

# Rau Site Development Plan

For the County of Vermilion

Lot 4, Plan 0024545, County of Vermilion River, AB



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on behalf of Mr Rod Rau

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# 1.0 Introduction

## 1.1 Area Context

This Site Development Plan is to facilitate the subdivide out of a 0.4 hectare lot from an existing 2.07 hectare parcel, located at Lot 4, Plan 0024545 in the County of Vermilion River. The subject parcel is located approximately 7 kilometres west of the City of Lloydminster and 1 kilometre north of the Hamlet of Blackfoot. The site is accessible from Yellowhead Highway (Hwy 16) in the south, via Range Road 21 and an unnamed county road. **Figure 1** (Regional Context Map) and **Figure 2** (Local Context Map) show the location of the subject parcel.

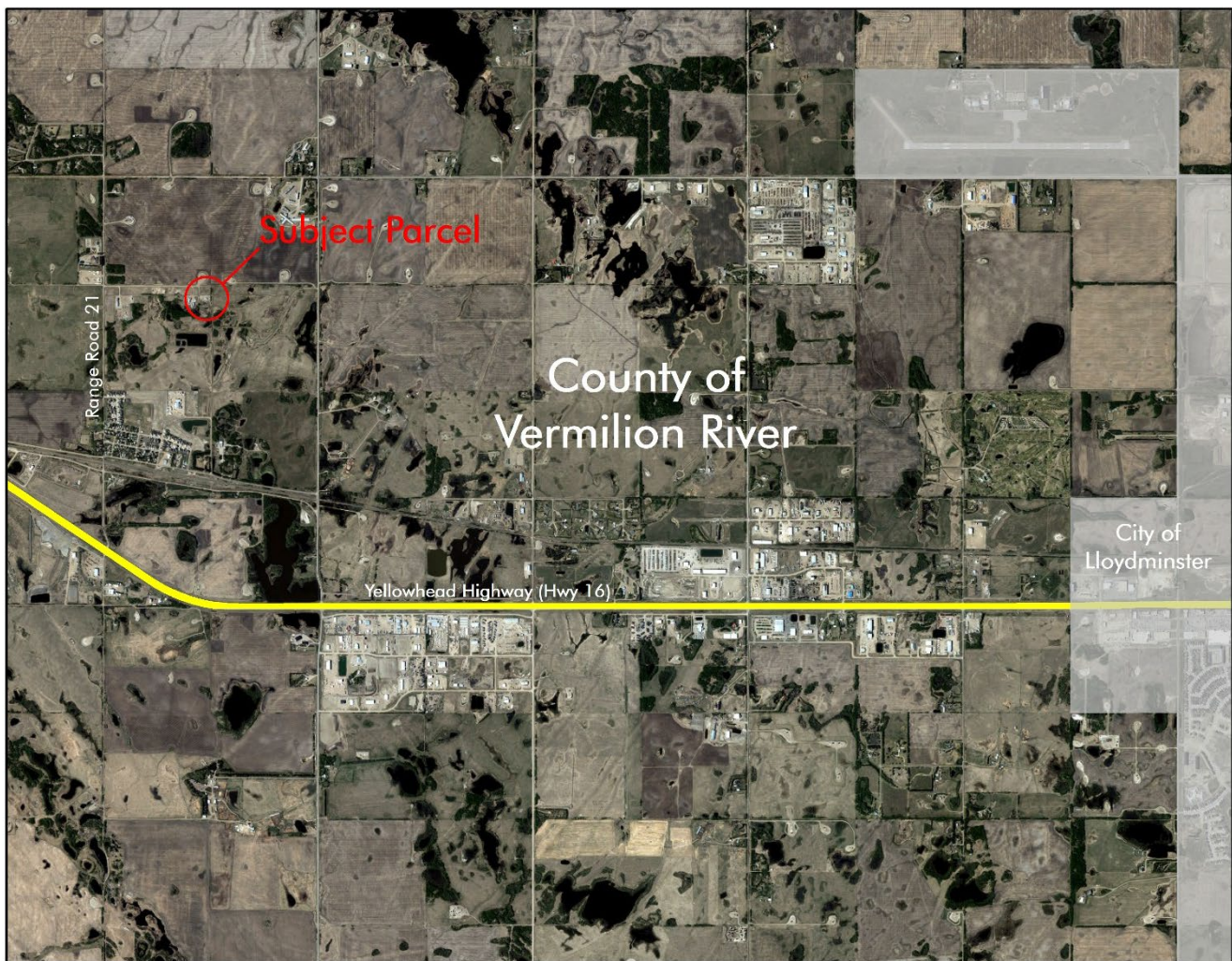


Figure 1: Regional Context Map





Figure 2: Local Context Map

## 1.2 Purpose of Plan

The subject parcel currently contains a 12.2m x 24.4m industrial shop (repairs and welding). The proposal would subdivide Lot 4 into two parcels, one containing the existing shop and one proposed for a new 14.6m x 14.6m storage unit.

The subject parcel is currently zoned as Industrial Development (M) District and the proposed Storage development is listed as a Permitted use.

The purpose of the plan is to investigate the existing land and environment and to provide clarification on the proposed development.



## 2.0 Policy Context

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The County of Vermilion River establishes its policies and regulations associated with development through various statutory plans and bylaws. These documents guide future development on lands within the county by directing land use, infrastructure and transportation, and by providing principles and processes for their responsible implementation.

### 2.1 Municipal Development Plan

The County's Municipal Development Plan (MDP) outlines a broad set of goals, objectives and policies which guide land use and land management practices within the County for years to come. The provisions of the MDP are implemented through the Land Use Bylaw, Area Structure Plans, Area Redevelopment Plans, and as in this case, Site Development Plans. Decision making on these documents, and the development which ensues from them, must all conform with the spirit and intent of the goals, objectives and policies of the MDP.

The MDP defines "industry" as manufacturing, warehousing and storage. Specifically, "Light industries are industrial uses that involve the manufacturing, processing, fabrication, storage, transportation, distribution or wholesaling of goods and services. The activities associated with light industries are fully contained within an enclosed building and do not emit noise, smoke, odour, dust or vibration beyond the boundaries of the building."

Additionally, the MDP states that the County recognises that industrial developments can be of benefit to the County by providing employment, tax dollars and services to County residents. The Plan encourages the clustering together of compatible industrial uses in rural industrial parks.

The below policies from the MDP directly influence the subject parcel and proposed development:

*Policy 4.3.1.2: Industries shall be encouraged to locate in designated industrial areas that are designed and serviced to accommodate industrial development.*

*Policy 4.3.1.4: All proposals for industrial development (including industrial parks) shall:*

*(a) in the opinion of the Development Authority, NOT conflict or jeopardise with surrounding land uses;*

*(b) be considered only in accordance with an Area Structure Plan or at the discretion of Council, a Development Concept Plan that has been developed and approved in accordance with the Municipal Government Act, which Development Concept or Area Structure Plan will address:*

- (i) the impact on adjacent land uses;*
- (ii) transportation;*
- (iii) provision of water and sewer services;*
- (iv) storm drainage;*
- (v) the provision for municipal reserve;*



- (vi) the impact on community services, such as fire protection;*
- (vii) the municipal servicing costs associated with the development;*
- (viii) landscaping and buffering;*
- (ix) risk assessment; and*
- (x) any other matters identified by the County.*

This application I meets the policy direction of the MDP as the proposed development of Storage. As required, all activities will be fully contained within an enclosed building and shall not emit noise, smoke, odour, dust or vibrations beyond the building. The development shall be low impact and there is no anticipated conflict with surrounding land uses.

On 18 January 2018, the County of Vermilion River Council passed a motion that an Area Structure Plan would not be required, due to the lesser nature of the proposed development. A Site Development Plan was instead requested to address largely the same elements of an ASP, however will not become a bylaw passed by Council resolution.

## 2.2 Land Use Bylaw

The subject parcel is currently designated ‘Industrial Development (M) District’ under Bylaw No. 13-14 Land Use Bylaw of the County of Vermilion River. Under the Industrial Development district, ‘Storage’ is listed as a permitted use.

The Land Use Bylaw defines the proposed use as:

*“STORAGE, INDOOR” means a self-contained Building or group of Buildings available for the storage of goods. This Use includes mini-storage or private storage facilities. Indoor Storage does not include “warehouse”.*

Further regulations of the district state:

*8.7 (4) (a) All Site regulations and requirements shall be based upon the type of industrial development proposed and shall be at the discretion of the Development Authority.*

The Rau Site Development Plan conforms with the Land Use definition of Storage as listed above and in the County of Vermilion Land Use Bylaw. This in turn relates back to the policy direction of Light Industries within the MDP. As per section 8.7(4)(a) above, from the existing Industrial Development (M) District within the Land Use Bylaw, the plan has been developed in close communication with the County’s Development Authority, to receive accurate direction and guidance.





## 3.0 Existing Site Conditions

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### 3.1 Existing Land Use

The existing 2.07 hectare parcel is currently designated as Industrial Development (M) District, according to the County of Vermilion Rover Land Use Bylaw No. 13-14. The intent of the Industrial Development District is to allow the development of industries which require large tracts of land and which may not be appropriate to develop within an urban municipality.

There is one existing 12.2m x 24.4m industrial shop on the property operating a repairs and welding business. The portion of the existing parcel which is to be subdivided out is currently undeveloped.

The surrounding land use is primarily agricultural consisting of cultivated fields and tame pasture. There is a high occurrence of oil and gas exploration (i.e. well heads) west of Range Road 21.

A search of Alberta Land Titles has revealed no caveats or rights-of-way on the property which will impact the proposed development.

### 3.2 Topography and Natural Features

The property has a very flat topography, gently sloping towards the south west corner of the site with a grade difference of approximately 50 cm (0.43% slope) over the whole site.

The vegetation on the site is mostly grass with a row of pine trees along the east boarder. The below photographs of the proposed lot offer a visual indication of the topography and natural features on site:



*A: Due east, from existing access road over proposed lot*



*C: Due northwest, from existing access road over proposed lot*



*B: Due southeast, from existing access toward existing*



*Photograph viewpoints*



### 3.3 Wetlands

As required by the Development Authority at the County of Vermilion River, a Desktop Biophysical Assessment was completed for the proposed project (**Appendix A**). Pursuant to the Alberta Wetland Policy and its Directives, a historical aerial photograph assessment (1949-2016) was completed for the proposed project. The most notable features located in the vicinity of the proposed project are the lagoons to the south, which appeared after 1981, and the wetland feature (Wetland 1) located south and southwest of the property.

Disturbances to Wetland 1 have been noted to have occurred in recent years. These activities occurred without approval and the landowner is currently working with Alberta Environment and Parks to rectify. The landowner self-reported the contravention on May 31, 2018 and an Environmental Protection Officer carried out a site visit on June 18, 2018. A second site inspection was carried out by the Officer along with a Wetlands Specialist on October 23, 2018. The Wetlands Specialist has confirmed they are in the process of issuing a Friendly Order, which provides permission to the landowner to conduct remediation work on the wetlands without requiring Water Act approval. The Friendly Order will be issued in Jan/Feb 2019.

The desktop biophysical assessment concluded that no wetlands are present on the proposed site. Furthermore, the project does not propose any work within, or disturbance to, the existing wetlands to the south and southwest of the property. As per Section 5 of the desktop biophysical assessment:

*“should work occur within the wetland, it is recommended that a presence/absence assessment be completed by a qualified professional to determine if further regulatory frameworks may apply”*

Therefore, a presence/absence assessment is not required.

The biophysical assessment identified that the horned grebe, a ‘sensitive’ waterfowl species was documented within 5km of the site. If construction activities are scheduled to occur within the migratory bird nesting period (April 1<sup>st</sup> – August 31<sup>st</sup>), it is recommended that a horned grebe and other rare species survey occur in Wetland 1 prior to development on the proposed project area, as a setback of 500 m from the nest site may be applied. Development and construction activities are proposed to only occur outside of this indicated nesting period. As per the assessment, these activities may occur without a survey.

### 3.4 Abandoned Wells

A review of Alberta Energy Regulators Abandoned Well Locator has indicated that there are no abandoned wells on the subject property. There is an abandoned well located on the neighbouring property to the west (Licence: 0038884, Licensee: Canadian Natural Resourced Ltd.), however it is located approximately 30 meters from the proposed subdivide lot, and therefore outside of the minimum 5m setback as set out in the AER Directive 079, *Surface Development in Proximity to Abandoned Wells*. A signed Abandoned Wells Statement and corresponding Abandoned Well Maps from the Alberta Energy Regulator are available in **Appendix B**.



### 3.5 Groundwater Potential

It is intended that the proposed development will be serviced by hauling in water. The County of Vermilion River have nevertheless requested a desktop hydrological study to determine if the aquifer could support the development, should ownership and the use of the site change in the future. A desktop hydrogeological assessment for groundwater potential and quality onsite was therefore completed for the proposed site and is attached as **Appendix C**. This study has been carried out based on a water supply requirement for washrooms, sinks and drinking water. Based on a review of available data and low demand for water in this area, the evaluation concluded there should be no issue for water supply on the proposed property.

As detailed, there is no proposal for a well as the development shall utilise hauled water only.

### 3.6 Environmental Site Assessment

The 2005 Phase One Environmental Site Assessment (ESA) conducted for the overall existing property reported that there were no indications of any environmental mishaps, spills, or problems that occurred in the past that are of any environmental concern (**Appendix D**). The report also identified that the septic system on the property was outdated and would require replacement prior to the replacement of the washrooms in the existing building.

The current owners of the property have confirmed that there were no unreported incidents on the property to the best of their knowledge, and there has been no incidents or contamination of the land since the date of the report. The owners also provided confirmation that the existing septic system has since been replaced with a modern system.

Within the Phase I ESA, a Phase II ESA was not recommended.

### 3.7 Existing Transportation Features

Yellowhead Highway (Hwy 16) runs laterally approximately 3 kilometres south of the subject parcel. From the highway, the site is accessible via Range Road 21 and an unnamed county road. The unnamed road will be named as part of this Site Development Plan.

As the proposed development is for a storage unit only, there is no expected increase to traffic numbers. Therefore, a Traffic Impact Assessment (TIA) was not required by the County of Vermilion River. A traffic count however was obtained from Alberta Transportation for the junction of Highway 16 and Range Road 21 to show current movement counts on a daily average as well as AM and PM estimates (**Appendix E**).

### 3.8 Shallow Utilities

The property will have access to natural gas via an ATCO natural gas line which extends south of the unnamed road, located west of the proposed site.

ATCO Electric provides power to the existing parcel through a west-east overhead power line, located south of the proposed site. This will also provide power to the proposed shop.



There are currently no utility rights-of-way present on the proposed site. Proposed utility easements shall be established during the subdivision of the parcel.

### 3.9 Historic Resources

Historic Resources Act approval was granted by Alberta Culture and Tourism for the Development Plan and is attached as **Appendix F**. No lands within the proposed property were identified as having historical or archaeological value.

### 3.10 Signage

The proposed parcel shall have a posted Rural Address Sign in accordance with the provisions of the County of Vermilion River Rural Addressing Bylaw No. 15-19.

No other signage is proposed.

## 4.0 Proposed Development

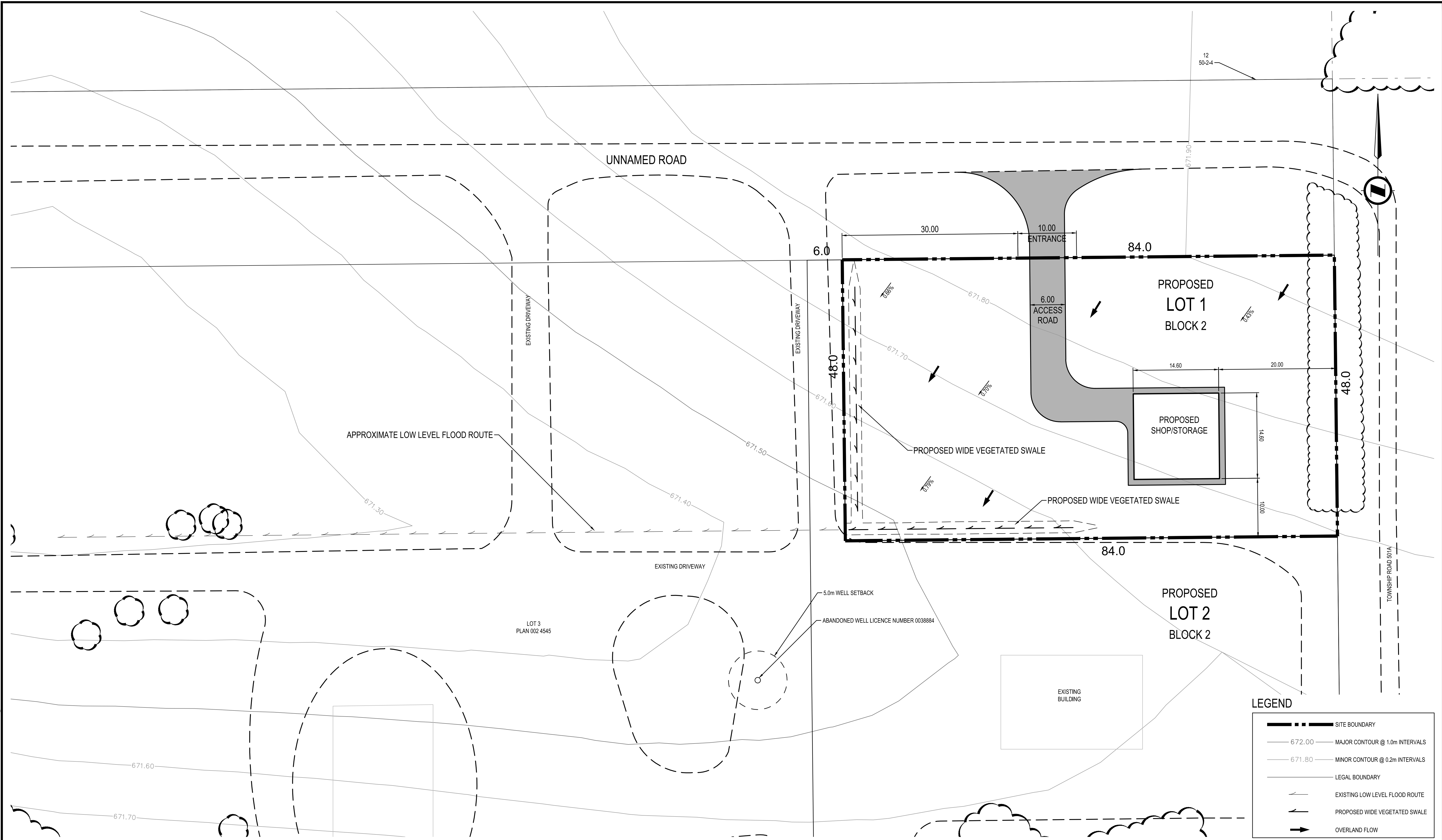
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### 4.1 Overview

The proposed subdivision will create a new 48m x 84m lot (0.4 ha), on an existing 2.07 hectare parcel. **Figure 3** on the following page details the proposed lot location, access and site layout.

The new lot will be developed to contain a 14.6m x 14.6m structure for the storage of vehicles and equipment.

Access to the new lot will be located on the north property line, approximately 30m from the west property line. The existing access will remain as is, on the west boundary of the existing lot, to continue to provide access to the remaining property. The access to the proposed lot will be gravel with a 6m minimum surface and will be developed to County of Vermilion River Standards.



Rev	Date	Description	Drawn	Design	App'd
A	2018.07.30	ISSUED FOR REVIEW	SS	HY	MM

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ORIGINAL DWG SIZE: ANSI D (22" x 34")

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Approved Sealed

RAU SITE DEVELOPMENT PLAN

**SITE PLAN**

Drawing No.  
**FIGURE 3**

Project Number  
2531-40701-00

Rev.  
A



## 4.2 Stormwater Management

A Stormwater Management Plan has been prepared for this proposal, as requested by the County (**Appendix G**). Due to a limited change in landscape resulting from the proposed shop/storage, the increase in runoff flow rate from the site is minimal. Because of the small increase in peak flow rate and the proposed runoff management to be implemented, no runoff detention storage is proposed for this project and no downstream lands are expected to face disadvantage as a result of this project. In general, the proposed development will not significantly alter the existing site conditions.

The stormwater management plan identifies that the following measures should be incorporated to mitigate any possibly increase in peak flow from the site:

- The rest of the proposed site will remain grassed without increasing the runoff coefficient;
- Runoff from the shop roof will be discharged to the grassed land to detain the peak flow and increase the infiltration rate;
- A wide shallow vegetated swale will be constructed at the west edge of the property to detain and infiltrate the flow before it flows to the existing low area located west of the project site.

## 4.3 Site Servicing

Municipal potable water is not available to the lands in the Plan area. The proposed site shall therefore be serviced by truck hauled potable water stored on site in a cistern, subject to provincial regulations and approved municipal facilities.

As Municipal waste water collection is also not available to the proposed property, it is proposed that the sanitary sewerage system will utilise a septic tank for pump and haul to the satisfaction of the County, Alberta Municipal Affairs, Safety Codes Council, and Alberta Environment and Parks. Sewage disposal shall be provided by a local contractor service and disposed of via the City of Lloydminster Waste Management facilities.

## 4.4 Shallow Utilities

Each new lot will be serviced with power and gas from the franchise utilities in the area. The existing overhead ATCO power line located in the existing lot will also provide power service to the proposed lot and shop.

The existing ATCO natural gas line which extends south from the unnamed county road, west of the proposed lot on the existing access road, will provide natural gas servicing.

## 4.5 Transportation

The site will continue to be accessed from Range Road 21 to the west and the unnamed county road to the north. As the proposed development is for Storage with no projected increase to traffic volume, there are no additional requirements to access or intersections.



No upgrades are proposed as part of this development. A Road Upgrade Allowance Statement has been signed and is located in **Appendix H** acknowledging the appropriate responsibilities for future road upgrades relating to the development of the proposed parcel.

As part of this Development Plan, the property owner is submitting to the County of Vermilion River, two proposed names for the currently unnamed county road leading eastward from Range Road 21 to the site:

**1. 'Rau Road'**

This name is the first choice from the property owner, as the lands accessed by the road are all owned by members of the Rau family, two brothers and a son.

**2. 'Klinger Road'**

The second choice for the road has been chosen as it has previously been referred to with this name by some locals.

#### 4.6 Emergency Response Plan

The proposed parcel and subsequent development will rely on emergency services available in the County of Vermilion River. Law enforcement services shall be provided by the County of Vermilion River Bylaw Enforcement staff and the RCMP while ambulance services are also available in the County. Fire protection shall be provided by the Blackfoot Fire Department with support from the City of Lloydminster.

Emergency vehicles will be able to access the site via Range Road 21 and the unnamed county road. Emergency access to the property is illustrated in the following map (**Figure 4**).

An emergency response plan has also been completed for the development (**Appendix I**) which acknowledges responsibilities for water provision, access and appropriate lighting for firefighting purposes.



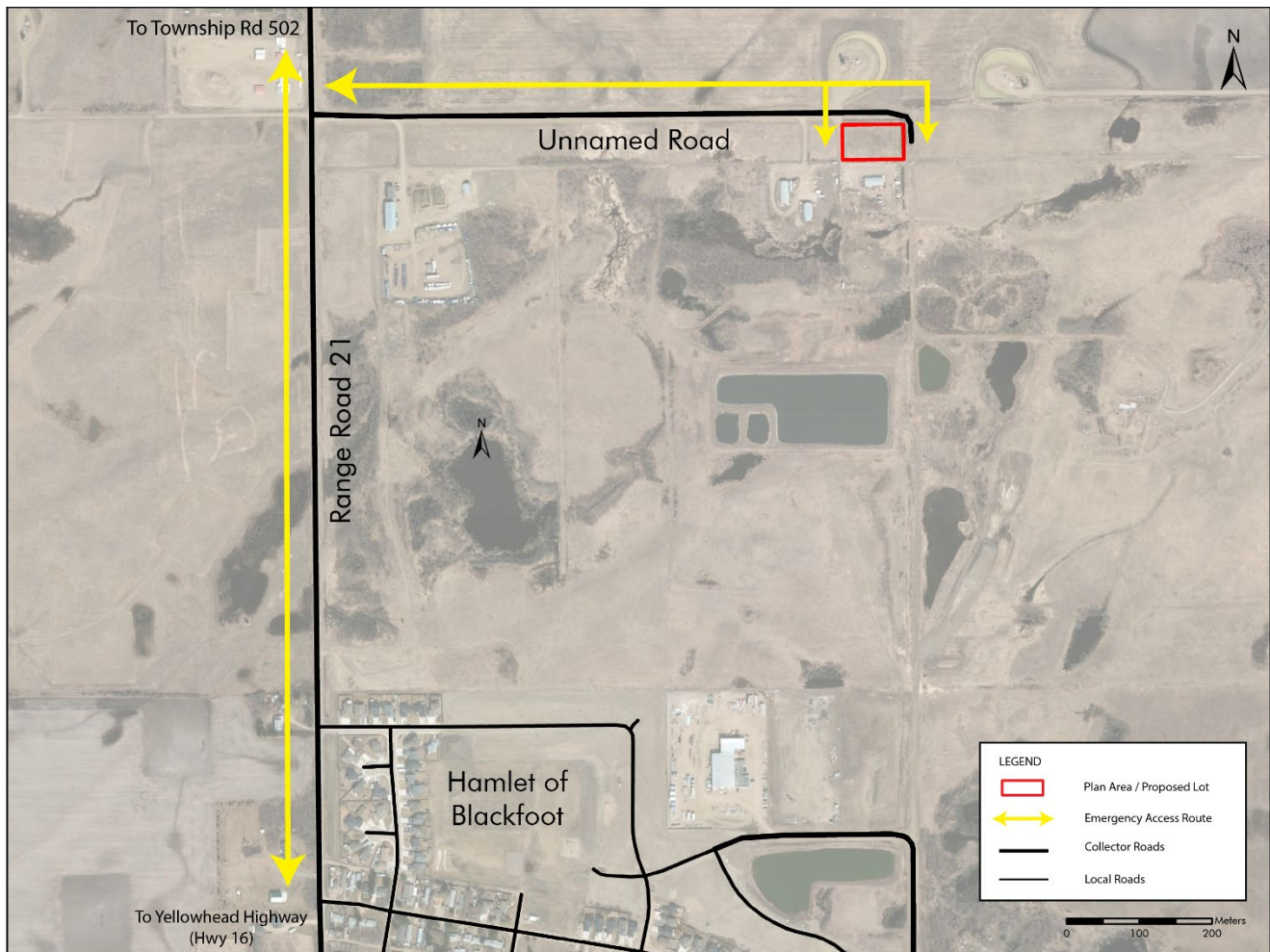


Figure 4: Emergency Access Routes

## 5.0 Implementation

The Rau Site Development Plan will be approved by the County of Vermilion River Development Authority, rather than passed as a bylaw by the County Council.

