18. Milton Quarry, ARA 5481
19. Milton Quarry, ARA 608621
20. Milton Pit, ARA 5484
21. Hayward Pit, ARA 5507
22. Leaver Pit, ARA 5619

- Urban Area
- Hamlet
- Key Features
- Enhancement Areas, Linkages and Buffers
- Prime Agricultural Areas in NHS Enhancements/Linkages/Buffers
- Greenbelt NHS
- Mineral Resource Extraction Area
- North Aldershot Policy Area
- Greenbelt Plan Boundary



Rehabilitation Status at Former and Abandoned Aggregate Sites Within/Adjacent to the NHS Areas in Halton

Former ARA sites and abandoned aggregate sites have also been considered in relation to the Greenbelt and Regional NHS Areas. Locations of the former sites, identified through the Ontario Geological Survey's (OGS's) Aggregate Resource Inventory Papers (1982-2009), are shown in Map 2. TOARC's Surrounded Sites Reporting and Mapping (SSR&M) Tool was utilized to verify the locations and land use status of the formerly licensed sites in Halton Region.

As of 2020, there were 11 known former pits and at least 6 former wayside pits (no former quarries) identified within/adjacent to the Greenbelt NHS in Halton Region. There are at least 29 former pits (including two Campbellville pits surrendered in 2020) and at least 16 quarries within/adjacent to the Regional NHS. Most of the formerly licensed pits had been rehabilitated or partially rehabilitated.

The following former ARA pits (locations identified as P# on Map 2) are within the Greenbelt NHS:

- Former ARA 5462 (6.28 ha)/David Anderson Pit (P5462) - According to TOARC, the licence was surrendered in December 2017. In May 2018, the MNRF deemed final rehabilitation to be acceptable and completed in accordance with the ARA, the regulations, conditions of the licence and the site plans.
- Former ARA 5510 (6.59 ha)/1294142 Ontario Limited Pit (P 5510) - The licence was surrendered in July 2016. The MNRF deemed final rehabilitation completed in accordance with the ARA, the approved site plan, and the conditions of the licence. The 2017 site uses identified by TOARC included open-natural (95 per cent) and residential-cottages and trailers (five per cent).
- Former ARA 5464 (30.38 ha)/C.G. Bishop c/o Halton Sand and Gravel Ltd. Pit (P38a) - The licence was surrendered in April, 2007. The 2017 site uses identified by TOARC included residential-single family housing (50 per cent), natural-meadow/grassland/prairie (15 per cent), natural-forest (15 per cent), and multiple (20 per cent).
- Former ARA 5477 (17.42 ha)/555816 Ontario Inc. Campbell Pit/Stull Pit (P24) - The licence was revoked in September 2006. The site was reported "rehabilitated" in the ARIP#184 (OGS, 2009). Halton Hills OPA 16, as well as the Niagara Escarpment Plan Amendment 192, apply to this site.
- Former ARA 5495 (4.86 ha)/R. Hess Pit (28/96) - The licence was revoked in 1999. The location of this pit (OGS, 1996) is in the vicinity of the former ARA 5510.
- Former ARA 5574 (83 ha)/Woodlawn Guelph Ltd. Campbellville Pit (P1) - This site was licensed as sand and gravel pit between 1976 and 2008. Sand and gravel was also extracted at this site during the 1960s. The licence was revoked in 2008. The site is currently owned by 2278082 Inc. (a subsidiary of James Dick Construction Limited). In 2018, JDCL filed an application for a new ARA licence, known as the Reid Road Reservoir Quarry proposal, to extract the remaining sand and gravel, and to extract the underlying rock (dolostone) at this site. The site is located in rural area with a mix of rural residential, agricultural, natural heritage, and industrial uses.

The following former ARA pits and quarries (locations identified as P# and Q# on Map 2) are within/surrounded by the Regional NHS:

- Former ARA 5479 (22.2 ha)/Campbellville Pit-north - The licence was surrendered in November 2020. MNRF's Inspection Report of November 6, 2020 confirmed final rehabilitation had been completed and deemed rehabilitation of the site acceptable. MNRF accepted ARA 5479 surrender on November 20, 2020. In early 2021, NEC initiated site-specific Niagara Escarpment Plan (NEP) Amendment to address post-rehabilitation land use re-designation on this property.

- Former ARA 5478 (15.9 ha)/Campbellville Pit-south - The licence was surrendered in June 2020. On December 9, 2019, the licensee requested surrender of ARA 5478 and provided MNRF with an Inspection Report of October 25, 2019, confirming completion of final rehabilitation. On June 5, 2020, MNRF deemed rehabilitation of the site acceptable and accepted surrender of ARA 5478. In early 2021, NEC initiated site-specific Niagara Escarpment Plan (NEP) Amendment to address post-rehabilitation land use re-designation on this property.
- Former ARA 5493 (125 ha)/Halton Crushed Stone Quarry (Q5493) - The licence was surrendered in September 2015. The MNRF deemed final rehabilitation completed in accordance with the ARA, the approved site plan and the conditions of the licence. The site uses, as identified by TOARC (2016) include water-pond (80 per cent), open-natural (10 per cent), exposed sand, stone, and gravel (five per cent), and multiple (five per cent).
- Former ARA 5687 (42.49 ha)/J.C. Duff Ltd. Silvercreek Gravel Pit (P21) - This site, located south of the Silver Creek Conservation Area, was rehabilitated and the licence was surrendered in October 2008. The site uses as identified by TOARC (2017) include open-natural (75 per cent), woodland (10 per cent), cultural thicket (10 per cent), and multiple (five per cent).
- Former ARA 5498 (41 ha)/Nelson Aggregate Burlington (Kilbride) Pit (P41) - The pit was rehabilitated and the licence was surrendered in January 1997. The site uses, as identified by TOARC (2010) included agriculture-livestock (85 per cent), natural (10 per cent), and rural (five per cent). Satellite view (TOARC's SSR&M Tool) shows graded and vegetated slopes, and levelled pit floor (appear to be seeded/cultivated). Residential and farm buildings and several ponds are present at the site.
- Former ARA 5496/Conservation Halton Kelso Quarry Park; formerly Lac Properties Inc. Limestone Quarry (Q4) - This site had been rehabilitated, and the licence was surrendered in July 2006 (TOARC). The site uses as identified by TOARC (2016) include recreational/conservation area (100 per cent).
- Former Milton Robertson Quarry - an unlicensed former site identified by TOARC within the current Kelso Conservation Area [CB-36 on Map 2]. The site uses as identified by TOARC (2017) include: woodland (55 per cent), open-exposed sand, stone, gravel (20 per cent), open-exposed bedrock (20 per cent), and multiple (five per cent).
- Former ARA 5713 (14.77 ha)/2066012 Ontario Inc.; formerly Hanson Brick Milton Quarry (Q3) - This site was rehabilitated and the licence was surrendered in November 2010 (TOARC). The site uses as identified by TOARC (2017) include natural-meadow/grassland/prairie (80 per cent) and water-wetland (20 per cent).
- Former ARA 5495 (4.86 ha)/R. Hess Pit (28/96) - The licence was revoked in 1999. The location of this pit (OGS, 1996) is in the vicinity of the former ARA 5510.
- Former ARA 5506 (20.89 ha)/Selco Construction Sand and Gravel Ltd. Pit (P42) - This pit, located on the southeastern side of Killbride Village, had surrendered its licence in January 1990 (TOARC). The site uses as identified by TOARC (2017) include pond (35 per cent), woodland (20 per cent), meadow/grassland/prairie (15 per cent), and multiple (30 per cent).
- Former ARA 5466 (40.5 ha)/WM. R. Barnes Co. Ltd. Quarry (Q5/83) - The licence was surrendered in November 1994. The site uses as identified by TOARC (2017) include natural-meadow/grassland/prairie (60 per cent), and natural-cultural thicket (40 per cent).

- Former ARA 5505 (3.4 ha)/Rice and McHarg Quarry (Q4/83) - This licence was surrendered in April 2007. The site uses as identified by TOARC (2017) include agriculture-field crops (40 per cent), rural (20 per cent), natural-meadow/grassland/prairie (20 per cent).
- Former ARA 5501 (0 ha)/Old Martin Quarry (Q21) - The licence for this site, located at Tenth Line near the Escarpment edge, was reported as surrendered in January 1990 (TOARC). The site uses as identified by TOARC (2017) include natural (90 per cent) and water-wetland (10 per cent).

