McNair Sand & Gravel Ltd.

DIRECT CONTROL DISTRICT

REZONING APPLICATION

ROCKY VIEW COUNTY

MASTER SITE DEVELOPMENT PLAN

PROPOSED OLSEN GRAVEL PIT
(South of HIGHWAY 72, at TOWNSHIP ROAD 280 and RANGE ROAD 264)

December 2023

CONTENTS

List of Appendices:

1 BACKGROUND

McNair Sand & Gravel Ltd. (McNair), as authorised by Nellie Olsen (titled owner of the parcel under consideration), is seeking to re-designate a portion of SE 5-28-26 W4M from Ranch and Farm District to Direct Control District (DC) for the purpose of gravel extraction.

Summary of Development:

- Redesignate 26 acres of the quarter section to Direct Control District (DC)
- Area of extraction: 26 acres (~16% of quarter section)
- Amount open at any one time: 11 acres maximum
- Estimated size of the deposit: 500,000 tonnes
- Yearly extraction rate: 50,000 tonnes of gravel
- Anticipated life of pit: 10 years
- Use of land today: pasture
- Use of land after gravel extraction: pasture

Information included in this application package includes:

- Drawings and Plans:
    - Site Development Plan:
        - Existing Site Conditions Drawing
        - Activity Plan & Phases Overview Drawing
            - general overview of site activities, stockpile locations, equipment locations and phasing for gravel extraction
    - Operations Plan
        - Includes a description of the proposed operations and estimates of the gravel deposit.

- Studies, Impacts and Mitigation Measures
    - Traffic Impact Assessment
    - Biophysical Impact Assessment
    - Other Impacts Discussion
        - Noise, Dust, Aesthetics and Erosion
        - Cumulative Effects Assessment

- Growth in the Area

- Benefits to Rocky View County

- Regulatory Response and Requirements

- Community Engagement

1.1 PROJECT OVERVIEW

The proposed project is to mine, process and deliver aggregate to market. The proposed pit (named the Olsen Pit hereafter) is estimated to contain approximate 500,000 tonnes of aggregate which would be delivered to market over 10 years. This equates to an approximate extraction rate of 50,000 tonnes of aggregate per year. At the end of the project lifetime the mined land will be reclaimed and used for pasture as it is today.

Olsen Pit Looking West at Intersection Rge Rd 264 & Twp Rd 280. The snowy/grassy knoll beyond the intersection is the gravel deposit. RVC, in years past, extracted gravel from this intersection prior to rebuilding the roads through this area.

Olsen Pit Looking North at Intersection Rge Rd 264 & Twp Rd 280. The snowy/grassy knoll beyond the intersection is the gravel deposit. RVC, in years past, extracted gravel from this intersection prior to rebuilding the roads through this area.

Olsen Pit looking South at Intersection Rge Rd 264 & Twp Rd 280. This same gravel deposit has been extracted, in years past, on both the East and West sides of the road by private industry as well as the center line of the road by RVC. The original deposit of gravel can still be seen in the background of this picture on the East side.

The proposed pit is located in the Southwest corner of a quarter section of land. The gravel deposit diminishes in depth just as the knoll diminishes as you move to the West and as you move to the North. This quarter section of land is currently used as pastureland. The Rosebud River runs through the quarter section North of the proposed MSDP area. As can been seen on the Phasing Plan Drawing (below) the gravel deposit and proposed phased extraction plan does not interfere with the Rosebud River.

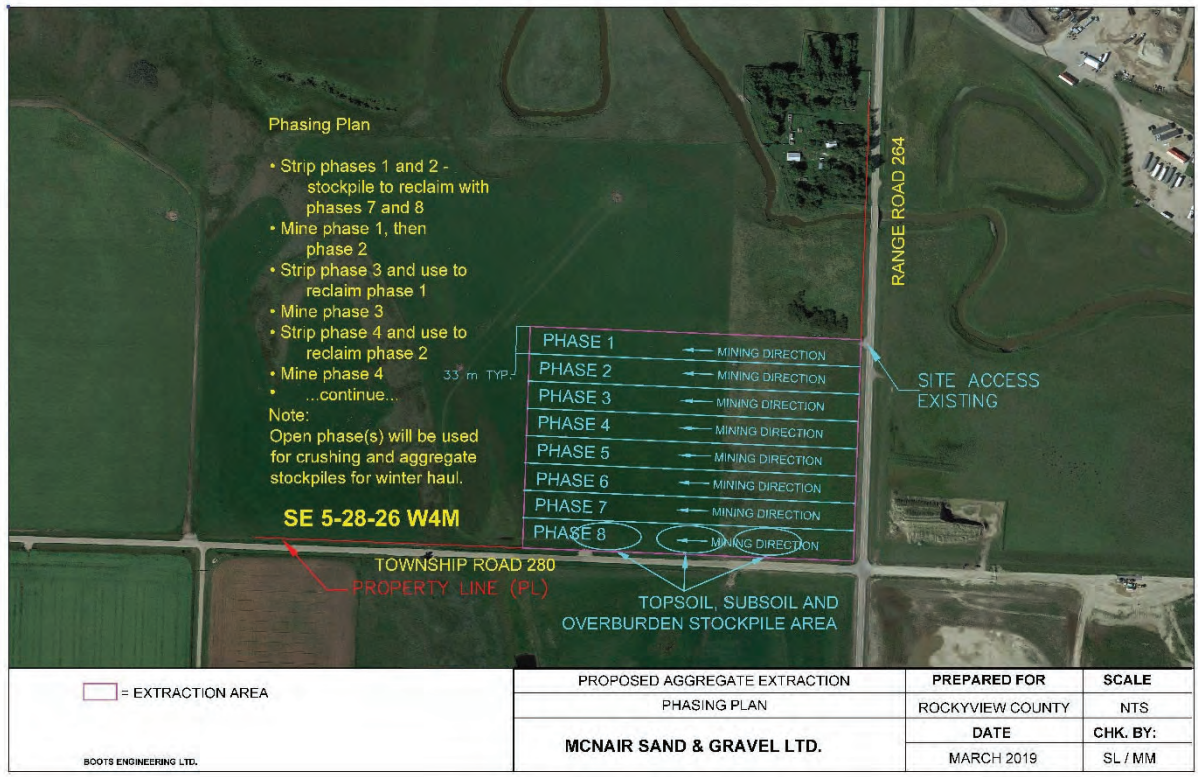

Figure 1 Phasing Plan

The proposed pit is located in a primarily farming community surrounded by existing gravel pits. There is a building site located on the quarter section, North of the Rosebud River and North of the proposed pit however there are no occupants living there as the house has been removed several years ago. There are three other residences in the area the closest being 800 meters away, the second closest is 1,300 meters away and the third is 1,700 meters from the site.

The proposed pit is located approximately 900 metres south of the existing McNair Pit and both have direct access to Range Road 264. Half of the yearly extraction, 25,000 tonnes, will be processed on-site and delivered to market with the remaining 25,000 tonnes moved to the nearby McNair Pit for further processing to produce various sizes of road gravel.

This area of the County has a number of existing gravel mining operations and the proposed Olsen Pit is located approximately six km southwest of Beiseker (straight line measure). See the Drawings Appendix for more details.

McNair recognizes the sensitivity to gravel extraction operations even though the proposed pit is in an area that contains numerous pits. Operations can impact nearby residents, businesses and the travelling public. Planning has been undertaken to minimize impacts and to ensure systems are in place to continue to minimize impacts throughout the life of the project. These considerations include a phased approach to extraction with no more than eleven acres open at any one time, see phasing plan drawing above as well in the attached drawing package contained in Appendix A. Also, to minimize impacts we will implement noise and dust mitigations further detailed in this document.

