

18



Lot 14
Plan 971 074
(ptn of SE 18-7-2 W5M)

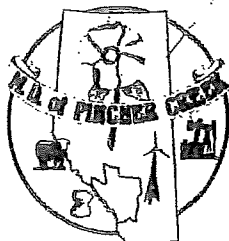
245 m
200 m
Proposed
Gravel Pit
4.9ha
(12 acres)

Proposed Access
Road

Burmis Lundbreck
Corridor ASP
Boundary

Highway 507

100 0 100 200 300 Meters



MUNICIPAL DISTRICT OF PINCHER CREEK NO. 9

APPLICATION FOR AMENDMENT TO THE LAND USE BYLAW

APPLICATION FEE \$600

RECEIPT NO. 4266

I/We hereby make application to amend the Land Use Bylaw.

Applicant: Alberta Rocks Ltd.

Address: Box 242, Pincher Creek, AB Telephone: _____

Owner of Land (if different from above): _____

Address: _____ Telephone: _____

Lot 14 Block _____ Registered Plan 971 0740

or Certificate of Title _____

Quarter Part of SE 18 Township 7 Range 2 Meridian 5

AMENDMENT PROPOSED:

From: AGRICULTURE - A

To: DIRECT CONTROL - DC

REASONS IN SUPPORT OF APPLICATION FOR AMENDMENT:

Extract valuable aggregate from 4.9 ha site within lot 14

I/We enclose \$ 600 being the application fee.

DATE: Oct 31 / 19

Craig Anderson
Applicant

Craig Anderson
Registered Owner

Information on this application form will become part of a file which will be considered at a public meeting.

Impacts and Mitigation:

Resource extraction operations such as gravel pits have many direct positive impacts — for example: municipal taxes and royalty payments, availability of local sources of aggregate for development of industry, transportation and residential, local jobs for equipment operators, trucking companies and house builders.

Negative comments related to gravel pits generally cite noise and visual as the principal impacts of gravel extraction operations.

Research into the climate of the area reveals that a typical day might see winds in the 50 – 90 km/hr range, a fact that has led to successful development of wind farms, and wind turbine towers are a familiar part of the area scenery. Siting this small Class 2 pit on the far southeast corner of SE18 7-2-5 will place it well downwind of the majority of residences in Villa Vega. It is anticipated that these same winds will significantly reduce the potential for most noises from downwind gravel extraction operations to be a disturbance to residents in the subdivision. Initial pit activities will see development of strategic berms to act as sound barriers that block potential work noises from escaping the pit area. Providing vegetative cover on berms by salvaging and seeding any available topsoil will also maximize the potential for this small pit to blend in with the surrounding topography.

In addition, the north-facing slope where many of the Villa Vega acreages are located is naturally well-treed, and it is anticipated that the vegetation cover there will continue to act as a buffer to suppress off-site noises. Existing noises would include highway (507 & 3) traffic, lawn mowers, chain saws, high winds and trains regularly passing through on CPR mainline.

Operation and Reclamation:

The aggregate deposit at this site is currently overlain by a thin, well-drained soil layer with characteristic grass/forb/shrub cover. There is some evidence to suggest that at some time in the past, an attempt had been made to cultivate the site, perhaps to grow grain or hay. For this site, low soil moisture, low soil nutrients, low rainfall and the drying effect of the predominant winds results in low grazing capability.

Operations will comply with existing Provincial and Municipal regulations and Codes of Practice applicable to gravel pit operations of this size.