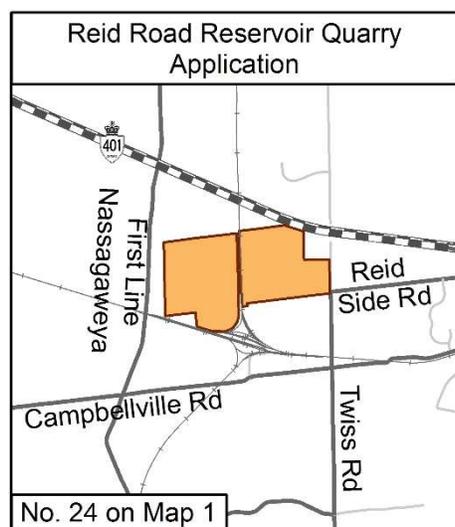
The 2009 Aggregate Resources Inventory Paper No. 184 (OGS 2009) referred to most of the formerly unlicensed (abandoned) aggregate sites in Halton Region as “overgrown”. Nine had been reported as “rehabilitated”, and two quarries were noted to be “water-filled”.

H. Number and Status of Active and Potential Applications for Mineral Resource Extraction Areas

During 2019-2020, Halton staff were involved in reviewing two active applications in Halton Region; one on-going since 2018, and one commenced in 2020.

Active Applications in Halton Region

Reid Road Reservoir Quarry (Town of Milton), James Dick Construction Limited



The on-going review is for the Reid Road Reservoir Quarry application by James Dick Construction Limited (JDCL), filed in July 2018. Review of JDCL’s ARA application to the MNRF for a Class A licence (Category 1 and 2 Pit and Quarry Below Water) to extract the remaining sand and gravel and to extract dolostone from former pits west of the Hamlet of Campbellville in the Town of Milton, continued through 2019 and into early 2021. The ARA’s approval process has a 2-year notification and consultation period, which began for this proposal on August 2, 2018. MNRF extended this period to January 29, 2021, due to COVID-19 pandemic.

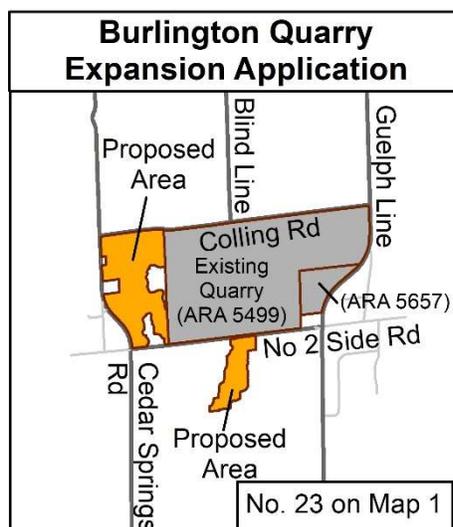
The Reid Road Reservoir Quarry (RRRQ) application and the early review process were described in LPS103-19, including establishment of a Joint Agency Review Team (JART) in early 2019 to review and comment on the ARA-related submissions from JDCL. As part of the first set of JART’s review comments to MNRF and JDCL in July 2019, JART recommended that the applicant works with the review team to address specific concerns. This review process was accepted by JDCL and involved

several joint meeting between JART and JDCL teams. In May 2020, JART submitted second set of detailed comments to the applicant (<https://www.halton.ca/The-Region/Regional-Planning/Mineral-Aggregate-Operations>). In responding to JART's comments, JDCL updated technical information and made a number of alterations to the proposed quarry, including a reduced scale of extraction and enhancement to operation, monitoring, and response action measures (<http://www.jamesdick.com/reid-road-reservoir-quarry/>). JART have continued to review information provided by JDCL in response to JARTs comments. In December 2020, member agencies reiterated their objection to the RRRQ proposal, largely due to limited review-time allotted between receipt of additional material from JDCL and the ARA-review closing date of January 29, 2021.

On January 29, 2021, in response to numerous concerns raised by public, MECP posted a proposal (ERO No. 019-2876) to designate and exempt the proposed RRRQ under the *Environmental Assessment Act (EAA)*. Among the issues raised in the requests from public to designate the quarry were concerns related to impacts to groundwater from under-water blasting. In response to ERO No. 019-2876, Halton Region, Town of Milton and CH filed a joint letter (March 11, 2021) with Environmental Assessment Branch of the MECP, supporting additional study and public consultation that would be mandated under an environmental assessment for this project. Halton Region and the Town of Milton had previously requested an environmental assessment for the RRRQ proposal: Town of Milton Council on August 12, 2019, and Halton Regional Council on September 11, 2019. Both motions were unanimously carried, and were referenced in the March 11, 2021, letter to the MECP. The agencies indicated that, notwithstanding considerable work by JDCL and extensive reviews completed by JART, additional study and public consultation that would be mandated through an environmental assessment were warranted and would provide for broader scale analysis, review, and consultation with public regarding this proposal. On June 30, 2021, MECP posted a decision regarding ERO No. 019-2876, requiring the Reid Road Reservoir Quarry to be subject to a project-specific environmental assessment under the *EAA*. According to the Ministry this assessment will provide additional opportunity to assess potential impacts to the environment, including local groundwater, and ensure that local concerns are considered and effects can be mitigated or managed.

Halton Region staff will continue to participate and provide comments on this project, as required under the *ARA* and under the *EAA* process. The MNRF, through the *ARA* site plan approval process, is ultimately responsible for making a decision on the quarry expansion.

Burlington Quarry Expansion (Town of Burlington), Nelson Aggregates Co.



The review commenced in 2020 was in regards to Burlington Quarry Expansion application by Nelson Aggregates Co. (Nelson). The application included a required Regional Official Plan Amendment, filed with the Region in May 2020.

Burlington Quarry is located to the west of the Hamlet of Mount Nemo in the City of Burlington. In June 2019, the Region became aware of a planned new application by Nelson Aggregates Co. (Nelson) to expand the existing Burlington Quarry (ARA 5499) to the south and west. A summary of the application, pre-consultation, and application-related submissions was provided in LPS51-20 (September 16, 2020). Additional information is summarized in this section.

Nelson submitted initial Terms of Reference (T of R) in November 2019 and the Region provided consolidated comments (Halton Region, NEC and CH) in December 2020. Nelson responded with a revised T of R in late February 2020 while they were finalizing their respective studies in support of the expansion application. On May 14, 2020, the Region received Nelson's application to amend the 2009 Regional Official Plan (ROP) to expand the existing Burlington Quarry (ARA 5499) to the south and west. The application included studies completed by Nelson in support of all required amendments (ARA, NEP, ROP, and Burlington OP). Halton Region deemed the application complete on July 20, 2020.

On October 29, 2020, upon MNRF's confirmation of the application completeness, Nelson posted a notice of the first formal (45-day) review period, and identified December 14, 2020, as a closing date for filing letters of objection to Nelson and MNRF. On November 25, 2020, Halton Regional Council passed a motion that, among other things, directed staff to contact Nelson to schedule and support delivery of a virtual public information session for the ARA Licence application. A virtual public consultation, coordinated and supported by Halton Region, was held on December 10, 2020.

All materials associated with the May 2020 application were subject to initial reviews by agency staff (Halton Region, City of Burlington, Conservation Halton, and NEC) and Region's expert consulting team. Comments from review parties were discussed during JART meetings.

Based on the initial review of technical information provided by Nelson in 2020, Halton Region issued an objection letter to the applicant and the MNRF on December 14, 2020. The Region had identified a number of concerns which, in staffs' opinion, were not in line with good planning practices and not in the best public interest. In general, concerns were raised in regards to potential effects of the proposed expansion on environment, nearby communities (including traffic safety, air quality, noise, financial impacts), groundwater and surface water resources (including on drinking water sources and private wells), and agricultural lands; suitability of the progressive and final rehabilitation plans; sufficiency of planning assessment, land use considerations and testing against provincial and local policies; appropriateness of proposed versus approved rehabilitation scenarios concerning the existing Burlington Quarry; and other matters. The same concerns were submitted by the Region on December 18, 2020, in response to the Environmental Registry of Ontario (ERO) posting No. 019-2698.