The goal for the project is to create and maintain a modern gravel pit operation. The key to that goal is to minimize impacts, while providing access to gravel, that will be used extensively in the creation, improvement and maintenance of our communities and transportation system.

The Master Site Development Plan (MSDP), the Development Permit, Code of Practice for Pits, Water Act, Environmental Protection and Enhancement Act and Roadside Development Permit from Alberta Transportation will be the guiding principles of the proposed development and will ensure a high standard of operation is maintained throughout its life.

2 DRAWINGS AND PLANS

2.1 SITE DEVELOPMENT PLAN (PHASED EXTRACTION)

The site development plan has been carefully put together for the purpose of extracting and processing the aggregate on 26 acres of this quarter section in a responsible manner which will minimize the impacts to the local community and the environment.

The development plan involves mining the 26 acres in phases. Please refer to the drawing package in Appendix A and in particular the “Phasing Plan” drawing shown above.

To start, the first two phases will be stripped of top soil, subsoil and overburden and stockpiled along the south property line. These stockpiles will be used at a later date to reclaim exhausted phases. Mining will begin in phase 1 than move on to phase 2. Once phase 1 is exhausted, phase 3 will then be stripped of the top soil, subsoil and overburden and used to reclaim phase 1. This process will progress through all 8 phases. Reclamation of each phase will follow Alberta Environment approved reclamation plan.

Re-designation to DC is being sought for approximately 26 acres as indicated on the drawing. The balance of the ¼ section, approximately 134 acres, is to remain as is.

At any one time, no more than 11 acres will be open for gravel extraction activity.

The conceptual plan and cross sections detail how the phases will be developed and reclaimed. **Drawing Package is provided in Appendix A.** Detailed plans will be developed as part of the requirements for Class 1 Pit Registration with Alberta Environment and the Development Permit for the proposed pit.

Throughout this application, there will be a series of Policies that are being committed to by the operator of the proposed pit. These policies are identified as shown below.

Policy 2.1: 134 acres of the parcel will remain undeveloped to support present day farming activities.

Policy 2.2: the size of the operating area shall be limited to a maximum of 11 acres at each development phase as determined through applicable County development permit approvals and AEP approvals pursuant to the Code of Practice for Pits.

2.1.1 RECLAMATION

As discussed above, reclamation will occur on depleted phases as a new phase opens and will occur as described on the "Phasing Plan" drawing. This minimizes the amount of open area at any one time and mitigates impacts from pit activities. When extraction is completed for all the phases, the disturbed land will be reclaimed and returned to pasture. Figure 2 and Figure 3 below, show cross sections A-A' and B-B' in original state and reclaimed state. These Figures have been extracted from the Reclamation Plan which can be found in Appendix B.

Important details are noted below:

- Slopes for cuts and fills greater than 2 metres will be a minimum of 4 horizontal to 1 vertical (4:1). This grade allows for easy traversal of slopes by equipment and animals and minimizes potential for erosion prior to re-establishment of vegetation.

- Disturbed areas will be shaped as per cross section drawings below. Reclaiming as indicated allows wildlife to utilise the area, allows future farm and ranching activities and does not introduce steep slopes which would be a concern for erosion, wildlife, people and ranch activity.

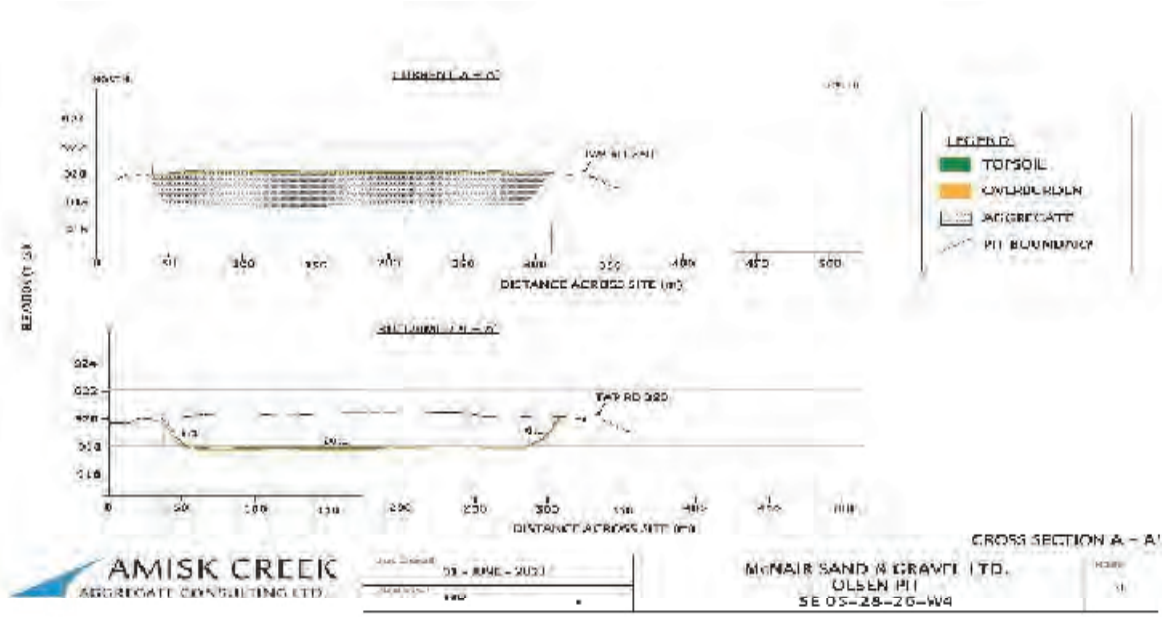

Figure 2 Cross Section A-A'

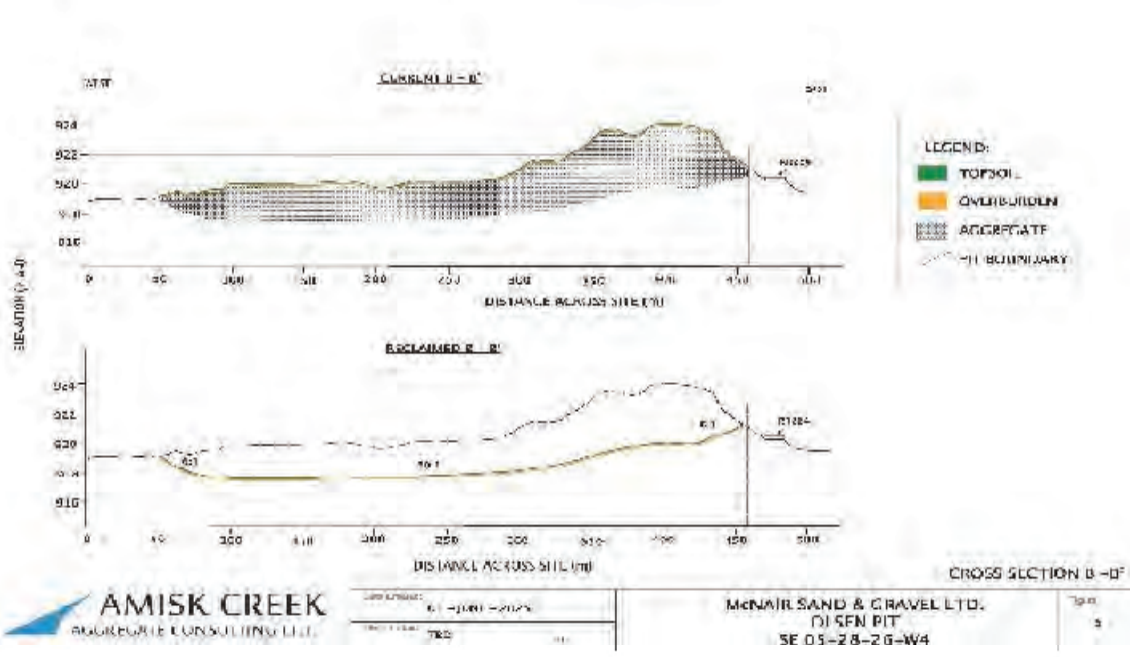

Figure 3 Cross Section B-B'

- Existing drainage paths will be maintained throughout the life of the project and maintained during reclamation.

