

## **BY-LAW NUMBER 2016/23**

BY-LAW NO. 2016/23 is a By-law of the County of Wetaskiwin No. 10 in the Province of Alberta, to authorize the adoption of an Area Structure Plan for the purpose of providing a framework for subsequent subdivision and development of the area known as the Fieldstone Acres Area Structure Plan within SW 4-46-7-W5M, in accordance with Section 633 of the Municipal Government Act, Chapter M-26.1, Revised Statutes of Alberta 2000, and amendments thereto.

WHEREAS: At the requirements of County Council, as per Policy 6606, an Area Structure Plan has been prepared for SW 4-46-7-W5M.

AND WHEREAS: The proposed Area Structure Plan has been widely circulated and discussed within the County pursuant to Section 230, 606(1), and 633(1) of the Municipal Government Act, 2000, Chapter M-26.1, and amendments thereto.

NOW THEREFORE: The County of Wetaskiwin No. 10, duly assembled, hereby enacts as follows:

1. The document attached to this By-law as "Appendix A", together with accompanying maps, is hereby adopted as the "Fieldstone Acres Area Structure Plan."

(a) SW 4-46-7-W5M, approximately 40.5 hectares (100 acres).

2. This By-law comes into effect on the date of third reading.

READ: A First time this 10 day of May A.D., 2016

READ: A Second time this 10 day of May A.D., 2016

READ: A Third time and finally passed this 10 day of May A.D., 2016

Waiting for  
Amendments to  
the ASP.



REEVE



CHIEF ADMINISTRATIVE OFFICER

## Issue Summary

**Issue ID:**

20160428007

**Meeting Type:**Council for Planning and  
Economic Development**Meeting:**

2016/05/10 10:00 AM

**Section:**

Delegations

**Owner:**

Lindsay Jacobsen

**Presenter :**

Rod Hawken

**Scheduled time :**

13:30

**Issue Status:**

Closed

**History****Submitted By :** Lindsay

Jacobsen

**Date :** 2016/04/28**Modified By :** Lindsay

Jacobsen

**Date :** 2016/05/09**1:30 p.m. Public Hearing - Area Structure Plan - Fieldstone Acres - SW 4-46-7-W5M****Minutes****Resolution No. PD20160510.1013**

MOVED: by Councillor K. Johnson that due to a conflict of interest, Councillor L. Seely be excused from the 1:30 p.m. Public Hearing as he is the applicant of the proposed Area Structure Plan for Fieldstone Acres located within SW 4-46-7-W5M.

**Carried Unanimously**

Councillor L. Seely left the meeting at 1:30 p.m.

Reeve K. Rooyakkers declared the Public Hearing open at 1:31 p.m. and a delegation consisting of Shelly Fulford, George Fitzner, Laureen Lederer, Brenda Schaap and Lyle Seely entered the meeting.

On November 25, 2015, Administration received a proposed Area Structure Plan from Lyle Seely known as 'Fieldstone Acres'. The proposed Area Structure Plan is located within SW 4-46-7-W5M and consists of approximately 100 acres into lots for single-family detached housing. The proposed area is located just north of the Hamlet of Alder Flats and will consist of 61 Country Residential or Urban Residential lots. The project is planned to be undertaken as three separate phases with 12 lots planned for Phase one, 19 lots for Phase two and 30 lots for Phase three. The Fieldstone Acres Area Structure Plan complies with the County's Municipal Development Plan and Land Use Bylaw and will be included within the Hamlet of Alder Flats.

Referral of the proposed Area Structure Plan was sent to West Central Planning Agency, Alberta Energy Regulator (AER), Alberta Sustainable Resource Development (ASRD), Alberta Environment, Alberta Transportation, and Administration on December 2, 2015.

Administration has received the following comments from referral agencies:

*"No issues in concept, other than the post-development storm water running west of Range Road 74 will be flagged as a potential issue. Also, provisions for a 15 metre radius turnaround should be included in each phase of the subdivision drawings (east of Road A)."*

*"1. Policy 6615 says that a Rural Gravel Standard is allowed if the proposed lots are over 1 acre which these are. However, regardless of parcel size, pavement shall be required for residential developments proposing lot densities over 30 lots per quarter section of land. This shall include densities of 30 lots or less on partially developed quarter sections (first phase developments) if it is intended under an Area Structure Plan that the total number of lots in future phases will result in there being more than 30 lots per quarter section."*

*Further to the above Policy 6615 also specifies that proposed multi-lot residential subdivisions with a proposed density of 25 or more needs to have a paved linking road from the subdivision to an existing paved arterial, collector or resource road.*

*And what requirement would there be for a per lot road contribution fee?*

*2. According to the County's farmland assessment records the land has an assessment of 36% for 97 acres and 8.5% for 1.67 acres. However, as addressed in the ASP the area immediately surrounding the Hamlet of Alder Flats has been designated as a development area. Further to this the MDP also aims to cluster development near Hamlets and existing services.*

*3. The abandoned oil and gas line is of some concern and the owners of the line and the AER should be sent a referral so their comments can be received prior to this plan going to Council so as to allow time to address anything that is received in the referral.*

*4. The fact that there would be 61 individual wells in close proximity to each other is a little unnerving especially with the water report stating that there has been a 25m increase in well depth for the region and that there may be some long term impacts.*

*5. 3.7(b) of the Country Residential district states that:*



"Density restrictions shall be at the discretion of Council based on factors including but not limited to tests listed under section 3.7(a). Density greater than 24 parcels on a quarter section shall be considered as being of a higher density, and may be subject to requirements for infrastructure above the general County standard. Subdivision creating more than 2 lots per quarter section, or resubdivision of a previously developed quarter, may be subject to a requirement for the adoption of or amendment to an Area Structure Plan."

*I am not sure what standards we would want or need to go above and beyond on? Maybe with the concerns raised on the water supply side of things?"*

Alberta Transportation provided the following comments:

*"Our department has no objections in principle to the proposed Area Structure Plan. Access to the proposed parcels is to be via the road system only. The County of Wetaskiwin will be responsible for intersectional improvements if it is found that improvements at the intersection of the local road and the highway are required due to development of this subdivision."*

The County's Country Residential land use district states the following:

**3. COUNTRY RESIDENTIAL DISTRICT (CR)**  
(Amended by By-law 2008/08)

**3.1 Purpose**

*The purpose of the district is to allow for the subdivision and development on poor agricultural land of non-farm dwellings compatible with adjacent land uses.*

**3.2 Permitted Uses**

- (a) Detached dwelling
- (b) Accessory building or use
- (c) New modular dwelling of a standard similar to a dwelling of conventional construction.

**3.3 Discretionary Uses**

- (a) Mobile or moved-in dwelling
- (b) Used modular dwelling
- (c) Home occupation
- (d) Bed and breakfast business
- (e) Public utility
- (f) Public park
- (g) Accessory building or use

**3.4 Parcel Size**

*Maximum parcel size is 2.02 ha (5 acres)*

*Minimum parcel size is 0.40 ha (1 acre)"*

The County's Urban Residential land use district states the following:

**"14. URBAN RESIDENTIAL DISTRICT (UR)**

**14.1 Purpose**

*The purpose of the district is to allow for the subdivision and/or development of land for residential uses in hamlets and elsewhere to an urban standard where the uses can now or may, in the future, be tied to full municipal services.*

**14.2 Permitted Uses**

- (a) Detached dwelling
- (b) Accessory building or use

**14.3 Discretionary Uses**

- (a) Mobile, modular or moved-in dwelling
- (b) Duplex, side-by-side
- (c) Duplex, vertical
- (d) Apartment
- (e) Home occupation
- (f) Bed and breakfast business
- (g) Post office
- (h) Public park
- (i) Public utility
- (j) Accessory building or use

**14.4 Lot Sizes**

- (a) *In a proposed subdivision served or to be served by municipal water and sewer services each lot intended for residential use must have an area of at least 450 square metres (5,000 sq. ft.) and a minimum width of 15.2 metres (50 ft.).*
- (b) *In a proposed subdivision served or to be served by a municipal sewer service, but not by a municipal water service, each lot intended for residential use shall have an area of at least 929 square metres (10,000 square feet) and an average width of at least 21.34 metres (70 feet).*  
(amended by By-law 2008/63)
- (c) *In a proposed subdivision served or to be served by municipal water service but not a municipal sewer service each lot intended for residential use must have an area of at least 1,394 square metres (15,000 sq.ft.) and a minimum width of 30.48 metres (100 ft.).*
- (d) *In a proposed subdivision not served or not to be served by municipal water and sewer services, each lot intended for residential use must have an area of at least 1,858 square metres (20,000 sq. ft.) and a minimum width of 30.48 metres (100 ft.).*
- (e) *Irregular (i.e. pie-shaped) lots under c and d above must have a minimum average lot width of 30.48*

meters (100 feet). (amended by By-law 2008/63)

(f) The minimum lot size for a duplex is 604 sq.m (6,500 sq. ft). and a minimum width of 15.2 metres (50 ft.). Separate water and sewer services must be provided to both lots subdivided for a side-by-side duplex."

The following email was received by Administration on March 23, 2016 regarding the proposed Area Structure Plan:

"To Whom it May Concern,

*These are our preliminary concerns with this proposed application and we would never condone or approve of this as neighboring land owners. This entire plan has not been thought out and has no thoughts regarding neighboring land owners and County taxpayers.*

Objections:

- Remove prime agriculture/farmland from a shrinking agricultural land base
- Many lots and homes available in Alder Flats and surrounding area
- Added stress on an already loaded existing sewage lagoon
- Added traffic and dust
- Seriously have an adverse affect on land values in surrounding parcels of land
- Affect water drainage and runoff patterns
- Increase taxpayer costs for fire fighting, policing and schools
- Plenty of available lots and acreages currently for sale in surrounding subdivisions between Alder Flats and Buck Lake. Adding more would only cause more strain on neighbors' homes and acreages in the area
- Proposed development phase scheme is completely and totally ridiculous in that the entire proposed trailer court Phase 1 leaps a complete parcel of land for no apparent reason, rather than just expand an existing hamlet of Alder Flats using existing infrastructure.

Lloyd Clark

Wild Rose Operating Ltd."

On May 6, 2016 Administration received a letter from Elaine Goldade in support of the proposed Area Structure Plan, the letter reads as follows:

*"This letter is in support of the proposed subdivision north of Alder Flats, Fieldstone Acres. As a landowner adjacent to this development, I would like to extend my full support. It is important for the community to continue to grow and this development would only enhance our hamlet.*

Sincerely,

Elaine Goldade"

A Public Hearing was set and the Notice of Public Hearing was advertised in the April 28 and May 5, 2016 issues of the Pipestone Flyer. The Notice of Public Hearing was mailed to the landowner and adjacent landowners on May 2, 2016.

Administration discussed the following amendments to the Area Structure Plan:

- Add Section 9.2 of Levelton Recommendations regarding pumping tests to Section 9.2 of the Area Structure Plan.
- Add the following to Section 8 of the Area Structure Plan: "In lieu of road contribution, 2nd Street West will be paved going north from Highway 13."
- Add the following to Section 8 of the Area Structure Plan: "If a future Traffic Impact Assessment (TIA) requires improvement, the total cost of any improvements will be the sole responsibility of the developer."

Adjacent landowner Laureen Leclerc discussed the following:

- Location of the entrance to the proposed subdivision;
- Entrance would be located on 4th Street West.

Adjacent landowner Shelly Fulford discussed the following concerns:

- Increased traffic flow along Highway 13;
- Safety of children;
- Increased noise (from people, animals, quads and snow machines);
- Effect on property taxes, utilities (water and sewage) with increased infrastructure;
- Enforcement of County Bylaws and the monitoring of increases in traffic and noise;
- Clarification on the zonings of the proposed subdivision.

Administration responded that there are rules and bylaws to enforce dog and noise complaints.

Councillor L. McKeever questioned the 25 metre drop and pumping test of the Levelton water study. Mr. McKeever would like to see groundwater issue resolved prior to the subdivision of 61 lots. Mr. Seely responded that one well would be drilled and a pump test done at the first phase to guarantee sufficient



water to the subdivision. Mr. Seely is willing to do a pump test on one lot as a condition of Area Structure Plan.

Administration supports the application as the intended use is compatible with the County's Land Use Bylaw and the Policy concept for development north of Alder Flats.

Administration recommended approving Three Readings of By-Law 2016/23, to authorize the adoption of the Fieldstone Acres Area structure Plan within SW 4-46-7-W5M for Lyle Seely, subject to the following amendments:

- Add Section 9.2 of Levelton Recommendations regarding pumping tests to Section 9.2 of the Area Structure Plan.
- Add the following to Section 8 of the Area Structure Plan: "In lieu of road contribution, 2nd Street West will be paved going north from Highway 13."
- Add the following to Section 8 of the Area Structure Plan: "If a future Traffic Impact Assessment (TIA) requires improvement, the total cost of any improvements will be the sole responsibility of the developer."

Reeve K. Rooyakkers declared the Hearing closed at 1:55 p.m. and Council thanked the delegation for attending and they left the hearing.

#### **Resolution No. PD20160510.1014**

By-law 2016/10 is a By-law in the County of Wetaskiwin No.10 in the province of Alberta, to authorize the adoption of the Fieldstone Acres Area structure Plan within SW 4-46-7-W5M for Lyle Seely, subject to three amendments, in accordance with Section 633 of the Municipal Government Act, Chapter M-26 Revised Statutes of Alberta 2000, and amendments thereto. The amendments to the Area Structure Plan include the following:

- Add Section 9.2 of Levelton Recommendations regarding pumping tests to Section 9.2 of the Area Structure Plan.
- Add the following to Section 8 of the Area Structure Plan: "In lieu of road contribution, 2nd Street West will be paved going north from Highway 13."
- Add the following to Section 8 of the Area Structure Plan: "If a future Traffic Impact Assessment (TIA) requires improvement, the total cost of any improvements will be the sole responsibility of the developer."

MOVED: by Councillor L. McKeever that By-law 2016/23 be given First Reading.

**Carried Unanimously**

MOVED: by Councillor P. Hay that By-law 2016/23 be given Second Reading.

**Carried Unanimously**

MOVED: by Councillor G. Dearing that By-law 2016/23 be presented for Third Reading.

**Carried Unanimously**

MOVED: by Councillor K. Johnson that By-law 2016/23 be given Third Reading and it be declared finally passed and the Reeve and Chief Administrative Officer be authorized to sign and affix thereto the corporate seal of the County of Wetaskiwin No. 10.

**Carried Unanimously**

Councillor L. Seely returned to the regular Council for Planning and Economic Development meeting.

# Fieldstone Acres Area Structure Plan



Prepared on behalf of:

**Lyle Seely**

by

**Senon Engineering Inc.**



November 2015

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## 1. Introduction

### 1.1 General Overview

Senon Engineering Inc. (Senon) was retained by Mr. Lyle Seely as his engineering consultant for the proposed Fieldstone Acres Development. Fieldstone Acres will consist of the development of approximately 100 acres into lots for single-family detached housing. The proposed area is located just north of the Hamlet of Alder Flats and will consist of 61 country residential sized lots. The project is planned to be undertaken as three separate phases with 12 lots planned for Phase 1, 19 lots for Phase 2 and 30 lots for Phase 3.

### 1.2 Purpose

The Fieldstone Acres Area Structure Plan (ASP) establishes a land use and servicing framework for the future subdivision and development of a residential subdivision in part of SW 4-46-7-W5M. The proposed development consists of 61 country residential sized lots ranging from 1.0 – 1.9 acres in size and the addition of municipal reserve land. The long range design plan for Fieldstone Acres consists of a low density country residential development.