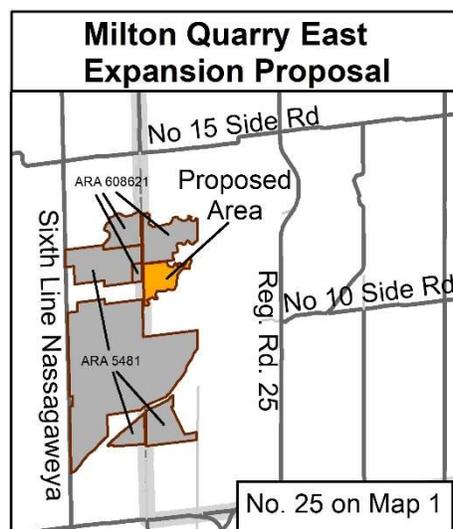
As part of the planning process, approval of a Niagara Escarpment Plan (NEP) Amendment and Development Permit under the Niagara Escarpment Planning and Development Act (NEPDA) process is required, followed by amendments to the Halton Region and City of Burlington Official Plans, prior to issuance of ARA Licence by MNRF (currently MNDMNRF). On February 24, 2021, MNRF posted a notice No. 019-3215 on ERO regarding Nelson's application for an amendment to the NEP, under NEPDA, to change the land use designation of approximately 78.3 ha from the Escarpment Rural Area to the Mineral Resource Extraction Area designation to facilitate an expansion to an existing aggregate extraction operation. Nelson's application also proposed to apply a site-specific special policy to the existing extraction site to allow for the continuation of aggregate processing operations in conjunction

with the proposed expansion. A 61-day consultation period, ending on April 26, 2021, was set under the ERO No. 019-3215.

Halton Region staff and expert consulting team have continued detailed review of the technical material provided by Nelson and assembled detailed technical comments from JART members and Halton's expert consulting team to accommodate on-going information sharing with public via Halton Region's webpage (<https://www.halton.ca/The-Region/Regional-Planning/Mineral-Aggregate-Operations>). JART will continue to collaborate and comment on this project. At the conclusion of the review period, JART will provide coordinated technical comments that will inform decision-making of the parties.

Regional Council is responsible for making a decision on the proposed ROPA. The MNRF (MNDMNR), through the ARA site plan approval process, is ultimately responsible for making a decision on the quarry expansion.

Proposed Milton Quarry East Expansion; Dufferin Aggregates, a Division of CRH Canada Group Inc.



The approved Milton dolostone quarry consists of two separate licences, ARA 5481 (Main and North) and ARA 608621 (Extension Phases 1, 2, and 3). According to Dufferin, the original Milton Quarry (ARA 5481) has only a small amount of reserves remaining under the existing processing plant (in the Main Quarry), and the Milton Quarry Extension (approved in 2007) will be depleted by 2024. In December 2019, Dufferin acquired 66.5 ha of land, located on Part of Lot 12, Concession 1, in the Town of Halton Hills and neighbouring with the existing operation. Of the subject site, Dufferin proposes 16 ha for extraction, based on their initial site investigations. According to Dufferin, the proposed extraction area contains 15 million tonnes of high quality aggregate (dolostone).

Preconsultation took place on November 12, 2020, and involved discussions on application requirements, including requisite technical studies and approvals from agencies with jurisdictions in Halton Region. Agency staff provided preliminary comments on Dufferin's T of R submitted ahead of the preconsultation meeting, and the JART-based approach for planned review of the proposal. Agencies participating in the preconsultation included Halton Region, Town of Halton Hills, Town of Milton, CH, and NEC. During this meeting, Dufferin indicated that their anticipated timeline for the East Expansion applications was April 2021. All agencies continue to await the filing of the application. The preconsultation and application/approval requirements concerning the pending application was outlined in LPS09-21 (January 20, 2021).

The proposed expansion to the Milton Quarry will require approvals under the *Aggregate Resources Act*, the *Niagara Escarpment Planning and Development Act*, and the *Planning Act*. A Regional Official Plan Amendment and a Town of Halton Hills Official Plan Amendment are required to permit the quarry expansion. The Town of Milton will participate in reviewing and commenting on the applications given the proximity of the proposed expansion to the Town's border. Halton Region will provide a lead on a JART process. Updates on planning and technical review matters concerning this project will be provided by individual review agencies.

Definitions

Active Licence

A licence that has been issued, transferred, or under suspension prior to the end of the calendar year. (Definition adopted from TOARC's Aggregate Resource Statistics Reports.)

Adaptive Management Plans (AMP)

The objective of Adaptive Groundwater Management Plans (AMPs) is to protect water resources and ecological features and functions. The AMP provides for local control through a direct Agreement between an Agency (or Agencies) and the Owner-Operator and includes mechanisms for enforcement of the AMP through Dispute Resolution/Arbitration Process, with securities held by an Agency in case of default by the Owner.

Abandoned Sites

Abandoned sites are pits and quarries for which a licence or permit was never in force at any time after December 31, 1989 (as defined by TOARC). Where the landowner has granted permission, these sites can be rehabilitated by The Ontario Aggregate Resources Corporation (TOARC) under the Management of Abandoned Aggregate Properties Program (<https://www.ontario.ca/page/aggregate-resources#section-2>).

Aggregate

In the Region of Halton, the primary aggregate sources include sand, gravel, clay, shale, limestone, dolostone, and sandstone (refer to Mineral Aggregate Resources for expanded definition).

Aggregate Resources Act (ARA) R.S.O 1990, Chapter A.8

The *Aggregate Resources Act (ARA)*, last amended in 2021 (<https://www.ontario.ca/laws/statute/90a08>), requires licences for pits and quarries in designated parts of Ontario, wayside permits for extraction involving public construction projects, and permits for pits and quarries on Crown Land. The legislation and policy framework under the *ARA* comprises *The Act* itself, General Regulation 244/97; provincial standards, "and provincial policies and procedures".

The Aggregate Resources Policies and Procedures Manual provides guidance on how to implement the *Aggregate Resources Act* (<https://www.ontario.ca/page/aggregate-resources-policies-and-procedures>). This includes supporting regulations, including the Aggregate Resources of Ontario Provincial Standards. The policies assist aggregate operators, members of the public, municipalities, consultants, stakeholders and government staff. The policies and procedures are under review due to recent changes to the *Aggregate Resources Act* and its regulation (Ontario Regulation 244/97).

The most recent amendment to Ontario Regulation 244/97 and the Aggregate Resources of Ontario Provincial Standards (Ontario Regulation 466/20), made through the passing of *Bill 132, Better for People, Smarter for Business Act, 2019*, are to apply incrementally with some changes effective as of April 1, 2021 and some on January 1, 2022 (<https://www.ontario.ca/laws/regulation/970244>).

Aggregate Resources Act Reform

Changes to Ontario Regulation 244/97 and the provincial standards under the *Aggregate Resources Act* (<https://www.ontario.ca/laws/regulation/970244>).

Aggregate Licence

Aggregate licence is required to operate a pit or quarry, in a part of Ontario designated under Section 5 of *ARA*, on land that is not under water and the surface rights are not the property of the Crown.

Aggregate Permit

Aggregate permit is required to (i) operate a pit or quarry on land the surface rights of which are the property of the Crown, (ii) to excavate aggregate that is the property of the Crown from land under water, and (iii) that is the property of the Crown in a part of Ontario not designated under Section 5 of *ARA*; or (iv) to excavate aggregate that is not the property of the Crown from land under water.

Agreement between MNR and MOE Re. Aggregate Matters

This refers to an Agreement to Address the Roles and Responsibilities of the MNR and the MOE [later MNRF and MOECP, now MNDMNR and MECP] Regarding Aggregate Extraction Operations within the Province of Ontario (May 2008). Key principles and steps are outlined in Operational Procedure 1 and 2 of the Agreement.

Alvar

An alvar is a biological environment based on a limestone plain with thin or no soil and, as a result, sparse grassland vegetation. Often flooded in the spring and affected by drought in midsummer, alvar supports a distinctive group of prairie-like plants, which provide habitat to some species of birds.

Bill 39

Aggregate Resources and Mining Modernization Act, 2017 (Royal Assent of May 10, 2017), where Schedule 1 made various amendments to the *Aggregate Resources Act*, while Schedule 2 amended provisions of the *Mining Act* (<https://www.ola.org/en/legislative-business/bills/parliament-41/session-2/bill-39>).

Class A Licence

A licence under the *Aggregate Resources Act* to allow excavation of more than 20,000 tonnes of aggregate annually from a pit or quarry within parts of Ontario that have been designated under the *Aggregate Resources Act*. (Definition adopted from TOARC's Aggregate Resource Statistics Reports.)

Class B Licence

A licence under the *Aggregate Resources Act* to allow excavation of less than 20,000 tonnes of aggregate annually from a pit or quarry within parts of Ontario that have been designated under the *Aggregate Resources Act*. (Definition adopted from TOARC's Aggregate Resource Statistics Reports.)

Clay

Earthy, extremely fine-grained sediment, composed of clay-size or colloidal particles, having high plasticity and a considerable content of clay minerals (i.e. primarily aluminum silicates).