Policy 2.3: Exhausted areas will be returned to their original condition as new mining areas are opened. Reclamation will be to the satisfaction of Rocky View County, Alberta Environment as per the attached Reclamation Plan.

Policy 2.4 Reclamation Plan shall be submitted with each development permit application to demonstrate how depleted areas will be returned to their original condition as new mining areas are opened to the satisfaction of the County and Alberta Environment.

Reclamation plan is provided in Appendix B.

2.2 OPERATIONS PLAN

2.2.1 GRAVEL DEPOSIT DESCRIPTION

The parameters of the deposit in the subject lands were estimated through the use of test holes. In summary:

- Average depth of topsoil and subsoil = 0.2 m
- Average depth of overburden = 0.1 m
- Average depth of deposit = 2.5 m
- Area to be mined for gravel (total of 8 phases) = 26 acres
- Estimate size of deposit = 500,000 tonnes
- Mined and delivered to market = 25,000 tonnes/year
- Mined and delivered to existing McNair Pit for further processing = 25,000 tonnes/year
- Estimated Life of Olsen Pit = 10 years

2.2.2 PROPOSED OPERATION – OVERVIEW

The proposal is to develop a gravel mining operation at SE 5-28-26 W4M in Rocky View County. The area sought for DC designation, approximately 16% of the quarter section area, is shown on the drawings. The proposed development will utilize an internal haul road to bring processed gravel directly to Range Road 264 at the existing site access. Trucks will generally be single unit gravel trucks with a trailer and will haul an average payload of 35 tonnes.

The facility will operate Monday through Saturday, from 7 a.m. to 7 p.m. There will be no pit activity on Sundays or Statutory Holidays.

The gravel haul for the Olsen Pit is expected to be Monday through Saturday, from 7 a.m. to 7 p.m. with no activity on Sundays or Statutory Holidays. Quantities to be hauled are as follows:

- 25,000 tonnes delivered to market directly from the Olsen Pit

- April thru November
  - Peak delivery typically occurring July thru September

- 25,000 tonnes delivered to the existing nearby McNair Pit
  - December thru March

Policy 2.5: Pit operator will follow hours of operations as agreed to and approved through each Development Permit.

Policy 2.6: The topsoil & overburden excavated within the site shall be stockpiled to be used to construct landscaped screening berms for sight and sound attenuation.

Upon successful land use redesignation, approved MSDP and development approval, mining operation are expected to commence in 2023 and continue until 2032/33.

2.2.3 PROPOSED OPERATION – OPENING PHASE

Fence lines mark the East and South Property boundaries of he proposed pit area as shown in the pictures below.

View facing West showing the fence marking the South property line.

View facing South showing the fence marking the East property line.

Zero set back is requested on the South and East property lines to improve sight lines at intersection Twp Rd 280 and Rge Rd 264.

Project limits to the North and West of the proposed pit area will be staked to limit the activity to the MSDP area as per the below “Figure 4 Phasing Plan”.

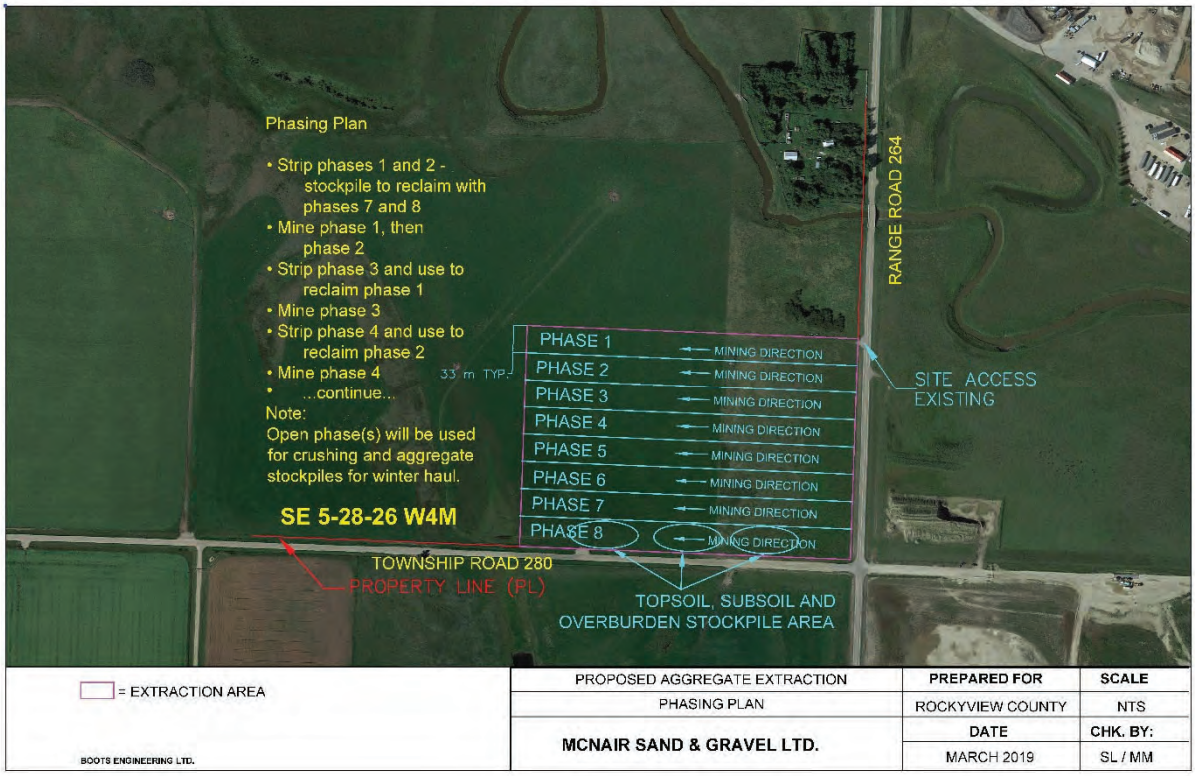

Figure 4 Phasing Plan

Topsoil and vegetative mass, from phase 1, will be stripped and stockpiled along the south boarder of the property on phase 8, as per the “Phasing Plan” drawing. The overburden from phase 1 will also be stripped and stockpiled, separate from the topsoil, on phase 8 as indicated on the “Phasing Plan” drawing.

Equipment used for removing and replacing topsoil and overburden will consist of bulldozers, scrapers and track hoe.

2.2.4 PROPOSED OPERATION – OPERATIONAL PHASE

The pit will be mined from the NE portion of the redesignated lands, heading west and south in strips as indicated until the gravel resources are depleted. A crusher will be utilized in a mined area with the exact location determined during operations. Stockpiles of crushed aggregate will be placed in a mined area which is best determined during operations.

The phased approach to extraction minimizes the impact of the Olsen Pit as no more than 7% (11 acres) of the quarter section will be open at any one time.

Extraction typically occurs early in the season (April) and continues until the anticipated tonnage of gravel for the season has been stockpiled. Extraction and crushing operation will typically conclude after one or two months (May – June). Activities after that time each year are expected to be limited to stockpile maintenance and loading of trucks.