This ASP reviews the existing site conditions, planning context and provides a decision-making framework for the orderly development of the subject lands by defining:

- a development concept that identifies the location and intensity of land uses
- roadway systems to serve the subject lands and how they relate to the overall transportation network
- conceptual utility servicing for the subject lands that integrates with existing infrastructure
- development implementation

## 2. Municipal Government Act

Area Structure Plans are authorized by Section 633 of the Municipal Government Act (MGA), Statutes of Alberta, 2000, Chapter M-26, for the purpose of providing a framework for the future subdivision and development of lands within a municipality. The MGA requires that an ASP, as a Statutory Plan, be consistent with a municipality's other Statutory Plans and must describe:

- Proposed land uses; either generally or specifically
- Population density
- The general location of major transportation and public utilities
- Sequence of development
- Any other planning matters that Council may consider necessary

An ASP must be adopted by municipal bylaw, and a public hearing is required prior to Council's second reading of the bylaw. In preparing this Statutory Plan an advertised public open house was held by the ASP's proponent and provided an opportunity for adjacent landowners and the general public to view and comment on the plan during preparation. No concerns were brought forth during the open house.

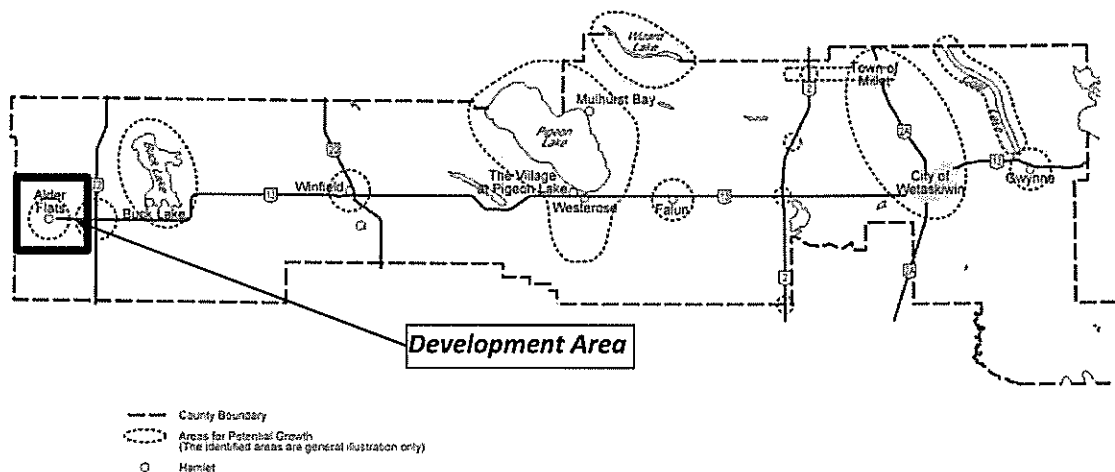
### 3. Municipal Development Plan & Requirements for Area Structure Plans Policy #6606

The County of Wetaskiwin's Municipal Development Plan (MDP) was created to maintain a balanced approach to diverse development while protecting the agricultural heritage and rural environment.

Development of the Fieldstone Acres ASP complies with the MDP Bylaw 2004/28.

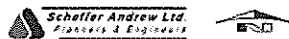
As seen in Figure 1 the ASP subject area was outlined as an area for potential growth in the County of Wetaskiwin.

**Figure 1: County of Wetaskiwin No. 10 Municipal Development Plan, Bylaw 2004/28**



County of Wetaskiwin No. 10  
Municipal Development Plan

**Figure 9: Areas for Growth Potential**



Scale 1:500,000

This report addresses specific criteria from the County of Wetaskiwin's requirements for Area Structure plans Policy # 6066, including, but not limited to:

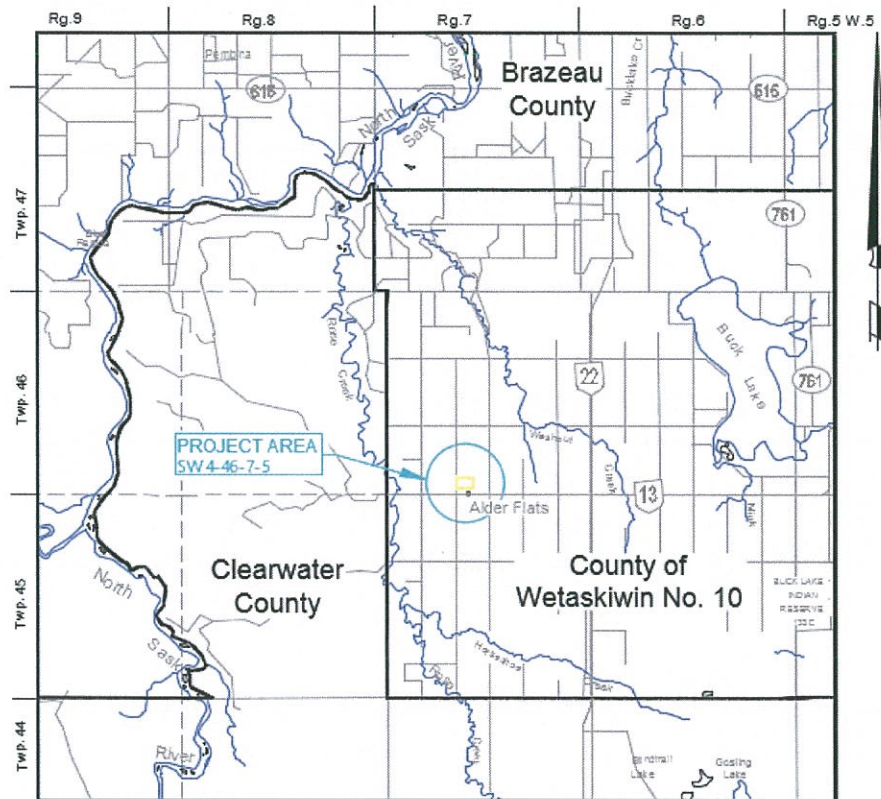
- Legal Land Descriptions
- Project boundaries
- Existing land conditions (i.e. topography, existing transportation infrastructure, etc.)
- Public input
- Groundwater reports and water supply
- Sewage treatment
- Storm water management

- Traffic & roads
- Provision of Municipal Reserve
- Lot servicing scenarios

#### 4. Legal Description and Boundary Uses

The Fieldstone Acres ASP is located in Wetaskiwin County No.10 north of the hamlet of Alder Flats in a portion of SW ¼ Section 4-Township 46-Range 7-West of the 5th Meridian (SW-4-46-7-5).

Figure 2: Fieldstone Acres Project Area



In its entirety, the development area is approximately 39.5 hectares (97.6 acres). The proposed subdivision is comprised of 61 country residential lots. Access to the lots will be from the south by a basic P-Loop road which connects to the existing 2<sup>nd</sup> Avenue North. There is also access from the west with a connection to Range Road 74. This layout can be seen in **Appendix A "Dev" Development Concept**. This ASP area has the following boundaries:



Direction	Boundary	Plan No – if applicable	Land Use
South	2 <sup>nd</sup> Avenue north	Road Allowance	Road Right of Way
East	Equestrian Arena and Track	Lot A, Plan 3273 RS	agriculture
East	SE -4-46-7W5M		undeveloped quarter section
West	RR 74	Road Allowance	Road Right of Way
North	NW 4-46-7-W5M		undeveloped quarter section

## 5. Existing Area

The Fieldstone Acres ASP is being completed for Lyle Seely (824440 Alberta Ltd.), who is currently the registered owner of a portion of SW 4-46-7-W5M with an area of 39.5 ha (97.6 acres). Please refer to Appendix B-Titles and Plans applicable to the subject property.

The development of the land within the proposed area is influenced by the natural and manmade environment. Existing site conditions are outlined in this section and provide context for the development concept.

### 5.1 Topography and Natural Features

The proposed development land is currently pasture land. The elevation of the existing area peaks at the southeast section and slopes down toward the north-northwest at an average slope of 2.8%. This can be seen in the existing topographic drawing in **Appendix A "Pre" Predevelopment Storm Conditions**, which outlines existing flow conditions and structures relevant to the site and surrounding area.

### 5.2 Historical Resources

A request for information pertaining to any historical or archeological resources in the proposed project area was submitted to the Historic Resources Management Branch of Alberta Culture and Community Spirit. They determined that there are no previously recorded historic resource sites within the development area and much of the area appears to have been previously disturbed, that there is low likelihood that historic resource sites will be impacted and a Historic Resources Impact Assessment is not required.

### 5.3 Land Use

#### 5.3.1 Existing Land Use

As shown in the air photo below, the site is currently a pasture with minimal to no tree coverage. The lands are currently zoned as agricultural.

**Figure 3: Existing and Surrounding Area Land Use**

### 5.3.2 Pipelines and Oil Wells

There is an abandoned Alder Flats Gas Co-Op Utility pipeline on the southwest section of the proposed development. It is not anticipated that this abandoned line will be an issue for the development. Discussions with the utility will occur during detailed design to determine whether the line has been removed or conditions required during construction if the line is still in place.

### 5.3.3 Surrounding Land Use

The ASP land is adjacent to the Hamlet of Alder Flats which is classified as an Urban Residential District. Lands to the north and east are classified as agricultural but are currently pasture land that is not being farmed. Immediately east of the proposed development is an equestrian centre.

## 6. Existing Access and Municipal Services

The Fieldstone Acres ASP area is currently well serviced with available roadways. The existing transportation network will allow excellent connection to the future Fieldstone Acres access roads. The subdivision is bounded on the west by Range Road 74 and on the south connections to 4<sup>th</sup> Street West and 2<sup>nd</sup> Street West. The subdivision will eventually tie in to this adjacent road network. The ASP land is also quite close to Highway 13 which allows for adequate transportation for the new development.

Utilities and municipal services do not currently exist on site, but are located nearby and may be readily extended for new subdivision development.

## 7. Development Plan

The Fieldstone Acres ASP provides a development framework for implementing a functional and attractive area for residential use.

### 7.1 General

The development plan described for the Fieldstone Acres ASP is as illustrated on the drawings in **Appendix A** and defines the overall concept for lot configuration, parks and open space corridors, stormwater management, and supporting road systems. The development concept is Country Residential as the residential zone type within the plan area. The total development area is 97.6 acres.

### 7.2 Country Residential Zone

The proposed development lands are proposed to become Country Residential lots. This area will consist of 61 individually titled lots

### 7.3 Parks, Trails and Open Space

The Fieldstone Acres ASP provides three separate open space and park areas as well as municipal reserve connections between lots and linking to the larger municipal reserve areas. The total area of municipal reserve is 15.04 acres.

There will also be a public utility lot (PUL) containing a stormwater management facility that is directly linked to a greenspace. The municipal reserve linkages will also serve as a walking links between the subdivision and greenspace areas.

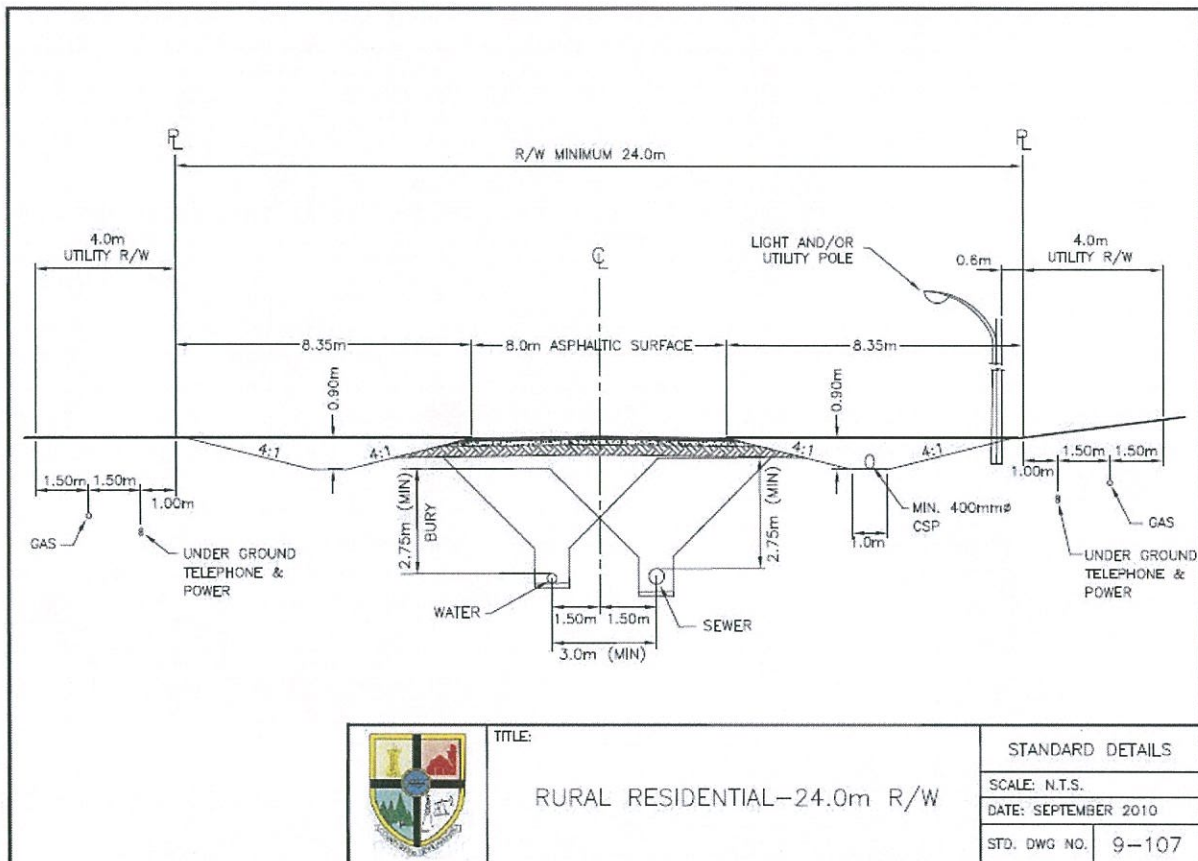
## 8. Transportation

The road design for the proposed subdivision provides an efficient and supportive internal road system for the safe movement of goods and people. The proposed interior road and the connections to existing and future network are shown on the site plan in **Appendix A**

The concept in Phase 1 establishes one primary road that will be extended to the first intersection of the subdivision's internal road network. This road has one access on the adjacent portion of Range Road 74. All proposed Phase 1 lots will be serviced from this road.



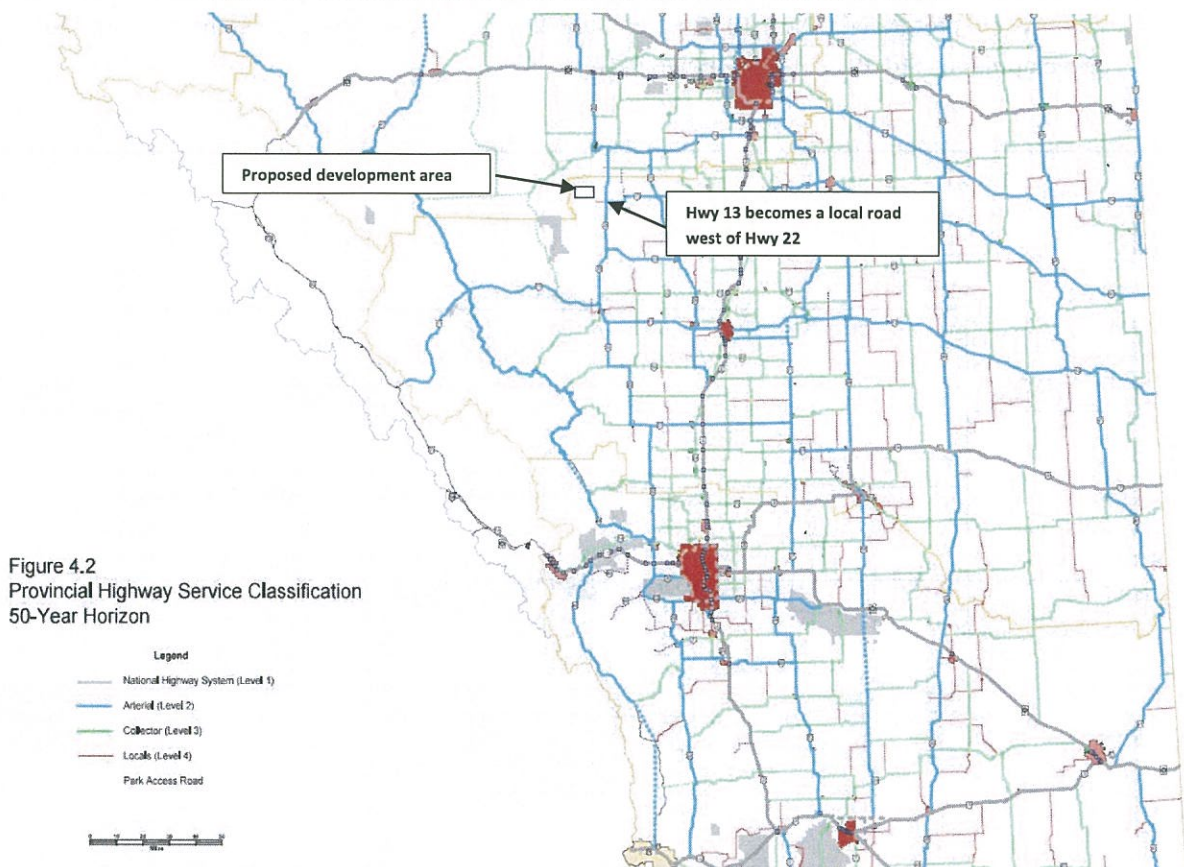
The access roads for all three phases will contain a 24 meter road right-of-way and will follow the County of Wetaskiwin No. 10 Design Guidelines and Construction Standards for Subdivision Developments, Std. Dwg. 9-107, shown in **Figure 4**.