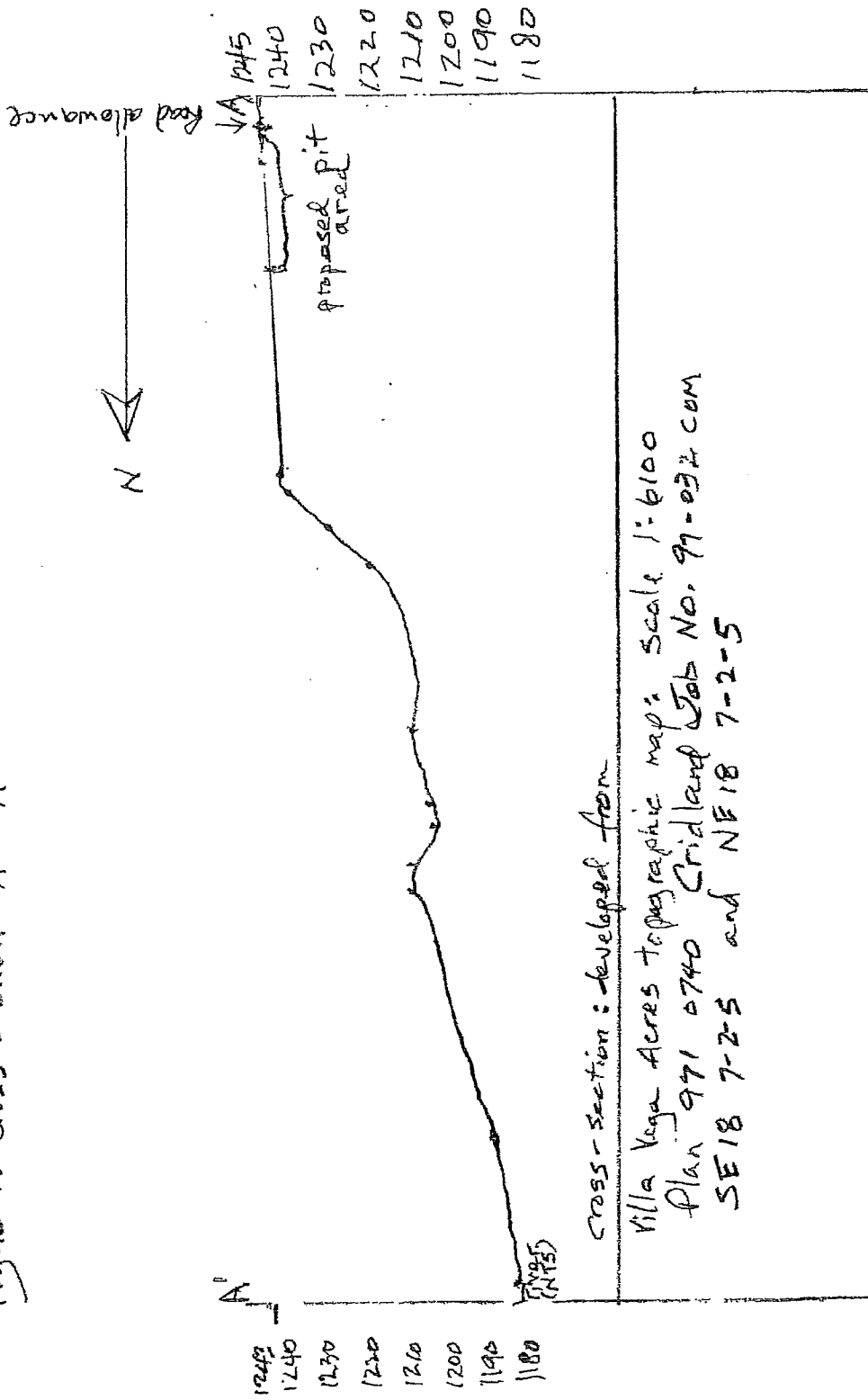
The first step in development will be to salvage all surface materials capable of supporting vegetation growth. There is generally a native seed bank present in the surface layer which is beneficial in providing additional native seed source for reclamation. Surface materials will be sequentially removed and stockpiled for later spreading on the re-contoured pit slopes during the reclamation phase. Re-contouring during site reclamation can provide much-needed topographic variation in the form of humps, swales and microsites that encourage seedling establishment. The reclamation objective will be to re-contour and re-seed the site to establish a vegetation cover that will prevent erosion and eventually provide wildlife cover and forage.

Attachment No. 2

Re: Cross-section A – A'

This cross-section represents a slice south to north through the east part of the Villa Vega subdivision, originating in the area of the proposed pit then proceeding north through SE18 7-2-5 and part of NE18 7-2-5. It is intended to illustrate the gradient and orientation of the timbered north-facing slope. Residences in this area are across the flats, over the hill and well away from proposed development activities associated with this application.