Operation of the proposed development (i.e. moving gravel to market) will occur throughout the season and is dependent upon contracts received within the service area of the development.

Neither the washing of aggregate, nor a permanent asphalt plant, are included in this application and would require amendment to the DC should they be required.

Equipment used for the extraction, processing and movement of gravel will consist of front-end loaders, excavators, haul trucks and a crushing plant.

> **Policy 2.7:** The maximum disturbance area at any one time will be no greater than 7% (11Acres) of the quarter section and will be extracted in 8 phases as per the "Phasing Plan" drawing.
>
> **Policy 2.8**: Signs will be posted at the entrance to the pit to advise of any safety concerns and traffic controls.

2.2.5 PROPOSED OPERATION – RECLAMATION PHASE

The pit will be reclaimed back to productive pastureland as discussed above. That is, as the next phase commences, the existing operational phase will go into reclamation phase (grade as per plans, cover with topsoil and seeded). It is noted that a Reclamation Certificate from Alberta Environment is required for all reclaimed areas.

During the time of final reclamation (Phase 8 extraction complete), remaining equipment will be moved off-site, internal haul road will be removed, final grades will be established, salvaged topsoil and root mass will be placed upon exposed surfaces and reseeded with an approved seed mixture and technique determined by Rocky View County or in consultation with the local agrologist thus allowing the parcel's land use to change from development back to Ranch and Farm district.

Equipment used for removing and replacing topsoil and overburden will consist of bulldozers, front end loaders and excavators.

Reclamation will be completed in accordance with Part 5 of the Code of Practice for Pits, which sets requirements regarding the conservation of soil and subsoil and the characteristics of reclamation.

Progressive reclamation is required to ensure that the area of disturbance is minimized at any given time and post-extraction lands are returned to their former agricultural state.

Policy 2.9: A Reclamation Certificate will be obtained from Alberta Environment for reclaimed areas that will no longer be mined.

Policy 2.10: Reclamation will be completed as per the cross sections and contour drawings as provided in the Reclamation Plan.

2.2.6 ROPOSED OPERATION – INACTIVE PIT PLAN

Should the pit remain inactive for a period of at least two years, the site will be monitored by McNair performing bi-monthly site visits and again after extreme weather events and remediate any issues that arise from extreme weather events. The registered owners also frequent the area and they will be able to perform regular site visits throughout the life of the development.

Policy 2.11: In the event the pit is inactive for a period of at least two years, the site will be maintained in safe condition by keeping all slopes to at least 3:1 (h:v) and ensuring equipment and structures are moved off site.

Policy 2.12: The site will be monitored, on a bi-monthly basis to ensure vegetation used as erosion control is still performing and will perform a weed check and provide necessary measures to control weeds as required.

2.2.7 PROPOSED OPERATION – DEPTH OF MINING FLOOR AND SETBACKS

The average depth to the recommended floor of the dry gravel deposit is 3.2 meters. Using a guideline for setback of 1.5 times the depth plus a 3 metre buffer gives a minimum setback of 8.0 meters from property boundaries.

For the Olsen Pit application, a site-specific amendment for a 0 metre setback from the south and east property lines is requested. This will improve sightlines at the intersection of Range Road 264 and Township Road 280. This will also match existing conditions for the other three quadrants of the intersection. These lands have been lowered in the past and provide good sight lines for vehicular traffic heading north and west. For vehicles travelling southbound and eastbound, the existing hill obscures sight lines approaching the intersection. This can be mitigated by lowering the adjacent hill on private lands. Range Road 264 will have a natural buffer from the excavation on each phase. The natural buffer will be removed as each phase is completed and reclaimed.

Seven test holes were dug on the proposed MSDP area in a grid formation. The depth of gravel ranged from zero metres to four metres. None of the test holes produced water. It is estimated the elevation at the bottom of the gravel deposit is approximately 5 to 6 meters above the elevation of the Rosebud River which runs through the quarter section North of the MSDP area.

The water table was not found in any of the test holes. With the elevation of the gravel deposit at 5 to 6 meters above the Rosebud River, intersecting the water table is not expected.

> **Policy 2.13:** Should the proposed site-specific amendment for setbacks be approved, McNair will work with County Administration to ensure that the adjacent roadways, including their drainage, continue to function as designed. This work will be performed at subsequent stages of the application to the satisfaction of Rocky View County.

2.2.8 PROPOSED OPERATION – HAUL ROUTE

It is estimated that 25,000 tonne of aggregate will be produced and delivered to market during the construction season of April thru November. Another 25,000 tonne of aggregate will be transported to the McNair main pit during the winter season from December thru March.

During the construction season of April thru November it is estimated that 50% (12,500 tonnes) of the 25,000 tonnes of aggregate produced will be transported directly to market on southbound Range Road 264. The other 50% (12,500 tonne) of the 25,000 tonnes of aggregate produced will be transported directly to market on Northbound Range Road 264.

During the winter season December thru March an estimated 25,000 tonnes of aggregate will be transported Northbound on Range Road 264, 900 meters to the McNair main pit to be processed in the following season.

More detailed pit generated traffic can be found in the attached Transportation Impact Memo. **Transportation Impact Assessment is provided in Appendix C**

2.2.9 WEED CONTROL PLAN

McNair will inspect the disturbed and reclaimed areas for weeds on a regular basis during the growing season. McNair will consult with local agronomist, as required, to determine the most effective means to control the weeds and apply herbicides when required.

> **Policy 2.14:** Weeds will be controlled on a continuous basis during operations and reclamation as per RVC standards, Weed Control Act and will be part of the Development Permit.

3 STUDIES, IMPACTS AND MITIGATION MEASURES

3.1 TRAFFIC IMPACTS AND SAFETY

A Traffic Impact Assessment (TIA) Memo was revised in June 2023 and is included in the Appendices. Highlights include:

- Construction season, for the purpose of this MSDP, has been defined as April thru November. The construction season will typically see higher truck volumes during the

"Peak" season which, for the purpose of this MSDP, has been defined as July thru September. The truck trips generated during the peak season are:
    - 16 two-way trips per day (loaded and unloaded)
        - Just over one truck exiting and entering the pit per hour.

- Winter season (December thru March) truck trips generated:
    - 18 two-way trips per day (loaded and unloaded) during winter months on Range Road 264 exclusively transporting aggregate from Olsen Pit to existing McNair Pit.
        - Average of 2 two-way trips per hour on Range Road 264.
        - Haul distance is less than 1 kilometer on County roads.

- Existing Access from pit to Range Road 264 appears sufficient for the activity.
    - Access to be confirmed through Development Permit Process.

- Intersection type at Highway 72 and Range Road 264 appears to be a Type III.

- Highway 72 has seen a 15% decrease in daily traffic from 2013 thru 2022 (latest data available from Alberta Transportation – see *Appendix C Traffic Impact Assessment*).

- Negligible impacts to upstream and downstream intersections from the proposed development.

- No improvements recommended due to the proposed development.

Truck Haul – Construction Season (April – November)

As the number of truck trips generated by the site is low at 16 vehicles per day (vpd) and is further reduced based on distribution (8 vpd heading north to market and 8 vpd heading south to market), the impacts to the transportation system are minimal.

In terms of a sensitivity analysis, if a peak month is doubled for trips generated (i.e. July sees 40% of all construction season trips as opposed to the 20% analysed), that is 16 vpd heading north to market and 16 vpd heading south to market. This is just over 1 vehicle per hour in each direction from the proposed pit. The impacts to the transportation system are minimal.