Compliance Assessment Report (CAR)

The Compliance Assessment Report is an annual reporting requirement under sections 15.1 and 40.1 of the *Aggregate Resources Act*. Aggregate permit and licence holders are required to submit the form annually to the Ministry (now MNDMNR) to report on compliance with the *Act*, the regulation, their site plan, and the conditions in their approved permit or licence (<https://www.ontario.ca/page/aggregate-resources#section-11>).

Disturbed Area

The amount of land area (in hectares) that remains excavated as a result of the operation of a pit or quarry. Areas of the site where processing equipment, offices, stockpile areas, or other structures still exist on the site are also considered disturbed. Exceptions may be where an office is shown on the Site Plan as remaining when the rehabilitation is complete (Ref.: Policy A.R. 5.00.04, MNR, March 20, 2006).

Dolostone

A term used for sedimentary rock dolomite in order to distinguish it from the mineral of the same name. Dolomite rock contains more than 90 per cent mineral dolomite [$\text{CaMg}(\text{CO}_3)_2$] and less than 10 per cent mineral calcite [CaCO_3]. The latter (mineral calcite) is the chief constituent of limestone.

Environmental Assessment Act (EAA)

The *Environmental Assessment Act (EAA)* sets out a planning and decision-making process so that potential environmental effects are considered before the project begins. On July 21, 2020, *the COVID 19 Economic Recovery Act, 2020* (Bill 197) received Royal Assent. The changes introduced by Bill 197, once proclaimed, would mean that EAA would only be required for projects (public or private) that are specifically designated. [definition subject to future follow up/revision as applicable]

Environmental Protection Act (EPA)

The *Environmental Protection Act (EPA)* is a key legislation for environmental protection in Ontario. It grants the Ministry of Environment, Conservation and Parks (MECP) broad powers to deal with the discharge of contamination, which can cause or are likely to cause negative effect, into the environment. It requires that any

spills of pollutants be reported and cleaned up in a timely fashion. The Act has an authority to establish liability on the party at fault.

Gravel

An unconsolidated natural accumulation of rounded rock fragments, mostly of particles larger than sand, such as boulders, cobbles, pebbles, granules, or any combination of these.

Greenbelt Plan (GBP)

Under Section 4.3.2.4 of the Greenbelt Plan (2005), MNRF (now MNDMNRF) is to pursue to minimize disturbed areas and maximize rehabilitated areas on an on-going basis during the life-cycle of aggregate operation. The Greenbelt Plan calls for MNRF's determination of the maximum allowable disturbed area of each mineral aggregate operation indicating that any excess disturbed area, above the maximum, will be required to be rehabilitated. Existing operations had 10 years of the approval of the Greenbelt Plan to complete rehabilitation, with 50 per cent requiring completion within six years. For new operations, including expansions, the total disturbed area shall not exceed an established maximum allowable disturbed area.

Under Section 4.3.2.5 of the new provincial Greenbelt Plan (2017): "New and existing mineral aggregate operations and wayside pits and quarries, within the Protected Countryside shall ensure that: a) The rehabilitated area will be maximized and disturbed area minimized on an ongoing basis during the life-cycle of an operation; b) Progressive and final rehabilitation efforts will contribute to the goals of the Greenbelt Plan); c) Any excess disturbed area above the maximum allowable disturbed area as determined by the Ministry of Natural Resources and Forestry will be rehabilitated. For new operations, the total disturbed area shall not exceed an established maximum allowable disturbed area; and d) The applicant demonstrates that the quantity and quality of groundwater and surface water will be maintained as per Provincial Standards under the *Aggregate Resources Act*. "

Inactive Licence

A licence that has been revoked or surrendered prior to the end of the calendar year (Definition adopted from TOARC's Aggregate Resource Statistics Reports.)

Inspection Notice

Inspector's notice can be served by MNRF's (now MNDMNRF's) Aggregate Inspector for remedial work concerning minor violations, with no immediate need to cease activities.

Local Planning Appeal Tribunal (LPAT)/Ontario Land Tribunal (OLT)

The Local Planning Appeal Tribunal (LPAT) had been designated as an adjudicative tribunal to hear cases in relation to a range of land use matters, heritage conservation and municipal governance. Appeals that came before LPAT have been identified through policies found in the Planning Act, *ARA*, *Heritage Act*, *Municipal Act*, *Development Charges Act* and *Expropriations Act*. These have included matters such as official plans, zoning by-laws, subdivision plans, consents and minor variances, land compensations, development charges, electoral ward boundaries, municipal finances, aggregate resources and other issues assigned by numerous Ontario statutes. LPAT was formerly known as the Ontario Municipal Board (OMB).

On June 1, 2021, LPAT, Environmental Review Tribunal, Board of Negotiations, Conservation Review Board and the Mining and Lands Tribunal were merged into a single tribunal called the "Ontario Land Tribunal" (<https://olt.gov.on.ca/tribunals/mlt/decisions/aggregate-resources-act/>).

Memorandum of Understanding (MOU): MNR and TOARC

This refers to The Memorandum of Understanding between the MNR [later MNRF, now MNDMNRF] and The Ontario Aggregate Resources Corporation (TOARC) Regarding Administration of the *Aggregate Resources Act*. The MOU establishes new functions of the Trust as specified in the *ARA*.

Mineral Aggregate Resources

Gravel, sand, clay, earth, shale, stone, limestone, dolostone, sandstone, marble, granite, or other material prescribed under the *ARA*, suitable for construction, industrial, manufacturing purposes, and that does not include materials prescribed under the *Mining Act*.

Mineral Aggregate Operations

1. Lands under licence or permit, other than wayside pits and quarries, issued in accordance with the *ARA*.
2. For lands not designated under the *ARA*: established pits and quarries that are not in contravention of municipal zoning by-law [...] (ROP, 2009).

Ministry of Environment, Conservation and Parks (MECP)

The Ministry of Environment, Conservation and Parks (MECP) administers Permit to Take Water (PTTW) for aggregate washing and dewatering, Environmental Compliance Approval (formerly Certificates of Approval) [ECA/C of A] for water discharges and other emissions, and Fill Protocols for material importation to the sites under the *Ontario Water Resources Act (OWRA)* and the *Environmental Protection Act (EPA)*.

Ministry of Natural Resources and Forestry (MNRF)

The Ministry of Natural Resources and Forestry (MNRF), currently part of the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF), regulates aggregate operations in Ontario in accordance with the *ARA* and the Planning Act. Under the *ARA*, MNRF (now MNDMNRF) receives and considers aggregate applications, issues aggregate licenses and permits, monitors and enforces compliance matters, and performs scheduled inspections of pits and quarries.

Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF)

In 2021, Premier Doug Ford separated the Ministry of Energy, Northern Development and Mines into the Ministry of Energy and the Ministry of Northern Development, Mines, Natural Resources and Forestry, by merging the ministry (excluding Energy, which was made into its own portfolio) with the Ministry of Natural Resources and Forestry (https://en.wikipedia.org/wiki/Ministry_of_Energy,_Northern_Development_and_Mines).

Ministry of Transportation (MTO)

The Ministry of Transportation (MTO) has delegated authority under the *ARA* to administer wayside permits and aggregate permits.

Ministry of Northern Development and Mines (MNDM)

Through Aggregate Resources Inventory Papers (ARIPs), authored by Staff of Ontario Geological Survey (OGS), the MNDM [currently part of Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF)] provides geological information and an assessment of aggregate resources in selected Regions of Ontario. ARIPs also identify former and existing pits and quarries.

Niagara Escarpment Commission (NEC)

NEC administers the Niagara Escarpment Plan (NEP) through promoting the objectives of the plan; processing and making decisions on development permit applications; and making recommendations on plan amendments.

Ontario Municipal Board (OMB)

The Ontario Municipal Board (OMB) was an independent adjudicative tribunal that conducted hearings and made decisions on land use planning issues and other matters. The OMB was also Ontario's first independent, quasi-judicial administrative tribunal. Originally named the Ontario Railway and Municipal Board (ORMB), it was renamed to the OMB in 1932. The OMB later became Local Planning Appeal Tribunal (LPAT), which became part of the Ontario Land Tribunal on June 1, 2021.

Ontario Water Resources Act (OWRA)

The *Ontario Water Resources Act (OWRA)* governs groundwater and surface water quality and quantity in Ontario. The *OWRA*, which is administered by the MECP, contains a number of mechanisms to protect water resources; for instance: it prohibits discharge of polluting material in or near water; regulates sewage disposal and sewage works; enables issuance of orders to prevent, reduce or alleviate impairment of water quality; regulates water taking in excess of 50,000 L/day; enables designation and protection of public water supply sources; regulates well drilling and construction; requires approval of water and sewage works, etc. There are a number of regulations enacted under the *OWRA* on a variety of water-related matters.