**Figure 4 – County of Wetaskiwin No. 10 Standard Details for Rural Residential Roads**

When assessing the traffic impact of this development on the existing transportation infrastructure it is important to note that Highway 13 within the vicinity of this project, and anywhere west of Highway 22, is classed as a Local roadway. This can be seen in the following figure. In fact, all existing roads within close proximity of the proposed development are local roadways and approval from Alberta Transportation will not be required. This combined with the low lot density of the proposed development eliminates the need for a complete traffic impact assessment to be completed.

Figure 5 – Provincial Highway Service Classification – 50 year Horizon



The development year of phase one is anticipated as 2016. The developing years of phase 2 and 3 are currently unknown as they will directly correlate with the housing market and economy.

Phase one consists of the development of only 12 lots with one access onto Range Road 74. It is not believed that these 12 lots will have a significant impact on the existing transportation infrastructure. The developer has completed his due diligence and has acquired background traffic data for the main intersections within the vicinity of the project. Once the development year of phase 2 and 3 are known this data can be used to reexamine the possible traffic impacts of these phases of the development.

Twelve hour traffic counts were conducted at the intersection of Highway 13 and Range Road 74, Highway 13 and 4<sup>th</sup> Street West and the intersection of Highway 13 with 2<sup>nd</sup> Street West on July 7<sup>th</sup>, 8<sup>th</sup> and 24<sup>th</sup> 2015, consecutively. The counts were completed by The Client's representative, Heather Wagner. The count data including turning movement counts are attached in **Appendix C**.

The traffic counts were completed at fifteen minute intervals over a twelve hour span and are believed to be a good representation of a typical weekday in Alder Flats. Peak hour traffic volumes were established after compiling the raw data. The corresponding Average Annual Daily Traffic (AADT)



volumes were then calculated using the following relationship from the Alberta Highway Geometric Design Guide

$$AADT = DHV / K$$

Where DHV = Design Hourly Volume

$$K = 0.12$$

(From Table A.6.2 of the Alberta Highway Geometric Design guide for rural roads)

DHV = Design Hourly Volumes

Tables 1 through 3 summarize the DHVs and AADTs for the corresponding intersections based on the traffic counts.

**Table 1:**  
**Background Traffic Volumes: Highway 13 & Range Road 74**

Road	Base Year (2015)	
	AADT	DHV
North Leg (Range Rd 74)	94	11
South Leg (Range Rd 74)	154	18
East Leg (Highway 13)	496	58
West Leg (Highway 13)	316	37

**Table 2:**  
**Background Traffic Volumes: Highway 13 & 4 Street West**

Road	Base Year (2015)	
	AADT	DHV
North Leg (4 Street)	42	5
South Leg (driveway)	0	0
East Leg (Highway 13)	558	67
West Leg (Highway 13)	533	64

**Table 3:**  
**Background Traffic Volumes: Highway 13 & 2 Street West**

Road	Base Year (2015)	
	AADT	DHV
North Leg (2 Street)	50	6
South Leg (driveway)	33	4
East Leg (Highway 13)	608	73
West Leg (Highway 13)	558	67



At this time, the initial phasing of the subdivision is not believed to have a large impact on the current traffic/existing intersections.

## 9. Servicing Concepts

The overall servicing concept for the proposed ASP is shown in **Appendix A-“Drawing Serv”, Servicing Concept**.

### 9.1 Sanitary Sewer

The sanitary sewer piping system will run centrally in the road rights-of-way, as well as utilize a utility easement paralleling the west edge of the pipeline right-of-way. For proposed sanitary servicing details, see **Appendix A-“Drawing Serv”, Servicing Concept**. The existing topography allows for gravity flow to be accommodated for the entire site, exiting at the northwest corner of the property and tying to the existing sanitary main. The closest sanitary network to tie the proposed system into exists adjacent to Range Road 74. Existing and future contributions to this system will be examined to confirm compliance with capacity regulations.

The sanitary sewer system, including individual lot services, will be designed in accordance with the County of Wetaskiwin’s “Design Guidelines and Construction Standards for Subdivision Developments, 2010”.

### 9.2 Water Distribution

The water distribution system for the plan area is a potable water supply by way of a private well for each lot being created. Each well will be tested and certified as meeting regulatory requirements. A Phase 1 Groundwater Assessment was completed for the development area by Levelton Consultants. This assessment concludes that there is sufficient supply in the area aquifers to meet the requirements of 61 wells to provide 1,250 m<sup>3</sup>/year in accordance with Section 23(3) of the Water Act for the proposed development.

The complete Groundwater Evaluation is included in **Appendix D**.

### 9.3 Stormwater Management

The stormwater management system will be designed using XP-SWMM software and will accommodate 1:100 year events, utilizing a paved road cross section with open ditches in accordance with County of Wetaskiwin’s Standard Details for Rural Residential Roads 24 m cross section. The development drainage will all eventually make its way to the storm pond located in the northwest corner of the subdivision with plans to outlet in the same corridor as the sanitary system. A control manhole will be installed at the storm outlet to control flows to the acceptable rate of flow. Runoff from the site will be controlled to predevelopment rates. The location for the storm pond is based on existing topography. Details of the overall stormwater system can be referenced in **Appendix A-“Post”, Post Development Storm Conditions**.

The stormwater management plan will be designed in accordance with the County of Wetaskiwin’s “Design Guidelines and Construction Standards for Subdivision Development, September 2010”.

#### **9.4 Shallow Utilities**

Franchise utilities, including power, natural gas, cable and telephone service are available from extension of existing nearby facilities. These utilities will be located in accordance with County of Wetaskiwin No. 10 Rural Residential, Std. Dwg. 9-107.

### **10. Implementation and Phasing**

#### **10.1 Implementation**

The implementation of the Fieldstone Acres ASP will be dependent on market demand for residential lands, the efficient extension of roads and infrastructure and the County's subdivision and development processes.

#### **10.2 Phasing**

It is proposed that the ASP subject area be developed in three phases as follows:

1. Phase 1 – 12 Lots – 5.24 ha (12.95 ac)
2. Phase 2 – 19 Lots – 8.02 (19.82 ac)
3. Phase 3 – 30 Lots – 14.13 ha (34.92 ac)

Construction for Phase 1 is planned for 2016 with the subsequent phase development to be completed when market demand prevails.

## APPENDIX A – DRAWINGS

Dwg. No.	Drawing List
COV	Cover Sheet
DEV	Development Concept
SERV	Servicing Concept
PRE	Predevelopment Storm Conditions
POST	Post-development Storm Conditions
P1	Stormwater Facility – Plan/Profile

# PRELIMINARY CONCEPT DRAWINGS

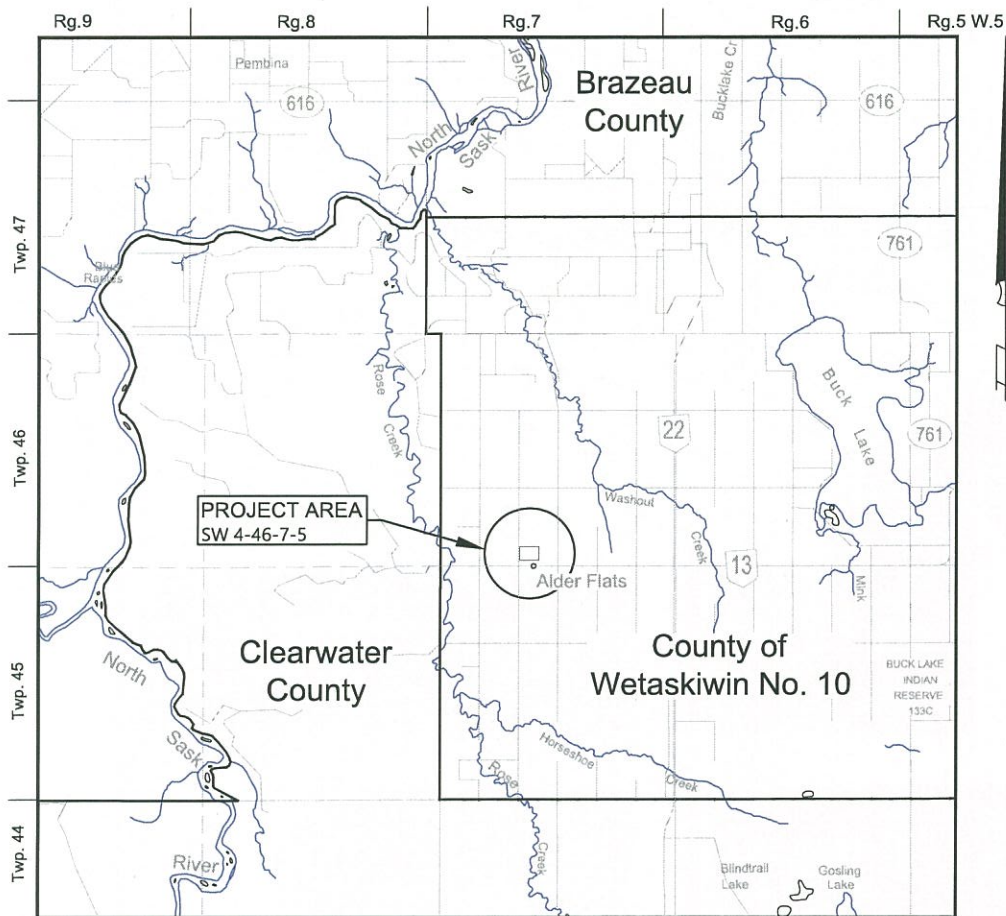
COUNTRY RESIDENTIAL SUBDIVISION

## Fieldstone Acres

in SW 4-46-7-5 near ALDER FLATS

### AREA STRUCTURE PLAN

WETASKIWIN COUNTY NO. 10



KEY PLAN

DWG. NO.	REV	DRAWING LIST	DATE
COV	0	COVER SHEET	Mar/15
DEV	0	DEVELOPMENT CONCEPT	Mar/15
SERV	0	SERVICING CONCEPT	Mar/15
PRE	0	PREDEVELOPMENT STORM CONDITIONS	Mar/15
POST	0	POST DEVELOPMENT STORM CONDITIONS	Mar/15
P1	0	STORMWATER FACILITY – PLAN/PROFILE	Mar/15







# LEGEND

PHASE 1 LOTS  
5.061 ha (12.51 ac.)  
PHASE 2 LOTS  
8.668 ha (21.42 ac.)  
PHASE 3 LOTS  
14.507 ha (35.85 ac.)

MUNICIPAL RESERVE  
6.088 ha (15.04 ac.)  
ROAD RIGHT-OF-WAY  
5.62 ha (13.89 ac.)  
PUL- STORMWATER  
MANAGEMENT FACILITY  
0.258 ha (0.64 ac.)

FUTURE ROAD RIGHT-OF-WAY  
0.23 ha (0.57 ac.)  
WALKING PATH  
(~3205 metres)  
TOTAL PLAN AREA  
39.533 ha (97.69 ac.)

## DEVELOPMENT CONCEPT

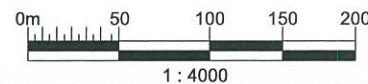
COUNTRY RESIDENTIAL SUBDIVISION

**Fieldstone Acres**

in SW 4-46-7-5 near ALDER FLATS

AREA STRUCTURE PLAN

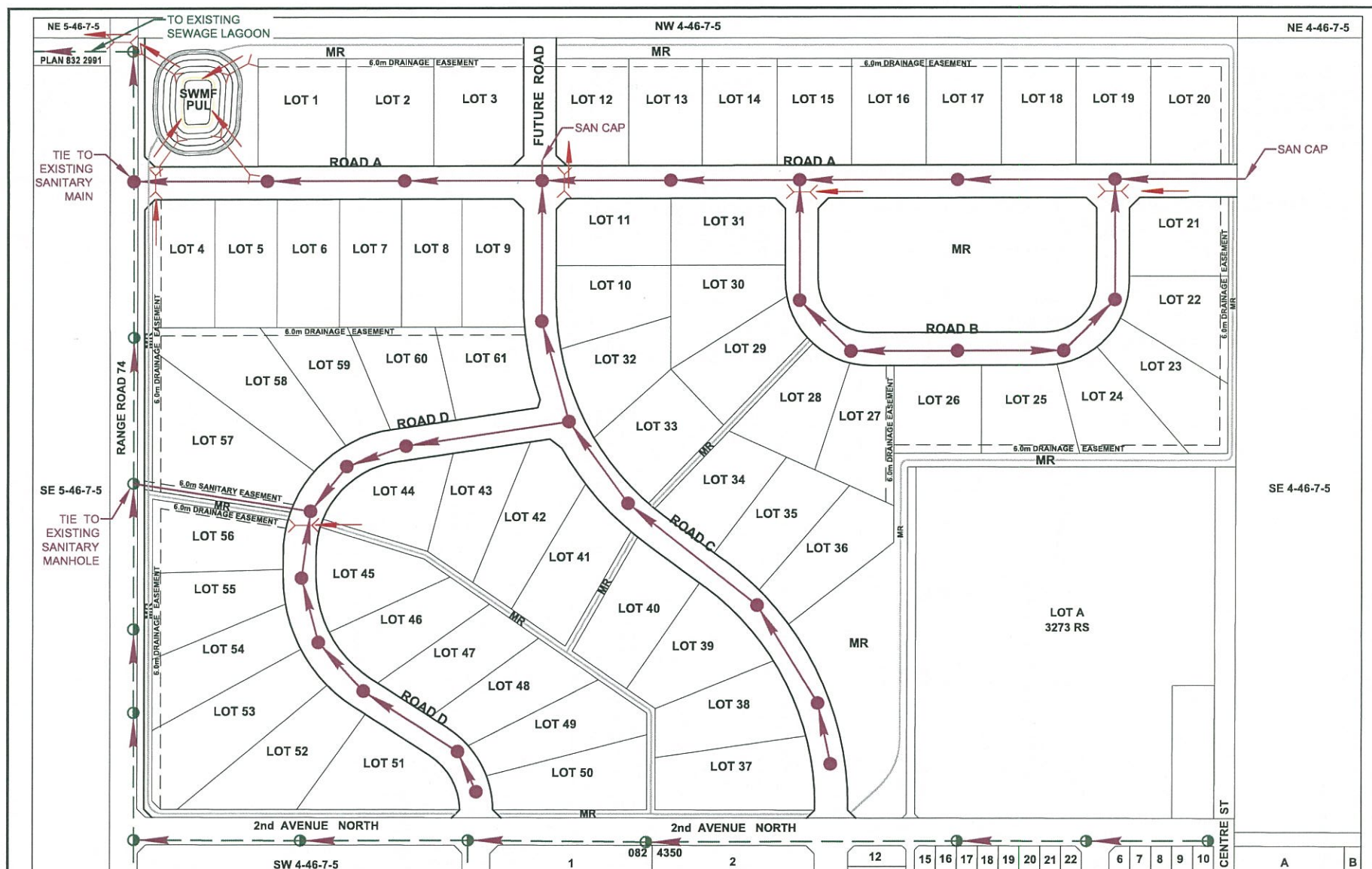
WETASKIWI COUNTY NO. 10







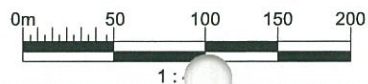
COUNTRY RESIDENTIAL SUBDIVISION  
**Fieldstone Acres**  
*in SW 4-46-7-5 near ALDER FLATS*  
AREA STRUCTURE PLAN  
WETASKIWIN COUNTY NO. 10