Figure 1: Cross-section A - A'



ATTACHMENTS

- 1: Article: "Crunch coming for gravel reserves in Western Canada", Journal of Commerce, Jean Sorensen, Sept 11, 2015
- 2: Article: "The world is running out of sand", Financial Post, Sunny Freeman, Sept 2017
- 3: Article: "Harmful noise levels, table of decibel levels", HealthLink BC
- 4: Table: "Comparative examples of noise levels", decibel levels & effects
- 5: Study excerpt: "Environmental Noise Impact Assessment – Sound Propagation", from Proposed Mixcor Cochrane Pit, prepared by Acoustical Consultants Inc., Edmonton, AB. Project # 14-078, June 11, 2015
6. Table: "Noise levels from various local activities", Sept 2019
- 7: Drawing: Typical cross-sections through site.

"We are using a lot more gravel than in the past," said SARM president Ray Orb, adding areas are pushed by increased industrial development, population and more infrastructure projects.

The SARM encompasses some 296 rural municipalities (RM).

Aggregate quarries there are mostly either privately-owned or operated by the provincial highways ministry.

However, some rural municipalities have control over their own aggregate pits.

The report was commissioned as some municipalities are trucking the material long distances, he said, adding he's heard distances up to 160 kilometres for a return trip.

Also, Saskatchewan, between two mountainous regions in Canada, does not have geology that lends itself to an abundance of aggregate reserves.

Orb said SARM is now evaluating consultants' proposals. However, Orb expects a supply and demand report to be completed by year end. He said the cost of the study and forecast reserves has yet to be defined, but most rural municipalities are looking for a 50-60 year supply of aggregate.

"There is also competition from within the province -- the Ministry of Highways needs lots of gravel as well as the RMs," said Orb, who hopes that the emergent strategy will provide for both municipal and provincial needs.

That's not happened in Alberta, where the Alberta Association of Municipal Districts and Counties (AAMDC), representing 59 counties and municipal districts, commissioned a similar study after experiencing similar concerns.

The report Got Gravel! Strategies to Secure Gravel for Rural Municipalities was completed in late 2013.

One of the recommendations was a commitment from provincial government that municipalities would have access to gravel on crown land to complete road maintenance.

Gerald Rhodes, AAMDC executive director, said the association, which is looking for reserves to cover 100 years, had its recommendation torpedoed by Alberta's Progressive Conservative Party, which maintained gravel should go to the highest bidder if the site is less than 80 acres and municipalities have no priority rights.

"Commercial operators require certainty that their efforts to explore and develop gravel pits less than 80 acres are not jeopardized by municipalities having subsequent first rights to the resource," the province responded.

Rhodes said that there are not many 80 acre ventures found in the regions affected.

The world is running out of sand — and you'd be surprised how significant that is

From fracking to the construction boom, sand has become such a hot commodity that 'sand mafias' have sprung up that illegally mine and sell it on a black market



The global demand for sand is rapidly catching up with supply. *Mike Faille/National Post*



Special to Financial Post

Attachment No. 2

A 2014 United Nations Environment Programme report, *Sand, Rarer Than One Thinks*, determined that sand and gravel mining accounts for as much as 85 per cent of all mining activity in the world and concluded that the depletion rate of sand is rapidly exceeding its natural renewal rate worldwide.

As a result, some Canadian sand companies are booming due to an increase in demand for oilsands fracking and exports to markets that have already depleted their supplies.

At the same time, industry players in some areas such as Greater Toronto Area (GTA) are warning about a shortage of the construction staple not because of demand-driven depletion, but because of local opposition to getting it out of the ground.

Decades of rapid urbanization and suburbanization in the GTA have put residents ever closer and closer to sand and gravel quarries and pits that once seemed relegated to the rural outskirts.

Residents associations have banded together to try to stop new quarries and pits from being built on the edge of their backyards. They're worried about air and noise pollution as much as the effect on their property values.