Truck Haul – Winter Season (December – March)

As discussed previously, half of the yearly production will be stockpiled on-site at the Olsen Pit and moved to the existing McNair Pit from December thru March of each year. The two pits access Range Road 264 and the accesses are located approximately 900 meters apart, meaning the truck haul distance and use of County roads is low.

It is expected that an average of 9 truck loads of gravel will be moved per day which equates to an additional 18 vpd on this 900-meter stretch of Range Road 264 for December thru March. It is noted that overall background daily traffic is expected to be lower during these months as well.

Participation in the ASGA Truck Registry program (or equivalent) will be required for all commercially licensed trucks directly controlled by the operator.

3.1.1 ROAD SAFETY ISSUES

Regarding school buses that may utilise Highway 72 and Range Road 264 for pickup and drop-offs, it is typical practice for contractors utilizing pits in the area, such as McNair, to notify the appropriate School Boards of their scope of work and schedule of activity each year. It is noted that typical peak hauling activity occurs outside of the typical school year, during July and August. It is also helpful that the proposed pit is in a known gravel pit area, meaning that regular travellers in the area, including school busses, are already aware of this activity and the type of traffic generated.

The proposed development will operate from 7am to 7pm with no activity on Sundays or statutory holidays. The majority of processing and hauling activity will take place during summer months April thru November, during daylight hours. Therefore, no illumination is recommended.

During the winter months of November through March, the hours of operation typically decrease with less on-site activity, therefore no illumination is recommended.

Policy 3.1: McNair will notify the appropriate School Boards of their scope of work and schedule of activity each year for projects where McNair is providing trucking.

Policy 3.2: McNair will work with Rocky View County and Alberta Transportation through the Development Permit Process and Roadside Development Permit program (as required) to ensure applicable standards are met. For example, truck turning signs may be required on Range Road 264 near the Olsen Pit access.

Policy 3.3: Hauling will be restricted to the hours of operation as stated in each approved development permit.

Policy 3.4: All trucks servicing the McNair Olsen Pit shall be registered with the Alberta Sand & Gravel Association Truck Registry.

3.2 ROCKS ON ROADWAY

Loads will be covered with a tarp to help mitigate aggregate falling off while hauling. Vehicles are inspected and mechanically cleaned of dirt and rocks daily.

Policy 3.5: All trucks leaving the pit loaded will be covered with a tarp. McNair vehicles are inspected and mechanically cleaned of dirt and rocks daily.

3.3 GROUNDWATER

It is important to note that wet extraction of gravel, that is extracting gravel located within the water table, occurs frequently throughout Alberta and is governed by Alberta Environment's *Code of Practice for Pits* and the *Water Act*.

McNair is proposing dry gravel extraction. That is, McNair will remain above the highest measured water level throughout the gravel extraction operation. This is a voluntary choice and is not required by Alberta Regulations.

Two piezometers were installed to monitor ground water elevation. Figure 5 below, is the East Piezometer Location, Figure 6 below, is the West Piezometer Location.

Figure 5 East Piezometer

Figure 6 West Piezometer

Piezometers were installed 1 meter into the clay beneath the gravel deposit, no water was found at either Piezometer locations.

Impact with the water table is not expected as no water was found in any of the test holes. The elevation at the bottom of the gravel deposit is several meters above the water level in the nearby Rosebud River. With the gravel deposit being the highest point, and with the gentle downward slope off the gravel deposit towards the Rose Bud River, it is expected the water table is several meters below the bottom of the gravel deposit. Piezometers will be installed and monitored, for the water table, on a regular basis.

If the water table is detected with an elevation within 1 meter below the bottom of the gravel deposit, the pit floor will be adjusted to maintain a minimum of 1 meter above groundwater.

A height of one metre above the water table was chosen to be consistent with the reclamation requirements from Alberta Environment for Agricultural lands. Section 4.13.1 of Alberta Environment's *A Guide to the Code of Practice for Pits* states: "Reclaimed land surfaces must be at least 1.0 metre above the seasonally high-water table". Staying a minimum of 1.0 metre above the water table for extraction ensures this reclamation requirement is met.

Policy 3.6: The lowest point of the pit floor will be held a minimum of 1 meter above groundwater. Piezometers will be installed and monitored for the purpose of maintaining the pit floor a minimum of 1 meter above groundwater.

Policy 3.7: A Groundwater Management Plan and Monitoring Program shall be submitted at the development permit application stage in support of each operational phase.

Policy 3.8: McNair Olsen Pit will implement a Groundwater Monitoring Plan throughout the lifespan of the operation.

Policy 3.9: Groundwater management techniques shall be implemented in accordance with the conclusions and recommendations of the Hydrogeological Assessment prepared in support of this MSDP.

Policy 3.10: All potential sources of groundwater contamination from human caused sources shall be mitigated using best handling practices under the Code of Practice for Pits, Environmental Protection & Enhancement Act rules, and other codes of best practice.

As McNair is not intending to operate within the water table, no *Water Act* approval is required.

3.3.1 REFUELLING AND HAZARDOUS MATERIAL STORAGE

Handling of hazardous materials will be done by trained personnel with dangerous goods certificates.

Storage will be in specialized storage trailers for any hazardous materials and will be located within the nearby and existing McNair Pit as these facilities already exist. Proper recycling and disposal methods will be strictly adhered to.

Material Safety Data Sheets for all hazardous materials on site will be located in the job trailer or other onsite trailer.

Fuel is stored in a double walled environmentally friendly tank with splash pad for refueling of equipment and again, is located in the nearby and existing McNair Pit. Refueling and maintenance will not occur within the active pit area.

Equipment needing significant maintenance will be hauled off site to McNair's main office near Beiseker, Alberta, for servicing.

Most hazardous materials on the site will be in small quantities, for daily use.

Policy 3.11: McNair will follow all regulations regarding refuelling and hazardous material storage as laid out by local, provincial and federal authorities.

3.4 STORM WATER MANAGEMENT AND PIT WATER

A Surface Water Hydrologic Analysis was conducted and a Stormwater Management Plan developed for the proposed pit. **Surface Water Management and Stormwater Management Plan is provided in Appendix D.**

The disturbance from the proposed pit is small in relation to the overall quarter section. As discussed, storm water will be left on-site to drain naturally. No discharge to adjacent rights-of-way will occur. General mitigation measures include:

- Locate soil (topsoil and overburden) stockpiles on existing high ground to maintain existing drainage patterns.
- Park vehicles outside of the active pit area during precipitation events.
- Pit water that has been caught in the active pit will be left on-site to drain. The pit floor is made of gravel, which is a free draining layer, therefore no further work is required.

Policy 3.12: Site-Specific Stormwater Management Plan shall be submitted at the development permit application stage to clarify the specific stormwater management requirements in support of each operational phase.

Policy 3.13: Stormwater will be managed in accordance with the Stormwater Management Plan.

Policy 3.14: The Stormwater Management Plan will be updated for the second half of mining phases.

3.5 NOISE, DUST AND EROSION

Noise

As noted above, the proposed Olsen Pit is in an area of Rocky View County that contains existing operational pits. Within 1 km there are four active gravel pits in various stages of extraction and reclamation. The proposed Olsen Pit will be used to facilitate additional gravel production (various grades of road gravel) at the nearby McNair Pit and is anticipated to have a 10-year development life.

The Olsen Pit will typically operate from Monday through Saturday, 7:00 a.m. to 7:00 p.m. There will be no activity on Sundays or Statutory Holidays. This will help to minimize noise during nearby resident's time for quiet enjoyment of their property. It is noted that the three closest residences are located 800 metres, 1,300 metres and 1,700 metres from the centre of the proposed pit.

Additionally, the proposed phased approach to extraction ensures that the footprint of the active pit is never greater than 7% (11 acres) of the quarter section. This approach also helps to minimize dust and visual impact.