# LEGEND

EXISTING SANITARY MAIN  
EXISTING SANITARY MANHOLE  
PROPOSED SANITARY MAIN  
PROPOSED SANITARY MANHOLE  
DIRECTION OF SANITARY FLOW

PROPOSED CULVERT  
CULVERT FLOW DIRECTION  
WALKING PATH



## SERVICING CONCEPT

COUNTRY RESIDENTIAL SUBDIVISION

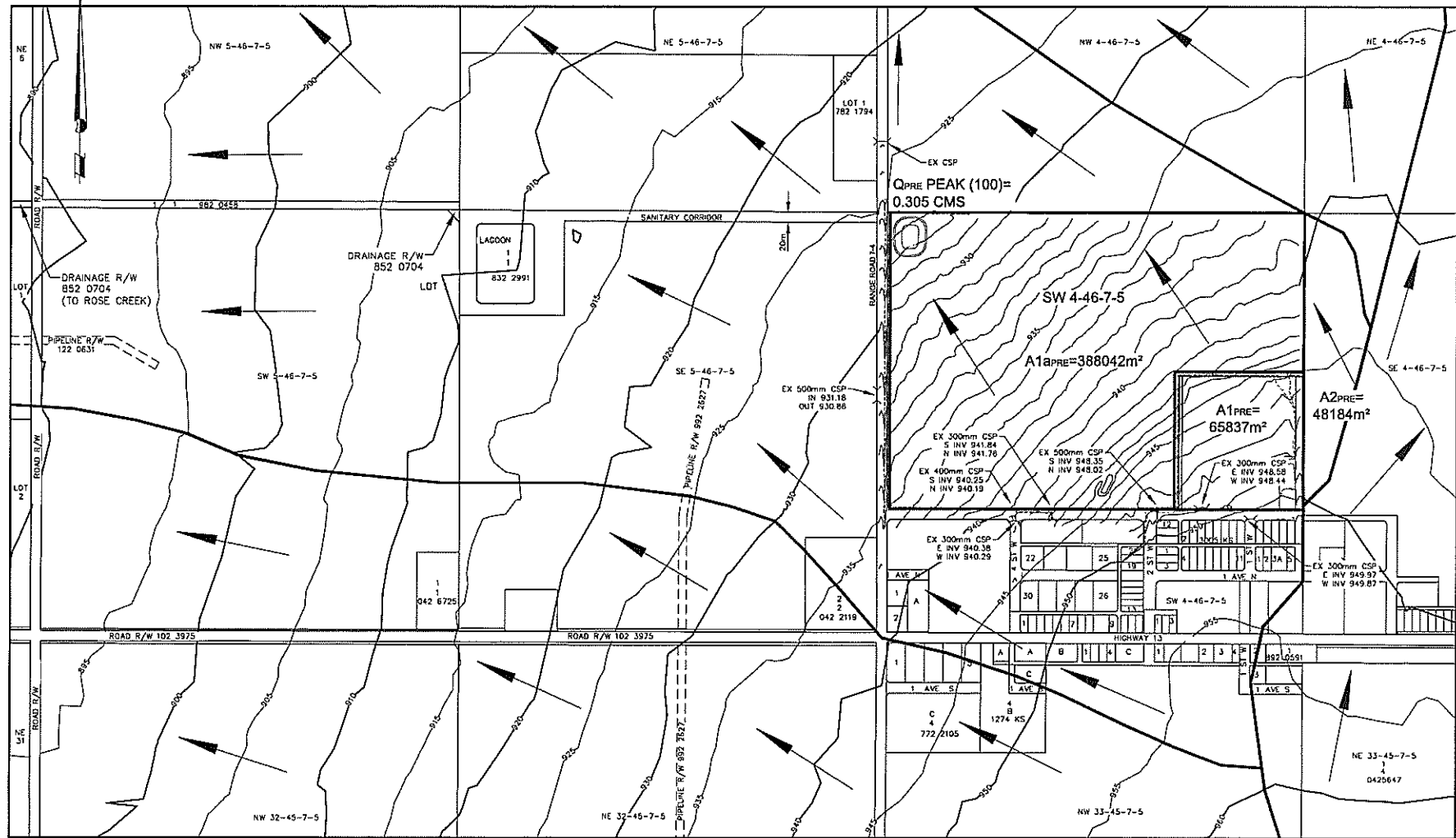
**Fieldstone Acres**

in SW 4-46-7-5 near ALDER FLATS

AREA STRUCTURE PLAN

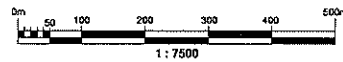
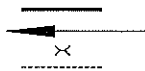
WETASKIWI COUNTY NO. 10





# LEGEND

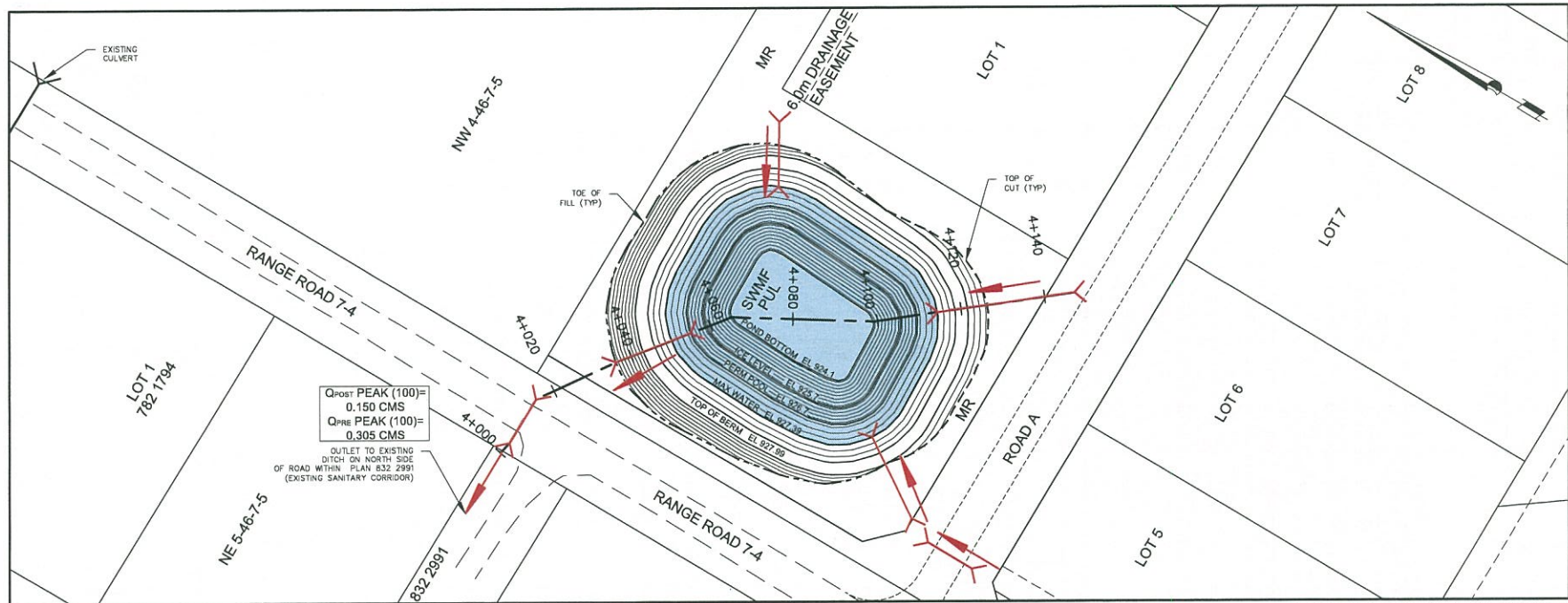
PREDEVELOPMENT STORM WATER BASIN  
 EXISTING DRAINAGE PATTERN  
 EXISTING CULVERT  
 EXISTING SURVEYED DITCH BOTTOM



PREDEVELOPMENT STORM CONDITIONS

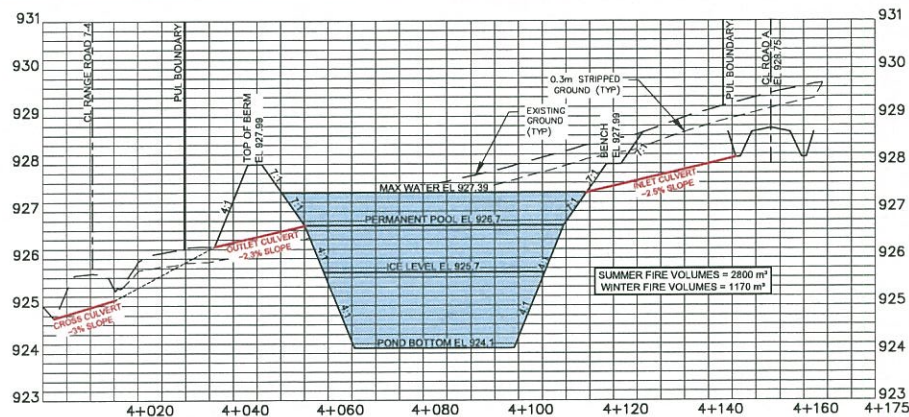
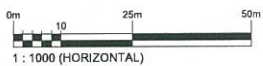
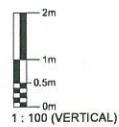
COUNTRY RESIDENTIAL SUBDIVISION  
**Fieldstone Acres**  
 in SW 4-46-7-5 near ALDER FLATS  
**AREA STRUCTURE PLAN**  
 WETASKIWIN COUNTY NO. 10





# LEGEND

EXISTING ROAD SHOULDER  
 PROPOSED ROAD SHOULDER  
 PROPOSED CULVERT  
 PROPOSED CULVERT FLOW



## STORMWATER MANAGEMENT FACILITY PLAN/PROFILE

COUNTRY RESIDENTIAL SUBDIVISION  
**Fieldstone Acres**  
 in SW 4-46-7-5 near ALDER FLATS  
 AREA STRUCTURE PLAN  
 WETASKIWIN COUNTY NO. 10

## APPENDIX B– TITLES AND PLANS

18023-2230

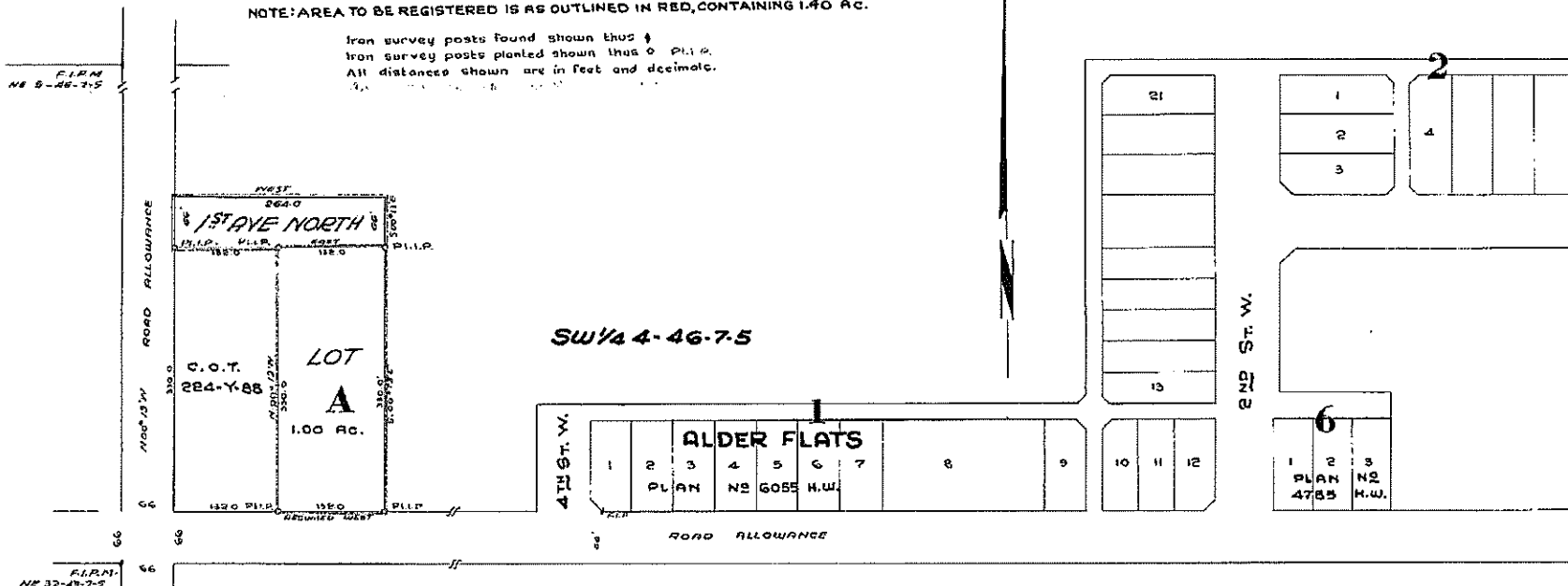
DUPLICATE

# PLAN SHOWING SURVEY OF SUBDIVISION ALDER FLATS SW 1/4 SEC. 4-TP. 46-RGE. 7 W. 5 M.

SCALE: 1" = 100' 1955 C.D. WOODHEAD A.L.S.

NOTE: AREA TO BE REGISTERED IS AS OUTLINED IN RED, CONTAINING 1.40 AC.

Iron survey posts found shown thus  $\dagger$   
Iron survey posts planted shown thus  $\circ$  P.L.P.  
All distances shown are in feet and decimals.



246-X-157  
I certify that the within instrument is duly entered and registered in the Land Titles Office for the North Alberta Land Registration District at Edmonton, in the Province of Alberta, this 10th day of April 1955, at 10:56 AM, and that the same is a true and correct copy of the original as filed.  
K. H. Woodhead, Registered A.L.S.

APPROVED subject to registration on or before 30th April 1955  
C. D. Woodhead  
A.L.S.