The existing Land Use Bylaw identifies the subject area as Industrial Development (M) District, which is the correct designation for this proposal. Therefore, a redistricting application and land use bylaw amendment is not required.

Following the approval of the Site Development Plan, the developer will submit a subdivision application for the site.

## APPENDICES

**APPENDIX A: DESKTOP BIOPHYSICAL ASSESSMENT**

# Rau Site Development Plan - Desktop Biophysical Assessment



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July 7, 2018

Mr. Rod Rau  
102 Sunwood Bay  
Sherwood Park, Alberta  
T2V 2V6

Attention: Mr. Rod Rau,

RE: Rau Site Development Plan - Biophysical Assessment for Subdivision of Lot 4, Plan 002, 4545, located at SW 12-50-2 W4M.

McElhanney Consulting Services Ltd. (McElhanney) was contacted by Mr. Rod Rau (the client) to complete a desktop Biophysical Assessment (BA) for the property located at SW 12-50-2 W4M as part of an application to subdivide the lot.

The following report summarizes the results of the desktop assessment, recommendations for further assessment, and what regulatory permits/ approvals may be required to further proceed with the development of the parcel.

Yours truly,  
McELHANNEY CONSULTING SERVICES LTD.

A handwritten signature in black ink, appearing to read 'Maire McNamee', with a period at the end.

Maire McNamee, Community Planner  
Phone: 403 621 4078  
Email: mmcnamee@mcelhanney.com

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# 1. Introduction

McElhanney Consulting Services Ltd (McElhanney) was contracted by Mr. Rod Rau (the client) to complete a Biophysical Assessment (BA) for the proposed subdivision at SW 12-50-2 W4M (the proposed project, Figure 1).

For a subdivision, the County of Vermilion River (“the County”), under the Land Use Bylaw No. 13-14 (July 2016) and as requested by the Development Authority, requires a certified BA stamped and signed by a relevant qualified Professional registered in the province of Alberta. The BA specifically should outline the impacts of the proposed development on wildlife habitat and natural environments.

McElhanney discussed the requirements for the proposed subdivision with the County and determined that a desktop BA was sufficient for this stage of the proposed project. The County specifically requested that McElhanney identify any wetlands present on and surrounding the parcel, and also provide an assessment of what the regulatory requirements may be if any impacts to wetlands is anticipated. Additionally, the County has also stated that the client may be requested to provide a more detailed assessment prior to subdivision approval.

The results of the desktop BA are summarized in the following report, with recommendations for permitting, approvals and/or further studies that may be requested by the Province and/or the County prior to approval for subdivision.



Figure 1. Sketch plan showing proposed subdivision of Lot 4, Plan 002, 4545 at SW 12-50-2 W4M, County of Vermilion River.



## 2. Landscape Description

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### 2.1. Land Use

The proposed project is northeast of the Hamlet of Blackfoot, in the County of Vermilion River, Alberta and is located east of Range Road 21 and is bisected by Township Road 501A (Figure 1). The existing and surrounding land use is primarily agricultural consisting of cultivated fields and tame pasture. There is a high occurrence of oil and gas exploration (i.e. well heads) west of Range Road 21. A wetland occurs in the south of the proposed project.

### 2.2. Natural Region and Subregion

The proposed project is located within the Central Parkland Natural Subregion a component of the larger Parkland Natural Region (Natural Regions Committee [NRC] 2006) The Parkland Natural Region is approximately 9% of the province (60,474 km<sup>2</sup>) and the Central Parkland Natural Subregion occupies approximately 88% of the Parkland Natural Region (53,706 km<sup>2</sup>) (NRC 2006).

The Central Parkland Natural Subregion is the most heavily cultivated and populated region of Alberta (NRC 2006). Approximately 10% of the region is composed of naturally occurring wetlands while 80% of the region is cropland, and the remaining is grazing land. Very little natural vegetation remains in this Subregion. Natural vegetation is estimated to comprise roughly 5% of the Subregion's area and are dominated by fescue prairies and aspen groves (NRC 2006). The dominant soils for the Subregion are generally Orthic Black Chernozems, with Solonchaks soils as secondary dominant soil type. Humic and Orthic Gleysols are the most common wetland soil type (NRC 2006).

Resource exploration and extraction occurs throughout region; including heavy oil, strip coal mining, and gravel extraction activities (NRC 2006).

### 2.3. Watershed

The proposed project occurs within the North Saskatchewan River Watershed, which is comprised of 12 tributary watersheds for a total drainage area of approximately 57,000 km<sup>2</sup> (North Saskatchewan Watershed Alliance [NSWA] 2012). The headwaters for the North Saskatchewan watershed originates in the icefields of the Rocky Mountains and is comprised of the Cline, Ram, Clearwater, and Brazeau Subwatersheds. The central portion of the watershed consists of the greater Edmonton region and is comprised of the Modeste, Strawberry, Sturgeon and Beaverhill Subwatersheds. The downstream portion of the watershed is comprised of the White Earth, Frog, Monnery and Vermilion Subwatersheds and extends further east through the Saskatchewan border (NSWA 2012).

The proposed project is located in the North Saskatchewan watershed and the Monnery Subwatershed. The Monnery Subwatershed is approximately 125,537 ha in size and includes approximately 7,049 ha of natural and artificial waterbodies (NSWA 2012).

## 2.4. Agricultural Regional and Soil Inventory Database (AGRASID)

The following table (Table 1) summarizes the soil data collected for the proposed project from the Alberta Soil Information Viewer (AGRASID, AAF 2018). The search results obtained from the AGRASID data base can be found in Appendix A.

*Table 1. AGRASID search results from the Alberta Soil Information Viewer for the proposed project located at SW 12-50-2 W4M.*

Soil Polygon No.	Total Area (ha)	Soil Description
16169	12942.64	Orthic Black Chernozem on medium textured till. The polygon includes poorly drained soils, undulating terrain, and a high relief landform with a limiting slope of 4%.

## 2.5. Historical Aerial Photograph Assessment

A historical aerial photograph assessment was completed for the proposed project pursuant to the Alberta Wetland Policy and its Directives. The results of this assessment are summarized in Table 2. Photographs were obtained from the Aerial Photographic Record System (APRS, 2001) and from satellite imagery available through ArcMap (Esri 2017). Photographs were selected based on relative climate data for wet, dry, and normal years following the Wetland Policy and its Directives (Figure 2, AEP 2016a).

Overall, the area surrounding the proposed project was observed to undergo increased tree clearing and surrounding road development over the course of the historical record (Appendix B). The property was developed sometime after 1971 and then further divided by road development sometime after 2000 (Figure 6 - Figure 11). The most notable features located in the vicinity of the proposed project are the lagoons to the south, which appeared after 1981 (Figure 8), and the wetland feature (Wetland 1) located immediately south and southwest of the property. Wetland 1 was observed to increase in size and permanence over the course of the historical aerial photograph record assessed. As a result, Table 2 includes the permanence results for Wetland 1 and is pursuant to the Alberta Wetland Policy and its Directives (AEP 2013-2016a). The change in the boundaries of Wetland 1 are outlined throughout the historical aerial photographs assessed (Appendix B).

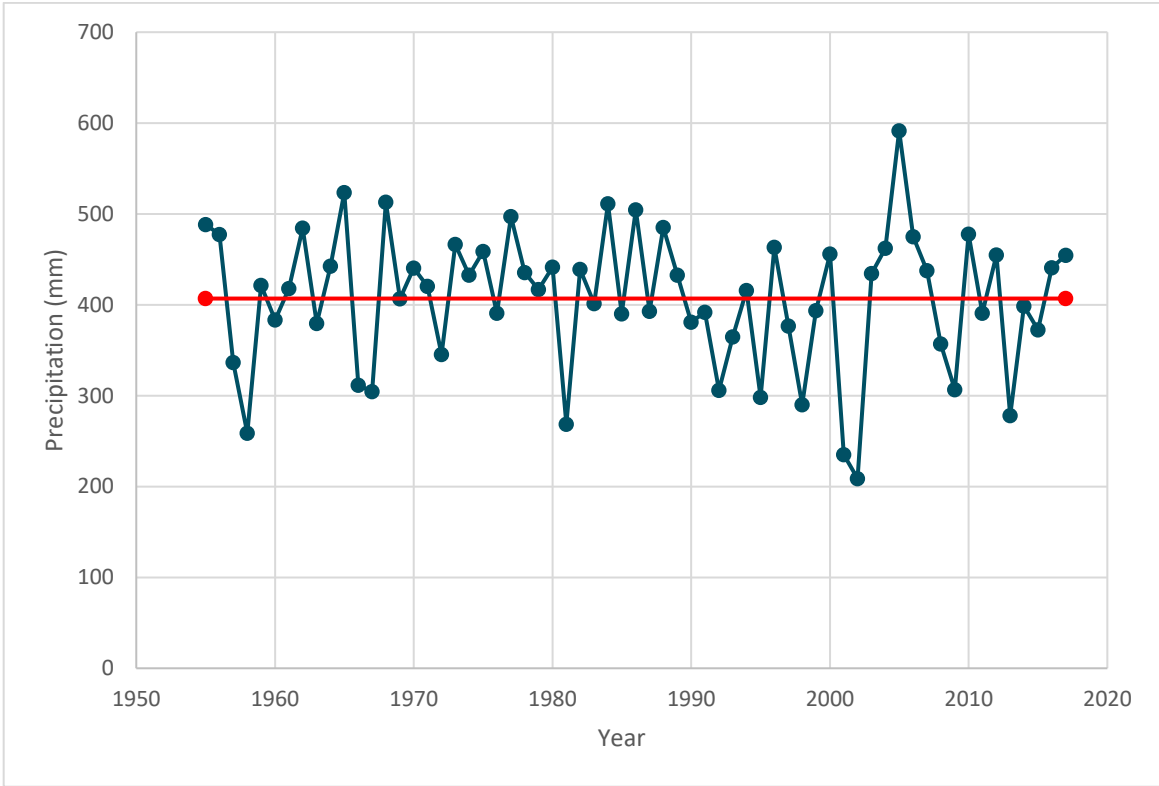


Figure 2. Historical precipitation data for Township Road 50, Range Road 02 from Alberta Climate Information Service (ACIS). Red line indicates average precipitation (406.87 mm) from 1955 – 2017.

Table 2. Historical aerial photograph assessment and wetland delineation for Wetland 1. Centre point of wetland feature 12U 555677E 5905769N. Legal land description: SW 12-50-2 W4M.

Wetland ID	Photo Date (MM/DD/YYYY)	Photo ID (Roll AS# - Photo#)	Scale	Season*	AWCS Wetland Classification	Precipitation (year)**	Open Water Visible or Consistent Wetland Vegetation Signature***	Assessment of Permanence****	Photo Notes
Wetland 1	09/13/1949	AS139 – Photo 184	1:40,000	Sum	S-(II/III)	Unknown	DV	Y	Surrounding area more heavily treed than recent years. Wetland margins defined by visible changes in tree density. Areas to the and east are cultivated. Apparent rural development north of the delineated wetland feature. No standing water observed.
	07/07/1966	AS0919 – Photo 148	1:31,680	Sum	M(G)(III)	D	DV	Y	Woody vegetation and/or trees cleared since 1949 creating characteristic marsh-like vegetation. Increased road development surrounding the proposed project area.
	10/02/1971	AS1308 – Photo 35	1:24,000	F	M(G)(II/III)	N	W	Y	Some woody vegetation re-growth. Area with more moisture than surrounding upland visible. A residential development was removed. . Trail / dirt road running north-south and bisecting the delineated wetland feature.
	09/22/1978	AS2953 – Photo 84	1:20,000	Sum	M(G)(III)	W	W	Y	Two developments now present north of the delineated wetland feature.
	07/03/1981	AS2346 – Photo 100	1:25,000	Sum	M(G)(II)	D	DV	Y	Some woody vegetation / trees cleared along the north margin of the wetland feature. Some additional development to the properties immediately north of the wetland. Increase in road / trail development to the southeast.
	06/10/1991	AS4161 – Photo 249	1:30,000	S	M(G)(III/IV)	N	W	Y	Increased channelization of the wetland feature. Lagoons appear to the south of the proposed project.
	08/31/1995	AS4676 – Photo 251	1:30,000	Sum	M(G)(III)	D	W	Y	Reduced woody vegetation along the channelized region of the wetland feature.
	05/30/2000	AS5105 – Photo 46	1:20,000	S	M(G)(III)	W	W	Y	Wetland increased in size and expanded west with reduced woody vegetation likely as a result of inundation.
	05/31/2007	AS5404B – Photo 140	1:20,000	S	W(IV)	W	W	Y	Open water portion becomes visible immediately south of the property. Increased road development to the north of the site.
	--/--/2016	Esri Basemap Imagery	-	-	S and/or W(IV/V)	W	W	Y	The wetland feature has increased in size, since 2007 and has expanded south, towards the lagoons and beyond the proposed project area. There is more standing and open water present than in previous years. There is evidence of some disturbance (i.e. infilling) occurring within the boundaries of the wetland in the southeast corner of the property.  Standing and open water portions visible in addition to surficial hydrological connection to surrounding wetlands and waterbodies.

\* S = Spring (April – June); Sum = Mid – Late Summer (June – September); F = Fall (September – November): Seasonality based on aerial photo capture date

\*\* D = Dryer; N = Normal; W = Wetter

\*\*\* W = Water present/inundated; D = Dry; DV = Dry, vegetated (consistent with wetland class); DVI = Dry, vegetated (indistinguishable from surrounding uplands)

\*\*\*\* Y = Yes (Reasonably Permanent, as Sec 3 Public Lands Act body of water); N = No (Not Permanent, but wetland regulated under Water Act)

## 3. Biophysical Desktop Review

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### 3.1. Alberta Conservation Information Management System (ACIMS)

The Alberta Conservation Information Management System (ACIMS) data centre provides biodiversity information on Alberta's vegetation species, as well as natural ecological vegetation communities and sites. McElhanney completed a search of the ACIMS database on June 8, 2018 and found no elemental occurrences to exist for the proposed project (ACIMS 2015c). The results of the search can be found in Appendix A.

### 3.2. Fish and Wildlife Management Information System (FWMIS)

The Fish and Wildlife Management Information System (FWMIS) database is provided by Government of Alberta's Fisheries and Wildlife. FWMIS provides a central repository for which government, industry and the public can store and access reliable fish and wildlife data. McElhanney requested the FWMIS data available for SW 12-50-2 W4M, the results of which are summarized in Figure 3 for the site. The provincial and federal status of each species within approximately 5 km of the site are summarized in Table 3.

All species summarized in Table 3 were found to be Secure (Alberta Wildlife Status Reference) and/or Not at Risk (Committee on the Status of Endangered Wildlife in Canada [COSEWIC] and Species at Risk Act [SARA]), with the exception of the horned grebe (*Podiceps auratus*).

Horned grebe is listed as "Sensitive" in Alberta (AEP 2011), and "Special Concern" under SARA and COSEWIC (Table 3). The decline in horned grebe populations have been linked to loss of suitable wetland habitat (AEP 2011). Horned grebes have a recommended setback of 500 m from their nesting sites (i.e. measured from the outer margin of the wetland habitat) during "high" levels of disturbance, and 200 m during "low" levels of disturbance. The nesting period for horned grebes is generally from April 15<sup>th</sup> – July 31<sup>st</sup>. The historical occurrence for horned grebe is approximately 4.45 km from the proposed project. However, Wetland 1 is located within 100 m of the proposed project and may provide suitable habitat for horned grebe.

Previous surveys for fish species completed in waterbodies adjacent to the property have reported "no fish caught" (Appendix D).

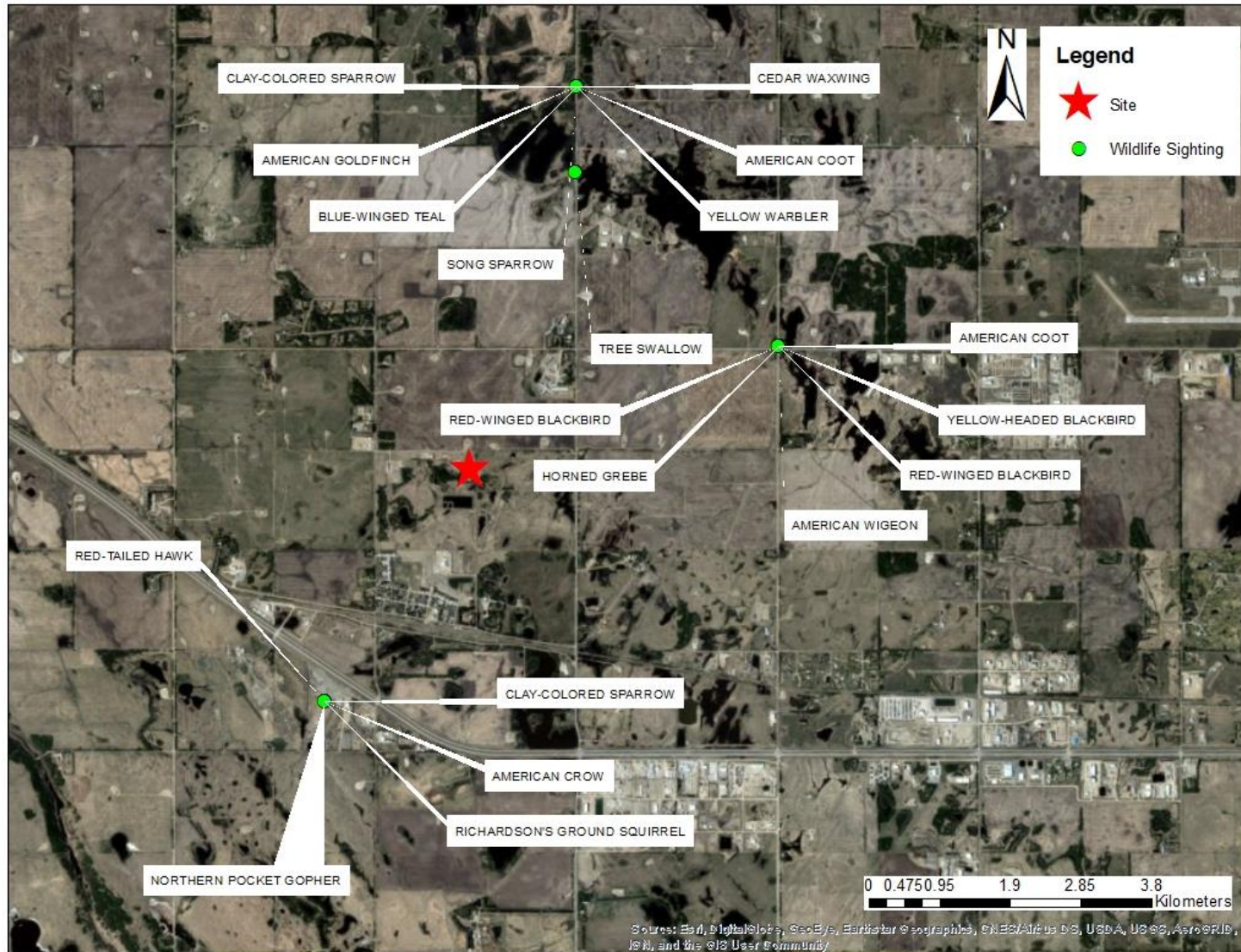


Figure 3. FWMIS wildlife sightings documented closest to the site (within approximately 5 kms).

Table 3. Provincial and Federal status of each species documented to occur within approximately 5 km of the site.

Common Name	Scientific Name	Alberta Wild Species Status <sup>1</sup>	COSEWIC Status <sup>2</sup>	SARA Status <sup>3</sup>
<b>Birds</b>				
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Secure	-	-
American Wigeon	<i>Anas americana</i>	Secure	-	-
Blue-winged Teal	<i>Anas discors</i>	Secure	-	-
Cedar Waxwing	<i>Bombycilla cedrorum</i>	Secure	-	-
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Secure	Not at Risk	-
Yellow Warbler	<i>Dendroica petechia</i>	Secure	-	-
American Coot	<i>Fulica americana</i>	Secure	Not at Risk	-
Song Sparrow	<i>Melospiza melodia</i>	Secure	-	-
Horned Grebe	<i>Podiceps auritus</i>	Sensitive	Special Concern	Special Concern
American Goldfinch	<i>Spinus tristis</i>	Secure	-	-
Clay-colored Sparrow	<i>Spizella pallida</i>	Secure	-	-
Tree Swallow	<i>Tachycineta bicolor</i>	Secure	-	-
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	Secure	-	-
<b>Mammals</b>				
Richardson's Ground Squirrel	<i>Spermophilus richardsonii</i>	Secure	-	-
Northern Pocket Gopher	<i>Thomomys talpoides</i>	Secure	-	-

1. AEP 2011  
 2. COSEWIC 2016  
 3. GoC 2002

## 4. Regulatory Requirements

The desktop assessment is limited in that some variables of the proposed project area, would require further study and field confirmation by qualified professionals. This may include the presence of fish and/or fish habitat, wetland classification, presence/absence of wildlife, and presence/absence of weed species. Table 4 summarizes the specific regulatory frameworks and permits required that may apply to further development the property.

*Table 4. Potential regulatory requirements that may apply to the property for further development to occur.*

Regulatory Framework / Permits	Description
<b>Provincial Jurisdiction</b>	
Water Act (GoA 2000a)	<p>All activities impacting wetlands are regulated under the Water Act. In accordance with the Water Act, no wetlands may be drained or altered without first receiving authorization (i.e. Water Act approval) to do so from the province.</p> <p>Under the authority of the Water Act, wetlands must be identified, delineated and assessed according Wetland Policy and its Directives. A Water Act application for activities within a wetland requires a Wetland Assessment and Impact Report (WAIR). In addition to the above information, a WAIR must include the required in lieu fee replacement value.</p> <p>Future activities within Wetland 1 require Water Act and Wetland Policy consideration. However, it is unclear from the desktop assessment if fish are present in Wetland 1. The historical aerial photograph review indicates that there may be potential for fish habitat and field confirmation by a Qualified Aquatic Environmental Specialist is recommended. A QAES must obtain a Fish Research License (FRL) from the appropriate area office of the Fisheries and Wildlife Management Division, Alberta Environment, prior to collecting fish data that may be needed in conducting field assessments. If fish are found within Wetland 1, a Water Act approval may stipulate fish mitigation measures. Fish also fall under the jurisdiction of the Federal Fisheries Act – see below for more information on Federal regulations.</p>
Public Lands Act (GoA 2000b)	<p>Applies to all permanent or reasonably permanent wetlands (e.g., permanence of IV or V), and gives the Crown the right to claim the bed and shore of the waterbody.</p> <p>Any works being installed or taking place within Public Land may require authorization (i.e. disposition).</p>



	<p>Wetland 1 may be Crown claimable, prior to any Water Act submission, a determination of Crown ownership will be required from the Water Boundary Group under the Public Lands Act.</p>
<p>Wildlife Act (GoA 2000c)</p>	<p>Influences and controls human activities that may have adverse effects on wildlife or wildlife habitat on both Crown and privately-owned land. Unless authorized, it is an offence under the Wildlife Act to carry out any activity on either public or private land that could harm a nest or den of prescribed wildlife. Prescribed wildlife is defined as endangered animals, migratory game birds, migratory insectivorous birds and migratory nongame birds as defined in the federal Migratory Birds Convention Act (see below for Federal regulations), as well as the dens of snakes and bats.</p> <p>The proposed project provides upland and wetland habitat. Any development activity that occurs during regular breeding and denning/nesting season requires a wildlife sweep (e.g., April 1 – August 30). It should be noted that some wildlife may be actively breeding/nesting/denning beyond that window and a qualified wildlife biologist should determine if sweeps are required.</p> <p>Additionally, there is potential for horned grebe within Wetland 1. It is recommended that a horned grebe survey occur in Wetland 1 prior to any development on the proposed project area as a setback of 500 m may be applied from the nest site (e.g., waterbody), which may preclude some development activities.<sup>1</sup></p>
<p>Weed Control Act (GoA 2011b)</p>	<p>Protects stakeholders from economic and invasive losses caused by weeds. Some weed species exhibit extreme growth habits, which can have consequences for line of sight at intersections, wildlife control along roadways, culvert and outfall maintenance, agricultural production, livestock forage quality, and many others. The Act prescribes activities that must be undertaken should a noxious or restricted weed be encountered. Each Municipality is responsible for enforcing the Weed Control Act.</p> <p>It is recommended that weed control occur during any development that may result in bare soil. It should be noted that spraying may not appropriate depending on the proximity to Wetland 1.</p>
<p>Municipal Government Act (GoA 2000b)</p>	<p>Under the Land Use Bylaw No. 13-14 (July 2016) and as requested by the Vermilion River Development Authority, a certified biophysical assessment stamped and signed by a relevant qualified Professional registered in the province of Alberta is required for the application to subdivide the property.</p> <p>The Municipal Government Act allows the Vermilion River Development Authority to require that an applicant enters into an</p>

	agreement with the County and to ensure compliance with the conditions of the agreement.
<b>Federal Jurisdiction</b>	
Fisheries Act (Canada 1985)	<p>Protects fish and fish habitat and is enforced by the Department of Fisheries and Oceans. This Act prohibits the deposit of deleterious substances into waters that contain fish, unless previously authorized.</p> <p>All projects occurring in or near waterbody that is fish bearing or connected to a fish bearing waterbody should complete a "Self-Assessment" to determine if DFO review or any additional authorizations that may be required.</p> <p>It is unclear from the desktop assessment if fish are present in Wetland 1. The historical aerial photograph review indicated that there may be potential for fish habitat and field confirmation by a QAES is recommended (see Water Act above)</p>
Species at Risk Act (SARA, GoC 2002)	<p>Intended to protect species at risk in Canada. Within the Act, COSEWIC is an independent body of experts responsible for identifying and assessing wildlife species considered to be at risk. Wildlife species that have been designated by COSEWIC may then qualify for legal protection and recovery under SARA.</p> <p>It is an offence to:</p> <ul style="list-style-type: none"> <li>• Kill, harm, harass, capture, or take an individual of a species listed in Schedule 1 of SARA.</li> <li>• Possess, collect, buy, sell, or trade an individual of a species listed in Schedule 1 of SARA,</li> <li>• Damage or destroy the residence of one or more individuals of a species listed in Schedule 1 of SARA.</li> </ul> <p>Horned grebe is a SARA listed species within the vicinity of the proposed project. Additionally, there is potential for horned grebe within Wetland 1. It is recommended that a horned grebe survey occur in Wetland 1 prior to any development on the proposed project area as a setback of 500 m may be applied from the nest site (e.g., waterbody), which may preclude some development activities.<sup>1</sup></p>
Migratory Birds Convention Act (GoC 1994)	<p>Protects migratory bird species, their nests and habitat. Prior to the commencement of any construction and/or clearing activities, bird and nest sweeps must be completed by a qualified professional.</p> <p>The general nesting period for the proposed project is from late April to late August. However, nesting may occur before or after this window</p>

depending on season and species. It is recommended that nest sweeps occur prior to disturbance to or adjacent to any potential nesting habitat.