Pit

Pit refers to land/land under water from which unconsolidated aggregate material (e.g. sand, gravel, clay, earth) is being/has been excavated, and that has not been rehabilitated.

Pits and Quarries Control Act (P&QCA)

An Act applicable between 1971 and 1990 to manage and regulate aggregate extraction in Ontario before it was replaced by *Aggregate Resources Act* as of January 1, 1990.

Public Complaints

Ministry of Natural Resources and Forestry (MNR) [currently MNDMNR] is the first responder in accordance with an Agreement to Address the Roles and Responsibilities of the MNR and the MOE Regarding Aggregate Extraction Operations within the Province of Ontario (May 2008). If the complaint relates to air quality or noise under the *Environmental Protection Act (EPA)*, or water under the *Ontario Water Resources Act (OWRA)*, then the Aggregate Inspector passes the information to the MECP to carry out an investigation.

Quarry

Quarry is land/land under water from which consolidated aggregate (e.g. sandstone, dolostone, limestone, shale) is being/has been excavated, and that has not been rehabilitated.

Rehabilitation (General)

Rehabilitation means restoring the land from which aggregate has been excavated to its former use or condition, or to change to another use or condition compatible with adjacent land.

Rehabilitation (Progressive and Final)

Under the *ARA*, aggregate operators are required to complete progressive rehabilitation of the site to the satisfaction of the Minister of Natural Resources and Forestry [currently MNDMNR] Final rehabilitation is to be performed in accordance with *ARA* and Site Plan conditions after the excavation of aggregate and the progressive rehabilitation are completed. Section 48 (1.1) of *ARA (2021)* requires reports on progressive and final rehabilitation at prescribed times and in accordance with the regulations.

Rehabilitation Order

Rehabilitation order can be served by MNR's [now MNDMNR's] Aggregate Inspector where progressive rehabilitation is not being undertaken in accordance with the plan. It provides for progressive rehabilitation of a licence or permit within specified timeframe.

Revocation (of Licence)

Revocation can be served by MNR [now MNDMNR] in regards to *ARA* licences and permits in cases involving bankruptcy, site abandonment, infraction where past charges and suspensions had no effects/situations where previous enforcement tools were not effective, and sites where rehabilitation was not the primary concern.

Sandstone

Sedimentary rock composed of grains of sand set in a matrix of silt or clay and firmly united by a cementing material (commonly silica, iron oxide, or calcium carbonate) - the consolidated equivalent of sand.

Shale

Fine-grained sedimentary rock formed by the compaction of clay, silt or mud. It has a finely-laminated structure.

Surrender (of Licence)

The MNR [now MNDMNR] may accept the surrender of a licence if the Ministry is satisfied that all applicable fees (e.g. annual licence, rehabilitation security, etc.) have been paid and the rehabilitation was completed in accordance with the *ARA*, the Site Plan and licence conditions.

Suspension (of Licence)

Suspension can be served by MNR's [now MNDMNR's] Aggregate Inspector in regards to violations of active licences, waysides and aggregate permits to obtain immediate compliance (i.e. to correct infraction) where there is no immediate need to stop site activity.

The Ontario Aggregate Resources Corporation (TOARC)

The Ontario Aggregate Resources Corporation (TOARC) was established by MNR [currently MNDMNR] in 1997 to administer the Aggregate Resources Trust and manage rehabilitation of abandoned pits and quarries. TOARC is responsible for, among other things, collection and disbursement of aggregate resource charges, collection and

publishing of production statistics, production auditing, research, and training of persons engaged/interested in management of aggregate resources in Ontario (<https://toarc.com/legacy-pits-quarries-maap/>).

TOARC's Management of Abandoned Aggregate Properties (MAAP)

TOARC's MAAP program is dedicated to rehabilitation of abandoned pits and quarries (i.e. former sites that have not had a valid licence issued under the *ARA* since 1990) in the *ARA*-designated areas of the province and is funded by the aggregate industry. Where the landowner has granted permission, these sites can be rehabilitated under the MAAP Program (<https://toarc.com/legacy-pits-quarries-maap/>).

Wayside Permit

Wayside permit refers to a permit issued to any person who has a contract with a public authority that required aggregate for a temporary project (road construction or road maintenance) from a source in a part of Ontario designated under Section 5 of *ARA*.

Appendix 1: Summary and Status of ARA Licences in the Region of Halton (2019-2020)*

ID # On Map 1	ARA Licence No; Site Name (owner, where not part of site name)	Licensed Area and Extraction Area (hectares)	Licence Class, Type (below/ above water) and Material Extracted	Extraction Limit/Annum (tonnes) [extraction status]	Total Disturbed Area* (hectares)	Total Rehabilitated* Area (hectares)	Operational Status/Recent Activities (as per Compliance Assessment Reports [CARs], MNR notices and/or other available information [2019- 2020])*
1	5480; Acton Limehouse Pit (Fountain Green South Inc., since May 31, 2018; formerly St. Marys Cement Inc. (Canada))	L - 26.33 E - 22.6	Class A, sand and gravel pit (below water ▼)	unlimited [no apparent activities]	6.9 (2020) 6.9 (2019)	6.75 (2020) 6.75 (2019)	CARs contain limited information on the site activities. The 2019 and 2020 CARs reported no pit operations since last inspection. Total disturbed area [6.9 ha] has not changed since 2018. Based on aerial photograph attached with CARs (Douglas Air, July 2019), the west-central area is occupied by a pond. Site limits appear to be vegetated/overgrown. No apparent site activities during the 2019-2020 period.
2	5492; Acton Quarry - Phases:1, 2, 3 (Dufferin Aggregates, a Division of CRH Canada Group Inc.)	L-222.28 E-193.25	Class A, dolostone quarry (below water ▼)	4,000,000 together with ARA 625003 [site near depletion; extraction was on hold]	112.45 (2020) 112.45 (2019)	85.85 (2020) 85.85 (2019)	No bedrock extraction or blasting in 2019-2020. Modifications to the Phase 1 Pumping Station (operations' discharge lines) were undertaken in fall 2019 to allow for simultaneous discharge from the Phase 1 Pumping Station to SW1 (4th Line weir), the Phase 2 Seeps, and SW3 (W3 south of Phase 3). Dufferin concentrated on extraction activities in their Milton Extension Quarry.
3	625003; Acton Extension Quarry – Phases:4, 5E, 5W/6 (Dufferin Aggregates, a Division of CRH Canada Group Inc.)	L – 65.6 E – 49.3	Class A, dolostone quarry (below water ▼)	4,000,000 together with ARA 5492 [extraction was on hold]	7.08 (2020) 7.08 (2019)	1.27 (2020) 1.27 (2019)	No stripping or aggregate extraction in 2019-2020, as Dufferin concentrated on extraction activities in their Milton Extension Quarry. Phase 4: some extraction above the water table occurred in 2018; no quarrying or dewatering activities took place in 2019-2020. Phase 5E: extraction was substantially completed by the end of 2018. Phase 5W and 6: no quarrying activities as of 2020. Region continued oversight of agreements and reviews of the AMP-related technical submissions (refer to extended summary in Section F of this Document).
4	20660; Brockton Farms Quarry (Brockton Farms)	L - 36.8 E - 25.7	Class B, sandstone quarry (above water)	20,000 [low extraction]	1 (2020) 1 (2019)	0.6 (2020) 0.6 (2019)	Small operation with limited extraction to date. Total disturbed area has not changed since 2007. Cut and blasted sandstone hauled to the processing area in the adjacent Hilltop Quarry (ARA 5720).
5	5720; Hilltop Quarry (Hilltop Stone and Supply Inc.)	L - 9.36 E - 1.5	Class B, sandstone quarry (below water ▼)	20,000 [active sandstone quarry]	5.0 (2020) 5.0 (2019)	0.7 (2020) 0.7 (2019)	CARs indicate: extraction of stone according to site plan. Beds of stone cut/periodically blasted; stone processed and stockpiled on-site. Total disturbed area has not changed since 2007.