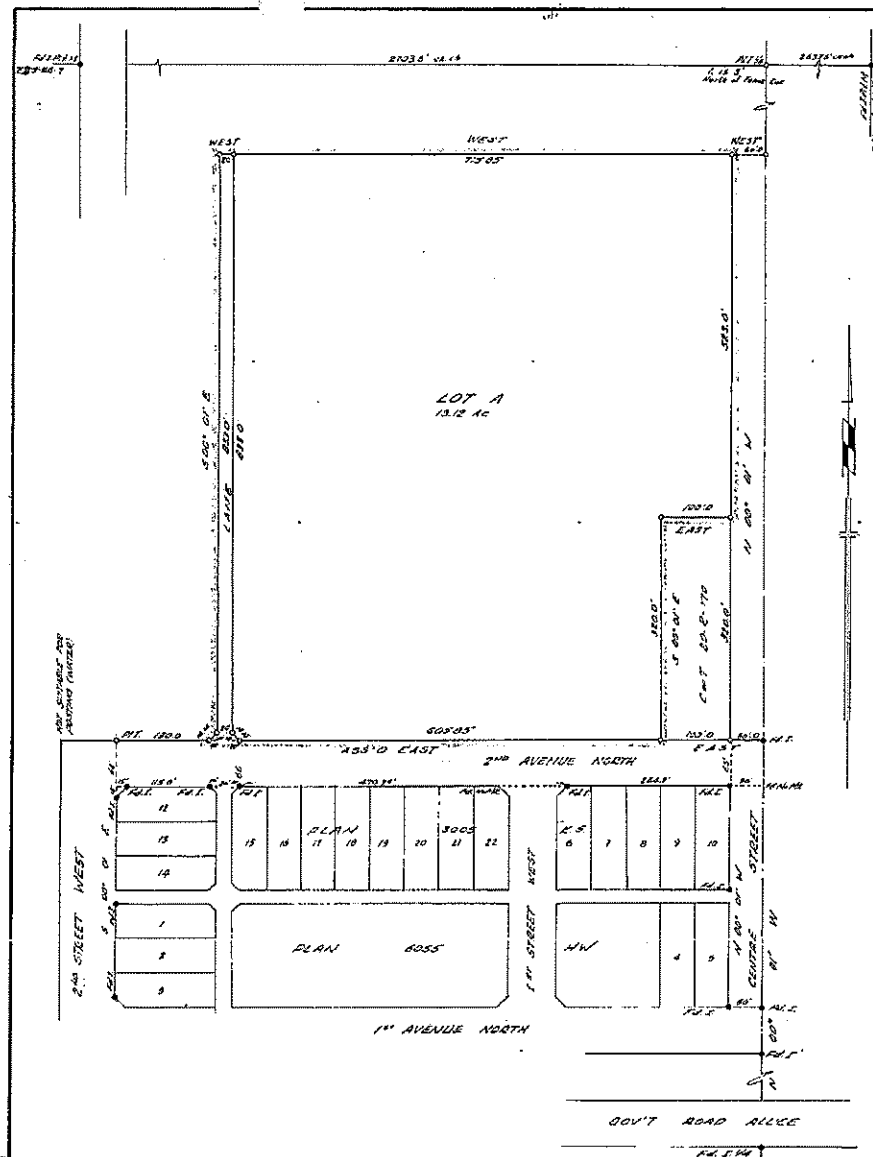
John Haggart  
OWNER'S SIGNATURE

I, Alvin Robert Evans... of the Hamlet of Alder Flats in the Province of Alberta, make oath and say:  
That I was personally present and did see John Haggart... who is personally known to me to be the person named herein, duly sign and execute the same for the purpose named therein;  
That the same was executed at the Hamlet of Alder Flats in the Province of Alberta and that I Alvin Robert Evans am the subscribing witness thereto.  
That I know the said John Haggart... and he is in my belief of the full age of twenty-one (21) years.  
Sworn before me at the Hamlet of Alder Flats in the Province of Alberta this 11th day of February 1955

John D. Anderson  
Commissioner for Oaths in and for the Province of Alberta

A. R. Evans  
Witness

I, C. D. Woodhead of the City of Edmonton in the Province of Alberta, Alberta Land Surveyor, make oath and say:  
That the survey represented by this plan has been made by me in accordance with the provisions of The Alberta Survey Act.  
That this survey was performed between the dates of 15th July 1954 and 15th August 1954 and that this plan is correct and true and is prepared in accordance with the provisions of The Land Titles Act.  
Sworn before me at the City of Edmonton in the Province of Alberta, this 11th day of February 1955  
C. D. Woodhead  
Alberta Land Surveyor



PLAN SHOWING  
SURVEY OF SUBDIVISION

OF PART OF  
S.W. 1/4 SEC. 4, TP. 46, R. 7, W. 5th. MER.

*ALDER FLATS- ALBERTA*

SCALE 1" = 100' 1969 R. J. WATSON, A.L.S.

LEGEND

IRON SURVEY POSTS FOUND AS INDICATED  
IRON SURVEY POSTS PLANTED SHOWN THIS  
AREA TO BE REGISTERED OUTLINED IN RED  
CONTAINING 11.51 AC.

**SUBDIVISION & TRANSFER  
REGULATION  
APPROVED**

2. *Signature*

February 18, 1976  
BATTLE RIVER REGIONAL  
PLANNING COMMISSION

I, J.J. Watson, of the City of Edmonton, Alberta  
Land Surveyor, make oath and say:  
That the survey represented by this plan has  
been made by me in accordance with the provisions  
of the Alberta Surveyors Act  
That the survey was performed between the  
dates of Sept. 1 and Oct. 2, A. D. 1989, and that  
this plan is correct and true and is prepared  
in accordance with the provisions of the Land  
Titles Act

Signed before me at the City of  
Edmonton in the Province of  
Alberta this 2<sup>nd</sup> day of Dec.  
A.D. 1969

Mr. Nelson  
A Commissioner for Oaths in  
and for the Province of Alberta

EDUCATION AND TRAINING  
APPROVED  
*[Signature]*  
69-8-104 MAR 4 1970

Under a provision of Section 22 (5) of The Companies Act 1961, the share subscription is directed to be applied of twelve months from the date of the share approval.

1. John Duggan of the house of Duggan of  
the Province of Alberta, male, born and says  
that he personally passed through the  
John Duggan of the Province of Alberta,  
is personally known to me to be the same  
named John Duggan and executed the same  
for the purpose named herein.  
That the same was executed at the house of  
Alberta, Province of Alberta, and that  
on the following witnesses the same  
That the name of John Duggan  
and he is in my belief of the full age of  
twenty-one years.

Removal of  
Excess before end of the term of  
2.A. ~~Excess~~ in the Province of  
October 26 day of October  
A.D. 1959.

*John W. Anderson*  
Commissioner for Census and Statistics  
and the Province of Alberta  
The Department of Agriculture, Ottawa, Ontario, Canada

OWNERS' SIGNATURE \_\_\_\_\_

John E Haggart

SURVEY APPROVED subject  
to registration on or before

June 18, 1970

1, A. 1970.

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N.E.1/4 SEC.5-46-7-5

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S.W.1/4 SEC.4-46-7-5

S.E.1/4 SEC.5-46-7-5

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GOVERNMENT ROAD ALLOWANCE

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PLAN 832-2503  
BY CH. WEIR, A.L.S.

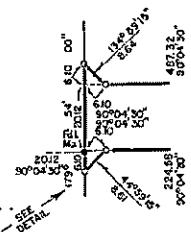
PLAN 832-2503  
BY CH. WEIR, A.L.S.

ALLOWANCE

GOVERNMENT

S.W. 1/4 SEC. 4 - 46-7-5

AREA REQUIRED = 1.09 ha.



2nd. AVENUE N.

1st. AV. N.

4th. ST. W.

1st. AV. N.

2nd. AV. N.

1st. AV. N.

4th. ST. W.

1st. AV. N.

2nd. AV. N.

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4th. ST. W.

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DIRECTOR OF SURVEYS

REGISTRAR, NORTH ALBERTA  
LAND REGISTRATION DISTRICT

PLAN NUMBER  
832 2503

SURVEY APPROVED  
DATE APPROVED 83-09-27  
EX'D B FILE 103550  
APPROVAL VALID FOR TWELVE MONTHS

FILE 251 MD-83

PLAN NUMBER 832-2503  
IS HEREBY CERTIFIED AS DULY  
ENTERED AND REGISTERED  
IN THE LAND TITLES OFFICE  
FOR THE NORTH ALBERTA  
LAND REGISTRATION DISTRICT  
REGISTRAR



I, ARTHUR G. HEINRICH, of the CITY OF EDMONTON, ALBERTA, LAND SURVEYOR, SOLEMNLY AFFIRM AND DECLARE:  
1. THAT THE SURVEY REPRESENTED BY THIS PLAN WAS MADE UNDER MY PERSONAL SUPERVISION,  
2. THAT THE SURVEY WAS MADE IN ACCORDANCE WITH GOOD SURVEYING PRACTICES AND IN ACCORDANCE WITH THE SURVEYS ACT, AND  
3. THAT THE SURVEY WAS PERFORMED ON THE DATES OF AUGUST 18th AND AUGUST 22, 1983, AND THAT THIS PLAN IS TRUE AND CORRECT, AND IS PREPARED IN ACCORDANCE WITH THE LAND TITLES ACT.  
SOLEMNLY AFFIRMED AND DECLARED BEFORE ME AT THE CITY OF EDMONTON, IN THE PROVINCE OF ALBERTA, THIS 26 DAY OF AUGUST 1983.  
ALBERTA LAND SURVEYOR

LEGEND

STATUTORY SURVEY MOVEMENTS FOUND SHOWN THUS:  
STATUTORY IRON SURVEY POSTS PLANTED SHOWN THUS:  
DISTANCES ARE IN METRES AND DECIMALS THEREOF.  
LANDS DEALT WITH BY THIS PLAN BOUNDED THUS:  
M.P. STANDS FOR MARKER POST  
C.S. STANDS FOR COUNTER SUNK  
C.M. STANDS FOR CHECK MEASURED

A COMMISSIONER FOR OATHS  
IN AND FOR THE PROVINCE OF ALBERTA, H.M. SMITH, C.M.A. 8-12

UNDER SECTION 134 OF THE MUNICIPAL GOVERNMENT ACT CANADA, PROVINCE OF ALBERTA, TO WIT: I, JOHN MCGOWAN, ALBERTA MAKE OATH AND SAY:  
1. THAT I AM THE SECRETARY-TREASURER OF THE COUNTY OF WETASKIWIN  
2. THAT AGREEMENTS HAVE BEEN REACHED WITH ALL THE OWNERS OF THE LANDS AFFECTED BY THIS PLAN AS TO THE AREA TO BE ACQUIRED AND THE PRICE TO BE PAID  
3. THAT THE LAND TO BE ACQUIRED IS FOR THE PURPOSE OF PUBLIC ROAD.  
SWORN BEFORE ME AT THE CITY OF WETASKIWIN, IN THE PROVINCE OF ALBERTA, THIS DAY OF AUGUST 1983.  
SHEILAGH ANDERSON, SECRETARY-TREASURER

I HEREBY CERTIFY THAT THE SURVEY REPRESENTED BY THIS PLAN HAS BEEN MADE IN ACCORDANCE WITH THE INSTRUCTIONS OF THE COUNCIL OF THE COUNTY OF WETASKIWIN, 14/10 UNDER THE PROVISIONS OF THE MUNICIPAL GOVERNMENT ACT.

COUNTY OF WETASKIWIN No. 10

PLAN  
SHOWING SURVEY OF  
STREET and AVENUE  
IN  
S.W. 1/4 SEC. 4 - TP. 46 - R. 7 - W. 5 MER.

ALDER FLATS - ALBERTA

SCALE 1:2000

1983

ARTHUR G. HEINRICH, A.L.S.

CRAFTED BY: M.F.  
CHECKED BY: W.A.T.  
FILE No. 1-83-12193

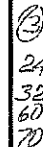
STEWART, WEIR & Co.  
11405 - 163RD STREET, EDMONTON 451-6485

PLAN NUMBER

832 2503

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PLAN NUMBER  
832 2505

SPR 28:83  
842.236-83



### LEGEND

STATUTORY SURVEY MOVEMENTS FOUND  
SHOWN THUS. \*  
STATUTORY IRON SURVEY POSTS  
PLANTED SHOWN THUS. O  
DISTANCES ARE IN METRES AND  
DECIMALS THEREOF.  
LANDS DEALT WITH BY THIS PLAN  
BOUNCED THUS:                       
Mp. STANDS FOR MARKER POST  
Cs. STANDS FOR COUNTER SUNK  
Ck.m. STANDS FOR CHECK MEASURED

UNDER SECTION 134 OF THE MUNICIPAL GOVERNMENT ACT  
CANADA, PROVINCE OF ALBERTA, TO WIT: I,  
JOHN MCGOWAN  
OF THE PROVINCE OF ALBERTA, HAVE OATH AND SAY:

UNDER SECTION 134 OF THE MUNICIPAL GOVERNMENT ACT  
CANADA, PROVINCE OF ALBERTA, TO WIT) I,  
JOHN MCGOWAN, ALBERTA MAKE OATH AND SAY:  
1. THAT I AM THE SECRETARY-TREASURER OF THE  
COUNTY OF MONTAGU AND  
2. THAT AGREEMENTS HAVE BEEN REACHED WITH ALL THE  
OWNERS OF THE LANDS AFFECTED BY THIS PLAN AS TO  
THE AREA TO BE ACQUIRED AND THE PRICE TO BE  
PAID  
3. THAT THE LAND TO BE ACQUIRED IS FOR THE PURPOSES  
OF PUBLIC ROAD.  
SWORN BEFORE ME AT THE  
CITY OF MONTREAL  
IN THE PROVINCE OF ALBERTA,  
THIS DAY OF AUGUST, 1968  
John McGowan  
SECRETARY-TREASURER

I HEREBY CERTIFY THAT THE SURVEY  
REPRESENTED BY THIS PLAN HAS BEEN  
MADE IN ACCORDANCE WITH THE  
INSTRUCTIONS OF THE COUNCIL OF  
THE COUNTY OF WISCONSIN  
NO. 10 UNDER THE PROVISIONS OF THE  
MUNICIPAL GOVERNMENT ACT.

SECRETARY-TREASURER

COUNTY OF WETASKIWIN No. 10

PLAN  
SHOWING SURVEY OF  
STREET and AVENUE  
IN  
S.W. 1/4 SEC. 4 - TP 46 - R. 7 - W. 5 MER.

ALDER FLATS - ALBERTA

SCALE 1 : 2000

1983

ARTHUR C. HEINRICH, A.L.S.

DRAFTED BY: N. F.  
CHECKED BY: W. A. T.  
FILE No. 1-83-12193

**STEWART, WEIR & Co.**  
11405 - 103RD STREET, EDMONTON 451-6485

PLAN NUMBER



832 2991

BLOCK 1

LOT 1

5.25 ha

S.E. 1/4 SEC. 5-46-7-5

C. of T.  
94 - W - 88

PLAN  
SHOWING SURVEY OF  
SUBDIVISION  
OF PART OF  
S.E. 1/4 SEC. 5-TP.46-R.7-W.5M.  
COUNTY OF WETASKIWIN No. 10  
1983 CHARLES H. WEIR, A.L.S.  
SCALE 1:2000

LEGEND  
EXISTING SURVEY MONUMENTS FOUND SHOWN THIS  
STATUTORY FROM SURVEY POSTS PLANTED SHOWN THIS  
DISTANCES ARE IN METRES AND DECIMALS THEREOF  
LANDS DEALT WITH BY THIS PLAN REQUIRED THIS  
AND CONTAINS 3.71 HECTARES  
NO LIGADE FOR MARKER THIS  
IN M. STANDS FOR METRE MEASURED.