Crushing aggregate into appropriate sizes for stockpiling is the primary generator of noise during expected operations. Mitigation measures include:

- Use of crushers that contain noise reduction measures such as rubber liners as well as dust suppression features such as canvas covers on conveyors, water sprinkling systems and water pumps.
- Limiting crushing operations to the hours proposed above.
- Limiting crushing operations to the beginning of the construction season (May - June) for the known projects acquired within the development's service area.
- Locating the crusher on the pit floor
- Crushing activities will be undertaken no less than 800 metres from the nearest resident.

Another loud generator of noise is the backup alarm on construction equipment. This safety feature cannot, and will not, be disabled. However, the proposed pit operation hours preclude the operator from working at night and during Sundays and Statutory holidays when such alarms could be disruptive. **Environmental Noise Impact Assessment is provided in Appendix E.**

Policy 3.15: McNair will follow the mitigation measures proposed in Section 3.5 of the MSDP, and industry best practices, in order to mitigate noise impacts upon adjacent lands.

Policy 3.16: McNair Olsen Pit shall maintain noise levels generated by the operation at or below 65 decibels, to be measured at the perimeter of the MSDP area.

Policy 3.17: Complaints with respect to noise will be dealt with on an individual basis by increasing mitigation measures.

Dust

To limit the movement of dust from the pit, McNair will perform the following activities:

- Consider wind direction in placement of stockpiles.
- Shape stockpiles (oval shaped), facing the prevailing wind to minimize the surface area exposed to the prevailing wind. See *Appendix A Drawings – Phasing Plan* for an example where the prevailing wind is coming from the west.
- Deplete stockpiles from the downwind side.
- Internal haul road will be watered and/or have a dust suppression agent such as calcium chloride applied during times of activity. The rates of application will be determined on a project-by-project basis. Experience demonstrates dust suppression is most effective if it occurs regularly throughout the course of a haul day; typically applied when the project supervisor believes it is required, when residents indicate current levels of suppression are inadequate or when triggers are met when an air quality monitoring program is in place.
- During times of high winds and dry conditions, pit and hauling activity may be stopped until wind and dust levels abate.

Dust Control and Mitigation Plan is provided in Appendix F. A technical assessment regarding Air Quality will be provided as part of the Development Permit.

> **Policy 3.18:** McNair Olsen Pit shall ensure air quality at the perimeter of the MSDP area to be in compliance with the Canadian Ambient Air Quality Standards (CAAQS) and Alberta Ambient Air Quality Objectives (AAAQO).
>
> **Policy 3.19:** Dust abatement mitigation measures will be as outlined in Section 3.5 of the MSDP and industry best practices.
>
> **Policy 3.20:** Complaints with respect to dust will be dealt with on an individual basis by increasing mitigation measures. Air quality monitoring program will be implemented when mitigation measures fail to resolve complaint issues.

Erosion

The primary concern for erosion is in relation to the preservation of top soil and subsoil. To that end, the top soil and subsoil will be placed in stockpiles following the guidelines listed immediately above. Additionally, these stockpiles will be seeded and placed directly on existing undisturbed topsoil to both aid in the abatement of dust and to ensure the top soil and subsoil remains on the property and can be utilised as part of reclamation.

> **Policy 3.21:** An Erosion & Sediment Control Plan shall be submitted at the development permit application stage in support of each operational phase.

Policy 3.22: McNair will stockpile all topsoil, root mass and overburden in phase 8 of the phasing plan. Refer to above **Figure 1 Phasing Plan**

Stockpiles will be placed on undisturbed land (i.e. not in the active pit area). Stockpiles will be vegetated to minimize erosion from wind and water throughout the life of the project. Stockpiles will be located on high ground or will have diversion channels built around them to help protect them from surface water erosion.

Policy 3.23: Erosion and sediment control plan will be provided with DP application.

3.6 PIT BEST PRACTICES

McNair commits to adhering to modern pit management methods which emphasize mitigations of pit related impacts throughout the life of the development. The end use will involve reclamation of the disturbed area per the Reclamation Plan. The land will again be made suitable for Ranch and Farm activities, consistent with its current zoning. All disturbed land will be overlain with topsoil and reseeded. In conjunction with the *Code of Practice for Pits*, this represents McNair's commitment to Best Management Practices. The intent of modern pit management is that final land use is compatible with today's land use.

Policy 3.24: McNair is committed to Best Management Practices as per *Code of Practice for Pits*

3.7 LANDSCAPE PLAN

ENTRANCE TO OLSEN PIT FROM RGE RD 264 LOOKING SOUTH

The approach to enter the Olsen Pit will be upgraded to RVC Standard. Landscaping to the entrance will be minimal. The entrance will be typical of other pit entrances in the area. With the proposed zero set back against Rge Rd 264 a natural berm will provide screening of the pit operation from the road. As each phase of the proposed pit is reclaimed, the land will be

landscaped and returned to pasture, in a similar manner to match the existing landscape adjacent to the property as shown in the above picture.

> **Policy 3.25:** Landscaping of reclaimed areas will match the existing areas to the north, west and the three adjacent properties.

3.8 BIOPHYSICAL CONSIDERATIONS AND WILDLIFE

A Biophysical Impact Assessment (BIA) was performed by Omnia Ecological Services in the fall of 2018 with an addendum report filed August 19, 2019, and a Wetland Assessment Memo filed December 2023.

Biophysical Impact Assessment, addendum report and Memo is provided in Appendix E

Specific tasks of this assessment were as follows:

- Vegetation cover supply assessment
- Ecological significance assessment of vegetation cover types
- Ecological significance assessment at the regional/landscape level
- Impact assessment

Development activities within the study area are governed by several federal, provincial and municipal legislations and/or guidelines as well as some planning initiatives, including:

- Migratory Birds Convention Act
- Species at Risk Act
- Public Lands Act
- Alberta Water Act
- Alberta Wetland Policy
- Alberta Wildlife Act
- Rocky View County Servicing Standards
- Rocky View County Wetland and Conservation Management

The regulatory requirements that are applicable to this project are detailed below.

Key findings from the BIA are:

- The majority of the property is comprised of disturbed vegetation cover types with very low native integrity. Further disturbance of these lands is unlikely to result in a significant negative effect on wildlife or vegetation cover in the property.

- Land areas with high levels of ecological significance at the habitat/local level do not occur within the property.

- Existing land cover conditions and pre-existing disturbance within and around the property has already resulted in substantial habitat fragmentation effects. As such, most native habitats and sensitive species have already been significantly impacted. Because the vegetation cover types on the property have been assessed as having a low ecological significance, the incremental contribution of the proposed development to regional habitat fragmentation is considered to be insignificant.

- Seven wetlands equaling 0.51 hectares were identified by Alberta Merged Wetland Inventory. Three are classified as “Ephemeral -M-1” and four are classified as “Not a wetland – Upland”. Based on the results of the additional desktop assessment, the final delineations for the three ephemeral wetlands have been outlined in the Memo. Although a WAIR is not required, an excavation approval must be applied for in DRAS as per communication with Jason Cayford, AEP.

  Policy 3.26: Any proposed disturbances of identified wetlands within the MSDP area shall require approval from Alberta Environment and Sustainable Resource Development in accordance with the requirements of the Provincial Wetland Policy and the Water Act.

  Policy 3.27: Aggregate development within the MSDP area shall comply with all relevant municipal, provincial, and federal legislation, regulations and policies.

  Policy 3.28: McNair Olsen Pit will obtain clearance under the Historical Resources Act prior to commencing any mining activities.