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6	5479; Campbellville Pit - north (555816 Ontario Inc.)	L - 22.19 E - 8.3	Class A, sand and gravel pit (above water)	unlimited [extraction completed; site filled, licence surrendered in November 2020]	NA (2020) NA (2019)	NA (2020) NA (2019)	On August 23, 2020, the licensee requested surrender of ARA 5479. MNR's Inspection Report of November 6, 2020 confirmed final rehabilitation had been completed and deemed rehabilitation of the site acceptable. MNR accepted ARA 5479 surrender on November 20, 2020. In February 2021, NEC notified that Site-specific Niagara Escarpment Plan (NEP) Amendment was initiated by the NEC to address the post-rehabilitation land use re-designation on the subject property.
7	5478; Campbellville Pit - south; (4000 Campbellville Road Inc.)	L - 15.88 E - 12.8	Class A, sand and gravel pit (below water▼)	unlimited [no extraction; site filled; licence surrendered in June 2020]	0 (2020) 15.9 (2019)	NA (2020) 15 (2019)	Site infilling/rehabilitation continued in 2019. On December 9, 2019, the licensee requested surrender of ARA 5478 and provided MNR with an Inspection Report of October 25, 2019, confirming completion of final rehabilitation. On June 5, 2020, MNR deemed rehabilitation of the site acceptable and accepted surrender of ARA 5478 .
8	5616; Bot-Holdings Pit (Bot Holdings Ltd.; formerly Bot- Duff Pit; Bot- Duff Resources Inc)	L - 58.6 E - 49.2	Class A, sand and gravel pit (above water)	750,000 [no extraction since 2006; rehabilitation was in progress]	38.1 (2020) 38.1 (2019)	26 (2020) 23 (2019)	Total disturbed area has not changed since 2016. On June 6, 2019, MNR granted consent, under Section 16(2) of ARA, for Minor Site Plan Amendment in relation to Bot Holdings' Rehabilitation Master Plan (May 2019). Per the 2019 CAR, replacement of previously-removed setback and progressive rehabilitation were in progress "per letter of agreement".
9	5500; Aldershot Quarry (Meridian Brick Canada Ltd.; Formerly Forterra Brick Ltd. and Hanson Brick Ltd.)	L - 62.4 E - 62.1	Class A, shale quarry (above water)	unlimited [active extraction]	22.1 (2020) 22.1 (2019)	8 (2020) 8 (2019)	Mining continued in West and Center quarries. Ramp built to west section of East Quarry. East area fenced and salamander screens installed. 1.8 ha of trees cut in preparation of quarry activity (activity previously registered under <i>O. Reg. 242/08 Endangered Species Act</i> [ID#M-102-7113630826]). Mitigation plan completed. As construction due diligence, noise, dust, human health assessment, archeological stages 1, 2 and 3 and salamander studies carried out (reports on http://aldershotquarry.ca/). Security firm contracted to patrol Centre and East quarries.

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10	5605; Burlington Pit (Meridian Brick Canada Ltd.; Formerly Forterra Brick Ltd. and Hanson Brick Ltd.)	L - 17.1 E - 16.0	Class A, shale quarry (below water ▼)	195,000 [extraction ceased before 2009; rehabilitated [per CARs]	12.3 (2020) 12.3 (2019)	12.3 (2020) 12.3 (2019)	Most of activity comments denoted "as per operational plan". Mining operations have ceased; slopes (2:1) seeded. According to Meridian Brick, the quarry had been rehabilitated, including reforestation of 1 ha adjacent to Bronte Creek, and licensee is in discussion with MNRF and local agencies to surrender the licence.
11	5546; Wilroy Brooks Pit (Fountain Green North Inc. - based on MNRF's Pits and Quarries Online; formerly St. Marys Cement Inc. (Canada)/	L - 79.18 E - 28.3	Class A, sand and gravel pit (above water)	363,000 [no extraction since about 2005]	7 (2020) 1.1 (2019)	7 (2020) 21.45 (2019)	CARs comments indicate "progressive rehabilitation only". On May 25, 2020, MNRF granted consent to amended site plan showing reduction in licensed area from 79.18 ha to 7 ha, and updated conditions on the plan including no further aggregate extraction. Updated ARA licence reflects partial surrender of ARA5546 and reduction of the licensed area from 79.18 ha to 7 ha. MNRF's inspection completed in fall 2019 determined that rehabilitation of 72.18 ha of the property was acceptable. CARs comments indicate "progressive rehabilitation only".
12	613081; Tansley Quarry (Meridian Brick Canada Ltd.; Formerly Forterra Brick Ltd. and Hanson Brick Ltd.)	L - 37.8 E - 28.9	Class A, shale quarry (below water ▼)	300,000 [1/2 limit permitted until Tremaine Road widening is completed]	17.2 (2020) 17.2 (2019) [includes 8.6 ha of excavated area and 8.4 ha berm]	8 (2020) 8 (2019)	Most of activity comments denoted "as per operational plan". Disturbed area of 17.2 ha had not changed since 2014, and was reported to include about 8.55 ha excavated and about 8.4 ha berm. Existing overburden stockpile seeded; new stockpile had not been seeded as further stripping was being planned. Annual extraction limit of 150,000 tonnes applies to this site until Tremaine Rd upgraded.
13	5716; Rice and McHarg Quarry (Rice and McHarg Quarries Ltd.)	L -12.85 E - 1.9	Class B sandstone quarry (below water ▼)	20,000 [resource almost depleted]	3.35 (2020) 3.35 (2019)	6.25 (2020) 6.25 (2019)	No stripping and no change in disturbed area since 2017. Northeast quarry face was being extracted intermittently. Extraction carried using hand tools, forklift etc. Limited processing done by hand and small tools. Waste rock is used to backfill worked out areas of the quarry floor; overburden is seeded. No decision on licensee's request to MNRF to extract a portion of the easterly 15m setback by licensee-owned lands.

Appendix 1: Summary and Status of ARA Licences in the Region of Halton (2019-2020)*

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14	5614; Limehouse Clay Products Ltd. Pit – north (Limehouse Clay Products Ltd. a subsidiary of Jazbrick)	L - 12.8 E - 10.6	Class B, shale quarry (above water)	20,000 [active shale quarry]	2.7 (2020) 2.7 (2019)	0.3 (2020) 0.3 (2019)	Limited information in annual CARs. Disturbed area of 2.7 ha has not changed since 2012. Extraction, when occurs, is close to setbacks in southeast area of the site. New settling pond was reported to be functioning as designed.
15	5711; Limehouse Clay Products Ltd. Pit - south (Limehouse Clay Products Ltd., a subsidiary of Jazbrick)	L - 3.24 E - 3.2	Class B, shale quarry (above water - original Site Plan); amended Site Plan (2013) permits quarry deepening by 5m on 1ha ▼	20,000 [no apparent active extraction in 2017/ 2018]	1.7 (2020) 1.7 (2019)	0.8 (2020) 0.8 (2019)	No activity notes provided in annual CARs. All items denoted in compliance. Below-water extraction within 1 ha (as per 2013 amended and approved Site Plan) not started as of 2019/20. Disturbed and rehabilitated areas have not changed since early 2000s.
16	5499; Burlington Quarry – The Majority (Nelson Aggregate Co.)	L-202.5 E-193.8	Class A, dolostone quarry (below water▼)	unlimited [extraction, stockpiles and some reserves]	123.8 (2018) 122.7 (2017)	121.5 (2020) 116.5 (2019)	On April 16, 2019, MNRF approved Minor Site Plan Amendment to permit removal or relocation of some on-site structures. Additional 1.8 ha was disturbed over the 2019-2020 period. General Comment in the 2020 CAR referred to activities within “reclaimed area” and specifically that more material was being added before final grade was to be reached and vegetation added.
17	5657; Burlington Quarry – The Minority (Nelson Aggregate Co.)	L- 16.2 E- 16.2	Class A, dolostone (quarry below water▼)	up to 2,722,000 [operation completed; site fully rehabilitated; some infilling occurred in 2019/2020 within “reclaimed area” adjacent to ARA 5499 on the west]	16.2 (2020) 16.2 (2019)	16.2 (2020) 16.2 (2019)	The site was previously operated as one quarry with ARA 5499. Site had been fully rehabilitated [total rehabilitated area of 16.2 ha (reported since 2002) corresponds to the licensed and permitted extraction area]. The 2019 CAR indicated there was a 1ha area being reclaimed along the west portion of the site, along the haul road/abutting licence 5499. Based on the 2020 CAR, Table 1 fill allowed per site plan (brought in as required for progressive rehabilitation) and is also subject to Nelson’s internal fill protocol. Vegetation to be added to graded slope. All items denoted in compliance or not applicable.