Notes:

1. Although horned grebe is the only historically identified species of management concern in the vicinity of the proposed project, it is possible that additional species of concern may occur. It is recommended the during horned grebe surveys a qualified wildlife biologist also survey for other potential other rare species, particularly within Wetland 1.

## 5. Conclusions & Recommendations

The property for proposed subdivision is located at SW 12-50-2 W4M, in the Central Parkland Natural Subregion of the Monnery Subwatershed. A historical aerial photograph assessment of the property showed that development of the area has steadily increased both on the property and on the surrounding landscape since as early as 1949. In addition to development, Wetland 1 was observed to increase both in size and in permanence over the course of the assessed aerial photographs from 1949 – 2016.

Disturbances to Wetland 1 have been noted to have occurred in recent years. These activities occurred without approval and the landowner is working with Alberta Environment and Parks is underway. Should future development occur within the wetland, a Water Act application pursuant to the Wetland Policy and its Direction is likely required.

The desktop assessment could not confirm the presence and/or absence of suitable fish habitat. Due to the increase in wetland permanence (i.e. more water), the appearance of channelized flow through the property, and the surface connection to surrounding waterbodies, it is possible that fish species may be present. Therefore, should work occur within the wetland, it is recommended that a presence/absence assessment be completed by a qualified professional to determine if further regulatory frameworks may apply (e.g., Fisheries Act).

One sensitive waterfowl species was documented to occur within 5 km of the site, the horned grebe. Horned grebe is listed as “Sensitive” in Alberta, and “Special Concern” under SARA and COSEWIC. Additionally, there is potential for horned grebe within Wetland 1. It is recommended that a horned grebe survey occur in Wetland 1 prior to any development on the proposed project area as a setback of 500 m from the nest site (e.g., waterbody) may be applied, which may preclude some development activities. This setback would only apply during the nesting period of the horned grebe (April 15<sup>th</sup> – July 31<sup>st</sup>). The migratory bird nesting window ranges from April 1<sup>st</sup> – August 30<sup>th</sup>. Although horned grebe is the only historically identified species of management concern in the vicinity of the proposed project, it is possible that additional species of concern may occur. It is recommended during horned grebe surveys a qualified wildlife biologist also survey for other potential other rare species, particularly within Wetland 1.

If development activities are scheduled to occur within the nesting periods identified above, it is recommended that a wildlife sweep be completed prior to activities to ensure there are no sensitive species of concern within the project area. If activities are scheduled to occur outside the nesting periods, then a wildlife sweep would not be required.

## 6. Closing

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This report has been prepared solely for Mr. Rod Rau by McElhanney Consulting Services Ltd. There are no beneficiaries of this report, and no other person or entity is entitled to rely upon this report for any purpose whatsoever. It is intended only for the Mr. Rod Rau and for the purposes and within the limitations stated in the report. McElhanney makes no guarantees and disclaims all liability to any third party with respect to any information or opinions set forth herein.

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## 7. References

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- Alberta Agriculture and Forestry (AAF). 2016. AgroClimatic Information Services (ACIS). Accessed online at: <http://agriculture.alberta.ca/acis/about.jsp>
- Alberta Agriculture and Forestry (AAF). 2018. Alberta Soil Information Viewer. Accessed online at: <https://soil.agric.gov.ab.ca/agrasidviewer/>
- Alberta Environment and Parks (AEP). 2011. Wild Species Status Search. Accessed online at: <http://AEP.alberta.ca/fish-wildlife/species-at-risk/wild-species-status-search.aspx>
- Alberta Environment and Parks (AEP). 2013. Alberta Wetland Policy. Accessed online at: <http://AEP.alberta.ca/water/programs-and-services/wetlands/documents/AlbertaWetlandPolicy-Sep2013.pdf>
- Alberta Environment and Parks (AEP). 2015a. Alberta Wetland Identification and Delineation Directive. Accessed online at: <https://open.alberta.ca/dataset/b2a69660-7f44-4c8c-9499-0da23946dafa/resource/3917b05d-7cf8-4d08-b3ae-74a15af625ce/download/2015-alberta-wetland-identification-delineation-directive-june-2015.pdf>
- Alberta Environment and Parks (AEP). 2015b. Alberta Wetland Classification System. Accessed online at: <https://open.alberta.ca/dataset/92fbfbf5-62e1-49c7-aa13-8970a099f97d/resource/1e4372ca-b99c-4990-b4f5-dbac23424e3a/download/2015-Alberta-Wetland-Classification-System-June-01-2015.pdf>
- Alberta Environment and Parks (AEP). 2015c. Alberta Conservation Information Management System (ACMIS) Database Search. Accessed online at: <http://www.albertaparks.ca/acims-data>
- Alberta Environment and Parks (AEP). 2016a. Alberta Guide for Assessing Permanence of Wetland Basins. Accessed online at: <http://aep.alberta.ca/forms-maps-services/directives/documents/AssessingPermanenceWetlandBasins-Feb2016A.pdf>
- Alberta Environment and Parks (AEP). 2016b. Fish and Wildlife Internet Mapping Tool (FWMIS). Accessed online at: [https://maps.srd.alberta.ca/FWIMT\\_Pub/default.aspx?Viewer=FWIMT\\_Pub](https://maps.srd.alberta.ca/FWIMT_Pub/default.aspx?Viewer=FWIMT_Pub)
- Alberta Environment and Parks (AEP). 2017a. Alberta Wetland Assessment and Impact Report Directive. Accessed online at: <http://AEP.alberta.ca/water/programs-and-services/wetlands/documents/WetlandAssessmentImpactDirective-Jun2015.pdf>
- Aerial Photographic Record System. 2001. Alberta Environment and Parks. Accessed online at: <https://securexnet.env.gov.ab.ca/aprs/index.html>
- County of Vermilion River. 2016. Land Use Bylaw No 13-14 (Office Consolidation) July 2016. Accessed online at: [2016-09-27\\_VermilionRiver\\_LUB\\_BiophysicalAssessment.pdf](2016-09-27_VermilionRiver_LUB_BiophysicalAssessment.pdf)
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2016. Wildlife Species Search: Database of wildlife species assessed by COSEWIC. Accessed online at: [http://www.registrelep-sararegistry.gc.ca/sar/index/default\\_e.cfm](http://www.registrelep-sararegistry.gc.ca/sar/index/default_e.cfm)
- Esri Inc. 1999-2014. ArcGIS 10.3 for Desktop. Version 10.3.0.4322. Licence type: Advanced. Copyright © 1999-2014 Esri Inc. All Rights Reserved.

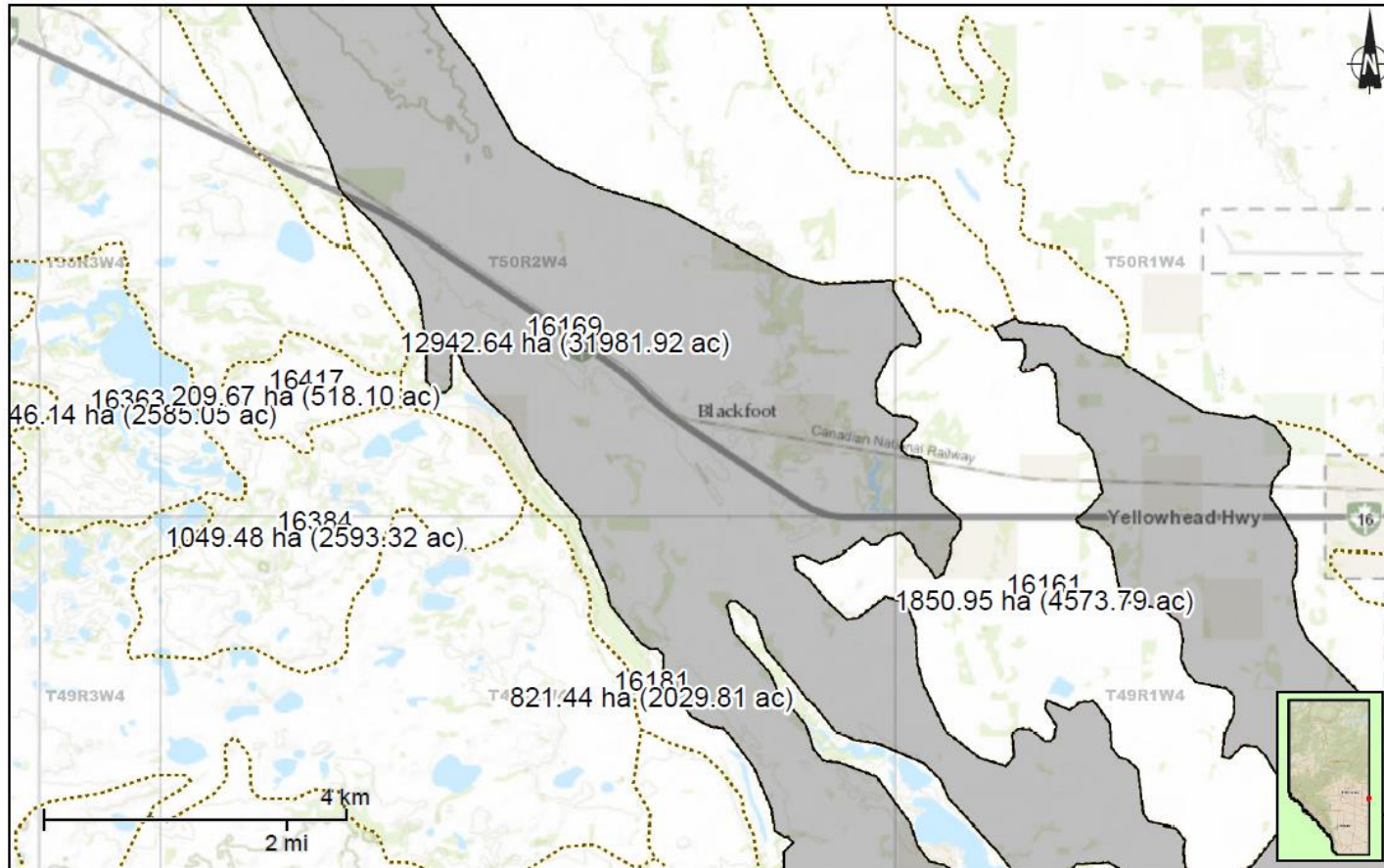
- Government of Alberta (GoA). 2000a. *Water Act* [Ch W-3]. Accessed online at: <http://www.qp.alberta.ca/documents/Acts/w03.pdf>
- Government of Alberta (GoA). 2000b. *Public Lands Act* [Ch P-40]. Accessed online at: <http://www.qp.alberta.ca/documents/Acts/P40.pdf>
- Government of Alberta (GoA). 2000c. *Municipal Government Act* [Ch M-26]. Accessed online at: <http://www.qp.alberta.ca/documents/Acts/m26.pdf>
- Government of Alberta (GoA). 2000d. *Wildlife Act* [Ch W-10]. Accessed online at: <http://www.qp.alberta.ca/documents/Acts/W10.pdf>
- Government of Alberta (GoA). 2011b. *Weed Control Act*. Alberta Queens Printer. Accessed online at: [http://www.qp.alberta.ca/1266.cfm?page=W05P1.cfm&leg\\_type=Acts&isbncln=97807797606](http://www.qp.alberta.ca/1266.cfm?page=W05P1.cfm&leg_type=Acts&isbncln=97807797606)
- Government of Canada (Canada). 1985. *Fisheries Act*. Accessed online at: <http://laws-lois.justice.gc.ca/eng/acts/f-14/page-1.html>
- Government of Canada (Canada). 1994. *Migratory Birds Convention Act*. Accessed online at: <http://laws-lois.justice.gc.ca/PDF/M-7.01.pdf>
- Government of Canada (Canada). 2002. *Species at Risk Act* (SARA). Accessed online at: <http://laws-lois.justice.gc.ca/PDF/S-15.3.pdf>
- Natural Regions Committee (NRC). 2006. *Natural Regions and Subregions of Alberta*. Accessed online at: [https://www.albertaparks.ca/media/2942026/nrsrcomplete\\_may\\_06.pdf](https://www.albertaparks.ca/media/2942026/nrsrcomplete_may_06.pdf)
- North Saskatchewan Watershed Alliance (NSWA). 2012. Accessed online at: <http://www.nswa.ab.ca/>

## **Appendix A – Agricultural Regions of Alberta Soil Inventory Database (AGRASID)**

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June 8, 2018

Soil Landscape Polygons

Scale 1:72,224  
 1 inch = 1.14 miles  
 1 cm = 722.24 metres  
 Map centre at latitude +53.287°N and longitude -110.190°E

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community  
 Alberta Agriculture and Forestry and Agriculture and Agri-Food Canada  
 Government of Alberta, Alberta Open Government Licence

## **Appendix B – Historical Aerial Photographs**

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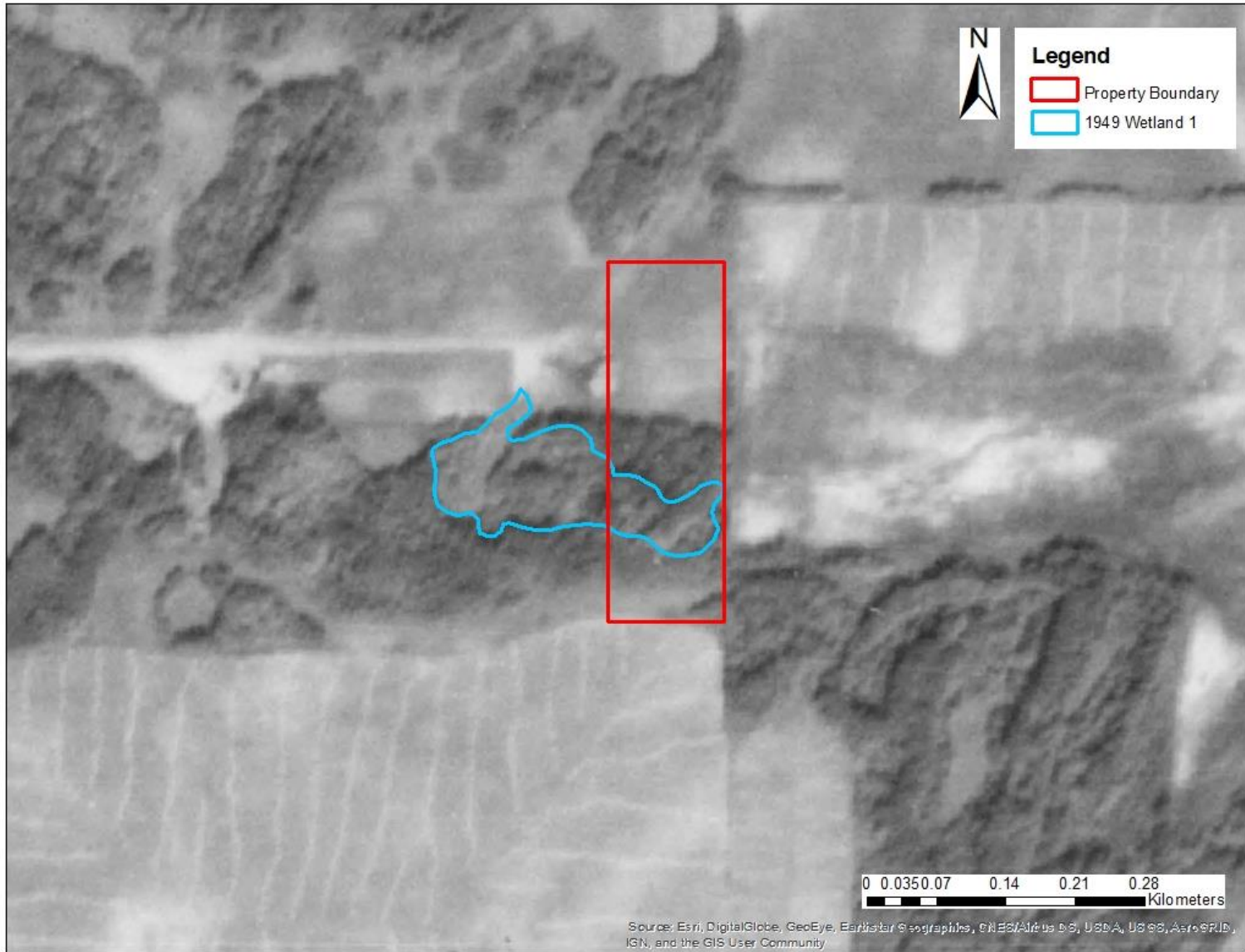


Figure 4. Historical 1949 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).

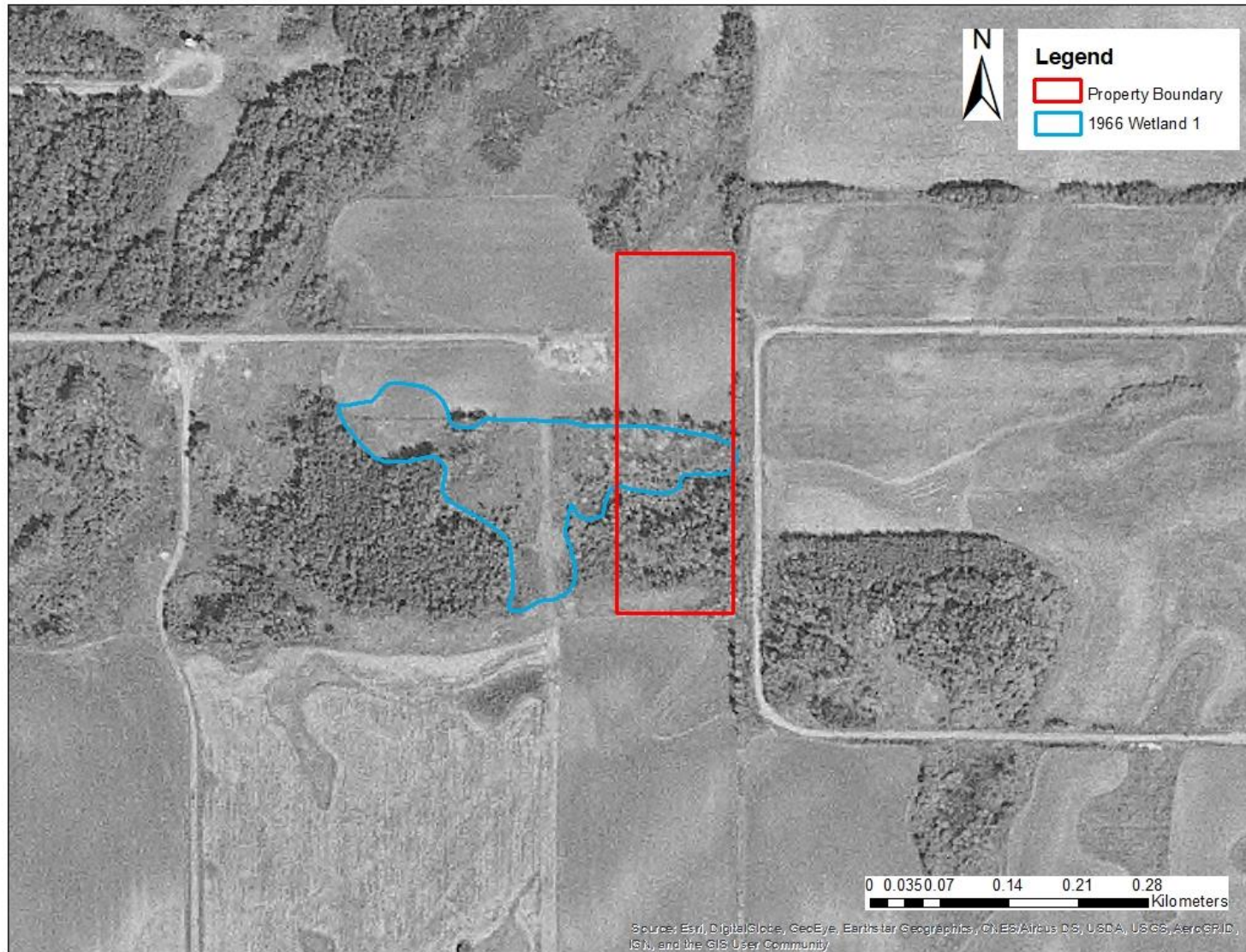


Figure 5. Historical 1966 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).



Figure 6. Historical 1971 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).

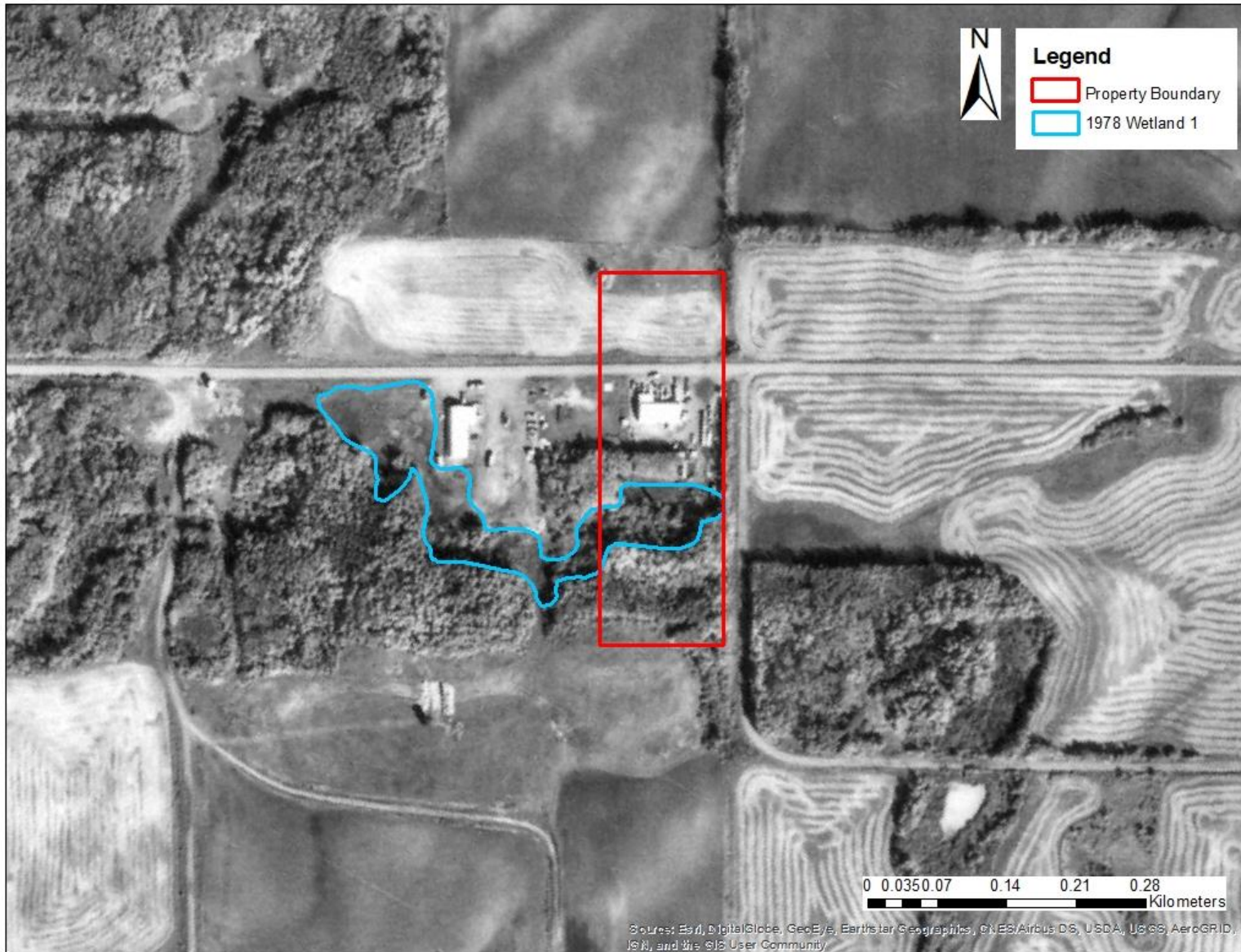


Figure 7. Historical 1978 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).