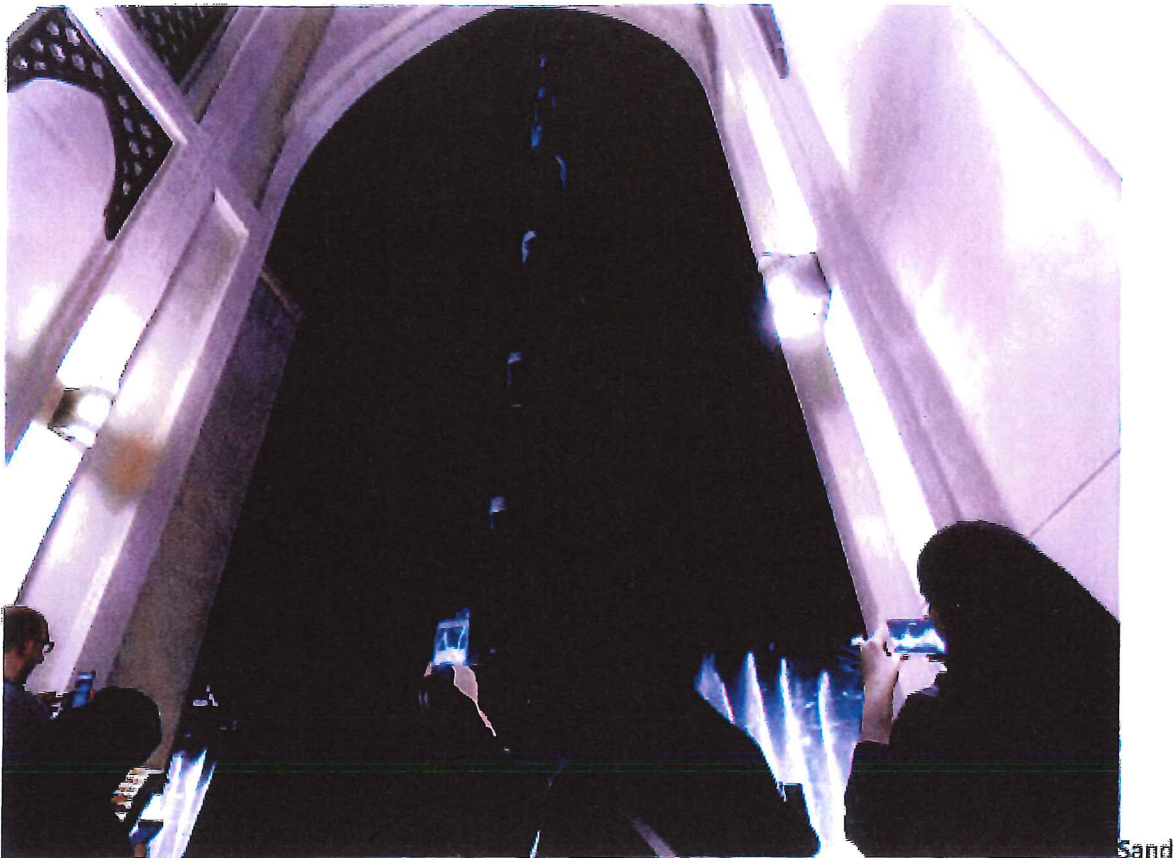
Such opposition has shut down three applications for new pits and quarries in the past decade and has led to a shortage of local sand that, of course, built the homes that house even the most vocal opponents, said Greg Sweetnam, vice-president of James Dick Construction, which operates a pit in Caledon, Ont., about 75 kilometres outside downtown Toronto.

We drive on it, we live inside it, we work inside it, we even brush our teeth with it

Attachment No. 2

The Ontario Stone Sand and Gravel Association (OSSGA) has decided to fight back against vocal anti-quarry opponents with a “buy local” public awareness campaign. Posters, already up in downtown Toronto bus stops, try to educate city dwellers who are largely unaware of both the importance of sand to their infrastructure and the issues it is causing in nearby townships.

We continue to use resources faster than we are replacing them



had to be imported to build Dubai's Burj Khalifa. *Tom Dulat/Getty Images*

The organization said local opposition or NIMBYism has worked its way into government processes that have become more rigorous in recent years. It said the provincial government's new review and consultation process is drawing out the permitting process for new pits and quarries to between five and 10 years.

At the same time, the government has also limited prospects for new pits and quarries by expanding protected areas that are off limits to development, said OSSGA executive director Norman Cheesman.