Appendix 1: Summary and Status of ARA Licences in the Region of Halton (2019-2020)*

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18	5481; Milton Quarry - Main and North (Dufferin Aggregates, a Division of CRH Canada Group Inc.)	L – 467.7 E - 382	Class A, dolostone quarry (below water▼)	Unlimited [extraction in North Quarry (since early 2000s) near completion]	193.69 (2020) 190.07 (2019)	187.81(2020) 191.43(2019)	Extraction in Phases 2, 3a and 3b (North Quarry [NQ]) in 2019 [no additional disturbed area reported]; extraction in Phase 1 (Main Quarry) and Phase 2 (NQ) in 2020 [3.62 ha disturbed]. Stockpiling area in the Main Quarry includes aggregate, asphalt and recycled concrete as per site plans. Disturbed/rehabilitated areas were revised based on review of survey/AutoCAD files. The 2019 and 2020 monitoring reports were reviewed by Halton Region staff.
19	608621; Milton Quarry Extension: Phases 1, 2, 3 (Dufferin Aggregates, a Division of CRH Canada Group Inc.)	L - 84.5 E – 70.6	Class A, dolostone quarry (below water▼)	unlimited [extraction: completed in Phase 1 [NQ]; continued in Phases 2 and 3 (West and East Cells)]	64.18 (2020) 67.09 (2019)	4.32 (2020) 1.41 (2019)	Extraction continued in Phases 2 (West Cell) and Phase 3 (East Cell). Stripping material was used for progressive rehabilitation, for east-west pillar (north side) and Townline pillar (west side). 10.45ha were disturbed in 2019; no additional disturbed were reported for 2020. Changes to disturbed and rehabilitated areas were based on review of survey/AutoCAD files. Region continued oversight of agreements and reviews of the AMP-related technical submissions and monitoring data (refer to extended summary in Section F of this Document).
20	5484; Milton Pit (368574 Ontario Ltd. and 579813 Ontario Inc.; formerly The Warren Paving and Materials Inc.)	L - 40.74 E - 25.5	Class A, sand and gravel pit (above water)	unlimited [extraction completed]	5 (2020) 5 (2019)	NA (2020) NA (2019) [a total of 2.5 ha last reported in 2012]	Limited information in annual CARs. Extraction at this site had been deemed completed; site is heavily overgrown. Total disturbed area of 5 ha has not changed since 2014. Remedial actions in the 2019 and 2020 CARs referred to "fence repairs at gate" with applicable due dates.
21	5507 Hayward Pit (Springbank Sand and Gravel Ltd.)	L - 52.0 [per ARA Licence] L- 42.3 and E - 19.5 per Site Plan	Class A, sand and gravel pit (above water)	unlimited [operations completed; pit depleted]	20.9 (2020) 20.9 (2019)	17.2 (2020) 17.2 (2019)	CAR notes indicate: licensed reserves totally depleted; rehabilitation activity in progress. Total disturbed of 20.9 ha and total rehabilitated of 17.2 ha have not changed since 2017. The CAR drawing shows rehabilitation along the southwest site boundary (hand- drawn sloping shown). All items denoted in compliance or not applicable.

Appendix 1: Summary and Status of ARA Licences in the Region of Halton (2019-2020)*

ID # On Map 1	ARA Licence No; Site Name (owner, where not part of site name)	Licensed Area and Extraction Area (hectares)	Licence Class, Type (below/ above water) and Material Extracted	Extraction Limit/Annum (tonnes) [extraction status]	Total Disturbed Area* (hectares)	Total Rehabilitated* Area (hectares)	Operational Status/Recent Activities (as per Compliance Assessment Reports [CARs], MNRF notices and/or other available information [2019- 2020])*
22	5619 Leaver Pit (Springbank Sand and Gravel Ltd.)	L - 54.27 [per ARA Licence] L - 61.8 E - 52.6 per Site Plan	Class A, sand and gravel pit (above water)	1,500,000 [operations completed; pit depleted]	52.6 (2020) 52.6 (2019)	52.6 (2020) 52.6 (2019)	CAR notes indicate: licensed reserves totally depleted; rehabilitation activity underway. Total disturbed and rehabilitated (both reported at 52.5 ha) have not changed since 2017. The CAR drawing includes hand-drawn slopes around the entire perimeter of the site, except for a boundary with ARA5507.

Notes: CAR – Compliance Assessment Report; L- licensed area; E – permitted extraction area; NA – information not available; n/a – not applicable; *Refer to LPS69-17, LPS96-15, LPS06-12, and LPS103-19 for earlier information on State of Aggregate Resources in Halton Region; ▼ – extraction permitted below water.

Appendix 2: Status of Implementation of Approved Rehabilitation Plans ARA Sites in Halton Region (2019-2020)

ID # on Map 1	ARA Licence No., Site Name (owner, where not part of site name)	Rehabilitation/End-use Description	Status of Implementation of Approved Rehabilitation Plans based on 2019-2020 CARs
1	5480; Acton Limehouse Pit (Fountain Green South Inc., since May 31, 2018; formerly St. Marys Cement Inc. (Canada))	Seven features including ponds, protected dabbling area, meadow and deep water aquatic habitat etc.	Total rehabilitated area of 6.75 ha has not changed since 2018. Based on aerial photograph attached with CARs (Douglas Air, July 2019), the west-central area is occupied by a pond. Based on the prior CARs, most of the pit faces above water had been sloped and rehabilitated and had self-sustaining vegetation growth.
2	5492; Acton Quarry - Phases 1, 2, 3 (Dufferin Aggregates, a Division of CRH Canada Group Inc.)	Conservation and/or Recreation	Total rehabilitated area of 85.85 ha has not changed since 2018. No importation of soil had occurred. Dufferin concentrated quarry-related activities within Milton Quarry during the 2019-2020 period. Rehabilitation specifics were not provided in the annual monitoring reports or CARs.
3	625003; Acton Extension Quarry - Phases 4, 5E, and 5/6W (Dufferin Aggregates, a Division of CRH Canada Group Inc.)	Lakes, shoreline wetlands, cliffs, and terrestrial (i.e. wooded slopes)	Total rehabilitated area at the Acton Extension quarry was reported at 1.27 ha for both 2019 and 2020. No importation of material (inert) occurred. As this site is under early development stages, and extractive activities were on hold during this period, rehabilitation has been limited to date.
4	20660; Brockton Farms Quarry (Brockton Farms)	Agricultural	Total rehabilitated area of 0.6 ha [relative to 1 ha disturbed] has not changed since 2004. Annual CARs indicate that most of the worked areas had been filled with waste rock and overburden; slopes/grades are established as part of excavation activities; previously rehabilitated areas are vegetated; and no importation of off-site material is proposed.
5	5720; Hilltop Quarry (Hilltop Stone and Supply Inc.)	Agricultural	Total rehabilitated area of 0.7 ha [relative to 5 ha disturbed] has not changed since 2007. Based on CARs: quarry faces are backfilled with waste rock and overburden from stripping; grades/contours/elevations are established during excavation/stripping operations, and it's not proposed to import material for rehabilitation purposes as quarry generates significant waste rock.
6	5479; Campbellville Pit – north (555816 Ontario Inc.) [licence surrendered in November 2020]	Agricultural; Reforestation/ Recreation; Estate Residential; or Recreational/Commercial in conjunction with Reforestation/ Recreation	MNRF's Inspection Report of November 6, 2020 confirmed final rehabilitation had been completed and deemed rehabilitation of the site acceptable. MNRF accepted ARA 5479 surrender on November 20, 2020 and indicated that 555816 Ontario Inc. no longer had any obligations for this property under the ARA. No CARs were available for this site for the 2019-2020 period.
7	5478; Campbellville Pit - south (4000 Campbellville Road Inc.) [licence surrendered in June 2020]	Agricultural; Reforestation/ Recreation; Estate Residential; or Recreational/Commercial in conjunction with Reforestation/ Recreation	Site infilling/rehabilitation continued in 2019. On December. 9, 2019, the licensee requested surrender of ARA 5478 and provided MNRF with an Inspection Report of October 25, 2019, confirming completion of final rehabilitation. On June 5, 2020, MNRF deemed rehabilitation of the site acceptable and accepted surrender of ARA 5478. MNRF indicated that 4000 Campbellville Rd. Inc. no longer had any obligations for this property under the ARA. No 2020 CAR was available for this site.