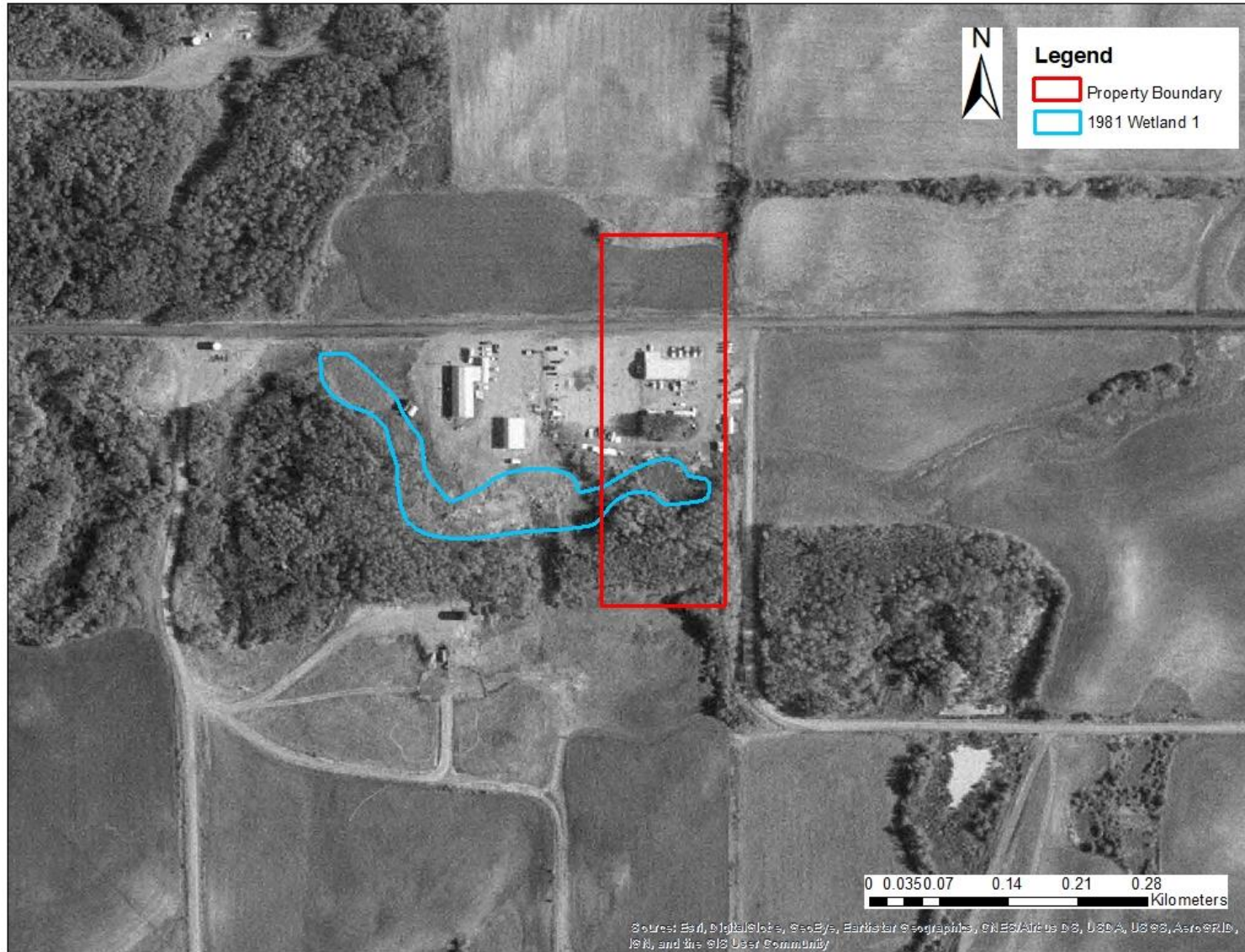


Figure 8. Historical 1981 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).



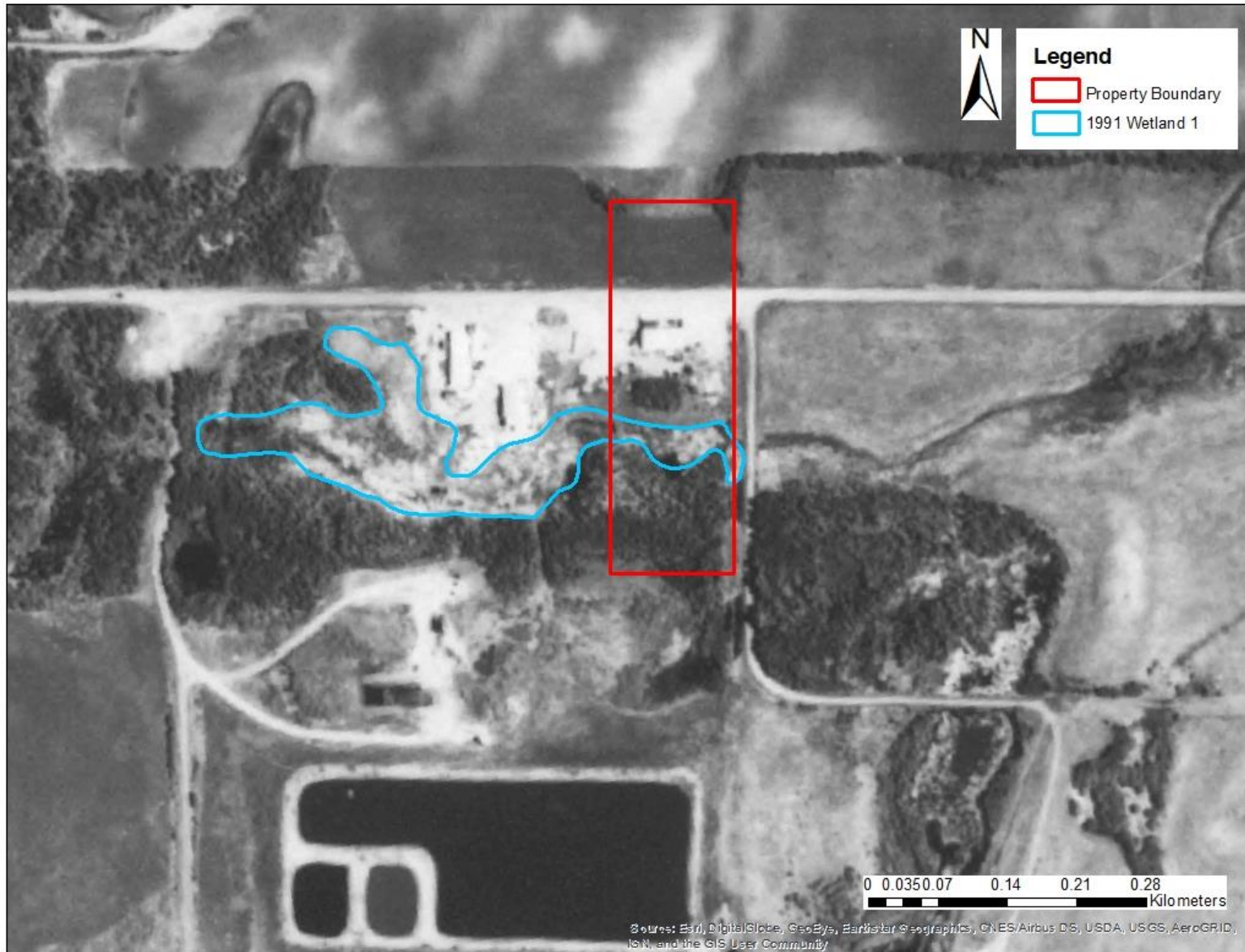


Figure 9. Historical 1991 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).

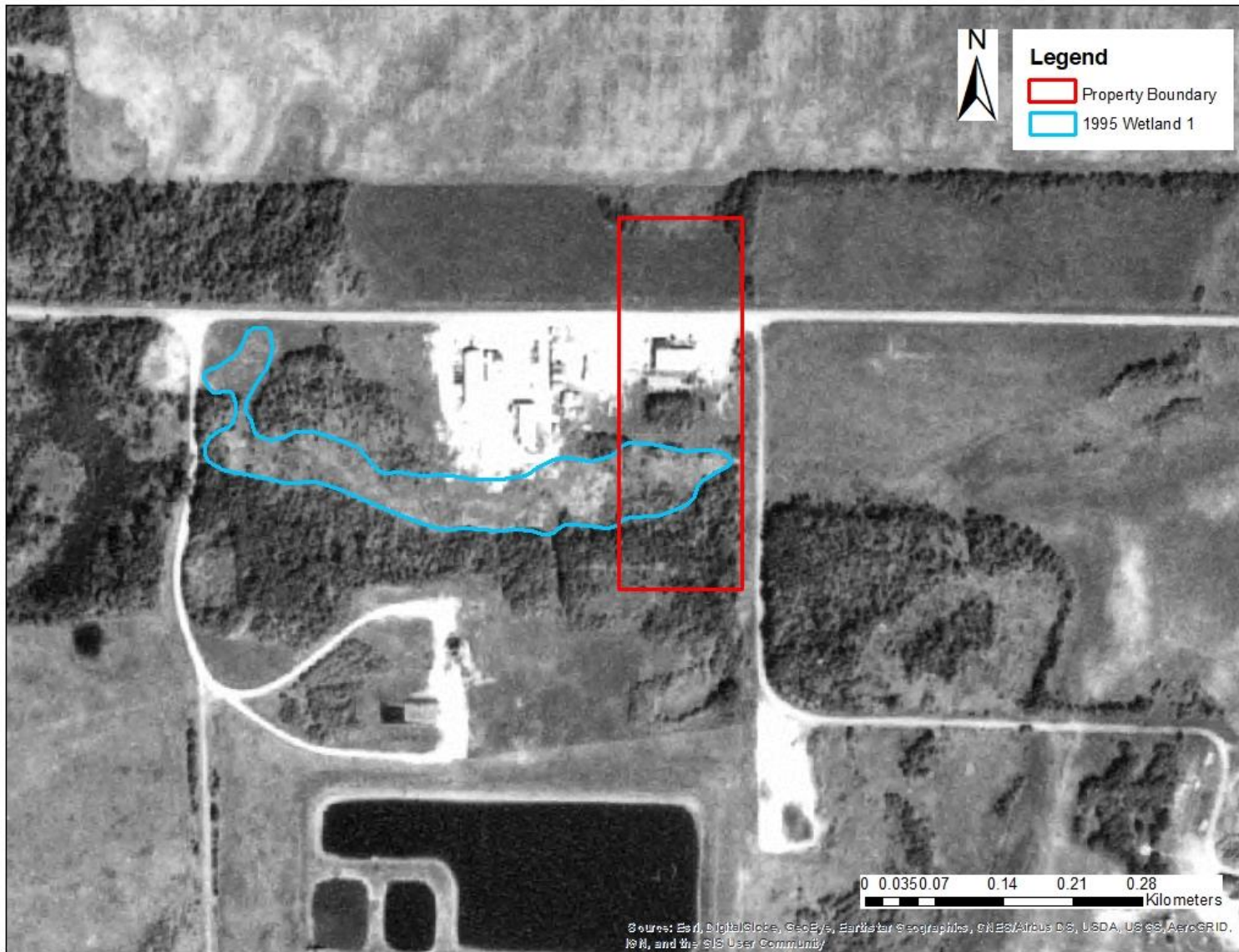


Figure 10. Historical 1995 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).

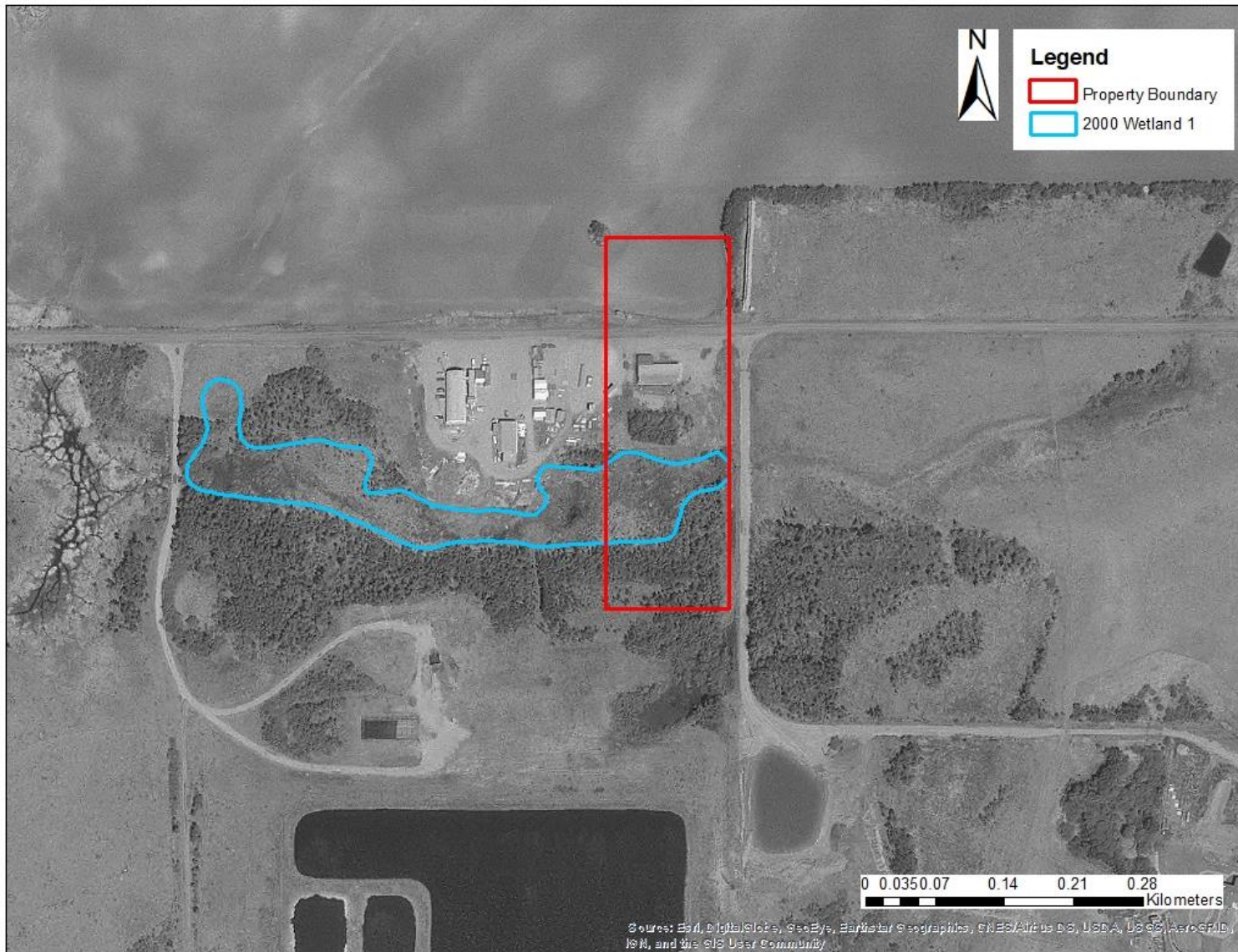


Figure 11. Historical 2000 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue)..



Figure 12. Historical 2007 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).



Figure 13. Historical 2016 aerial photograph of property (red) and delineated boundary of Wetland 1 (blue).

## **Appendix C – Alberta Conservation Information Management System (ACIMS) Database Search Results**

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8/6/2018 Search ACIMS Data Alberta Parks Alberta Conservation Information Management System (ACIMS) Search ACIMS Data

**Date:** 8/6/2018  
**Requestor:** Consultant  
**Reason for Request:** Environmental Assessment  
**SEC:** 12 **TWP:** 050 **RGE:** 02 **MER:** 4



**Non-sensitive EOs: 0 (Data Updated: October 2017)**

M-RR-TTT-SS	EO_ID	ECODE	S_RANK	SNAME	SCOMNAME	LAST_OBS_D
<b>No Non-sensitive EOs Found: Next Steps - <a href="#">See FAQ</a></b>						

**Sensitive EOs: 0 (Data Updated: October 2017)**

M-RR-TTT	EO_ID	ECODE	S_RANK	SNAME	SCOMNAME	LAST_OBS_D
<b>No Sensitive EOs Found: Next Steps - <a href="#">See FAQ</a></b>						

**Protected Areas: 0 (Data Updated: October 2017)**

M-RR-TTT-SS	PROTECTED AREA NAME	TYPE	IUCN
<b>No Protected Areas Found</b>			

**Crown Reservations/Notations: 0 (Data Updated: October 2017)**

M-RR-TTT-SS	NAME	TYPE
<b>No Crown Reservations/Notations Found</b>		



## **Appendix D – Fish and Wildlife Management Information System Data Request Results (FWMIS)**

---

**LEAVE PAGE BLANK**



## Fish and Wildlife Internet Mapping Tool (FWIMT)

(source database: Fish and Wildlife Management Information System (FWMIS))

### Species Summary Report

Report Created: 8-Jun-2018 08:17

#### Species present within the current extent :

##### Fish Inventory

No Species Found in Search Extent

##### Wildlife Inventory

No Species Found in Search Extent

##### Stocked Inventory

No Species Found in Search Extent

#### Buffer Extent

##### Centroid (X,Y):

821955, 5914010

##### Projection

10-TM AEP Forest

##### Centroid: (Qtr Sec Twp Rng Mer)

SW 12 50 2 4

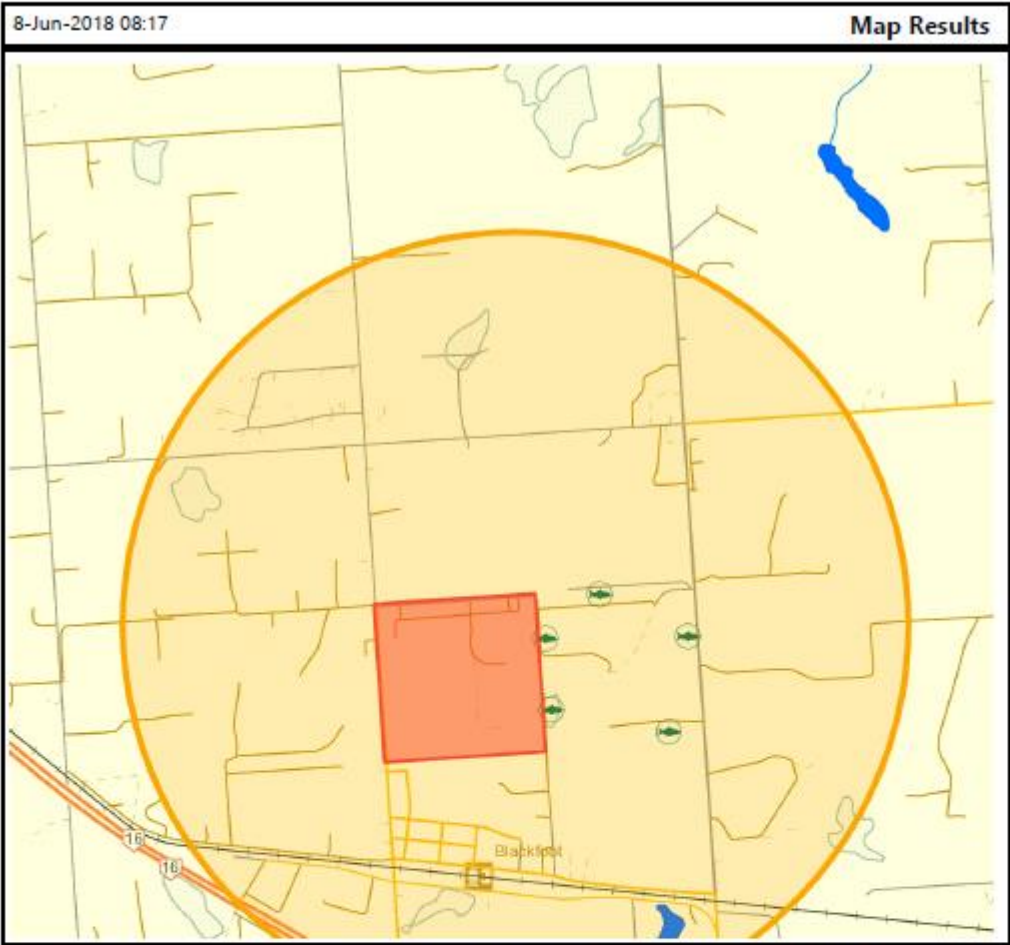
##### Radius or Dimensions

2 kilometers

#### Contact Information

For contact information, please visit:

<http://aep.alberta.ca/about-us/contact-us/fsheries-wildlife-management-area-contacts.aspx>



Display may contain: Base Map Data provided by the Government of Alberta under the Alberta Open Government Licence. Cadastral and Dispositions Data provided by Alberta Data Partnerships. ©GeoEye, all rights reserved. Information as depicted is subject to change, therefore the Government of Alberta assumes no responsibility for discrepancies at time of use.  
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## **APPENDIX B: ABANDONED WELL DECLARATION**

**PLEASE NOTE: The County of Vermilion River CANNOT OPEN NEW APPLICATIONS until all relevant information regarding abandoned oil and gas wells has been provided by the landowner/agent.**

**PART A: NO WELLS on Property (if you have abandoned wells, please complete Part B)**

Statement regarding NO wells on the subject property:

I, MAIRE M'NAMEE, registered owner (or their agent) of Lot 4, Plan 0024545, have  
(please print) (Legal land description)

consulted the Alberta Energy Regulator (AER) Abandoned Well Map Viewer, and verified that **THERE ARE NO ABANDONED** wells located on the property subject to this application.

**A COPY OF THE AER MAP SHOWING THE SUBJECT PROPERTY IS ATTACHED.**

Applicant Signature [Signature]  
Print Name MAIRE M'NAMEE  
Date 18 - Dec - 2018

Registered Owner Signature [Signature]  
Print Name ROD RAN  
Date Dec 19/18

Registered Owner Signature [Signature]  
Print Name GAIL N RAN  
Date Dec 19/18

**PART B: Statement regarding ABANDONED wells on the subject property:**

I \_\_\_\_\_, registered owner (or their agent) of \_\_\_\_\_, have  
(Please print) (Legal land description)  
consulted the Alberta Energy Regulator (AER) Abandoned Well Map Viewer, and verified that **ABANDONED WELLS ARE LOCATED** on the property subject to this application. I have contacted the responsible licensee(s), and the exact well location(s) has/have been confirmed.

**\*\*INFORMATION SHEET IS ATTACHED SHOWING EXACT LOCATIONS\*\***

Additional information provided by the licensee(s) requiring a change in the setback area is attached:

Yes     Not applicable

In the event that construction activity occurs within the setback area of the abandoned well(s) as a result of development on the subject property, the abandoned well(s) will be temporarily marked on-site with identification to prevent contact during construction.

**A copy(s) of the AER map showing the subject property and a list of identifying and locating the abandoned well(s) and on the subject property and a list are attached.**

Applicant Signature \_\_\_\_\_  
Print Name \_\_\_\_\_  
Date \_\_\_\_\_

Registered Owner Signature \_\_\_\_\_  
Print Name \_\_\_\_\_  
Date \_\_\_\_\_

Registered Owner Signature \_\_\_\_\_  
Print Name \_\_\_\_\_  
Date \_\_\_\_\_

The personal information requested on this form is being collected by the County of Vermilion River for purposes provided under Section 33(c) of the Freedom of Information and Protection of Privacy (FOIP) Act and is protected by the FOIP Act. If you have any questions about this collection, contact the County Administrator at (780)846-2244 or (780)853-5492



## Abandoned Well Map

Base Data provided by: Government of Alberta

Author XXX

Printing Date: 12/18/2018

Date Date (if applicable)

### Legend

- ◇ Abandoned Well (Large Scale)
- Revised Well Location (Large Scale)
- Revised Location Pointer
- Road Paved
- Road Gravel
- Road Other
  - Unimproved Road
  - - Winter Road; Truck Trail
- Rail Line
  - + Rail Line
  - + Abandoned Rail Line

The Alberta Energy Regulator (AER) has not verified and makes no representation or warranty as to the accuracy, completeness, or reliability of any information or data in this document or that it will be suitable for any particular purpose or use. The AER is not responsible for any inaccuracies, errors or omissions in the information or data and is not liable for any direct or indirect losses arising out of any use of this information. For additional information about the limitations and restrictions applicable to this document, please refer to the AER Copyright & Disclaimer webpage: <http://www.aer.ca/copyright-disclaimer>.