1. CHARLES H. WEIR OF THE CITY OF EDMONTON  
ALBERTA, LAND SURVEYOR, MAKE OATH AND SAY:  
1. THAT THE SURVEY REPRESENTED BY THIS PLAN WAS  
MADE UNDER MY PERSONAL SUPERVISION,  
2. THAT THE SURVEY WAS MADE IN ACCORDANCE WITH  
GOOD SURVEYING PRACTICES AND IN ACCORDANCE  
WITH THE SURVEY ACT, AND  
3. THAT THE SURVEY WAS REMOVED BETWEEN THE  
DATES OF 1971, 1972, AND 1973, AND  
AND THAT THIS PLAN IS TRUE AND CORRECT, AND  
IS PREPARED IN ACCORDANCE WITH  
THE LAND TITLES ACT  
SWORN BEFORE ME AT THE  
CITY OF EDMONTON IN THE  
PROVINCE OF ALBERTA, THIS  
7 DAY OF APRIL, 1983  
J.H. Weir  
ALBERTA LAND SURVEYOR

A COMMISSIONER FOR OATHS AND  
FOR THE PROVINCE OF ALBERTA  
KATHARINE KRAMER Q.S.B. 11  
1. HENRY ZIEGLER OF THE CITY OF CALGARY  
IN THE PROVINCE OF ALBERTA, MAKE OATH AND SAY:  
THAT I WAS PERSONALLY PRESENT AND DID SEE HENRY ZIEGLER  
HARRY ALICE KEMP. NAMED IN THIS PLAN WHO  
IS PERSONALLY KNOWN TO ME TO BE THE PERSON NAMED  
HENRY ZIEGLER AND EXECUTE THE SAME FOR THE PURPOSES  
NAMED HEREIN.  
THAT THE SAME WAS EXECUTED AT THE CITY OF  
CALGARY IN THE PROVINCE OF ALBERTA, AND THAT  
I AM THE SUBSCRIBING WITNESS THEREOF, THAT I AM THE S.O.  
HAROLD HARRY ALICE KEMP AND  
SHE IS IN MY BELIEF OF THE FULL AGE OF EIGHTEEN YEARS  
SWORN BEFORE ME AT THE  
CITY OF CALGARY IN THE  
PROVINCE OF ALBERTA  
THIS 24 DAY OF MAY, 1983  
Shirley Anderson  
A COMMISSIONER FOR OATHS AND  
FOR THE PROVINCE OF ALBERTA  
AP. DAN FOR THE PRESENCE OF  
SIGNED BY THE REGISTEERED OWNER  
Margaret Mary Alice Kemp  
HAROLD HARRY ALICE KEMP  
WITNESS

1. HENRY ZIEGLER OF THE CITY OF CALGARY  
IN THE PROVINCE OF ALBERTA, MAKE OATH AND SAY:  
THAT I WAS PERSONALLY PRESENT AND DID SEE  
HENRY ZIEGLER AND HENRIE L. ZIEGLER NAMED IN THIS  
PLAN WHO ARE PERSONALLY KNOWN TO ME TO BE THE  
PERSONS NAMED HEREIN, DULY SEEN AND EXECUTE THE  
SAME FOR THE PURPOSES NAMED HEREIN.  
THAT THE SAME WAS EXECUTED AT THE CITY OF  
CALGARY IN THE PROVINCE OF ALBERTA, AND  
THAT I AM THE SUBSCRIBING WITNESS THEREOF, THAT  
I KNOW THE SAID HENRY ZIEGLER AND HENRIE L. ZIEGLER  
AND THEY ARE IN MY BELIEF OF THE FULL AGE OF  
EIGHTEEN YEARS.  
SWORN BEFORE ME AT THE  
CITY OF CALGARY IN THE  
PROVINCE OF ALBERTA  
THIS 24 DAY OF MAY, 1983  
Caroline Coan  
A COMMISSIONER FOR OATHS IN AND  
FOR THE PROVINCE OF ALBERTA  
-WITNESS-  
SIGNED BY THE MORTGAGORS  
IN THE PRESENCE OF  
WITNESS

1. HENRY ZIEGLER OF THE CITY OF CALGARY  
IN THE PROVINCE OF ALBERTA, MAKE OATH AND SAY:  
THAT I WAS PERSONALLY PRESENT AND DID SEE  
HENRY ZIEGLER AND HENRIE L. ZIEGLER NAMED IN THIS  
PLAN WHO ARE PERSONALLY KNOWN TO ME TO BE THE  
PERSONS NAMED HEREIN, DULY SEEN AND EXECUTE THE  
SAME FOR THE PURPOSES NAMED HEREIN.  
THAT THE SAME WAS EXECUTED AT THE CITY OF  
CALGARY IN THE PROVINCE OF ALBERTA, AND  
THAT I AM THE SUBSCRIBING WITNESS THEREOF, THAT  
I KNOW THE SAID HENRY ZIEGLER AND HENRIE L. ZIEGLER  
AND THEY ARE IN MY BELIEF OF THE FULL AGE OF  
EIGHTEEN YEARS.  
SWORN BEFORE ME AT THE  
CITY OF CALGARY IN THE  
PROVINCE OF ALBERTA  
THIS 24 DAY OF MAY, 1983  
Caroline Coan  
A COMMISSIONER FOR OATHS IN AND  
FOR THE PROVINCE OF ALBERTA  
-WITNESS-  
SIGNED BY THE MORTGAGORS  
IN THE PRESENCE OF  
WITNESS

1. HENRY ZIEGLER OF THE CITY OF CALGARY  
IN THE PROVINCE OF ALBERTA, MAKE OATH AND SAY:  
THAT I WAS PERSONALLY PRESENT AND DID SEE  
HENRY ZIEGLER AND HENRIE L. ZIEGLER NAMED IN THIS  
PLAN WHO ARE PERSONALLY KNOWN TO ME TO BE THE  
PERSONS NAMED HEREIN, DULY SEEN AND EXECUTE THE  
SAME FOR THE PURPOSES NAMED HEREIN.  
THAT THE SAME WAS EXECUTED AT THE CITY OF  
CALGARY IN THE PROVINCE OF ALBERTA, AND  
THAT I AM THE SUBSCRIBING WITNESS THEREOF, THAT  
I KNOW THE SAID HENRY ZIEGLER AND HENRIE L. ZIEGLER  
AND THEY ARE IN MY BELIEF OF THE FULL AGE OF  
EIGHTEEN YEARS.  
SWORN BEFORE ME AT THE  
CITY OF CALGARY IN THE  
PROVINCE OF ALBERTA  
THIS 24 DAY OF MAY, 1983  
Caroline Coan  
A COMMISSIONER FOR OATHS IN AND  
FOR THE PROVINCE OF ALBERTA  
-WITNESS-  
SIGNED BY THE MORTGAGORS  
IN THE PRESENCE OF  
WITNESS

1. HENRY ZIEGLER OF THE CITY OF CALGARY  
IN THE PROVINCE OF ALBERTA, MAKE OATH AND SAY:  
THAT I WAS PERSONALLY PRESENT AND DID SEE  
HENRY ZIEGLER AND HENRIE L. ZIEGLER NAMED IN THIS  
PLAN WHO ARE PERSONALLY KNOWN TO ME TO BE THE  
PERSONS NAMED HEREIN, DULY SEEN AND EXECUTE THE  
SAME FOR THE PURPOSES NAMED HEREIN.  
THAT THE SAME WAS EXECUTED AT THE CITY OF  
CALGARY IN THE PROVINCE OF ALBERTA, AND  
THAT I AM THE SUBSCRIBING WITNESS THEREOF, THAT  
I KNOW THE SAID HENRY ZIEGLER AND HENRIE L. ZIEGLER  
AND THEY ARE IN MY BELIEF OF THE FULL AGE OF  
EIGHTEEN YEARS.  
SWORN BEFORE ME AT THE  
CITY OF CALGARY IN THE  
PROVINCE OF ALBERTA  
THIS 24 DAY OF MAY, 1983  
Caroline Coan  
A COMMISSIONER FOR OATHS IN AND  
FOR THE PROVINCE OF ALBERTA  
-WITNESS-  
SIGNED BY THE MORTGAGORS  
IN THE PRESENCE OF  
WITNESS

1. HENRY ZIEGLER OF THE CITY OF CALGARY  
IN THE PROVINCE OF ALBERTA, MAKE OATH AND SAY:  
THAT I WAS PERSONALLY PRESENT AND DID SEE  
HENRY ZIEGLER AND HENRIE L. ZIEGLER NAMED IN THIS  
PLAN WHO ARE PERSONALLY KNOWN TO ME TO BE THE  
PERSONS NAMED HEREIN, DULY SEEN AND EXECUTE THE  
SAME FOR THE PURPOSES NAMED HEREIN.  
THAT THE SAME WAS EXECUTED AT THE CITY OF  
CALGARY IN THE PROVINCE OF ALBERTA, AND  
THAT I AM THE SUBSCRIBING WITNESS THEREOF, THAT  
I KNOW THE SAID HENRY ZIEGLER AND HENRIE L. ZIEGLER  
AND THEY ARE IN MY BELIEF OF THE FULL AGE OF  
EIGHTEEN YEARS.  
SWORN BEFORE ME AT THE  
CITY OF CALGARY IN THE  
PROVINCE OF ALBERTA  
THIS 24 DAY OF MAY, 1983  
Caroline Coan  
A COMMISSIONER FOR OATHS IN AND  
FOR THE PROVINCE OF ALBERTA  
-WITNESS-  
SIGNED BY THE MORTGAGORS  
IN THE PRESENCE OF  
WITNESS

1. HENRY ZIEGLER OF THE CITY OF CALGARY  
IN THE PROVINCE OF ALBERTA, MAKE OATH AND SAY:  
THAT I WAS PERSONALLY PRESENT AND DID SEE  
HENRY ZIEGLER AND HENRIE L. ZIEGLER NAMED IN THIS  
PLAN WHO ARE PERSONALLY KNOWN TO ME TO BE THE  
PERSONS NAMED HEREIN, DULY SEEN AND EXECUTE THE  
SAME FOR THE PURPOSES NAMED HEREIN.  
THAT THE SAME WAS EXECUTED AT THE CITY OF  
CALGARY IN THE PROVINCE OF ALBERTA, AND  
THAT I AM THE SUBSCRIBING WITNESS THEREOF, THAT  
I KNOW THE SAID HENRY ZIEGLER AND HENRIE L. ZIEGLER  
AND THEY ARE IN MY BELIEF OF THE FULL AGE OF  
EIGHTEEN YEARS.  
SWORN BEFORE ME AT THE  
CITY OF CALGARY IN THE  
PROVINCE OF ALBERTA  
THIS 24 DAY OF MAY, 1983  
Caroline Coan  
A COMMISSIONER FOR OATHS IN AND  
FOR THE PROVINCE OF ALBERTA  
-WITNESS-  
SIGNED BY THE MORTGAGORS  
IN THE PRESENCE OF  
WITNESS

PLAN NUMBER  
832 2991  
REGISTRAR, NORTH ALBERTA  
LAND REGISTRATION DISTRICT

PLAN NUMBER 832 2991  
IS HEREBY CERTIFIED AS ONLY  
ENTERED AND REGISTERED  
IN THE LAND TITLES OFFICE  
FOR THE NORTH ALBERTA  
LAND REGISTRATION DISTRICT.  
25 NOV 83  
252247-047



DIRECTOR OF SURVEYS  
SURVEY APPROVED  
DATE APPROVED 11.11.83  
EXT. 11.11.83  
APPROVAL VALID  
FOR TWELVE MONTHS

PLANNING  
BATTLE RIVER REGIONAL  
PLANNING COMMISSION  
SUBDIVISION REGULATION APPROVED,  
SUBJECT TO REGISTRATION WITHIN 12 MONTHS  
OF DATE OF ENDORSEMENT  
R/W/83/11 NOVEMBER 21, 1983  
FILE NO. DATE  
R. R. R. 11.11.83  
FOR DIRECTOR

ALDER FLATS GAS CO-OP  
LIMITED  
RE. UAW 726 208 848

ALDER FLATS GAS CO-OP  
LIMITED  
RE. UAW 726 208 848

ALDER FLATS GAS CO-OP  
LIMITED  
RE. UAW 726 208 848

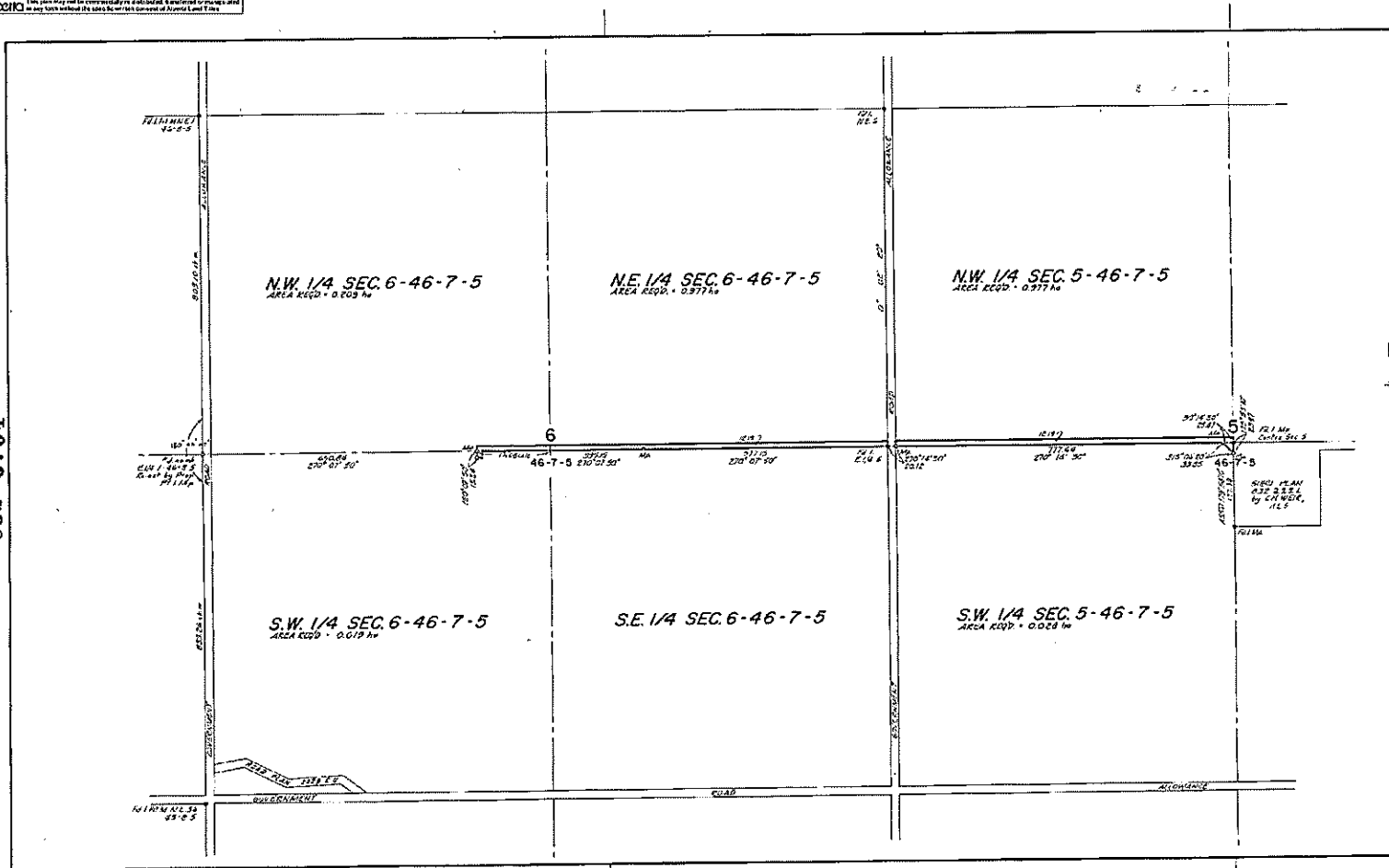
PLAN NUMBER  
832 2991  
STEWART, WEIR & Co.  
FILE NO. 2-82-11012 A.A.M. B.M.F.