  Policy 3.29: Excavation approval will be applied for in DRAS as per communication with Jason Cayford, AEP.

3.9 RESPONDING TO CONCERNS

It is recommended that a sign with the phone number to the McNair Main Pit be placed at the entrance to the pit and the phone number be distributed to adjacent residences.

Local residents will also have access to Miles McNair, the owner and operator McNair Sand & Gravel Ltd., through his mobile phone.

Policy 3.30: Contact information for the proposed development will be made available to the public.

All complaints and the response taken will be recorded and distributed to the County or relevant municipal and provincial departments. This includes such items as spilling of gravel on the highway, noise complaints, trucking issues, etc. Frequency of reporting will be annually.

Policy 3.31: The site will log all nuisance instances on the site as outlined in Section 3.8 with a summary report provided to the County annually.

The following items will be addressed:

- Record complaint (date) and subject matter.
- Record actions taken.
- Identify any trends and discuss potential mitigation (as needed) with The County

3.10 END USE OF PROPOSED DEVELOPMENT

As discussed previously, reclamation will allow for the reversion to Agricultural, General District, as proposed, benefitting the landowner, neighbors and local wildlife.

3.11 IMPACTS TO EXISTING LAND USE

The mitigation measures proposed above help to ensure that the impacts from the proposed development are minimized.

- Phased approach to extraction. At any one time, more than 90% of the quarter section will be undisturbed or reclaimed to its previous state.

- It is noted that the three closest residences are located 800 metres, 1,300 metres and 1,700 metres from the centre of the proposed pit.

- It is noted that what appears to be a residence north of the proposed pit and just north of the Rosebud River is not a residence as the house has been removed.

- As there are other gravel pits in the immediate area and half of the aggregate extracted from the proposed development will be brought to McNair's Main Pit for stockpiling and processing, the impacts to existing land use in the area are considered minimal.

- Proposed operation is small scale

The mitigation measures in the Application Package have been developed so that McNair can be good neighbours, who do not impact the quality of life and business for adjacent residents.

4 DISTANCE TO ADJACENT RESIDENCES AND LONG HAUL ROUTES

Distances from the midpoint of the proposed development to nearby residences within 2 km are shown in the Drawings Appendix and are summarised here. Note that the distance to former residence on the same quarter (400 metres) is not relevant as the house has been removed several years prior.

- Residence 1 (located southwest)
  - 950 m
- Residence 2 (located west)
  - 1 530 m
- Residence 3 (located due south)
  - 1 640 m
- Residence 4 (located southeast)
  - 1 770 m

Residences 1 and 2 are of a similar distance to existing gravel pits and residences 3 and 4 are closer to existing gravel pits.

As discussed, the route to haul gravel for the 25,000 tonnes extracted during the construction season will be 50% north on Range Road 264 to market and 50% south on Range Road 264 to market.

The route to haul gravel for the 25,000 tonnes stockpiled for transfer to the McNair Main Pit is 900 metres north on Range Road 264 from the Olsen Pit site access to the McNair Main Pit site access.

See *Appendix A Drawings – Haul Routes* for more information.

> **Policy 3.32:** Maximum disturbance area over all the phases will not come within 700 meters of the closest residence.

5 GROWTH IN THE AREA

As discussed in the Transportation section above, data from provincial Highway 72 in the vicinity of Range Road 264 shows that annual average daily traffic (AADT) has decreased by over 15% over the time period available from Alberta Transportation. This is for the years 2013 to 2023.

It is standard practice to apply a linear growth rate of 2.5% to AADT on provincial highways, but that may not be the case here.

It appears that this area of the County is dominated by Farm and Ranch activities and aggregate resource extraction (gravel pits). The proposed development will:

- Add minimal traffic to the existing background traffic levels. Site access will be directly to Range Road 264.
- Utilise mitigation measures to be good neighbours and keep down dust and noise and preserve top soil.
- Return the parcel to its current zoning of Agricultural, General District at the end of the development's service life.
- Follow all applicable codes and guidelines including the *Code of Practice for Pits*, the *Environmental Protection and Enhancement Act* and the *Water Act*.

6 BENEFITS TO ROCKY VIEW COUNTY

McNair is committed to continuing a mutually beneficial relationship with Rocky View County and its residents. In addition, McNair uses local residents and services as much as possible in their activities and will continue to do so with the operation of the proposed development. Finally, McNair will make any aggregate products available to the County and its residents.

It is expected that the proposed development will generate a minimum of $200,000 dollars for Rocky View County through Aggregate levy fees and an additional $120,000 dollars for the County through the Transportation Off-Site Levy bylaw.

7 REGULATORY RESPONSE AND REQUIREMENTS

Detailed comments from the Agency Circulation (as performed by Rocky View County) are included in Appendix F with responses included below, throughout the MSDP and by separate communications with the County.

Prior to DP approval Provincial approval is required from AEP for *Code of Practice for Pits.*

7.1 ROCKY VIEW COUNTY REQUIREMENTS

Applications for Gravel Pits in Rocky View County require a land use re-designation in order to operate, as well as the Master Site Development Plan. Should that be successful, this will be followed by an application for a Development Permit. Both steps in the process impose requirements and restriction to manage the development through its life.

7.2 CODE OF PRACTICE FOR PITS

Alberta Environment and Parks regulates aggregate pits through the *Code of Practice For Pits*. Registrations are required, along with a security deposit to reclaim the pit at any time, for any pits larger than 5 hectares in size. The Olsen Pit will apply for a registration during the development permit phase.

7.3 WATER ACT

As the proposed development will not extract aggregate within the water table, the *Water Act* does not require a formal application and approval. A Wetland Assessment will be provided at time of DP application.

7.4 ALBERTA TRANSPORTATION ROADSIDE DEVELOPMENT APPROVALS

Alberta Transportation requires a roadside development permit for all proposed developments within 300 meters of their right of ways. The development may not utilise the provincial highway network until this permit has been received.

As the proposed development is approximately 3 km from an Alberta Transportation right of way, no roadside development permit is required.

7.5 UNDERGROUND UTILITIES

Quarter section 4-26-28-5-SE is encumbered by a utility right of way containing a natural gas distribution line owned by Rockyview Gas Co-Op Ltd.

McNair's extraction area is planned to be outside of this right of way. As part of the subsequent Development Permit process, and prior to any ground disturbance, the extents of the extraction area including setbacks from all right of ways will be surveyed and become part of the detailed plans to the satisfaction of Rocky View County, relevant regulatory bodies and utility rights of way owners such as Rockyview Gas Co-Op Ltd.

7.6 ALBERTA CULTURE AND COMMUNITY SPIRIT (HISTORICAL RESOURCES)

An application for Historical Resources Act (HRA) approval is required for all proposed Class 1 Aggregate Pits. The HRA application will form part of the subsequent Development Permit application to the County.

8 CUMULATIVE EFFECTS ASSESSMENT AND MITIGATION

The past and future use of the subject lands is ranch and farming. Additionally, the proposed Olsen Pit is small scale occupying less than 20% of the subject quarter section with a life of approximately 10 years.

The proposed Olsen Pit is also a logical extension of on-going operations for the McNair Pit, albeit separated by 900 metres. As shown in the Drawings Appendix, the area adjacent to the proposed Olsen Pit is predominately Ranch and Farm and Gravel Pits.

The impacts to the biophysical environment are considered low and the additional traffic generated is minimal and likely falls within daily variation of background traffic. It is further noted that traffic on the major highway in the area, Highway 72, has decreased since 2013 by approximately 15%. Thus, it's proposed that the Land Use and associated development under consideration has minimal impact to the area.

The operational standards and mitigation measures documented within this MSDP are felt to be sufficient in dealing with any local impacts and the cumulative impact of this extension of the McNair Main Pit is low.