Scale: 2,256.99

0.03 Kilometers 0



Projection and Datum:

WGS84 Web Mercator Auxiliary Sphere





### Abandoned Well Map

Base Data provided by: Government of Alberta

Author: XXX

Printing Date: 12/18/2018

Date Date (if applicable)

#### Legend

- ◆ Abandoned Well (Large Scale)
- Revised Well Location (Large Scale)
- Revised Location Pointer
- Road Paved
- Road Gravel
- Road Other
  - Unimproved Road
  - - Winter Road; Truck Trail
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  - + Abandoned Rail Line

The Alberta Energy Regulator (AER) has not verified and makes no representation or warranty as to the accuracy, completeness, or reliability of any information or data in this document or that it will be suitable for any particular purpose or use. The AER is not responsible for any inaccuracies, errors or omissions in the information or data and is not liable for any direct or indirect losses arising out of any use of this information. For additional information about the limitations and restrictions applicable to this document, please refer to the AER Copyright & Disclaimer webpage: <http://www.aer.ca/copyright-disclaimer>.

Scale: 4,513.99

0.07 Kilometers 0

Projection and Datum:

WGS84 Web Mercator Auxiliary Sphere





## APPENDIX C: DESKTOP HYDROLOGICAL STUDY

Our Project File: 2531-4070-100  
Task Number 2009

August 7, 2018

County of Vermilion River  
4912 - 50 Ave  
Box 69  
Kitscoty, AB T0B 2P0

Attention: Roger Garnett  
Director Planning & Development Authority

**Re: County of Vermilion River Subdivision Application – Groundwater Supply Evaluation SW¼-12-50-2 W4M.**

McElhanney Consulting Services Ltd. (McElhanney) has reviewed the available information in the Alberta Environment and Protection Water Well Database and Alberta Research Council to assess the potential for domestic water supply at SW¼-12-50-2 W4M. My comments are as follows:

**Groundwater Supply Evaluation, Project No. 2531-4070-100**

The County of Vermilion maintains that each parcel within a subdivision must have the ability to provide potable water to meet the demand of the occupant. In addition, the amount requested for diversion must not adversely affect other existing households, registered licensees or traditional agricultural users.

McElhanney reviewed information available within the public domain to assess the potential for supplying groundwater to the proposed development. Surficial sediments in this area consist of Fluted Moraine which are reported as glacially streamlined sediments, mainly till. Terrain varies from alternating furrows and ridges to elongated smoothed hills which parallel the inferred local ice-flow direction and includes flutes, drumlins and drumlinoids (Alberta Geological Survey). Although groundwater is available in surficial glacial drifts, the supply of water capable for domestic use is generally isolated to pockets of water-bearing sands, and the potential exists for these sands to be pumped dry.

Bedrock geology is reported as Lea Park Formation which consists of medium to dark grey, blocky weathering, noncalcareous mudstone with minor siltstone, rare, thin sandstone beds and bentonitic units; marine offshore (Alberta Geological Survey). The formations in this area were identified to consist of sand and sandstone units with hydraulic conductivity capable of water supply. Water well pump test results from sands indicate yields range between 32 m<sup>3</sup>/day and 1,200 m<sup>3</sup>/day with a safe yield in the range of 600 m<sup>3</sup>/day. Lower yields can be expected from siltstone and sandstone but these formations will certainly be capable of supplying water for domestic use.

Review of the AEP Water Well Information Database verified that water well density in the immediate area is low; there were five water wells located within the SW¼-12-50-2 W4M, however, upon further review of the water well drilling reports, only two wells were identified as being completed for use. Both wells were screened in siltstone and primarily sandstone zones between 60 and 73 metres below ground surface. The recommended pumping rates ranges between 7–10 imperial gallons per minute (IGPM) which conservatively translates to 16,425 m<sup>3</sup>/year. This far exceeds the annual groundwater requirement of 1,250 m<sup>3</sup>/year for a household as defined under the Alberta Water Act.

Based on the review of available data and low demand for water in this area, there should be no issue for household water supply on the proposed subdivision located at SW¼-12-50-2 W4M. It is important to note,



however, that groundwater yields cannot be confirmed until a water well is actually drilled and tested. The testing should also confirm whether there is potential for interference with the other wells within the area to ensure that the addition of a new water well will not compromise the existing users.

Should you have any questions or comments regarding this review, please contact the undersigned.

Yours truly,

***MCELHANNEY CONSULTING SERVICES LTD.***

Senior Hydrogeological Review by:

Roger Towsley, P.Ag., P. Geo.  
Senior Hydrogeologist  
APEGA Member No. M77642  
APEGA Permit to Practice No. P6383

D (403) 930 7797 | C (403) 875 2141  
Email: [rtowsley@mcelhanney.com](mailto:rtowsley@mcelhanney.com)

## APPENDIX D: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

---

*Phase I*  
*Environmental Site Assessment*

---

**Building and Property**

**SW-12-050-02 W4**

**Lot 4, Plan 0024545**

**Jim Robert's Property (Blackfoot, AB)**

---

Prepared for:	Motif Concrete Services Ltd. (Rod & Gail)	Phone: (780) 872-0668 Fax: (780) 872-0661
Prepared by:	SDS Environmental Services Ltd.	Phone: (780) 842-6365 Fax: (780) 842-6410

---

**SDS Environmental Services Ltd.**  
1811-17th Avenue Wainwright, Alberta T9W 1L2

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## **Executive Summary**

The subject property is currently owned by Jim Roberts, who used the property for closed storage and parking for the past four years. The lot is partially graveled, with a clay pad area to the north of the building, and a large grass area to the south of the building. There is some surficial staining from hydrocarbons within the graveled portion of the property, however, the staining is very shallow, and not considered to be an environmental concern. The current septic sump is wood-cased, however, there is currently no sewage entering the sump at this time. Should future occupants of the property redevelop washrooms within the interior of the building, it is recommended that the existing septic system be replaced with a modernized system, including a fiberglass holding tank. There are no underground tanks on the property, according to the current landowner and the Petroleum Tank Management Association of Alberta. No hazardous chemicals are stored on site and no incidences of contamination have been reported to the County of Vermilion River No. 24 or the Blackfoot Fire Department with regards to the property in question.

**The property appears to be in environmental compliance and should not require any remedial work for contamination.**

## **Introduction**

Having received instructions, SDS Environmental Services Ltd. has completed a Phase I environmental assessment on the property at Lot 4, Plan 0024545 within the SW-12-050-02 W4, County of Vermilion River No. 24. A visual inspection of the property took place on October 7, 2005. The visual inspection of the property did not suggest a Phase II assessment be required.

**No responsibility is assumed by the inspector for matters of a legal nature pertaining to the property and is not intended to affect the value of the property. It is assumed there are no hidden defects or conditions, which may affect the subject property. Hidden or unreported incidences are not taken into account. The audit does not cover any incident, which may have occurred after the report date, or any changes in operation that may affect the environmental compliance of the operation.**

Information obtained during the completion of this report is assumed to be true. There is no responsibility assumed by SDS Environmental Services Ltd. for the accuracy of information supplied by others.

This report may be used only with the written consent of the author or Motif Concrete Services Ltd.



## Property Description

The property is described as Lot 4, Plan 0024545, located in SW-12-050-02 W4, County of Vermilion River No. 24. The property is located north of Blackfoot, Alberta.

The current owner, Jim Roberts purchased property on June 12, 2001 from Canadian Natural Resources Limited.

The property occupies 2.07 ha, and is 90 m x 230.5 m in size. There is a building on the premises was being used by the current landowner for closed storage and parking. Prior to that, Canadian Natural Resources Limited used the building as a parts shop.

The building is approximately 25 m x 12 m in size. It is believed that the building was constructed in the late 1970's to early 1980's; however, the exact year could not be obtained from public records, and is unknown. The building is serviced with power, and natural gas. The power is supplied by ATCO Power, and managed through Direct Energy. ATCO Gas supplies the natural gas. The current landowner has recently installed radiant heaters and hooked them into the gas line. The water is supplied by a well that is located on Lot 2 within the SW-12-050-02 W4 (west of the subject property). Water is not supplied directly into the building, but to a hydrant on the exterior of the building near the northwest corner. There is no bathroom facility within the building; however, there is a sewer system in place, including a wood-cased septic sump, with a septic pump out area to the southwest of the building near a low drainage draw. The septic system is out-dated, and it is recommended that a modernized system, including a fiberglass septic holding tank, be installed, should future occupants of the building redevelop the bathroom facilities. The building is constructed of wood, with an arch-rib frame and a combination of asphalt shingles and vinyl siding, on the exterior. The interior of the building has fiberboard paneling. It is used for closed storage and parking by the current landowner. There is a concrete floor with a floor drain of approximately 15 m in length, 10 cm in width that is sloped to the west of the building into a small sump area, with an over-flow into the septic system. The floor drain is very dry, and contains mainly soil and debris (nuts, bolts, etc.). The small sump area contains some watery fluids. The building was vacant at the time of the assessment.

There is chain link compound located on the south side of the building, that is approximately 32 m x 22 m in size. The compound was very clean, with the exception of some metal debris along the south side of the compound.

The lot consists of both, grassed and graveled/clay pad areas. The lot is partially fenced, with wooden fence posts in place around the perimeter of the property. The site is very well vegetated, especially south of the building. The landowner indicated that cattle had grazed the portion of the property south of the drainage draw, until he purchased the property. There are some surficial hydrocarbon stains on the graveled portions of the lot from general traffic and vehicle parking. There is no surface staining within the compound area. The grassed area north of the drainage draw had been mowed prior to the assessment. The property appeared very clean and neatly maintained.

## **Background and Surrounding Property Information**

Contact was made with Ken Roger's, Planning and Development for the County of Vermilion River No. 24. He indicated that the property in question was raw, undeveloped pasture land prior to its development in the mid-1980's. On October 1, 1986, Norcen International Ltd., applied for a surface lease agreement from the Province of Alberta for the Community of Blackfoot Sewage Lagoon to exist on this location. The surface lease was agreed upon for a 25-year period, thus is current until 2011. Based on aerial photos from 2004, the lagoon is not located within the subject property, however, is located within the same quarter section as the subject property. The site was zoned as pasture until August of 1999, at which time, an application for subdivision was submitted to the County of Vermilion River No. 24, and the property was rezoned as Commercial IMP. Contact was made with Jim Roberts, the current property owner, regarding the history of the property. Jim commented that he purchased the property four years ago (2001) from Canadian Natural Resources Limited, who had used the property as a parts shop. Jim Roberts used the property for closed storage and parking. Jim indicated that there had been a slough area south of the building, which he developed into a long, narrow drainage draw. An area north of the building was stripped of the topsoil, in order to develop a clay pad for future development, and the topsoil was used for landscaping of the drainage draw south of the building. The building and lot sit vacant today.

Cultivated, agricultural lands surround the property to the North and East, with pasture land to the South.

K & B Sandblasting and Coating occupy the property located to the West of the subject property.

The County of Vermillion River No. 24 and the Blackfoot Fire Department were contacted in regards to any information, which they may have regarding the subject property. Neither party has any records of any incidences on the property in question.

## **Site Inspection**

### **General Observations**

There were not any signs of contamination on the subject property. The nature of the activities conducted on the property should not raise any environmental concerns.

### **Emergency Response**

Not applicable as the building and lot are vacant.

### **Dangerous Goods Storage**

There are no dangerous goods stored on the premises.

### **Waste Disposal**

The current landowner, at his discretion, disposes garbage.

### **Sewage Disposal**

The property has a sewage system in place; however, it is not currently in use. The sewage system includes a wood-cased septic sump, with a pump out area to the southwest of the building near a drainage draw. The septic system is outdated, and should be modernized with a fiberglass holding tank, should the future occupant decide to restore the bathroom facilities within the building.

### **Water System**

Water is supplied to the exterior of the building only, through a hydrant near the northwest corner of the building. The water is supplied from a water well that is located on a lot to the west of the subject property (Lot 2 within the SW-12-050-02 W4).

### **Pesticides**

No pesticides were found on the property. The nature of the activities on the property would not indicate any need for pesticides.

### **Polychlorinated Biphenyl (PCB)**

There was no evidence of transformers or ballast's containing PCB's. There is not any hydraulic equipment containing PCB's on the property.

### **Asbestos**

No evidence of asbestos was observed.

### **Urea Formaldehyde Foam Insulation (UFFI)**

No evidence of Urea Formaldehyde Foam Insulation found on this site.

### **Lead Paint**

No lead paint was used on the interior of the building.

### **Underground Tanks**

An underground storage tank search was conducted through the Petroleum Tank Management Association of Alberta. There is no record of active or abandoned tanks with the search database. Documentation of this is attached. Also, the current landowner has no knowledge of there being Underground tanks on the property.

## **Conclusions and Recommendations**

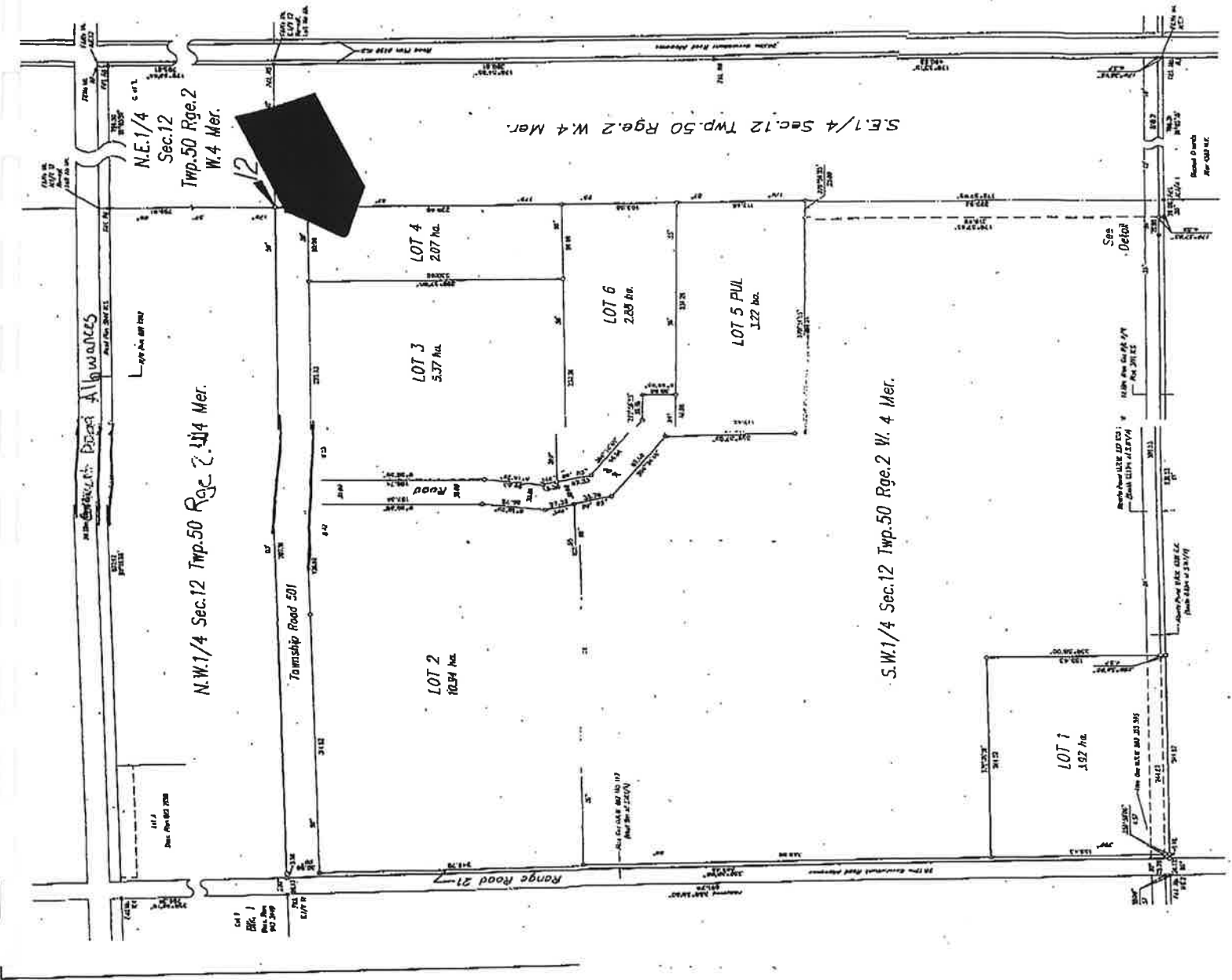
The property is currently vacant but was used by the current property owner for closed storage and parking. Based on the nature of business and age of the property, contamination should not be a concern on the subject property.

Based on information provided and the results of the visual inspection, the site appears to be in environmental compliance.

**No follow up work is required.**

Lisa Groves  
Karen Fleming

# **Appendix A - Property Survey Plan**



N.E. 1/4  
Sec. 12  
Twp. 50 Rge. 2  
W. 4 Mer.

N.W. 1/4 Sec. 12 Twp. 50 Rge. 2 W. 4 Mer.

S.E. 1/4 Sec. 12 Twp. 50 Rge. 2 W. 4 Mer.

S.W. 1/4 Sec. 12 Twp. 50 Rge. 2 W. 4 Mer.

LOT 4  
2.07 ac.

LOT 3  
5.37 ac.

LOT 2  
10.34 ac.

LOT 6  
2.85 ac.

LOT 5 PUL  
1.27 ac.

LOT 1  
1.92 ac.

Township Road 501

Range Road 21-7

Sec. 12

Defect

Lot 1  
Bk. 1  
Plat No. 207

Plat No. 207

Plat No. 207

Plat No. 207

# **Appendix B – Building & Property Sketches**

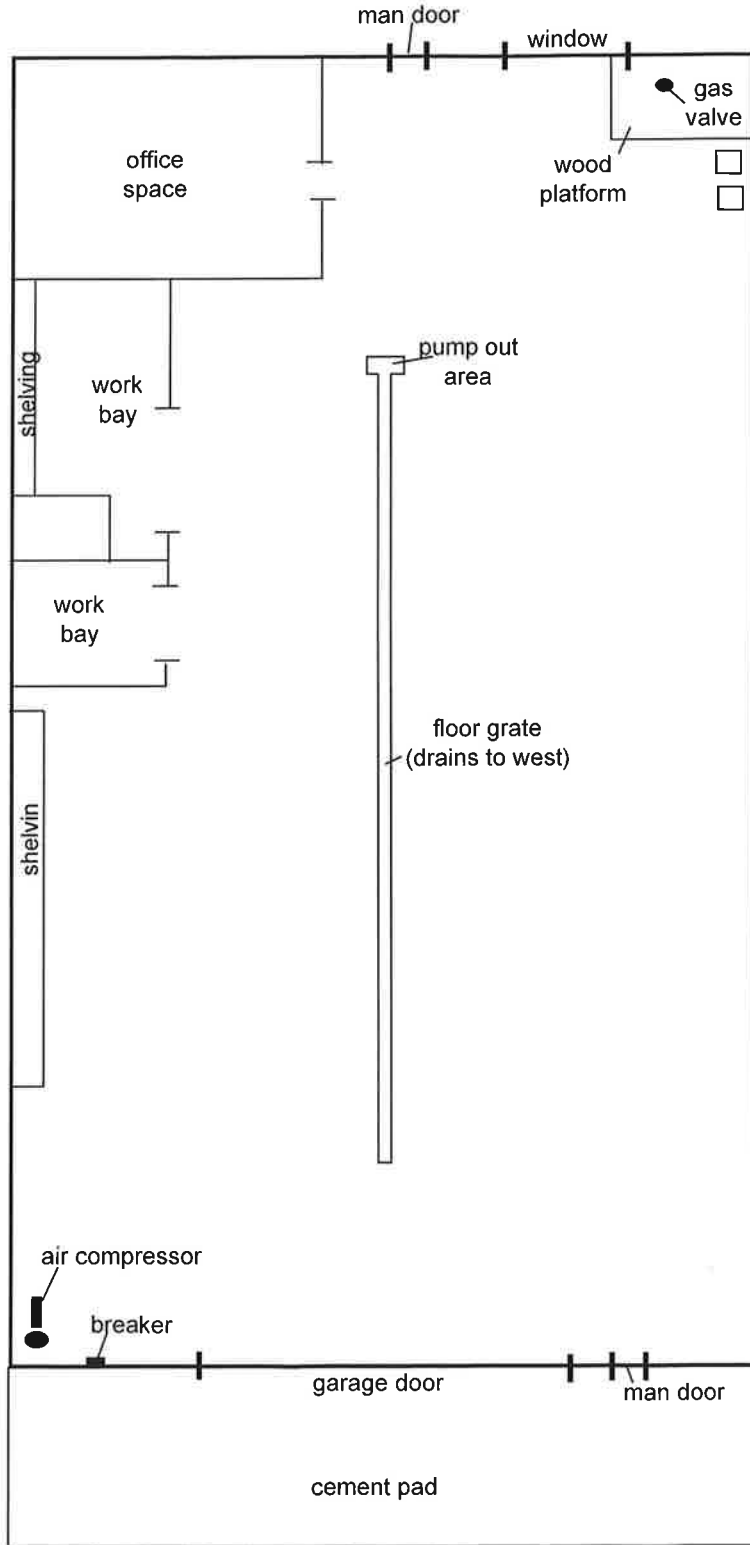


# Building Sketch

Jim Robert's Property (Blackfoot)

SW-12-050-02 W4

Lot 4, Plan 0024545

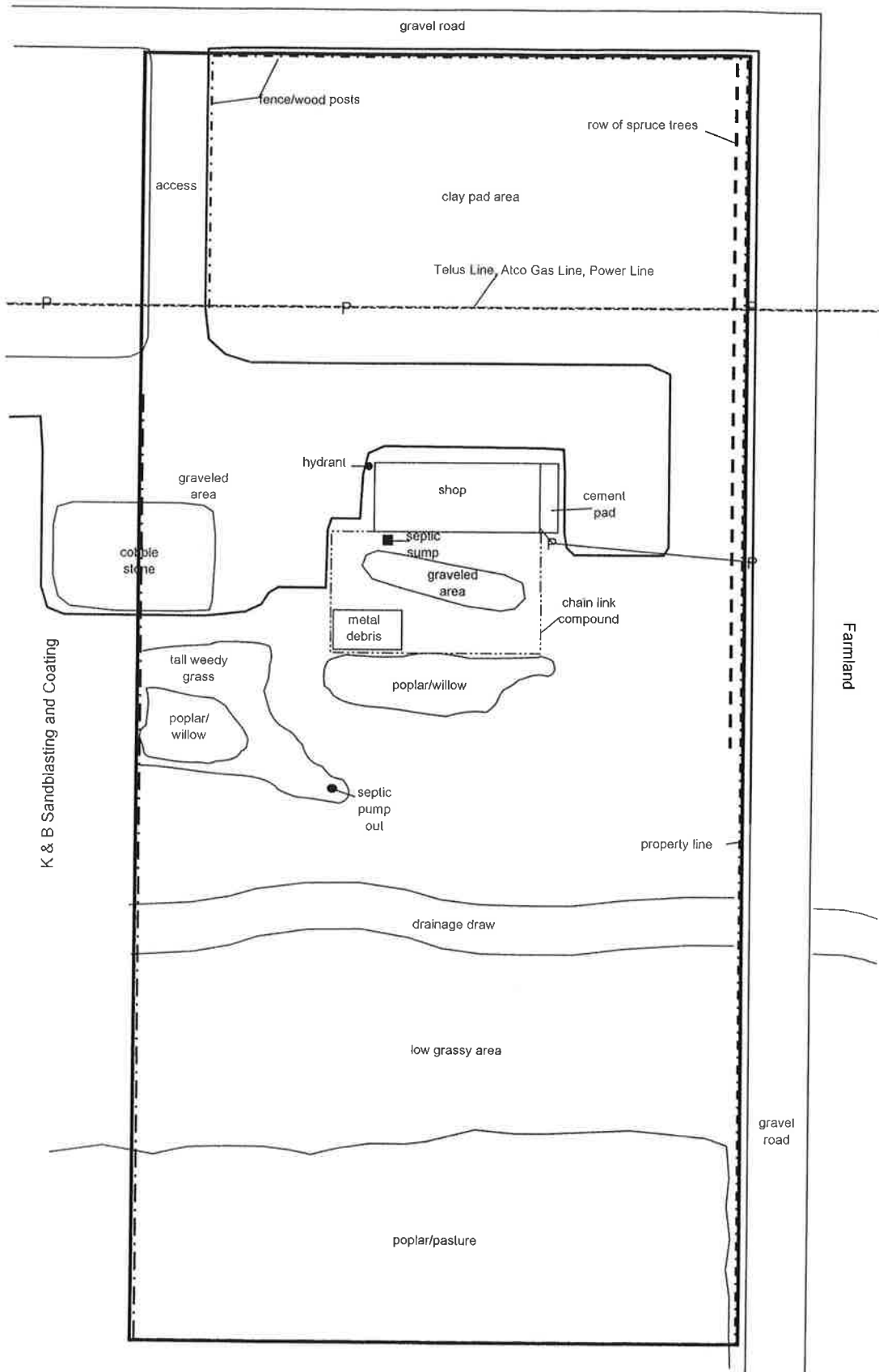


# Property Sketch

Jim Robert's Property (Blackfoot)

SW-12-050-02 W4

Lot 4, Plan 0024545



# **Appendix C - Aerial Photos**

## APRS Results of Search By Legal Description

Search is based on section. When ordering, please provide a more precise location (i.e. quartersection, legal subdivision or street address).