83-03-04

832 2991



852 0704



DIRECTOR OF SURVEYS		REGISTRAR, NORTH ALBERTA LAND REGISTRATION DISTRICT	PLAN NUMBER <b>852 0704</b>
<p><b>SURVEY APPROVED</b></p> <p>DATE APPROVED: 15-10-86</p> <p>APPROVAL VALID FOR TWELVE MONTHS</p>		<p>PLAN NUMBER <b>852 0704</b></p> <p>IS HEREBY CERTIFIED AS DULY ENTERED AND FILED IN THE LAND TITLES OFFICE FOR THE NORTH ALBERTA LAND REGISTRATION DISTRICT</p> <p>APR 17 '85 852 075 388</p>	
COUNTY OF WETASKIWIN No. 10			
<p>1. WHEREAS THE ... OF THE CITY OF EDMONTON ...</p> <p>2. THAT THE SURVEY REPRESENTED BY THIS PLAN WAS MADE UNDER MY PERSONAL SUPERVISION ...</p> <p>3. THAT THE SURVEY WAS MADE IN ACCORDANCE WITH GOOD SURVEYING PRACTICES AND IN ACCORDANCE WITH THE SURVEY ACT, AND</p> <p>4. THAT THE SURVEY WAS PERFORMED BETWEEN THE DATES OF ... AND ...</p> <p>5. THAT THIS PLAN IS TRUE AND CORRECT, AND IS PREPARED IN ACCORDANCE WITH THE LAND TITLES ACT</p> <p>6. THAT THE SURVEY WAS MADE BY THE CITY OF EDMONTON, IN THE PROVINCE OF ALBERTA, THIS 7th DAY OF MARCH 1986.</p>			
<p>ALBERTA LAND SURVEYOR</p> <p><i>Alan R. ...</i></p>		<p>LEGEND</p> <p>STATUTORY SURVEY MONUMENTS FOUND</p> <p>SHOW THIS</p> <p>STATUTORY ... SURVEY ...</p> <p>PLANTED SHOW THIS</p> <p>IN DISTANCES ARE IN METRES AND DECIMALS THEREOF</p> <p>LAID OUT WITH BY THIS PLAN</p> <p>BOUNDED THEREBY</p> <p>NO STAKES FOR MARKER POST</p> <p>IS STAKES FOR MARKER POST</p>	
COUNTY OF WETASKIWIN No. 10			
<p>PLAN</p> <p>SHOWING SURVEY OF</p> <p><b>DRAINAGE RIGHT - OF - WAY</b></p> <p>IN</p> <p><b>SEC'S. 5 &amp; 6 - TP. 46 - R. 7 - W. 5 MER.</b></p> <p>- ALBERTA</p>			
SCALE: 1:5000		1983 CHARLES H. WEIR, A.L.S.	
<p>DRAWN BY: T.C.N.</p> <p>CHECKED BY: M. J. ...</p> <p>FILE NO. 1-852-1875</p>		<p><b>STEWART, WEIR &amp; Co.</b></p> <p>1405 - 10th STREET, EDMONTON, ALBERTA</p> <p>PLAN NUMBER <b>852 0704</b></p>	

852 0704

S.E.1/4 Sec.5-46-7-5

N.E.1/4 Sec.32-45-7-5

ALLOWANCE

ROAD

GOVERNMENT

S.W.1/4 Sec.4-46-7-5

1st AVENUE NORTH

LOT 1  
0.222 ha.

LOT 2  
0.202 ha.

LOT A

PLAN

GOVERNMENT

ROAD

ALLOWANCE

LOT 1

LOT 2

LOT 3

LOT 4

LOT 5

PLAN

012 0765

STREET

PLAN NUMBER

LAND TITLES OFFICE

PLAN No. 9721019

ENTERED AND REGISTERED

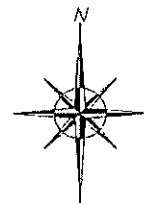
ON APR 15 '97

INSTRUMENT No. 972100140

J. Smith  
A.L.S. REGISTRAR  
N.A.L.B.

PLANNING COMMISSION

COMMISSION PERMIT  
Issued by the Registrar 12 months  
to the Registrar  
County of Wetaskiwin  
Date 30 Oct 96



J.K. SMITH, ALBERTA LAND SURVEYOR  
DRAUGHTSMAN

DRAWN BY: J.K.S.	CALC'S BY: J.B.R.
CHECKED BY: J.K.S.	FILE NUMBER: 261533

PLAN

SHOWING SURVEY OF SUBDIVISION OF  
PART OF THE

S.W.1/4 Sec.4, Twp.46, Rge.7, W5M.  
COUNTY OF WETASKIWIN No.10

Scale: 1:1000 1996 J.K. SMITH A.L.S.



LEGEND:

1. STATUTORY IRON SURVEY POSTS PLANTED SHOWN THUS...
2. STATUTORY IRON SURVEY POSTS PLANTED SHOWN THUS...
3. STATUTORY IRON SURVEY POSTS PLANTED MARKED P154
4. AREA TO BE ACQUIRED BY THIS PLAN BOUNDED THUS AND CONTAINS 0.445 ha.

J. SMITH, of the TOWN OF DRAUGHTSMAN, ALBERTA, LAND SURVEYOR  
WITNESSETH AND SAYS:  
THAT THE SURVEY REPRESENTED BY THIS PLAN WAS MADE UNDER MY  
PERSONAL SUPERVISION.

THAT THE SURVEY WAS MADE IN ACCORDANCE WITH GOOD SURVEYING PRACTICES  
AND IN ACCORDANCE WITH THE PROVISIONS OF THE SURVEYS ACT, AND  
THAT THE SURVEY WAS PERFORMED BETWEEN THE DATES OF AUGUST 23, 1996  
AND SEPTEMBER 12, 1996, AND THAT THIS PLAN IS TRUE AND  
CORRECT, AND IS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE  
LAND TITLES ACT.

SWORN BEFORE ME AT THE  
CITY OF EDMONTON, IN THE  
PROVINCE OF ALBERTA, THIS  
23rd DAY OF AUGUST, 1996.

*J. Smith*  
ALBERTA LAND SURVEYOR

A COMMISSIONER FOR OATHS IN AND  
FOR THE PROVINCE OF ALBERTA.

NAME: J. Smith, J. Smith, J. Smith COMMISSION EXPIRES: 1996 27 1997

REGISTERED OWNERS:

*J. Smith*

SIGNED IN THE PRESENCE OF:

*J. Smith*  
WITNESS

J. SMITH, of the TOWN OF DRAUGHTSMAN, IN THE PROVINCE  
OF ALBERTA, WITNESSETH AND SAYS:  
THAT I WAS PERSONALLY PRESENT AND DID SEE  
EDWARD E. SMITH

NAMED IN THIS PLAN, WHO ARE PERSONALLY KNOWN TO ME TO BE THE  
PERSONS NAMED HEREIN, DULY SIGN AND EXECUTE THE SAME FOR THE  
PURPOSES INTENDED HEREIN.  
THAT THE SAME WAS EXECUTED IN THE TOWN OF DRAUGHTSMAN  
IN THE PROVINCE OF ALBERTA AND THAT I AM THE SUBSCRIBING WITNESS  
THEREOF.  
THAT I KNOW THE SAID PARTY AND HE IS OF THE FULL AGE OF  
EIGHTEEN YEARS.

SWORN BEFORE ME AT THE  
TOWN OF DRAUGHTSMAN, IN  
THE PROVINCE OF ALBERTA  
THIS 23rd DAY OF AUGUST, 1996

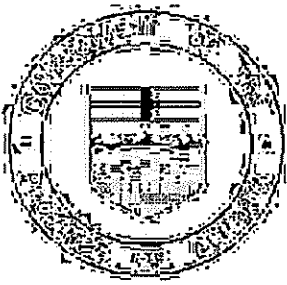
*J. Smith*  
WITNESS

A COMMISSIONER FOR OATHS IN  
AND FOR THE PROVINCE OF ALBERTA

NAME: J. Smith, J. Smith COMMISSION EXPIRES: 1996 27 1997

11





# LAND TITLE CERTIFICATE

S

LINC

SHORT LEGAL

TITLE NUMBER

0012 867 842

5;7;46;4;SW

082 328 519

## LEGAL DESCRIPTION

ALL THAT PORTION OF THE SOUTH WEST QUARTER OF SECTION FOUR (4)  
TOWNSHIP FORTY SIX (46)

RANGE SEVEN (7)

WEST OF THE FIFTH MERIDIAN

LYING NORTH OF PLANS 8322505 AND 3005KS CONTAINING 45.7 HECTARES

(112.9 ACRES) MORE OR LESS.

EXCEPTING THEREOUT:

A) 5.47 HECTARES (13.5 ACRES) MORE OR LESS, SUBDIVIDED UNDER PLAN 3273RS

B) 0.295 HECTARES (0.73 ACRES) MORE OR LESS, DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE PRODUCTION NORTHERLY OF THE WEST

LIMIT OF CENTRE STREET WITH THE NORTH LIMIT OF SECOND AVENUE NORTH

BOTH AS SHOWN ON SUBDIVISION PLAN 3005KS THENCE WESTERLY ALONG THE

SAID NORTH LIMIT 100 FEET; THENCE NORTHERLY AND PARALLEL TO THE EAST

BOUNDARY OF THE SAID QUARTER SECTION 320 FEET; THENCE EASTERLY AND

PARALLEL TO THE SAID NORTH LIMIT 100 FEET; THENCE SOUTHERLY AND PARALLEL

TO THE SAID EAST BOUNDARY TO THE POINT OF COMMENCEMENT

EXCEPTING THEREOUT ALL MINES AND MINERALS

AND THE RIGHT TO WORK THE SAME

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF WETASKIWIN NO. 10

REFERENCE NUMBER: 022 378 057

REGISTERED OWNER(S)				
REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
082 328 519	07/08/2008	TRANSFER OF LAND	\$175,000	\$175,000

## OWNERS

824440 ALBERTA LTD.

OF BOX 190

ALDER FLATS

ALBERTA T0C 0A0

( CONTINUED )

-----  
ENCUMBRANCES, LIENS & INTERESTS

PAGE 2  
# 082 328 519

REGISTRATION

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

772 041 859 10/03/1977 UTILITY RIGHT OF WAY  
GRANTEE - ALDER FLATS GAS CO-OP LTD.

042 238 551 10/06/2004 CAVEAT  
RE : DEFERRED RESERVE  
CAVEATOR - THE COUNTY OF WETASKIWIN NO. 10.  
WEST CENTRAL PLANNING AGENCY  
#105, 5111 - 50 AVENUE  
WETASKIWIN  
ALBERTA T9A0S5  
AGENT - ROBERT H RIDDETT

082 328 520 07/08/2008 MORTGAGE  
MORTGAGEE - ALBERTA TREASURY BRANCHES.  
BOX 6900  
DRAYTON VALLEY  
ALBERTA  
ORIGINAL PRINCIPAL AMOUNT: \$240,000

082 328 531 07/08/2008 AMENDING AGREEMENT  
AMOUNT: \$240,000  
AFFECTS INSTRUMENT: 082328520

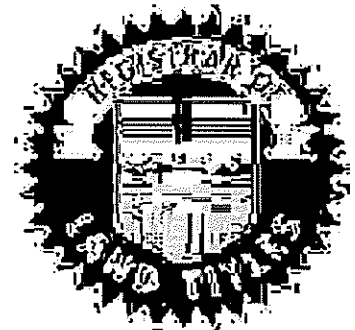
102 336 969 23/09/2010 AMENDING AGREEMENT  
AMOUNT: \$310,000  
AFFECTS INSTRUMENT: 082328520

TOTAL INSTRUMENTS: 005

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN  
ACCURATE REPRODUCTION OF THE CERTIFICATE OF  
TITLE REPRESENTED HEREIN THIS 27 DAY OF APRIL,  
2014 AT 01:41 P.M.

ORDER NUMBER: 25820919

CUSTOMER FILE NUMBER:



\*END OF CERTIFICATE\*

( CONTINUED )

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).

**ALBERTA GOVERNMENT SERVICES  
LAND TITLES OFFICE**

IMAGE OF DOCUMENT REGISTERED AS:

**772201475**

**ORDER NUMBER: 27909437**

**ADVISORY**

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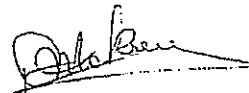


772201475

OCT 13 '77

UTILITY RIGHT OF WAY

Alder Flats Natural Gas CO-OP Ltd.  
Alder Flats, Alta.



BES

# UTILITY RIGHT OF WAY

CCA-10.002

(LAND TITLES ACT C. 198, R.S.A. 1970, Section 71)

ALDER FLATS

Gas Co-op Limited

(hereinafter referred to as "The Association") ALDER FLATS, ALBERTA

WHEREAS the Association proposes to furnish gas service to its members in the Association's franchise area, by means of a natural gas pipeline, or pipelines and related facilities called herein the "distribution system",

AND WHEREAS for the purpose of constructing and maintaining the distribution system on the land of the undersigned, being

ALL THAT PORTION OF THE NW 1/4 OF SECTION 5-46-7-5

AS DESCRIBED IN C. OF T. 752090172.

RESERVING THEREOUT ALL MINES AND MINERALS.

NOW THEREFORE in consideration of the sum of One Dollar (\$1.00) paid to me, the receipt of which is hereby acknowledged, I

RICHARD F. HARE AND NELLIE HARE

ALDER FLATS, ALBERTA

hereby grant to the Association a utility right of way for locating, erecting, maintaining and removing its distribution system including the right to carry out the necessary trimming and cutting of trees and brush, on and over such part of the said lands as may be necessary from time to time. Extensions, continuations or branches of the distribution system will, where possible, and with due consideration for costs, be located according to the grantor's wishes. The utility right of way is hereby granted for as long a period as the Association, its successors and assigns, desires and continues to maintain and operate the distribution system across the said lands.

The Association shall pay to the Grantor(s) reasonable compensation for damages to growing crops, fences and livestock occurring as a result of the aforementioned operations, and as soon as weather and soil conditions permit, the Association will, insofar as it is practical to do so, restore the said lands to their condition prior to the Association's entry thereon.

IN WITNESS WHEREOF I, the above-named undersigned, have hereunto set my hand and seal this 20 day of

19 77

SIGNED, SEALED AND DELIVERED

IN THE PRESENCE OF

Fred L. Seely  
WITNESS

Richard F. Hare  
Nellie Hare  
SIGNATURE OF GRANTOR(S)

## AFFIDAVIT OF EXECUTION

Fred L. Seely

of the Alder Flats

in the Province of Alberta, Canada. Farmer

CANADA  
PROVINCE OF ALBERTA

TO WIT:

(Occupation)  
make oath and say:

1. That I was personally present and did see Richard F. Hare and Nellie Hare

named in the within instrument, and personally known to me to be the persons named therein, duly sign and execute the same for the purpose named therein.

2. That the same was executed at the Hamlet of Alder Flats in the Province of Alberta and that I am the subscribing witness thereto.

3. That I know the said Richard F. Hare and Nellie Hare

and they are in my belief of the full age of eighteen years.

Sworn before me at Alder Flats

in the Province of Alberta

this 21th day of October

A.D. 1977

O. J. Schmitt

A Commissioner in Oath in and for the Province of Alberta

Note: All affidavits sworn outside the Province must be sworn before a Notary Public who must affix his seal.

**ALBERTA GOVERNMENT SERVICES  
LAND TITLES OFFICE**

IMAGE OF DOCUMENT REGISTERED AS:

**862102498**

**ORDER NUMBER: 27909437**

**ADVISORY**

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FOURTH: The Grantee shall compensate the Grantor and/or other interest parties, as their respective interests for the time being may appear, for damage done to any crops, pasture, fences or livestock on the said lands by reason of the exercise of the rights hereinbefore granted, and the Grantee will not at any time fence the said right-of-way.

FIFTH: The Grantee shall, insofar as it is practicable to do so and as soon as weather and soil conditions permit, bury and maintain all pipelines so as not to interfere unreasonably with the drainage or ordinary cultivation of the said lands, except for such parts which are required to project above the ground.

SIXTH: Upon the abandonment of the said right-of-way and release of all the rights hereby granted, the Grantee shall and will restore the surface of the said lands to the same condition, so far as may be practicable so to do, as the same were in prior to the entry thereof and the use thereof by the Grantee.

SEVENTH: The Grantee, performing and observing the covenants and conditions on its part to be performed and observed, shall and may peaceably hold and enjoy the rights, licenses, liberties, privileges and easement hereby granted without hindrance, molestation or interruption on the part of the Grantor, or any person, firm or corporation claiming by, through or under the Grantor.

EIGHTH: The Grantee accepts the Grantor's title to the said lands as same appears at the time hereof for the purpose of this Grant.