9 COMMUNITY CONSULTATION

On Thursday, July 25, 2019, McNair held an Open House Public Engagement Session at the Beiseker Community Centre in Beiseker, AB. The session was held from 6 p.m. to 8:30 p.m.

McNair invited approximately 27 landowners from the circulation area to the open house. Three people attended the Open House and indicated support. One of the attendees asked if McNair could work with the County to improve sight lines at the intersection of Range Road 264 and Township Road 280. This supports McNair's proposed Policy 2.6.

10 SUMMARY OF POLICIES

Policy 2.1: 134 acres of the parcel will remain undeveloped to serve as a buffer area for pit activities and to provide a base for existing activities.

Policy 2.2: No more than 7% (11 acres) of the quarter section will be open at any one time for gravel extraction activities.

Policy 2.3: Exhausted areas will be returned to their original condition as new mining areas are opened. Reclamation will be to the satisfaction of Rocky View County, Alberta Environment as per the attached Reclamation Plan.

Policy 2.4 Reclamation Plan shall be submitted with each development permit application to demonstrate how depleted areas will be returned to their original condition as new mining areas are opened to the satisfaction of the County and Alberta Environment.

Policy 2.5: Pit operator will follow hours of operations as agreed to and approved through each Development Permit.

Policy 2.6: The topsoil & overburden excavated within the site shall be stockpiled to be used to construct landscaped screening berms for sight and sound attenuation.

Policy 2.7: The maximum disturbance area at any one time will be no greater than 7% (11Acres) of the quarter section and will be extracted in 8 phases as per the “Phasing Plan” drawing.

Policy 2.8: Signs will be posted at the entrance to the pit to advise of any safety concerns and traffic controls.

Policy 2.9: A Reclamation Certificate will be obtained from Alberta Environment for reclaimed areas that will no longer be mined.

Policy 2.10: Reclamation will be completed as per the cross sections and contour drawings as provided in the Reclamation Plan.

Policy 2.11: In the event the pit is inactive for a period of at least two years, the site will be maintained in safe condition by keeping all slopes to at least 3:1 (h:v) and ensuring equipment and structures are moved off site.

Policy 2.12: The site will be monitored, on a bi-monthly basis to ensure vegetation used as erosion control is still performing and will perform a weed check and provide necessary measures to control weeds as required.

Policy 2.13: Should the proposed site-specific amendment for setbacks be approved, McNair will work with County Administration to ensure that the adjacent roadways, including their drainage, continue to function as designed. This work will be performed at subsequent stages of the application to the satisfaction of Rocky View County.

Policy 2.14: Weeds will be controlled on a continuous basis during operations and reclamation as per RVC standards, Weed Control Act and will be part of the Development Permit.

Policy 3.1: McNair will notify the appropriate School Boards of their scope of work and schedule of activity each year for projects where McNair is providing trucking.

Policy 3.2: McNair will work with Rocky View County and Alberta Transportation through the Development Permit Process and Roadside Development Permit program (as required) to ensure applicable standards are met. For example, truck turning signs may be required on Range Road 264 near the Olsen Pit access.

Policy 3.3: Hauling will be restricted to the hours of operation as stated in each approved development permit.

Policy 3.4: All trucks servicing the McNair Olsen Pit shall be registered with the Alberta Sand & Gravel Association Truck Registry.

Policy 3.5: McNair trucks that are leaving the pit loaded will be covered with a tarp. McNair vehicles are inspected and mechanically cleaned of dirt and rocks daily.

Policy 3.6: The lowest point of the pit floor will be held a minimum of 1 meter above groundwater. Piezometers will be installed and monitored for the purpose of maintaining the pit floor a minimum of 1 meter above groundwater.

Policy 3.7: A Groundwater Management Plan and Monitoring Program shall be submitted at the development permit application stage in support of each operational phase.

Policy 3.8: McNair Olsen Pit will implement a Groundwater Monitoring Plan throughout the lifespan of the operation.

Policy 3.9: Groundwater management techniques shall be implemented in accordance with the conclusions and recommendations of the Hydrogeological Assessment prepared in support of this MSDP.

Policy 3.10: All potential sources of groundwater contamination from human caused sources shall be mitigated using best handling practices under the Code of Practice for Pits, Environmental Protection & Enhancement Act rules, and other codes of best practice.

Policy 3.11: McNair will follow all regulations regarding refuelling and hazardous material storage as laid out by local, provincial and federal authorities.

Policy 3.12: Site-Specific Stormwater Management Plan shall be submitted at the development permit application stage to clarify the specific stormwater management requirements in support of each operational phase.

Policy 3.13: Stormwater will be managed in accordance with the Stormwater Management Plan.

Policy 3.14: The Stormwater Management Plan will be updated for the second half of mining phases.

Policy 3.15: McNair will follow the mitigation measures proposed in Section 3.5 of the MSDP, and industry best practices, in order to mitigate noise impacts upon adjacent lands.

Policy 3.16: McNair Olsen Pit shall maintain noise levels generated by the operation at or below 65 decibels, to be measured at the perimeter of the MSDP area.

Policy 3.17: Complaints with respect to noise will be dealt with on an individual basis by increasing mitigation measures.

Policy 3.18: McNair Olsen Pit shall ensure air quality at the perimeter of the MSDP area to be in compliance with the Canadian Ambient Air Quality Standards (CAAQS) and Alberta Ambient Air Quality Objectives (AAAQO).

Policy 3.19: Dust abatement mitigation measures will be as outlined in Section 3.5 of the MSDP and industry best practices.

Policy 3.20: Complaints with respect to dust will be dealt with on an individual basis by increasing mitigation measures. Air quality monitoring program will be implemented when mitigation measures fail to resolve complaint issues.

Policy 3.21: An Erosion & Sediment Control Plan shall be submitted at the development permit application stage in support of each operational phase.

Policy 3.22: McNair will stockpile all topsoil, root mass and overburden in phase 8 of the phasing plan. Refer to above **Figure 1 Phasing Plan**

Policy 3.23: Erosion and sediment control plan will be provided with DP application.

Policy 3.24: McNair is committed to Best Management Practices as per *Code of Practice for Pits*

Policy 3.25: Landscaping of reclaimed areas will match the existing areas to the north, west and the three adjacent properties.

Policy 3.26: Any proposed disturbances of identified wetlands within the MSDP area shall require approval from Alberta Environment and Sustainable Resource Development in accordance with the requirements of the Provincial Wetland Policy and the Water Act.

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The following items will be addressed:

- Record complaint (date) and subject matter.
- Record actions taken.
- Identify any trends and discuss potential mitigation (as needed) with The County

Policy 3.32: Maximum disturbance area over all the phases will not come within 700 meters of the closest residence.

11 CLOSURE

This report has been prepared using the most recently available data and estimates based upon engineering judgment. It is intended solely for the use of McNair Sand & Gravel Ltd., Rocky View County and others as authorized by McNair Sand & Gravel Ltd.

Amended by:

Monty McNair
Digitally signed by Monty McNair
Date: 2024.01.12 16:31:10 -07'00'

Monty McNair P.Eng
Project Manager
McNair Sand & Gravel Ltd.

APPENDIX A

DRAWINGS

APPENDIX B

RECLAMATION PLAN

APPENDIX C

TRANSPORTATION IMPACT ASSESSMENT

APPENDIX D

STORMWATER MANAGEMENT PLAN

APPENDIX E

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

APPENDIX F

DUST CONTROL AND MITIGATION PLAN

APPENDIX G

BIOLOGICAL IMPACT ASSESSMENT, ADDENDUM AND MEMO