**Legal Description (Sec. Twp. Rge. W Meridian): 12 - 50 - 2 - 4**

Project No.	Sub. ID	Coverage (P/C)	Date	Scale (1:)	Emulsion	Comments
04-003	13	C	2004-06-27	40000	B/W	
01-078	9	C	2001-09-24	30000	B/W A200	OSL/2508;
T96-73E	17	P	1996-00-00	20000	B/W Kodak 2405	← partial coverage NOT SENT
95-143	18	C	1995-08-29	30000	B/W AGFA-150	← alt.
91-167	11	C	1991-06-00	30000	B/W Pan-150	
T91-077+	13	C	1991-00-00	20000	PAN XX	← NOT ORDERED
88-061	4	P	1988-04-21	30000	B/W Pan-2405	
88-053	1	P	1988-04-21	5000	PAN 2405	← partial coverage NOT SENT
87-089	13	C	1987-00-00	30000	B/W PAN	← alt.
83-145	1	C	1983-09-10	60000	PAN 2405	
82-088 73E	4	C	1982-07-28	30000	B/W PAN-2405	
F80-035	2	C	1981-07-03	25000	B/W Pan-2405	
80-121	1	C	1980-09-08	60000	PAN 2405	
F78-163	1	C	1978-09-22	25000	PAN 2405	
75-132	12	C	1975-00-00	31680	PAN 2405	
71-354	1	C	1971-10-07	24000	B/W PAN-2405	
70-322 73E	2	C	1970-00-00	80000	B/W Pan-2405	
65-73E	11	C	1965-00-00	31680	B/W	
49-73E	2	C	1949-00-00	40000	B/W Super XX	Years 49-51?

Plan 0024545, Lot 4 (SW-12-050-02 W4)  
Photo I.D. 49-73E Sub. 2 Year: 1949



Plan 0024545, Lot 4 (SW-12-050-02 W4)  
Photo I.D. 71-354 Sub. 1 Year: 1971



Plan 0024545, Lot 4 (SW-12-050-02 W4)  
Photo I.D. F80-035 Sub. 2 Year: 1981







Plan 0024545, Lot 4 (SW-12-050-02 W4)  
Photo I.D. 95-143 Sub. 18 Year: 1995





# **Appendix D - Title Search**



ALBERTA REGISTRIES  
LAND TITLE CERTIFICATE

S  
LINC                      SHORT LEGAL                      TITLE NUMBER  
0028 634 871              0024545;14                      012 198 612

LEGAL DESCRIPTION  
PLAN 0024545  
LOT 4  
EXCEPTING THEREOUT ALL MINES AND MINERALS  
AREA: 2.07 HECTARES (5.12 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE  
ATS REFERENCE: 4,3;50;12;SW

MUNICIPALITY: COUNTY OF VERMILION RIVER NO. 24

REFERENCE NUMBER: 002 343 422 +4

REGISTRATION	DATE (DMY)	REGISTERED OWNER(S) DOCUMENT TYPE	VALUE	CONSIDERATION
012 198 612	03/07/2001	TRANSFER OF LAND	\$41,500	\$41,500

OWNERS

JIMMIE KENNETH ROBERTS,

AND  
DEBRA JEAN ROBERTS  
BOTH OF:  
5317-46 ST  
LLOYDMINSTER  
ALBERTA T9V 0J4  
AS JOINT TENANTS

780 - 875 - 1948

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
------------------------	--------------	-------------

( CONTINUED )

ENCUMBRANCES, LIENS & INTERESTS

PAGE 2  
# 012 198 612

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
862 082 628	23/04/1986	CAVEAT RE : EASEMENT CAVEATOR - ALBERTA POWER LIMITED. 10035 105 STREET, EDMONTON ALBERTA T5J2V6 AGENT - GEORGE D LEIGHTON
982 272 557	09/09/1998	UTILITY RIGHT OF WAY GRANTEE - ATCO GAS AND PIPELINES LTD.. 10035-105 ST EDMONTON ALBERTA T5J2V6 (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 012018796)
002 312 871	24/10/2000	DISCHARGE OF UTILITY RIGHT OF WAY 982272557 PARTIAL EXCEPT AS TO PART

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE  
REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED  
HEREIN THIS 6 DAY OF OCTOBER, 2005 AT 01:52 P.M.

ORDER NUMBER: 3700893

CUSTOMER FILE NUMBER:



\*END OF CERTIFICATE\*

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE  
SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER. SUBJECT TO WHAT IS  
SET OUT IN THE PARAGRAPH BELOW.

THE ABOVE PROVISIONS DO NOT PROHIBIT THE ORIGINAL PURCHASER FROM  
INCLUDING THIS UNMODIFIED PRODUCT IN ANY REPORT, OPINION, APPRAISAL OR  
OTHER ADVICE PREPARED BY THE ORIGINAL PURCHASER AS PART OF THE ORIGINAL  
PURCHASER APPLYING PROFESSIONAL, CONSULTING OR TECHNICAL EXPERTISE FOR  
THE BENEFIT OF CLIENT(S).

## **Appendix E - Recent Site Photos**

Site Name: **Jim Robert's Property**

Location: **Plan 0024545, Lot 4 (SW-12-050-02 W4)**



**Near the northwest corner of the property looking south.**



**Near the northwest corner of the property looking east.**

Site Name: **Jim Robert's Property**

Location: **Plan 0024545, Lot 4 (SW-12-050-02 W4)**



**Near the northeast corner of the property looking south.**



**Near the northeast corner of the property looking west.**

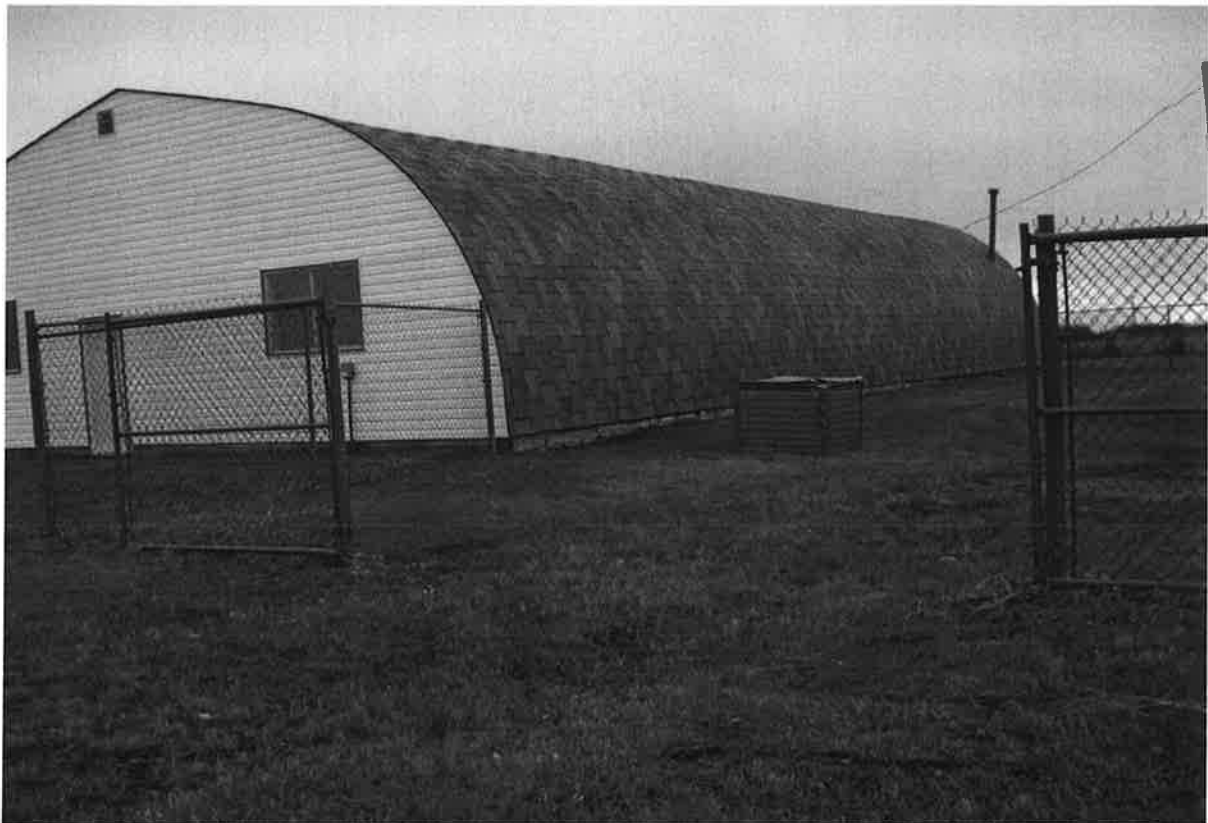


Site Name: **Jim Robert's Property**

Location: **Plan 0024545, Lot 4 (SW-12-050-02 W4)**



**Looking at the west-facing side of the building.**



**Looking at the south-facing side of the building.**

Site Name: **Jim Robert's Property**

Location: **Plan 0024545, Lot 4 (SW-12-050-02 W4)**



**Looking at the north-facing side of the building.**



**Looking at the east-facing side of the building.**

Site Name: **Jim Robert's Property**

Location: **Plan 0024545, Lot 4 (SW-12-050-02 W4)**



**Looking at metal debris along the south fence of the chain-link compound (south of the building).**



**Standing near the northeast entrance to the building looking west at building interior.**

Site Name: Jim Robert's Property

Location: Plan 0024545, Lot 4 (SW-12-050-02 W4)



Standing near the northeast entrance to the building looking southwest at building interior.



Standing near the northeast entrance to the building looking south at building interior.



**Looking at the interior of the septic sump (wood casing).**



**Looking north at the exterior of the septic sump (within the chain-link compound).**

Site Name: **Jim Robert's Property**

Location: **Plan 0024545, Lot 4 (SW-12-050-02 W4)**



**From 130 m south of the north boundary looking south at the property.**



**From 130 m south of the north boundary looking southwest at the property.**

Site Name: **Jim Robert's Property**

Location: **Plan 0024545, Lot 4 (SW-12-050-02 W4)**



**From 130 m south of the north boundary looking west at the property.**



**Looking west at the septic pump-out area.**

# **Appendix F – PTMAA Search**



Fax Search Request to: **Petroleum Tank Management Association of Alberta**  
 (780) 425-4722

**(NOTE: Users please place an "X" in Column 2 to reflect the reports you would like the PTMAA to provide for each address listed. Charges will be based on reports requested and available as identified within this area. Please refer to our website for the table which outlines costs associated with Tank Search Requests.)**

Please conduct a record search for the existence of past or present underground or aboveground tanks for the following properties. We are requesting any available reports listed within "Information Requested" for each specific property.

<b>Information Requested</b> (Place an "X" in the column to the right next to each report you wish to order)	<b>X</b>	<b>Address</b> <enter Lot, Block, Plan # >	<b>City/Town/Municipality</b>
Notification Letter Site/Tank Detail Report Tank Closure Report Site Diagram	<b>X</b>	Plan 0024545, Lot 4	<b>Blackfoot, AB</b>
Notification Letter Site/Tank Detail Report Tank Closure Report Site Diagram			
Notification Letter Site/Tank Detail Report Tank Closure Report Site Diagram			

***"Provide notice of any tanks (past or present) which may be contained within your records for SW-12-050-02 W4 and also include any site/tank detail reports and site diagrams."***

Information Requested By: **SDS Environmental Services Ltd.**  
**1811 – 17<sup>th</sup> Avenue**  
**Wainwright, Alberta T9W 1L2**  
**Attention: Lisa Groves**  
**(780) 842-6365 Telephone**  
**(780) 842-6410 Fax**



## **Petroleum Tank Management Association of Alberta**

Sulte 980, 10303 Jasper Avenue  
Edmonton, Alberta T5J 3N6  
PH: (780)425-8265 or 1-866-222-8265  
FAX: (780)425-4722

October 7, 2005

Lisa Groves  
SDS Environmental Services Ltd.  
1811 - 17 Avenue  
Wainwright, AB  
T9W 1L2

Dear Lisa Groves:

As per your request, the PTMAA has checked the registration of active tank sites and inventory of abandoned tank sites and there are no records for the property with the legal land description:

Plan 0024545, Lot 4, Blackfoot  
SW 12-50-2-W4

Please note that both databases are not complete. The main limitation of these databases is that they only include information reported through registration or a survey of abandoned sites completed in 1992 and should not be considered as a comprehensive inventory of all past or present storage tank sites. The PTMAA **cannot** guarantee that tanks do not or have not existed at this location. Information in the databases is based on information supplied by the owner and the PTMAA cannot guarantee its accuracy. Information on storage tanks or on past or present contaminant investigations may be filed with the local Fire Department or Alberta Environment.

Yours truly,

A handwritten signature in black ink, appearing to read 'Connie Jacobsen', is written over a horizontal line.

Connie Jacobsen  
PTMAA

**From:** Rod Gail Rau  
**To:** [Maire McNamee](#)  
**Subject:** Raus subdivision  
**Date:** Thursday, May 17, 2018 8:48:30 AM

---

Regarding our shop land  
4-2-50-12 LSD 6

Since we have owned this property it has always been used for storing our trucks and equipment.  
There is nothing that we have done to contaminate the land with our use.

Thanks you  
Rod & Gail Rau  
780.205.1417

Sent from my iPhone

**APPENDIX E: ALBERTA TRANSPORTATION 2017 TRAFFIC COUNT**

### Turning Movement Summary Diagram

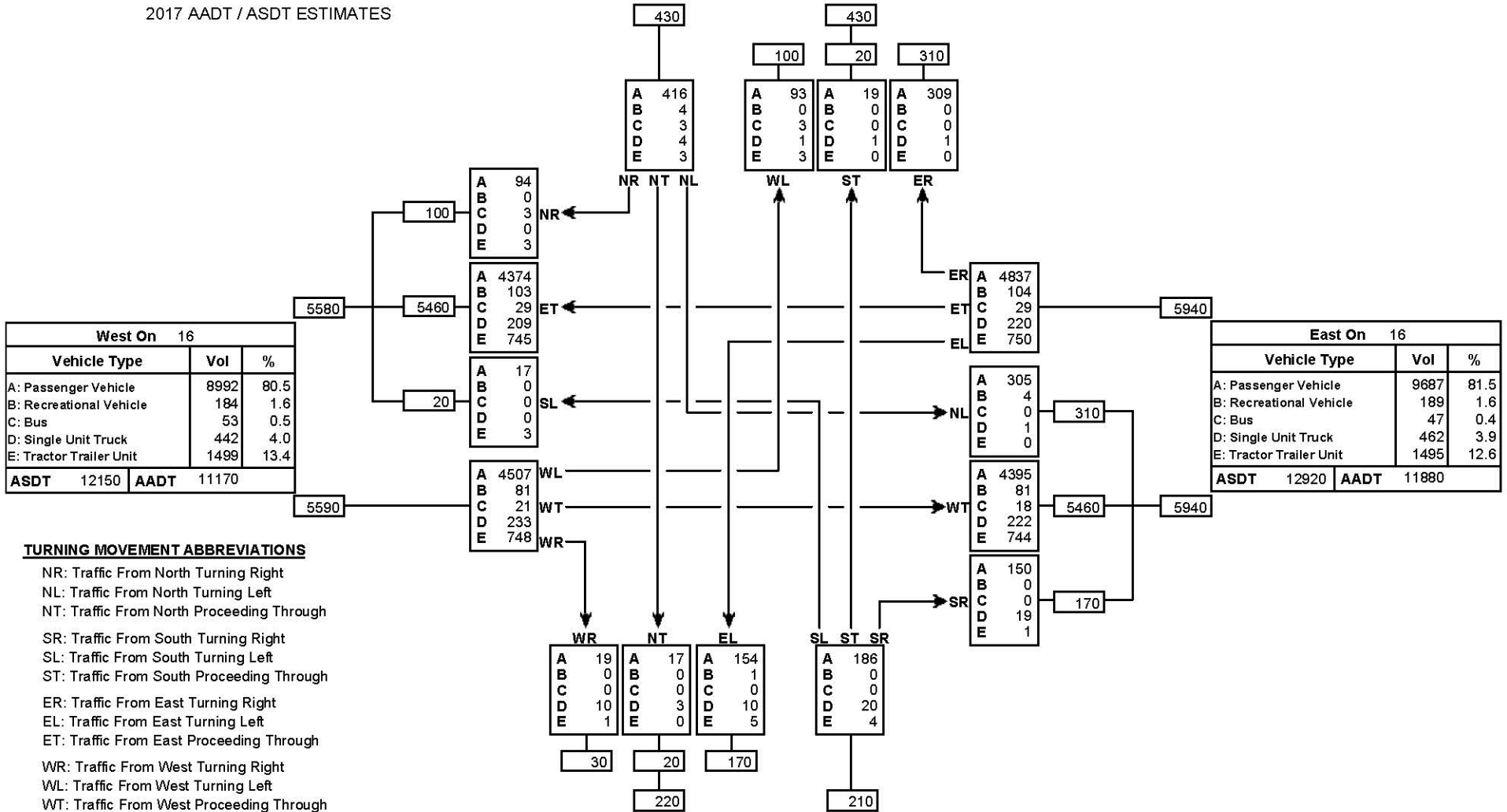
Reference No.: 997109

Intersection of:

16 & RGE RD 21 2-50-2-400001200

2017 AADT / ASDT ESTIMATES

North On Rge Rd 21		
Vehicle Type	Vol	%
A: Passenger Vehicle	837	97.3
B: Recreational Vehicle	4	0.5
C: Bus	6	0.7
D: Single Unit Truck	7	0.8
E: Tractor Trailer Unit	6	0.7
<b>ASDT</b>	<b>940</b>	<b>AADT</b>
		<b>860</b>



West On 16		
Vehicle Type	Vol	%
A: Passenger Vehicle	8992	80.5
B: Recreational Vehicle	184	1.6
C: Bus	53	0.5
D: Single Unit Truck	442	4.0
E: Tractor Trailer Unit	1499	13.4
<b>ASDT</b>	<b>12150</b>	<b>AADT</b>
		<b>11170</b>

East On 16		
Vehicle Type	Vol	%
A: Passenger Vehicle	9687	81.5
B: Recreational Vehicle	189	1.6
C: Bus	47	0.4
D: Single Unit Truck	462	3.9
E: Tractor Trailer Unit	1495	12.6
<b>ASDT</b>	<b>12920</b>	<b>AADT</b>
		<b>11880</b>

**TURNING MOVEMENT ABBREVIATIONS**

- NR: Traffic From North Turning Right
- NL: Traffic From North Turning Left
- NT: Traffic From North Proceeding Through
- SR: Traffic From South Turning Right
- SL: Traffic From South Turning Left
- ST: Traffic From South Proceeding Through
- ER: Traffic From East Turning Right
- EL: Traffic From East Turning Left
- ET: Traffic From East Proceeding Through
- WR: Traffic From West Turning Right
- WL: Traffic From West Turning Left
- WT: Traffic From West Proceeding Through

**TURNING MOVEMENT ABBREVIATIONS**

- AADT: Annual Average Daily Traffic  
Average daily traffic expressed as vehicles per day for period of January 1 to December 31 (365 days)
- ASDT: Average Summer Daily Traffic  
Average daily traffic expressed as vehicles per day for period of May 1 to September 30 (153 days)

South On Rge Rd 21		
Vehicle Type	Vol	%
A: Passenger Vehicle	376	87.4
B: Recreational Vehicle	1	0.2
C: Bus	0	0.0
D: Single Unit Truck	43	10.0
E: Tractor Trailer Unit	10	2.3
<b>ASDT</b>	<b>470</b>	<b>AADT</b>
		<b>430</b>

Turning Movement Summary Diagram

Reference No.: 997109

Intersection of:

16 & RGE RD 21 2-50-2-400001200

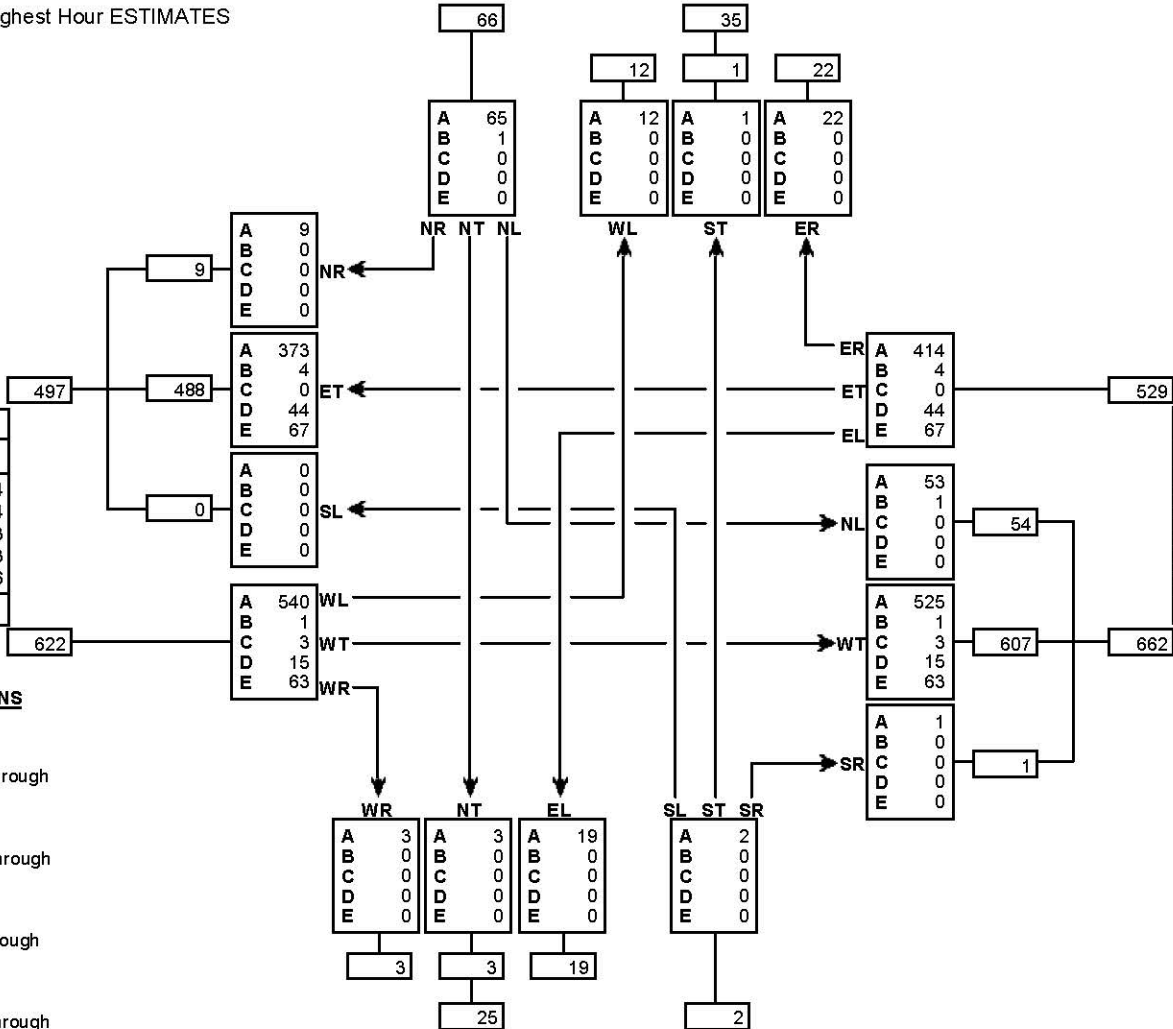
2017 a.m. 100th Highest Hour ESTIMATES

North On Rge Rd 21		
Vehicle Type	Vol	%
A: Passenger Vehicle	100	99.0
B: Recreational Vehicle	1	1.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
<b>Total</b>	<b>101</b>	

West On 16		
Vehicle Type	Vol	%
A: Passenger Vehicle	922	82.4
B: Recreational Vehicle	5	0.4
C: Bus	3	0.3
D: Single Unit Truck	59	5.3
E: Tractor Trailer Unit	130	11.6
<b>Total</b>	<b>1119</b>	

East On 16		
Vehicle Type	Vol	%
A: Passenger Vehicle	993	83.4
B: Recreational Vehicle	6	0.5
C: Bus	3	0.3
D: Single Unit Truck	59	5.0
E: Tractor Trailer Unit	130	10.9
<b>Total</b>	<b>1191</b>	

South On Rge Rd 21		
Vehicle Type	Vol	%
A: Passenger Vehicle	27	100.0
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	0	0.0
E: Tractor Trailer Unit	0	0.0
<b>Total</b>	<b>27</b>	



**TURNING MOVEMENT ABBREVIATIONS**

- NR: Traffic From North Turning Right
- NL: Traffic From North Turning Left
- NT: Traffic From North Proceeding Through
- SR: Traffic From South Turning Right
- SL: Traffic From South Turning Left
- ST: Traffic From South Proceeding Through
- ER: Traffic From East Turning Right
- EL: Traffic From East Turning Left
- ET: Traffic From East Proceeding Through
- WR: Traffic From West Turning Right
- WL: Traffic From West Turning Left
- WT: Traffic From West Proceeding Through