Harmful Noise Levels

Topic Overview

The effects of noise on hearing vary among people. Some people's ears are more sensitive to loud sounds, especially at certain frequencies.

(Frequency means how low or high a tone is.) But any sound that is loud enough and lasts long enough can damage hearing and lead to hearing loss.

A sound's loudness is measured in decibels (dB). Normal conversation is about 60 dB, a lawn mower is about 90 dB,

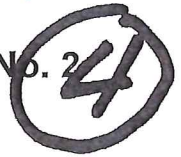
and a loud rock concert is about 120 dB. In general, sounds above 85 are harmful, depending on how long and how often you are exposed to them

and whether you wear hearing protection, such as earplugs or earmuffs.

Following is a table of the decibel level of a number of sounds.

Noise levels

Noise	Average decibels (dB)
Leaves rustling, soft music, whisper	30
Average home noise	40
Normal conversation, background music	60
Office noise, inside car at 60 mph	70
Vacuum cleaner, average radio	75
Heavy traffic, window air conditioner, noisy restaurant, power lawn mower	80–89 (sounds above 85 dB are harmful)
Subway, shouted conversation	90–95
Boom box, ATV, motorcycle	96–100
School dance	101–105



COMPARITIVE EXAMPLES OF NOISE LEVELS

Noise Source	Decibel Level	Decibel Effect
Jet take-off (at 25 meters)	150	Eardrum rupture
Aircraft carrier deck	140	
Military jet aircraft take-off from aircraft carrier with afterburner at 50 ft (130 dB).	130	
Thunderclap, chain saw. Oxygen torch (121 dB).	120	Painful. 32 times as loud as 70 dB.
Steel mill, auto horn at 1 meter. Turbo-fan aircraft at takeoff power at 200 ft (118 dB). Riveting machine (110 dB); live rock music (108 - 114 dB).	110	Average human pain threshold. 16 times as loud as 70 dB.
Jet take-off (at 305 meters), use of outboard motor, power lawn mower, motorcycle, farm tractor, jackhammer, garbage truck. Boeing 707 or DC-8 aircraft at one nautical mile (6080 ft) before landing (106 dB); jet flyover at 1000 feet (103 dB); Bell J-2A helicopter at 100 ft (100 dB).	100	8 times as loud as 70 dB. Serious damage possible in 8 hr exposure.
Boeing 737 or DC-9 aircraft at one nautical mile (6080 ft) before landing (97 dB); power mower (96 dB); motorcycle at 25 ft (90 dB). Newspaper press (97 dB).	90	4 times as loud as 70 dB. Likely damage in 8 hour exposure.
Garbage disposal, dishwasher, average factory, freight train (at 15 meters). Car wash at 20 ft (89 dB); propeller plane flyover at 1000 ft (88 dB); diesel truck 40 mph at 50 ft (84 dB); diesel train at 45 mph at 100 ft (83 dB). Food blender (88 dB); milling machine (85 dB); garbage disposal (80 dB).	80	2 times as loud as 70 dB. Possible damage in 8 hour exposure.
Passenger car at 65 mph at 25 ft (77 dB); freeway at 50 ft from pavement edge 10 a.m. (76 dB). Living room music (76 dB); radio or TV-audio, vacuum cleaner (70 dB).	70	Arbitrary base of comparison. Upper 70s are annoyingly loud to some people.



aci Acoustical Consultants Inc.
5031 - 210 Street
Edmonton, Alberta, Canada T6M 0A8
Phone: (780) 414-6373
www.aciacoustical.com

Environmental Noise Impact Assessment

For The

Proposed Mixcor Cochrane Pit

At

SE 10-27-04-W5M

Version 3

Prepared for:

Mixcor Aggregates Inc.

Prepared by:

P. Froment, B.Sc., B.Ed., P.L.(Eng.)

aci Acoustical Consultants Inc.

Edmonton, Alberta

Reviewed by:

S. Bilawchuk, M.Sc., P.Eng.

aci Acoustical Consultants Inc.

Edmonton, Alberta

APEGA Permit to Practice #P7735

aci Project #:14-078

June 11, 2015