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ID # on Map 1	ARA Licence No., Site Name (owner, where not part of site name)	Rehabilitation/End-use Description	Status of Implementation of Approved Rehabilitation Plans based on 2019-2020 CARs
8	5616; Bot-Holdings Pit (Bot Holdings Ltd.; Formerly Bot-Duff Pit; Bot-Duff Resources Inc.)	Agricultural	On June 6, 2019, MNRF granted consent for Minor Site Plan Amendment in relation to licensee's Rehabilitation Master Plan of May 2019. Per the 2019 and 2020 CARs, replacement of previously-removed setback [along the 4th Line right-of-way] and progressive rehabilitation was underway "per letter of agreement".
9	5500; Aldershot Quarries (Meridian Brick Canada Ltd.; Formerly Forterra Brick Ltd. and Hanson Brick Ltd.)	Final after use to be determined upon completion of the extraction operation. Interim use will be open space. The Greenbelt Plan area (4.7 ha) is to be rehabilitated to 100 per cent forest cover; all watercourse diversions and remaining SWM ponds to be rehabilitated to aquatic enhancement representative of the local natural ecosystem.	<p align="center">ARA 5500 consists of West, Centre, and East Quarry Cells. Total rehabilitated area of 8 ha, within the previously extracted cells (West and Centre Quarry areas) has not changed since 2008. East Quarry is under early development stages. The 2019/2020 CARs had all rehabilitation items denoted in compliance. CAR notes indicated: grades/contours as per rehabilitation plans; areas of West and Centre Quarry have been backfilled and slopes seeded. No further rehabilitation-related specifics were provided in CARs.</p>
10	5605; Burlington Pit/Quarry (Meridian Brick Canada Ltd.; Formerly Forterra Brick Ltd. and Hanson Brick Ltd.)	Originally Pond; however, the site had been largely filled with waste brick and soil, sloped and grassed, and 1 ha of the Greenbelt area adjacent to the Bronte Creek had been reforested.	Mining operation had ceased. Licensee maintains that the quarry had been rehabilitated to MNRF's requirements, including reforestation of 1 ha adjacent to Bronte Creek, and that Meridian Brick was in discussions with MNRF and local agencies to surrender the ARA licence.
11	5546; Wilroy Brooks Pit (Fountain Green North Inc. based on MNRF's Pits and Quarries Online; formerly St. Marys Cement Inc.)	Rural Residential and Agricultural	CAR comments indicate "progressive rehabilitation only". MNRF's inspection, completed in fall 2019, determined that rehabilitation of 72.18 ha of the property was acceptable. On May 25, 2020, MNRF granted consent to amended site plan showing reduction in licensed area from 79.18 ha to 7 ha, and updated conditions on the plan including no further aggregate extraction.
12	613081; Tansley Quarry (Meridian Brick Canada Ltd.; Formerly Forterra Brick Ltd. and Hanson Brick Ltd.)	The site is to be rehabilitated to upland habitat with future lake of 18.2 ha	Total rehabilitated area of 8 ha has not changed since 2015 [this site, which was licensed in 2007, is under active development]. The 2019/2020 CARs indicated: grades/contours/elevations "as per rehabilitation plan" and that no importation of material for rehabilitation had occurred at this site.

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13	5716; Rice and McHarg Quarry (Rice and McHarg Quarries Ltd.)	To be seeded	Total rehabilitated area of 6.2 ha has not changed since 2009. CARs indicate that: worked out areas are backfilled with waste rock and covered with overburden and topsoil and seeded, grades are generally established using waste rock as excavation occurs, importation of inert material from off-site sources is permitted for rehabilitation purposes, previously rehabilitated areas are well vegetated with self-sustaining growth, and natural regeneration is occurring in portions of the quarry.
14	5614; Limehouse Clay Products Pit - north (Limehouse Clay Products Ltd., a subsidiary of Jazbrick)	Estate Residential, Agricultural (Pasture Land)	Total rehabilitated area of 0.3 ha has not changed since 2003 [total disturbed area has remained at 2.7 ha since 2012]. No rehabilitation specifics provided in annual CARs. This site is under extractive development; most activities have occurred in the southern areas adjacent to ARA 5711. All items in annual CARs denoted in compliance.
15	5711; Limehouse Clay Products Pit - south (Limehouse Clay Products Ltd., a subsidiary of Jazbrick)	Estate Residential, Agricultural (Pasture Land) [note: amended Site Plan (approved on August 28, 2013) permits below-water extraction on 1 ha of this licence; after uses remain same]	Total rehabilitated area of 0.8 ha has not changed since 2003 [the total disturbed area has been 1.7 ha since 2001]. Below-water extraction within 1 ha [as per the 2013 amended and MNRF- approved Site Plan] had not started as of 2019/2020. No rehabilitation specifics provided; all items in annual CARs denoted in compliance.
16	5499; Burlington Quarry - The Majority (Nelson Aggregates Co.)	Lake with vegetated slopes, residential, public and/or private recreational uses (i.e. sports fishing, swimming and boating).	Based on CARs, progressive rehabilitation area increased by a total of 9.5 ha over the 2019-2020 period and included gradual sloping of quarry faces. Per CAR notes, importation of Table 1 fill is allowed (brought in for rehabilitation as required; also subject to Nelson's fill protocol). All rehabilitation items denoted in compliance or not applicable. Prescribed conditions refer to C of A #5203-AN6NGV and PTTW# 96-P-3009.
17	5657; Burlington Quarry - The Minority (Nelson Aggregates Co.)	Lake with vegetated slopes, residential, public and/or private recreational uses (i.e. sports fishing, swimming and boating).	Site fully rehabilitated; total rehabilitated area of 16.2ha, corresponding to licensed area, has been reported since 2002. The 2019 CAR indicated there was a 1ha area being reclaimed along the west portion of the site, along the haul road/abutting licence 5499. Based on the 2020 CAR, Table 1 fill is allowed per site plan (brought in as required for progressive rehabilitation) and is also subject to Nelson's internal fill protocol. All rehabilitation items denoted in compliance or not applicable.
18	5481; Milton Quarry - Main and North (Dufferin Aggregates, a Division of CRH Canada Group Inc.)	In 2000, Dufferin developed Final Rehabilitation Plan (FRP) superseding prior alternatives. Dufferin received MNR's approval for the FRP (and related approvals under LIRA, OWRA and EPA). The key	Overburden material was used for progressive rehabilitation in the southeast area adjacent to Cox Tract. In total, 4.38 ha was reported as rehabilitated in 2019 and 0 ha in 2020. Importation of clean fill for rehabilitation is permitted (MNRF notified as per site plan). Vegetation planting (pollinator plots) took place in April 2019; further planting, planned for April 2020, was cancelled due to Covid restrictions. General CAR comments indicate: disturbed and rehabilitated areas changed [from previous

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		components of the FRP for the Main Quarry are reservoir, lake and wetland on the west side and dry land after-uses on the east side.	reporting] based on review of survey and AutoCAD files. Based on the previous annual Monitoring Reports by GHD, the west side of the Main Quarry had been essentially in its final rehabilitation form (e.g. Reservoir, Lake and Wetland) since around 2008 and no significant changes to the rehabilitation plan were planned.
19	608621; Milton Quarry – Extension: Phases 1, 2, 3 (Dufferin Aggregates, a Division of CRH Canada Group Inc.)	Two lakes in the two extension areas [West and East] as an after-use, and 5 ha of wetlands. The adjacent North Quarry is also to become a lake.	Based on the 2020 CAR, 2.91 ha were rehabilitated that year (0 ha in 2019), including continued development of the east-west pillar (buttress) and Townline pillar using on-site stripped material. No importation of soil reported for 2019 and 2020. Rehabilitation information is limited in annual CARs and annual Monitoring Reports.
20	5484; Milton Pit (368574 Ontario Ltd. and 5798813 Ontario Inc.; formerly The Warren Paving and Materials Group Ltd.)	Agricultural, Reforestation or Recreation	In the 2019/2020 CARs, all rehabilitation items were denoted in compliance, including final rehabilitation. Total rehabilitated area of 2.5 ha [last reported in 2012] has been denoted NIL ever since. Based on aerial photography of the site (July 19, 2018), an elongated former extraction area is surrounded by vegetation and trees.
21	5507; Hayward Pit (Springbank Sand and Gravel Ltd.)	Potential after uses include recreation/conservation. The pit floor grading to incorporate “mounds” and “depressions” that will increase the sites' potential for wildlife habitat.	CAR notes indicate: licensed reserves totally depleted; rehabilitation activity in progress. Total rehabilitated area of 17.2 ha has not changed since 2017. The CAR-related sketch shows rehabilitation along the southwest site boundary. All items in the CAR denoted in compliance or not applicable. Based on aerial photography, slopes and graded areas show vegetation interspersed with patches/areas of remnant material (e.g. boulders) at this site.
22	5619; Leaver Pit (Springbank Sand and Gravel Ltd.)	Potential after uses include recreation/conservation	All rehabilitation items denoted in compliance. The CAR-related sketch indicates: depleted/rehabilitation in progress [it appears this note applies to the entire site area]. The 2020 CAR refers to 52.6 ha as both disturbed and rehabilitated. The aerial photography shows sloped and somewhat vegetated (i.e. naturalized) pit edges.