### Turning Movement Summary Diagram

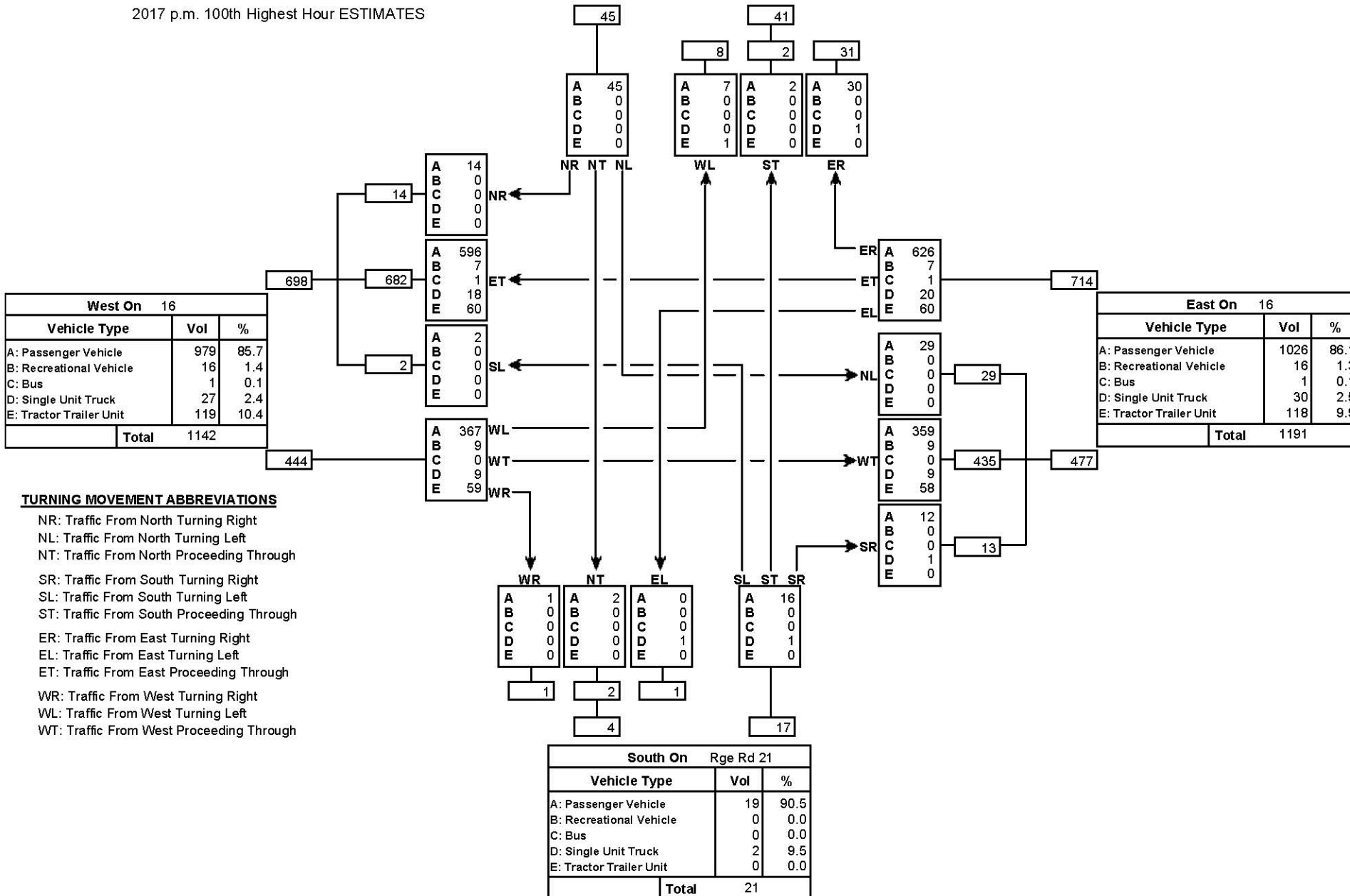
Reference No.: 997109

Intersection of:

16 & RGE RD 21 2-50-2-400001200

2017 p.m. 100th Highest Hour ESTIMATES

North On Rge Rd 21		
Vehicle Type	Vol	%
A: Passenger Vehicle	84	97.7
B: Recreational Vehicle	0	0.0
C: Bus	0	0.0
D: Single Unit Truck	1	1.2
E: Tractor Trailer Unit	1	1.2
<b>Total</b>	<b>86</b>	



## **APPENDIX F: HISTORIC RESOURCE ACT APPROVAL**



## Historical Resources Act Approval

Proponent: N/A  
102 Sunwood Bay, Sherwood Park, AB T8H 0Z6

Contact: Mr. Rod Rau

Agent: Mrs

Contact: Maire McNamee

**Project Name: Rau Site Development Plan**

Project Components: Area Structure Plan / Outline Plan

Application Purpose: Requesting HRA Approval / Requirements

*Historical Resources Act* approval is granted for the activities described in this application and its attached plan(s)/sketch(es) subject to Section 31, "a person who discovers an historic resource in the course of making an excavation for a purpose other than for the purpose of seeking historic resources shall forthwith notify the Minister of the discovery." The chance discovery of historical resources is to be reported to the contacts identified within [Standard Requirements under the Historical Resources Act: Reporting the Discovery of Historic Resources](#).



Martina Purdon  
Head, Regulatory Approvals &  
Information Management

Lands Affected: All New Lands

Proposed Development Area:

MER	RGE	TWP	SEC	LSD List
4	2	50	12	6

Documents Attached:

Document Name	Document Type
Map 1	Illustrative Material
Map 2	Illustrative Material



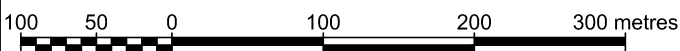
**PROPOSED AREAS:**

	HECTARES	ACRES
LOT 1, BLOCK 2:	0.403	1.00
LOT 2, BLOCK 2:	1.667	4.12
<b>TOTAL:</b>	<b>2.070</b>	<b>5.12</b>

**McElhanney**  
 McElhanney Land Surveys (Alta.) Ltd.  
 116, 5704 - 44th Street  
 Lloydminster, AB T9V 2A1  
 T780-875-8857 F780-875-4768

**LEGEND:**

Elevations and Distances are in metres.



**SCALE 1:5000** UNLESS OTHERWISE NOTED

SKETCH PLAN SHOWING  
**PROPOSED SUBDIVISION**

OF  
**LOT 4, PLAN 002 4545**  
 WITHIN  
**S.W. 1/4 SEC. 12 TWP. 50 RGE. 2 W.4 M.**  
**COUNTY OF VERMILION RIVER**

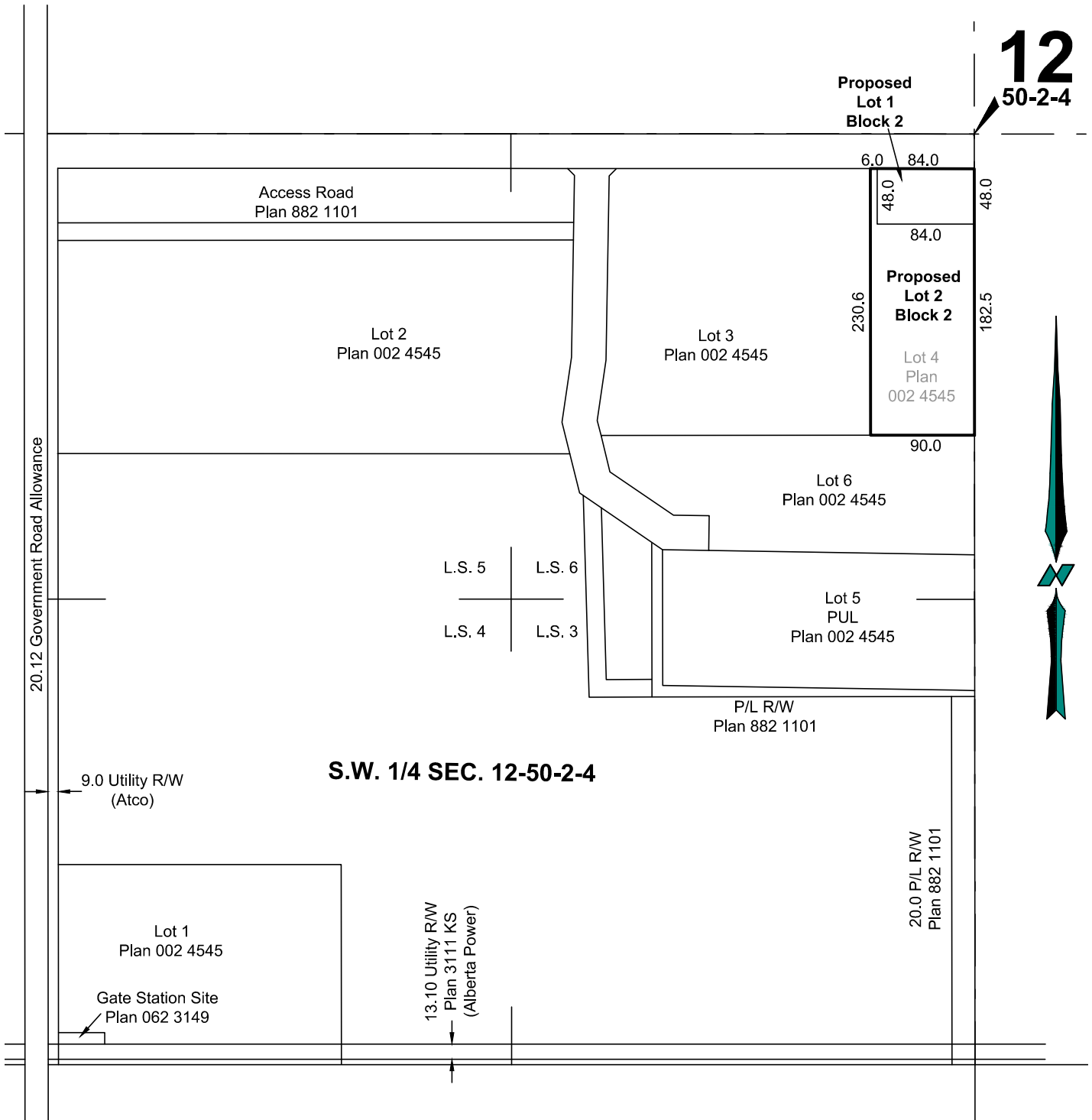
REV.	DATE	DESCRIPTION	DRAF	CHKD	SURV
0	Oct. 31/17	Plan Issued	JMY	BAD	---

**REVISIONS**

JOB No: 341113291

Plan ID.: L13291SK1

**12**  
50-2-4



**PROPOSED AREAS:**

	HECTARES	ACRES
LOT 1, BLOCK 2:	0.403	1.00
LOT 2, BLOCK 2:	1.667	4.12
<b>TOTAL:</b>	<b>2.070</b>	<b>5.12</b>



**LEGEND:**

Elevations and Distances are in metres.



**SCALE 1:5000** UNLESS OTHERWISE NOTED

**SKETCH PLAN SHOWING**  
**PROPOSED SUBDIVISION**  
 OF  
**LOT 4, PLAN 002 4545**  
 WITHIN  
**S.W. 1/4 SEC. 12 TWP. 50 RGE. 2 W.4 M.**  
**COUNTY OF VERMILION RIVER**

REV.	DATE	DESCRIPTION	DRAF	CHKD	SURV
0	Oct. 31/17	Plan Issued	JMY	BAD	---

**REVISIONS**

JOB No: 341113291 | Plan ID.: L13291SK2

## **APPENDIX G: STORMWATER MANAGEMENT PLAN**



<b>To</b>	<b>From</b>
Mr. Rod Rau, 102 Sunwood Bay Sherwood Park, Alberta T2V 2V6	Haimanot Yadete, MSc. PEng. Senior Water Resources Engineer
<b>Company</b>	<b>MCSL Branch</b>
	2531 - Canmore
<b>Re</b>	<b>Date</b>
<b>Rau Industrial Plan Storm Water Management</b>	July 31, 2018
	<b>File Number</b>
	2531-40701-00

## 1. INTRODUCTION

McElhanney Consulting Services Ltd. (MCSL) is pleased to provide Mr Rod Rau with the stormwater management plan for the proposed Rau Industrial Lot. The existing site, Lot 4, is located in the municipality of County of River Vermillion (see Figure 1 for study site). Rau is proposing to subdivide Lot 4 in to two Lots, Lot 1 Block 2 in the north and Lot 2 Block 2 in the south. The existing land use for Lot 4 is designated for Industrial use (shop and storage) and the proposed subdivided land use is also to maintain the same designation as Industrial (shop and storage). Currently, there is no building located in the proposed area to be subdivided.

The proposed lot, Lot 1 Block 2, approximately 0.4 ha, will have a proposed shop/storage (14.6 m by 14.6 m) structure. A gravel access to the shop will be via an unnamed county road. Due to a limited change in landscape resulting from the proposed shop/storage, the increase in runoff flow rate from the site is minimal. Because of the small increase in peak flow rate and the proposed runoff management to be implemented, no runoff detention storage is proposed for this project and no downstream lands are expected to face disadvantage as a result of this project.

This technical memo presents estimation and comparison of the peak runoff rate, mitigative measures proposed to minimize the increase in peak flow rate and the justification for not proposing a stormwater detention storage.

## 2. OBJECTIVE AND SCOPE OF WORK

The objective of this study is to provide a stormwater management plan for the proposed site. The scope of work consisted of the following:

- reviewing the original and current site topography;
- evaluating onsite drainage patterns;
- estimating and comparing the existing and proposed area runoff;
- reviewing stormwater management plans considered; and
- preparing a technical memo summarizing the results of the assessment for the site.



Figure 1: Study Site

### 3. STUDY AREA

---

The existing Lot 4, approximately 2.07 ha, is located in the municipality of County of Vermillion River. Lot 4 is adjacent to Lot 3 in the west, Lot 6 in the south and the unnamed county road in the north and a land that is not allotted land in the east (See Figure 2). Rau is proposing to subdivide Lot 4 in to two Lots, Lot 1 Block 2 in the north and Lot 2 Block 2 in the south. The project site for this study is the subdivided area to the north which is Lot 1 Block 2.

The existing land use for Lot 4 is designated as Industrial use (shop and storage) and the proposed subdivided land use for Lot 1 Block 2 will maintain the same designation as Industrial (shop and storage). The proposed subdivided area is located in the north of Lot 4 and is approximately 0.403 ha. The topography of the land is flat with mostly grass and with pine trees vegetation along the east boarder. The existing condition of the proposed site (Lot 1 Block 2) is flat with a 0.43% slope from northeast to southwest. Currently, there is no building located in the proposed lot.

Topographic information (found from Altalis Open Data) of the site indicates that the existing (Lot 4, Plan 0024545) runoff drains along a low point located in southwest corner of the property (See Figure 3). Runoff from the existing subdivided property generally runs overland from the northeast towards the southwest corner towards the low point of the property. (see Figure 2)

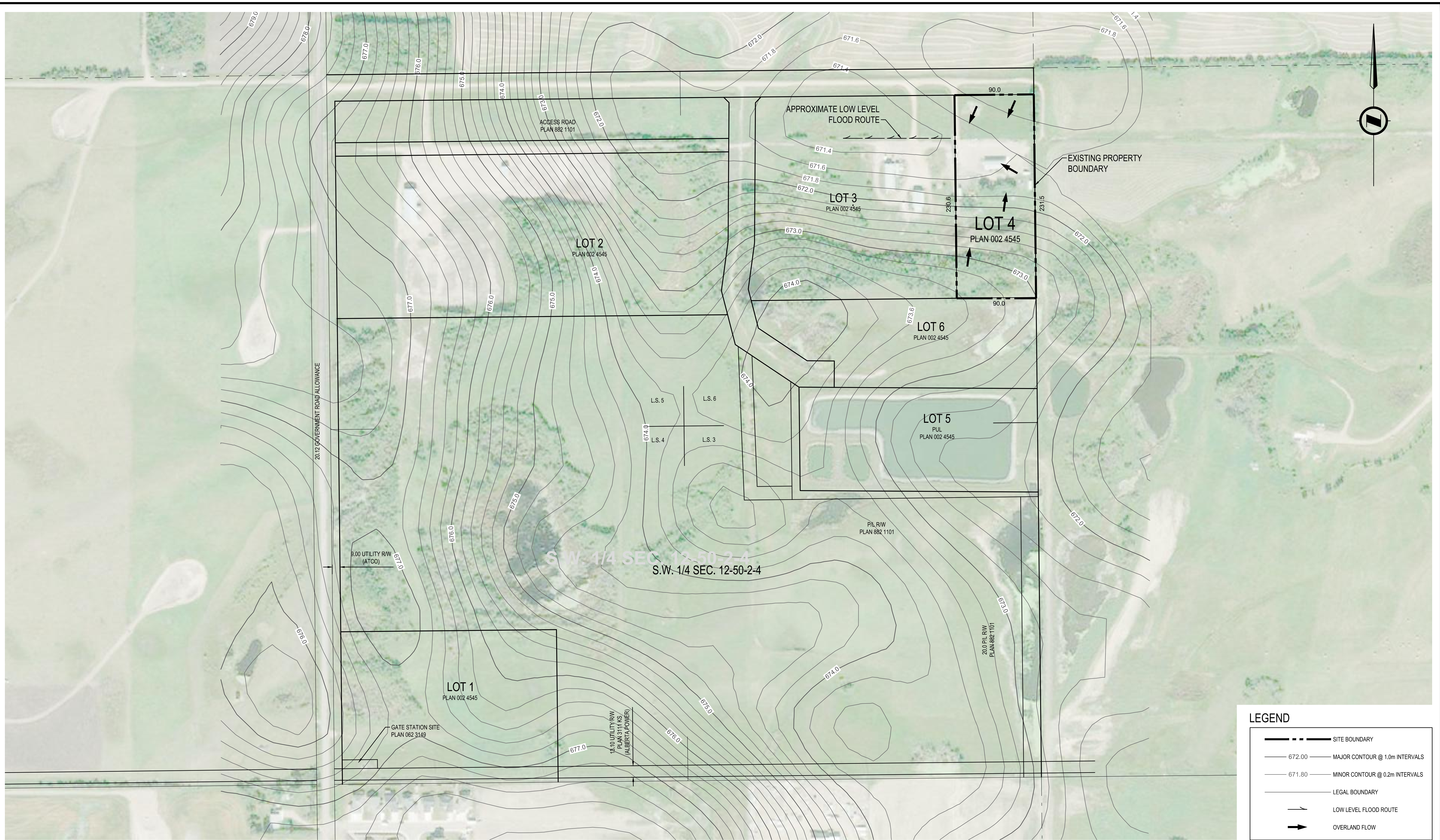
### 4. PROPOSED CONDITION

---

The existing Lot 4, an industrial lot, is to be divided into two blocks, Lot 1 Block 2 to the north and Lot 2 Block 2 to the South. The project site for this study is the north lot which is Lot 1 Block 2. The property, which is the subject of this study is approximately 0.407 ha. The lot will have a shop added on the site with a dimension of 14.6 m x 14.6 m (See Figure 4).

A gravel access to the shop is proposed via an unnamed road located on the north boundary of the proposed site. The shop/storage roof with higher runoff coefficient will be composed of only 5% of the project area. Due to a limited change in landscape resulting from the proposed shop/storage, the increase in runoff peak flow rate from the site is minimal. In general, the proposed Industrial Site Plan (Figure 4) will not alter the existing site conditions significantly.

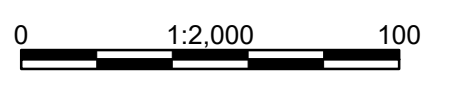
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LEGEND	
	SITE BOUNDARY
	672.00 MAJOR CONTOUR @ 1.0m INTERVALS
	671.80 MINOR CONTOUR @ 0.2m INTERVALS
	LEGAL BOUNDARY
	LOW LEVEL FLOOD ROUTE
	OVERLAND FLOW

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ORIGINAL DWG SIZE: ANSI D (22" x 34")



100  
402-11th Avenue SE  
Calgary AB  
Canada T2G 0Y4  
Tel 403 262 5042

Approved Sealed

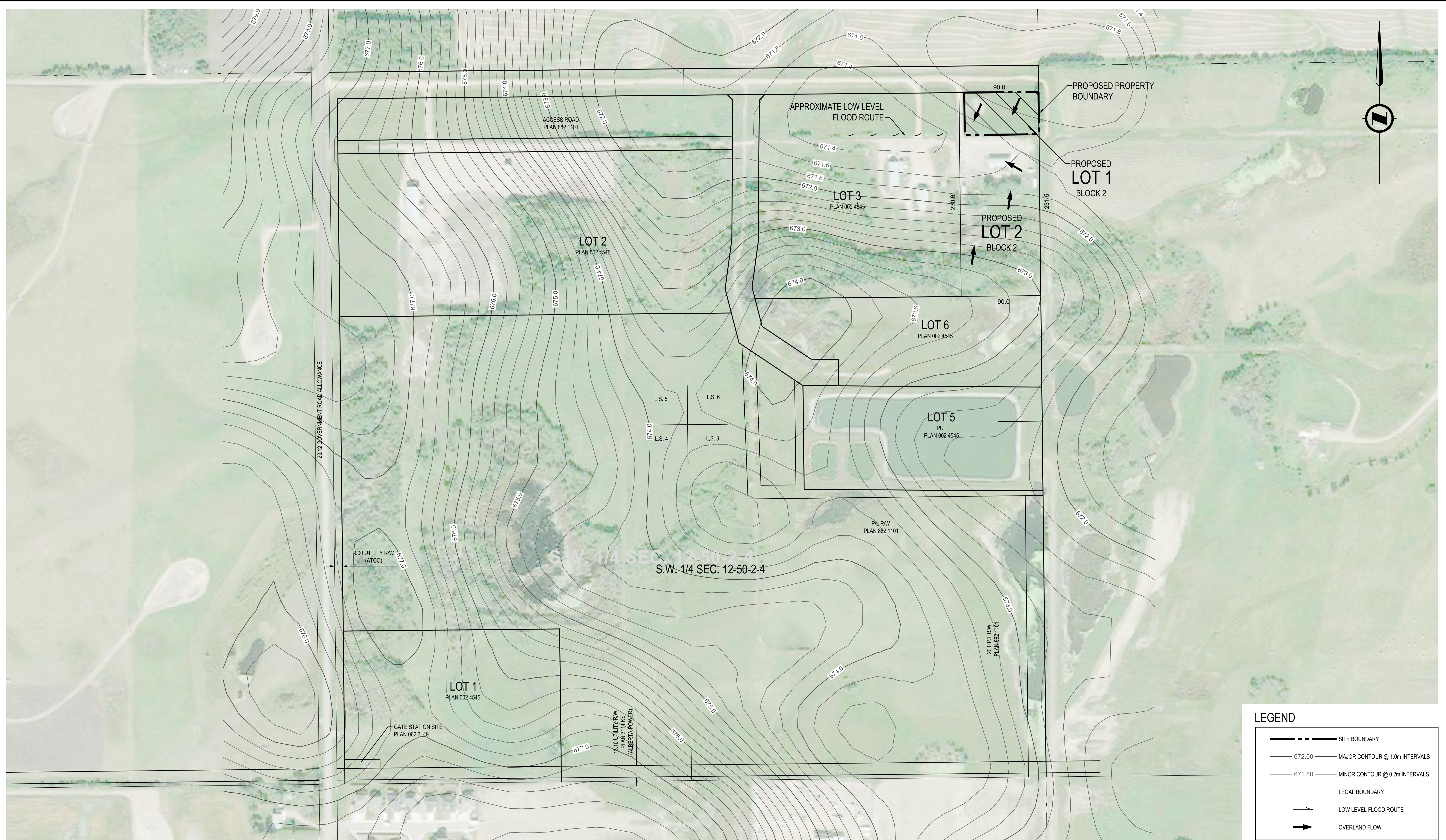
**Mr. Rod Rau**  
102 Sunwood Bay, Sherwood Park, Alberta  
**RAU INDUSTRIAL PLAN**  
**STORMWATER MANAGEMENT**  
**EXISTING SITE PLAN**

Drawing No.	
<b>FIGURE 2</b>	
Project Number	Rev.
2531-40701-00	A

CHECKED BY: ALL PRINTS BEING PREVIOUS REVIEW



DATE: 2018.07.30, 14:29 FILE: G:\Projects\251\251-40701-01\Drawings\Plan\10.0\Drawings\10.0\_Raw\Industrial\Plan\10.0\_Subsites\10.0\_Subsites\10.0\_Subsites.dwg

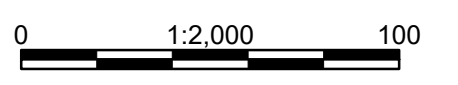


LEGEND	
	SITE BOUNDARY
	672.00 MAJOR CONTOUR @ 1.0m INTERVALS
	671.80 MINOR CONTOUR @ 0.2m INTERVALS
	LEGAL BOUNDARY
	LOW LEVEL FLOOD ROUTE
	OVERLAND FLOW

Rev	Date	Description	Drawn	Design	App'd
A	2018.07.30	ISSUED FOR REVIEW	SS	HY	MM

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ORIGINAL DWG SIZE: ANSI D (22" x 34")



100  
402-11th Avenue SE  
Calgary AB  
Canada T2G 0Y4  
Tel 403 262 5042

Approved Sealed

**Mr. Rod Rau**  
102 Sunwood Bay, Sherwood Park, Alberta

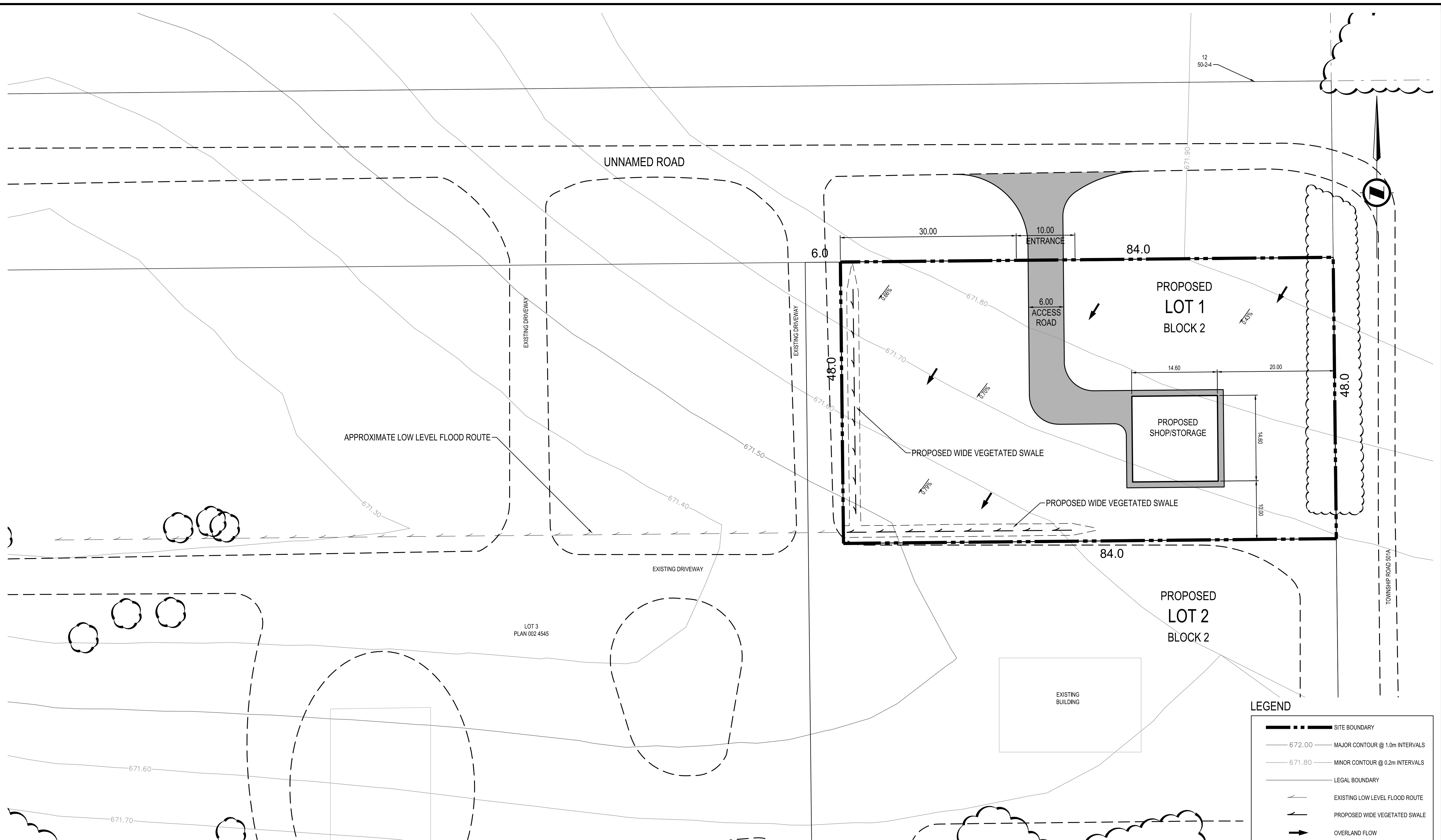
**RAU INDUSTRIAL PLANT  
STORMWATER MANAGEMENT  
PROPOSED SITE PLAN**

Drawing No. **FIGURE 3**

Project Number 2531-40701-00 Rev. A

CHECKED BY: ALL PRINTS BEING PREVIOUS REVIEW

DATE: 2018.07.31, 10:40 FILE: G:\Projects\251\0551-40701-01\RAU Industrial\Plan\03\Drawing\107\_Subarea\1071\_4545\_PropStorm.mxd  
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ORIGINAL DWG SIZE: ANSI D (22" x 34")



100  
 402-11th Avenue SE  
 Calgary AB  
 Canada T2G 0Y4  
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Approved Sealed

**Mr. Rod Rau**  
 102 Sunwood Bay, Sherwood Park, Alberta  
**RAU INDUSTRIAL PLAN**  
**STORMWATER MANAGEMENT**  
**PROPOSED PROJECT AREA**

Drawing No.  
**FIGURE 4**  
 Project Number  
 2531-40701-00  
 Rev.  
 A

Rev	Date	Description	Drawn	Design	App'd
A	2018.07.30	ISSUED FOR REVIEW	SS	HY	MM

CHECKED BY: ALL PRINTS BEING PREVIOUS REVISION

## 5. STORMWATER ASSESSMENT

### 5.1. Location Characteristics

The features contributing to the increased imperviousness of the project location are presented in Table 1. The table presents the land use breakdown of the project location under both existing and proposed conditions. The area weighted runoff coefficient for both the original and current conditions was calculated as per below:

$$C = (((A_g) * (0.5)) + ((A_r) * (1.0)) + ((A_l) * (0.3))) / A$$

Table 1: Summary of Catchment Area and Runoff Coefficient

AREA TYPE	RUNOFF COEFFICIENT	ORIGINAL PARKING CATCHMENT AREA (HA)	CURRENT PARKING CATCHMENT AREA (HA)
Roof	1.0	0	0.021
Gravel	0.5	0	0.029
Landscape	0.3	0.353	0.353
<b>Total Area</b>		<b>0.403</b>	<b>0.403</b>

### 5.2. Runoff Calculation

Increases to imperviousness and their impacts to stormwater runoff rates were assessed using the Rational Method for both existing and proposed conditions. Comparisons of peak flow runoff were made to determine impacts due to the revised imperviousness at the project location.

The Rational Method is a runoff estimation method based on an empirical formula relating the peak flow rate to the drainage area, the rainfall intensity, and a runoff coefficient.

$$Q = 2.78 CiA$$

where: Q = peak runoff rate (L/s)

2.78 = constant

C = runoff coefficient

i = intensity of the rainfall (mm/hr) for a storm duration equal to  $t_c$

$A$  = area of the drainage basin (ha)

$t_c$  = Time of Concentration for the basin (min) = Inlet Time + Flow Time

The runoff coefficient,  $C$ , is used in the Rational Method and is defined as the ratio of the average rate of rainfall on an area to the maximum rate of runoff. The runoff coefficient incorporates all of the hydrologic abstractions, soil types, and antecedent moisture conditions. For this property, a runoff coefficient of 0.3 is considered

According to County of Vermilion River Master Stormwater Management Plan Technical Report, December 2010, the principal consideration for site-specific drainage channel and culvert parameters is to use the 1 hour 100 Year rainfall intensity which is 45.2 mm/hr.

### Existing Site

The release rate from the existing project site is calculated using the 1 hour 100 Yr Storm runoff, 45.2 mm/hr intensity and 0.3 runoff coefficient.

Total Catchment Area          0.403 ha

#### *Input Variables*

$C$       = 0.3 (Coefficient of Runoff for Country Residential)

$I$       = 45.20 mm/hr

$A_i$      = 0.403ha (Area of Landscaping)

$A$       = 0.403 ha (Total Site Area)

#### *Discharge from the Existing Area*

$Q$       =  $C \times I \times A \times 2.78$

          = 15.2 l/s

For the existing site, the runoff rate for the 1 hour 100 Yr storm intensity is from the site is estimated to be 15.2 L/s.

### Proposed Site

The proposed project area is going to have a shop sized 14.6 m by 16.6 m (0.021 ha), reducing the grassed area to 0.382 ha. The runoff increase from the site due to this increase is estimated as follows.

Total Catchment Area          0.403 ha

#### *Input Variables*

$C$       = 0.3 (Coefficient of Runoff)

$$\begin{aligned}
 I &= 45.20 \text{ mm/hr} \\
 A_l &= 0.353 \text{ ha (Area of Landscaping)} \\
 A_r &= 0.021 \text{ ha (Area of Roof)} \\
 A_g &= 0.029 \text{ ha (Area of Roof)} \\
 A &= 0.403 \text{ ha (Total Catchment Area)}
 \end{aligned}$$

*Existing Discharge*

$$\begin{aligned}
 Q &= C \times I \times A \times 2.78 \\
 &= 15.2 \text{ l/s}
 \end{aligned}$$

*Actual Runoff from Site*

$$\begin{aligned}
 C_1 &= ((A_l \times 0.3) \times (A_r \times 1.0) \times (A_g \times 0.5))/A \\
 &= 0.351
 \end{aligned}$$

$$\begin{aligned}
 Q_1 &= C_2 \times I \times A \times 2.78 \\
 &= 17.8 \text{ l/s}
 \end{aligned}$$

*Discharge from the Proposed Area = 17.8 l/s*

For the proposed site, the actual discharge for the 100 Yr 1 hour storm event, is 17.8 L/s.

### 5.3. Assessment of Impacts and Mitigation Measures

There is an increase in runoff at the proposed Rau Industrial Plan lot due to the addition of the shop onsite which in turn increases the runoff. As shown above, the increase in flow rates were assessed using the Rational Method for both existing and proposed conditions. Comparisons of peak flow rates were conducted to assess impacts due to the revised imperviousness at the project location.

As noted above, the increased in peak flow rate is 2.6 l/s, an increase from 15.2 L/s to 17.8 L/s. This increase is minimal and does not warrant a storage in the project area to detain the flow. The following mitigative measures are proposed to decrease the increase in peak flow.

- The rest of the proposed will remain grassed without increasing the runoff coefficient
- Runoff from the shop roof will be discharged to the grassed land to detain the peak flow and increase the infiltration rate;
- A wide shallow vegetated swale will be constructed at the west edge of the property to detain and infiltrate the flow before it flows to the existing low area located west of the project site.

This measure is expected to mitigate the minimal increase in peak flow from the site.

Considering the drainage method in place, the increase in release rate is not expected to significantly impact the current drainage system. Any site runoff will be caught by the proposed vegetated swale and led to the drainage ditch.

## 6. SUMMARY

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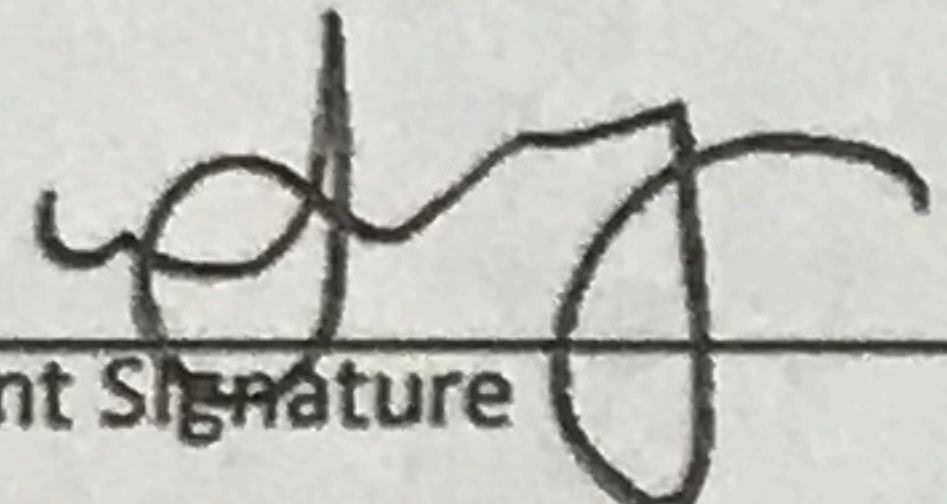
The overall changes in runoff due to the change in imperviousness of the project following the change in site condition of the Rau Industrial Plan lot is minimal. The implementation discharging roof runoff over the grassed area and a wide vegetated swale within the project site is expected to even lower the peak flow increase. As a result, no storm storage is needed for the site.


## APPENDIX H: ROAD UPGRADE ALLOWANCE STATEMENT

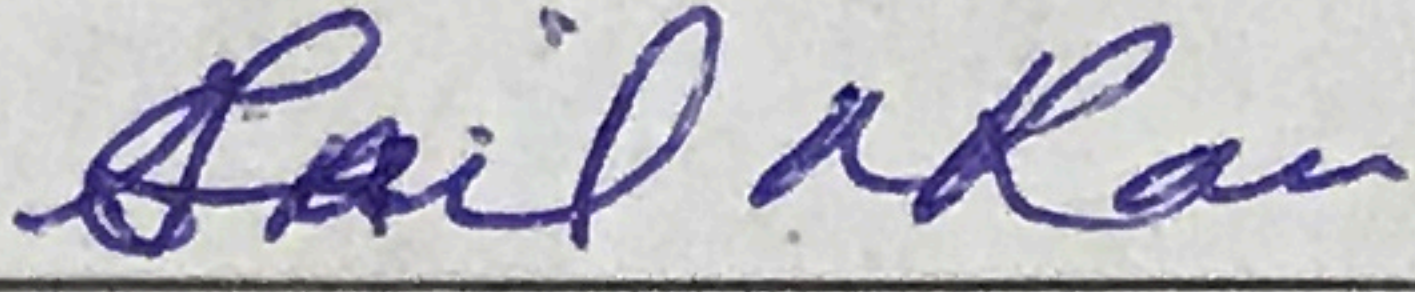
**IN REGARDS TO UPGRADING ROAD ALLOWANCES, PLEASE NOTE:**

When considering a development within the County, please keep in mind that there may be costs associated with upgrading road allowances to serve your development. Section 650 (1) of the Municipal Government Act states that "A Council may in a land use bylaw require that, as a condition of a development permit being issued, the applicant enter into an agreement with the municipality to do any or all of the following: (a) to construct or pay for the construction of a road required to give access to the development". Additionally, County policy PD 003 states that the County is not obligated to provide, build, or upgrade an access to any parcel or ¼ section of land. If you have concern over whether your road will require upgrades, please contact the Planning and Development Department or the Public Works Department.

I, the undersigned, agree that I have read and understand the above statement and those responsibilities that may apply in regards to this development permit application.

  
Applicant Signature  
\_\_\_\_\_  
Print Name  
MAIRE MC NAMEE  
\_\_\_\_\_  
Date  
18 - Dec - 2018

  
Registered Owner Signature  
\_\_\_\_\_  
Print Name  
★ ROD RAU  
\_\_\_\_\_  
Date  
★ Dec 19/18.  
\_\_\_\_\_  
★

  
Registered Owner Signature  
\_\_\_\_\_  
Print Name  
GAIL RAU  
\_\_\_\_\_  
Date  
Dec 19/18.  
\_\_\_\_\_

**SKETCH DISCLAIMER**

By signing the above, it is acknowledged that the sketch provided with this application form has been prepared with information provided by the applicant for the sole purpose of processing a development permit application. Accordingly, the County of Vermilion River is not responsible for the accuracy of the sketch or any other information contained herein.

The personal information requested on this form is being collected by the County of Vermilion River for purposes provided under Section 33(c) of the Freedom of Information and Protection of Privacy (FOIP) Act and is protected by the FOIP Act. If you have any questions about this collection, contact the County Administrator at (780)846-2244 or (780)853-5492



## APPENDIX I: EMERGENCY RESPONSE PLAN

**IMPORTANT NOTICE:**

In order for the application to be considered complete, it must include the required items indicated below AND any applicable additional supportive information requested as indicated below or during the process of reviewing your application. All required information must be attached to the application.

**INCOMPLETE APPLICATIONS MAY BE RETURNED OR EXPERIENCE DELAYS**

<b>Water Supplies for Firefighting (Fire Pumps)</b>	
For full list of tasks and inspection form sample refer to NFPA 25	
<u>General</u> Ensure quality of fuel through replacement and/or testing	<u>Responsibility</u> N/A
<u>Daily</u> The temperature of pump rooms shall be checked daily during freezing weather.	N/A
<b>Private Fire Hydrants</b>	
For full list of tasks and inspection form sample refer to NFPA 25	
<u>General</u> Hydrants shall be readily available and unobstructed for use at all times. <u>Private hydrants shall be painted yellow.</u>	<u>Responsibility</u> N/A
<b>Water Volumes &amp; Sources</b>	
<u>Source of Water</u> Development shall meet Alberta Safety Code requirements for fire suppression. Building design shall determine whether water supply is necessary and the required volume. Any required water shall be provided for through the water tanked and stored on site for servicing the property.	<u>Volume (m<sup>3</sup>)</u> To be determined at building design stage
<b>Water Supplies for Firefighting (Water Tanks)</b>	
For full list of tasks and inspection form sample refer to NFPA 25	
<u>Daily</u> Unobstructed access to building and fire tank as per <i>Alberta Building Code 3.2.5.6 (1)</i>	<u>Responsibility</u> Property Owner
<u>Weekly</u> Ensure water levels are adequate for firefighting as per <i>Alberta Building Code 3.2.5.7 (1)</i>	Property Owner

**Water Supplies for Firefighting (Ponds)**

For full list of tasks and inspection form sample refer to NFPA 25

General

Daily

Unobstructed access to building and fire pond as per *Alberta Building Code 3.2.5.6 (1)*

Responsibility N/A

Monthly

Ensure water levels are adequate for firefighting as per *Alberta Building Code 3.2.5.7 (1)(2)* (ice depth and drought conditions need to be reported to the County if volumes do not meet code)

N/A

Yearly

Annual inspection of hydrants and roadways (repairs as needed)

N/A

**Emergency Lighting**

No  
 Yes Location(s): \_\_\_\_\_ To be determined at building design stage

**Emergency Power**

No  
 Yes  Battery  Generator

Generator

Diesel  Natural Gas

Fuel supply location: \_\_\_\_\_

Transfer switch location: \_\_\_\_\_

Equipment powered by generator: \_\_\_\_\_

**Proper Signage**

No  
 Yes Location(s): \_\_\_\_\_ To be determined at building design stage

**Hazardous Area(s)**

Are there hazardous material on site?

No  
 Yes Material & quantity: \_\_\_\_\_

**Additional Supportive Information**

Please list any additional supportive information that you may have to append to this form (will become part of the application):

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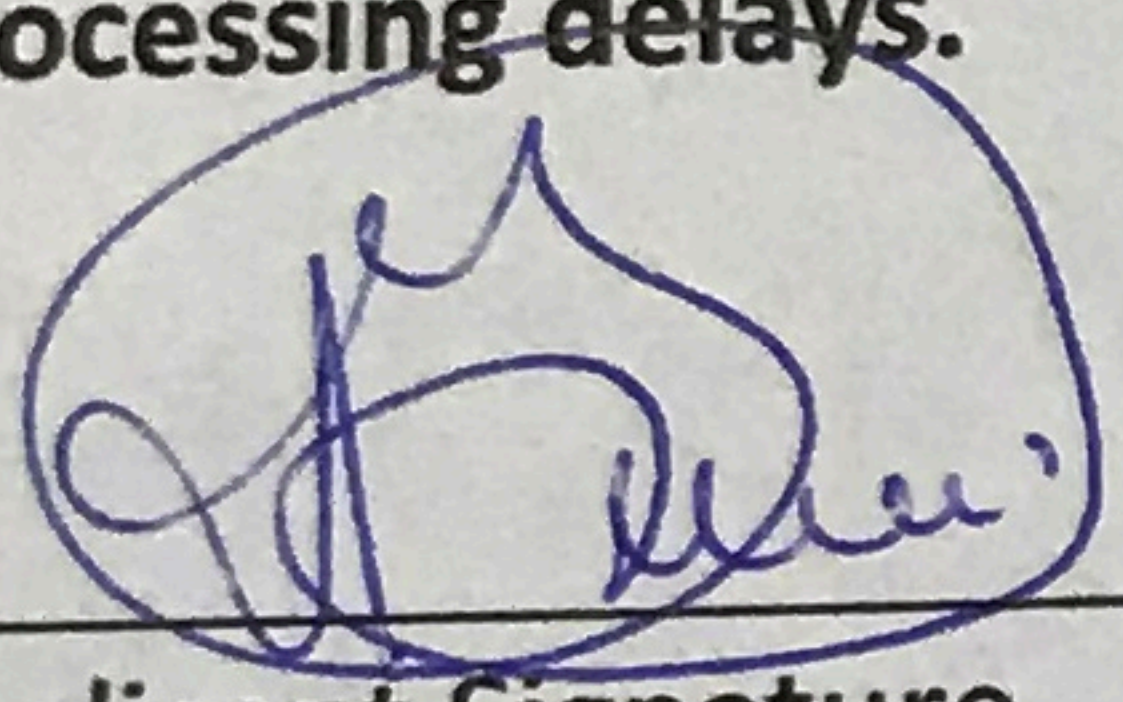
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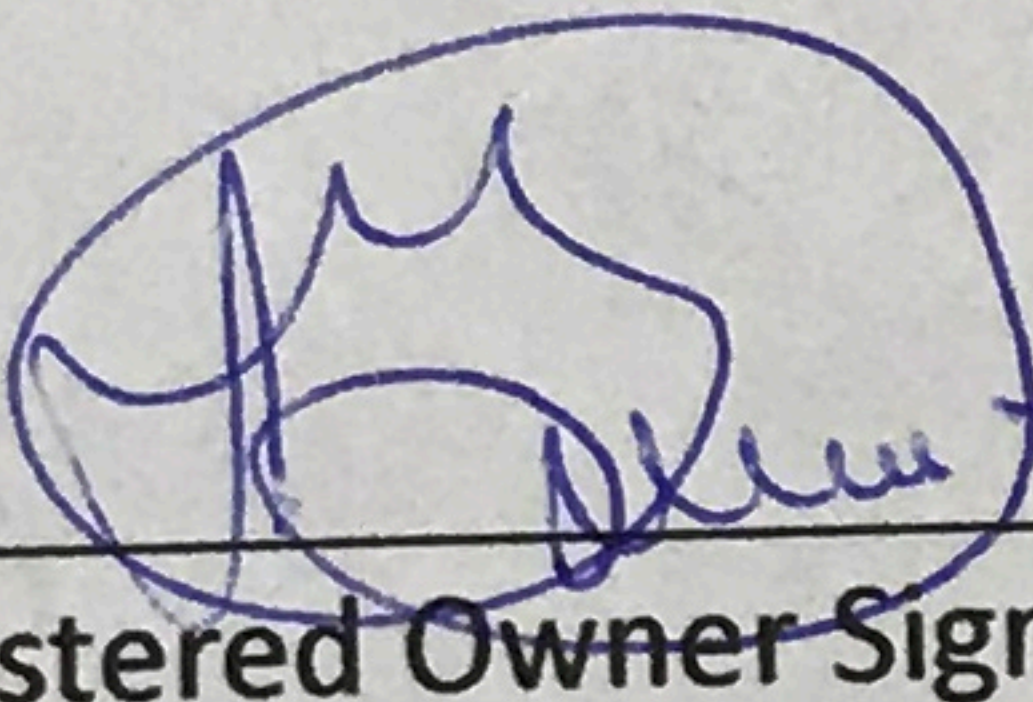
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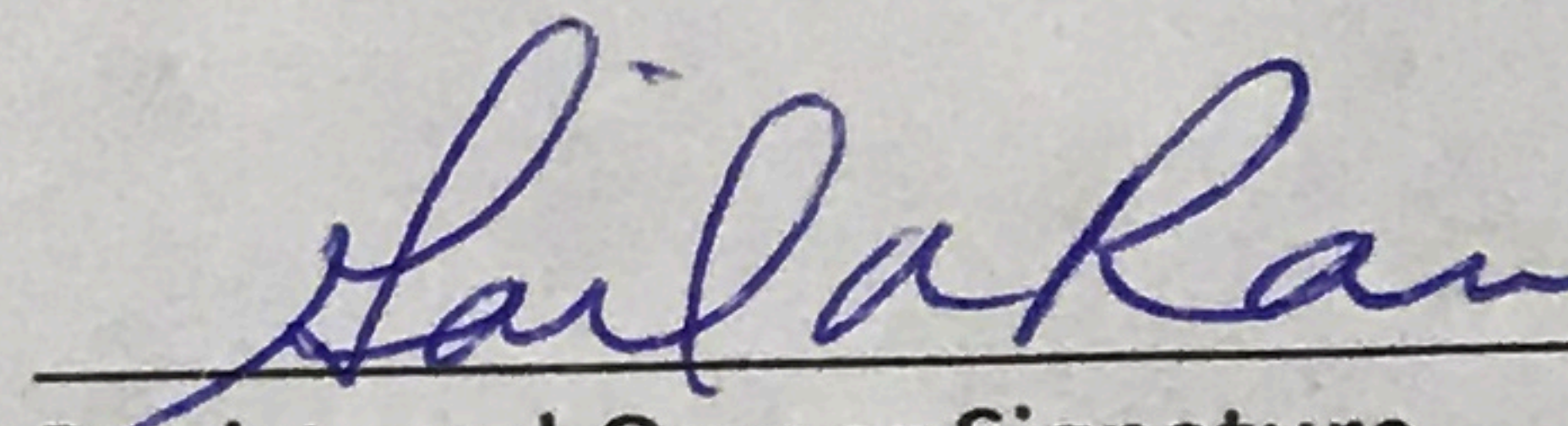
I / We, the Applicant and/or registered owner/s understand that failure to provide complete and accurate information to satisfy all the required items for my application may deem my application incomplete and may result in project processing delays.



Applicant Signature



Registered Owner Signature



Registered Owner Signature

Rod M Ran

Print Name

Rod M Ran

Print Name

GAIL N RAN

Print Name

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