NINTH: All notices to be give hereunder may be given to the Grantee by registered letter addressed to Alder Flats and to the Grantor at 5102 - 51 Street, Wetaskiwin, Alberta T9A 2A5 or at such other address, in either case, as the Grantor or Grantee respectively may from time to time appoint in writing and any such notice shall be deemed to be given to and received by the addressee seven (7) days after the mailing thereof, postage prepaid.


TENTH: This Easement may be assigned in whole or in part as to all or any portion of the rights, licenses, liberties, privileges and easement hereby granted, transferred or conveyed.

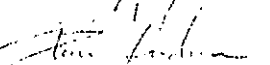
ELEVENTH: This Easement is, and shall be of the same force and effect to all intents and purposes as a covenant running with the land and these presents, including all the terms and conditions herein contained, shall extend to, be binding upon and enure to the benefit of the heirs, executors, administrators, successors and assigns of the Grantor and Grantee respectively.

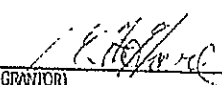
TWELFTH: Words herein importing number or gender shall be construed in grammatical conformance with the context or the party or parties in reference.

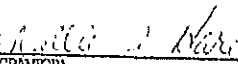
IN WITNESS WHEREOF, the Grantor and the Grantee have executed and delivered these presents this 15 day of May, A.D. 1986.

SIGNED, SEALED AND DELIVERED  
By the Grantor in the presence of:

  
(WITNESS)

  
(WITNESS)

  
(GRANTOR)

  
(GRANTOR)

Per: \_\_\_\_\_

Per: \_\_\_\_\_



# AFFIDAVIT OF EXECUTION FOR WITNESS

CANADA  
PROVINCE OF ALBERTA  
TO WIT: } 1. Steven Henderson  
of Lacombe In the Province of Alberta  
MAKE OATH AND SAY:

1. I was personally present and did see Richard F. Hare and Nellie Hare named in the within instrument, who is (are) personally known to me to be the person(s) named therein, duly sign and execute the same for the purpose(s) asmed therein.
2. That the same was executed at Alder Flats In the Province of Alberta, and that I am the subscribing witness thereto.
3. That I know the said person(s) and he (she, each) is in my belief of the full age of eighteen years.

SWORN before me at Wetaskiwin In the Province of Alberta this 15th day of May A.D. 1986

(A Commissioner for Oaths in and for the Province of Alberta)

SHARON RADIS  
EXP. DATE JAN. 24/89

I, \_\_\_\_\_ of \_\_\_\_\_ In the Province of Alberta (occupation), MAKE OATH AND SAY:

1. That I am the Transferor named in the within instrument.
2. That I am not married, OR That neither my self nor my spouse have resided on the within mentioned lands at any time since our marriage.

SWORN before me at \_\_\_\_\_ In the Province of Alberta this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 19 \_\_\_\_\_

(A Commissioner for Oaths in and for the Province of Alberta)

## CONSENT OF SPOUSE

1. NELLIE HARE being married to the above named RICHARD F. HARE do hereby give my consent to the disposition of our homestead, made in this instrument and I have executed this document for the purpose of giving up my life estate and other dower rights in the said property given to me by THE DOWER ACT, to the extent necessary to give effect to the said disposition.

(Signature of Spouse)

## CERTIFICATE OF ACKNOWLEDGMENT BY SPOUSE

1. This document was acknowledged before me by NELLIE HARE apart from her husband (his wife), acknowledged to me that she (he),
2. (a) is aware of the nature of this disposition;  
(b) is aware that THE DOWER ACT, gives her (or him) a life estate in the homestead and the right to prevent disposition of the homestead by withholding consent;  
(c) consents to the disposition for the purpose of giving up the life estate and other dower rights in the homestead given to her (or him) by THE DOWER ACT, to the extent necessary to give effect to the said disposition.  
(d) is executing the document freely and voluntarily without any compulsion on the part of her husband (or his wife).

Dated at ALDER FLATS In the Province of Alberta this 15 day of MAY A.D. 1986

(A Commissioner for Oaths in and for the Province of Alberta)

Steven Henderson

EXPIRES JULY 23, 1988

(2) The Grantee shall be entitled to use the said working area for all purposes in connection with such installation and construction without further payment to the Grantor other than the payment of damage to crops, pasture, fences or livestock on the working area.

SECOND: The Grantor shall not without the prior written consent of the Grantee, excavate, drill, install, erect, or permit to be excavated, drilled, installed or erected on or under the said right-of-way any pit, well, foundation, pavement or other structure or installation, but otherwise the Grantor shall have the right fully to use and enjoy the said right-of-way so long as such use and enjoyment does not interfere with or detract from the use and enjoyment thereof for the purposes of the Grantee.

THIRD: (1) The Grantee shall have the right to do whatever may be requisite for the enjoyment of the rights herein granted.

(2) The Grantee shall have the right of clearing the said right-of-way of timber or brush.

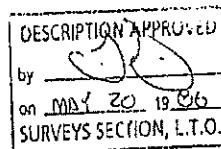
GRANT OF EASEMENT

I, (HE), RICHARD T. HARE AND ALLIE HARE

of ALDER FLATS, in the Province of Alberta,  
(hereinafter called "the Grantor"), being or being entitled to become registered owner  
of an estate in fee simple, subject, however, to the reservations and exceptions con-  
tained in the original Grant from the Crown and the existing Certificate of Title, of  
all that certain tract of land situate in the Province of Alberta, being composed of:

THE NORTH EAST QUARTER OF SECTION FIVE (5),  
TOWNSHIP FORTY SIX (46), RANGE SEVEN (7),  
WEST OF THE FIFTH MERIDIAN, CONTAINING ONE  
HUNDRED AND FIFTY NINE (159) ACRES MORE OR LESS.

RESERVING unto our heirs, assigns and successors  
TOGETHER WITH FULL POWER TO WORK THE SAME.



Subject to any exceptions or reservations of mines and minerals appearing on the title,  
but, in any case, excepting thereout all mines and minerals; (hereinafter referred to  
as "the said lands").

IN CONSIDERATION of the sum of -----DOLLARS

(\$ -----), paid, or caused to be paid by The County of Hutsheg No. 30  
(hereinafter called "the Grantee"), the  
receipt whereof is hereby acknowledged, and in consideration of the covenants and con-  
ditions hereinafter mentioned to be kept and performed by the Grantee,

DO HEREBY GRANT, TRANSFER and CONVEY unto the Grantees for themselves, their servants,  
agents and contractors the right, license, liberty, privilege and easement to use that  
portion of the said lands, being a right-of-way the most southerly 40.0 (fourty) feet in  
perpendicular width throughout.

and containing 2.41 Acres more or less, as shown on a plan of the said right-  
of-way of record in the Land Titles Office for the North Alberta Land Registration  
District as Plan No. N/A for the laying down, construction, operation,  
maintenance, inspection, removal, replacement, reconstruction and repair of a water  
transmission line or lines and a sewer line or lines together with all such stations,  
structures, pumps, drips, valves, cleanout traps, fittings, meters, cathodic protection  
apparatus, communications systems and other equipment and appurtenances as the Grantee  
shall deem necessary or convenient in connection therewith, for the carriage, conveyance,  
transportation and handling of water and sewage through or by means of the same, to-  
gether with the right of ingress and egress over the said lands to and from the said  
right-of-way with vehicles, supplies and equipment for all purposes useful or con-  
venient in connection with or incidental to the exercise and enjoyment of the rights  
and privileges herein granted on the following terms and conditions:

FIRST: (1) The Grantor grants to the Grantee, during the installation and con-  
struction of the first water transmission line, the right to use for a working area  
an additional portion or portions of the said lands, not exceeding in total an addi-  
tional N/A parallel to the said right-of-way and at the option  
of the Grantee lying on either or both sides of the said right-of-way.

(2) The Grantee shall be entitled to use the said working area for all  
purposes in connection with such installation and construction without further pay-  
ment to the Grantor other than the payment of damage to crops, pasture, fences or  
livestock on the working area.

SECOND: The Grantor shall not without the prior written consent of the Grantee,  
excavate, drill, install, erect, or permit to be excavated, drilled, installed or  
erected on or under the said right-of-way any pit, well, foundation, pavement or  
other structure or installation, but otherwise the Grantor shall have the right fully  
to use and enjoy the said right-of-way so long as such use and enjoyment does not  
interfere with or detract from the use and enjoyment thereof for the purposes of the  
Grantee.

THIRD: (1) The Grantee shall have the right to do whatever may be requisite for  
the enjoyment of the rights herein granted.

(2) The Grantee shall have the right of clearing the said right-of-way  
of timber or brush.

**ALBERTA GOVERNMENT SERVICES  
LAND TITLES OFFICE**

IMAGE OF DOCUMENT REGISTERED AS:

**962330871**

**ORDER NUMBER: 27909437**

**ADVISORY**

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Please contact the Land Titles Office at (780) 422-7874 if the image of the document is not legible.

Memorandum of Agreement entered into this 31 day of October, A.D., 1996.

BETWEEN:

**THE COUNTY OF WETASKIWIN NO. 10,**  
a Municipal Corporation pursuant to the  
laws of the Province of Alberta  
(hereinafter referred to as "the County")

ORIGINAL  
OF THE  
ORIGINAL

OF THE FIRST PART

- and -

**STUART ALAN HARE AND DONNA HARE,**  
both of Alder Flats, in the Province of Alberta  
(hereinafter referred to as "the Owner")

OF THE SECOND PART

## **LAND ACQUISITION AGREEMENT**

WHEREAS the Owner is the registered owner of the following lands:

MERIDIAN 5 RANGE 7 TOWNSHIP 46  
SECTION 5  
QUARTER NORTH WEST  
EXCEPTING THEREOUT ALL MINES AND MINERALS  
AND THE RIGHT TO WORK THE SAME  
AREA: 64.3 HECTARES (159 ACRES) MORE OR LESS

as more particularly described and set forth in Certificate of Title Number 952 147 737  
registered in the North Alberta Land Registration District Office.

(hereinafter referred to as "the Lands"); and

WHEREAS THE COUNTY wishes to acquire a portion of the Lands from the Owner for  
the purpose of construction, extending or widening a public roadway or ditch; and

WHEREAS THE OWNER is prepared to sell a portion of the Lands to the County for the above noted purpose on the terms and subject to the conditions hereinafter set forth.

NOW THEREFORE THIS AGREEMENT WITNESSETH THAT in consideration of the covenants and agreements hereinafter contained, the Owner and the County covenant and agree, each with the other as follows:

1. The Owner hereby assigns, transfers and conveys to the County and the County hereby purchases from the Owner the fee simple interest in that Portion of the Lands free and clear of all encumbrances and described as:

CEP 10000  
(A) 10000  
01/10/00

Fifty (50.0) <sup>Feet</sup> ~~meters~~ wide parallel and continuous to the south boundary of the lands.

AREA: 1.23 HECTARES (3.03 ACRES) MORE OR LESS

SHOWN ON SCHEDULE "A" ATTACHED TO THIS AGREEMENT and more particularly described in a survey to be registered in the Land Titles Office for the North Alberta Registration District by or in conjunction with the County.

(hereinafter referred to as "the Right-of-Way").

2. The Owner agrees to accept the sum of Four Thousand One Hundred (\$4,100.00) Dollars based on an acreage of Three and Three One Hundredths (3.03) acres in full and final settlement for the Right-of-Way being acquired by the County.
3. The Owner will be responsible for the payment of taxes on the portion of land to be taken, for the period of the signing of this agreement until the removal of the right of way from the lands, and the assessment change recorded on the County's tax roll.
4. The consideration will not be due or payable until a Postponement to this Agreement has been obtained and registered from the all prior encumbrances registered against the Lands and affecting the right-of-way, and the County has registered a Caveat protecting its interest as a first charge against the Lands pursuant to this Agreement as contemplated by paragraph 8 herein, but in any event not later than commencement of construction.
5. The Owner warrants that he/she is lawfully seized of the lands and has a good right to enter into this Agreement and the Owner will warrant and defend the same unto the County against the lawful claims and demands of all persons whomsoever; the Owner further warrants that he is not aware of any mortgages or encumbrances affecting the land, or that any other person has an estate or interest therein, at law or at equity, in possession, remainder, reversion or expectancy other than those noted on the Certificate of Title.



6. From and after the date of execution of the Agreement by the Owner and the County, the County shall be at liberty to enter upon the Lands with surveyors, workmen and contractors, for the purpose of construction, extending or widening a public roadway or ditch. During the construction of the public roadway, the Owner shall have reasonable access to the Lands.
7. The County shall not be under any duty or obligation to construct, extend or widen the public roadway or ditch immediately and the County shall be at liberty to construct, extend or widen the public roadway or ditch when the County in its sole and absolute discretion considers that the said construction, extension or widening is necessary and warranted.
8. The County shall be at liberty to file a Caveat against the title to the Lands to protect its interest in the Lands under this Agreement and the Owner acknowledges and agrees that the County shall not be required to file a plan of survey for the Right-of-Way at the Land Titles Office for the North Alberta Land Registration District, until such time as the County considers that the said construction, extension or widening of the public roadway or ditch is necessary. The Owner further acknowledges that the Municipal Secretary of the County is at liberty to execute the affidavit and file the plan of survey at Land Titles Office for N.A.L.R.D. with respect to the Right-of-Way. The County shall discharge the caveat registered against the Lands following the filing of a plan of survey for the Right-of-Way.
9. Compensation for crop or pasture loss is set out in Schedule "B" and is payable only on disturbed areas outside the right-of-way.
10. The Owner hereby agrees to indemnify and save harmless the County of and from any loss, cost, claims, expenses, actions or demands arising out of the County's acquisition of the Right-of-Way from the Owner pursuant to this agreement.
11. This agreement is not binding upon the County of Wetaskiwin No. 10 until accepted by resolution of the Council of the said County at a regular meeting.
12. This agreement shall enure to the benefit and be binding upon the parties, and their heirs, executives, administrators, transferees, employees, agents, servants and assigns.

IN WITNESS WHEREOF the Owner has affixed his hand and seal and the County has affixed its seal as witnessed by the hands of its proper officers duly authorized in that behalf all as the day and year first above written.

Wallace Wilson  
Witness

Stuart Alan Hare  
STUART ALAN HARE

Wallace Wilson  
Witness

Donna Hare  
DONNA HARE

COPIED  
COPY OF THE  
ORIGINAL

COUNTY OF WETASKIWIN NO. 10

Wallace Wilson  
REEVE

County Administrator  
COUNTY ADMINISTRATOR

# SCHEDULE "A"

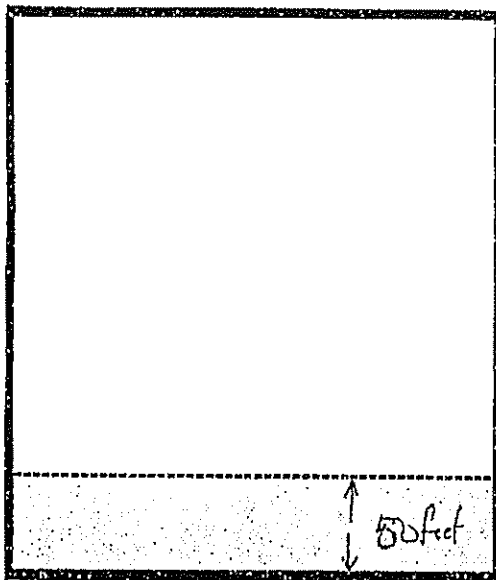
## SKETCH PLAN

OF LAND PURCHASE

IN

NW Section 5 Township 46 Range 7 W 5 M

ORIGINAL  
COPIES  
ORIGINAL



NOT TO SCALE

<p>APPROXIMATE AREA REQUIRED</p> <p><u>1.23</u> HECTARES ± (<u>3.03</u> ACRES ±)</p>	<p>Accepted this <u>29</u> day of <u>October</u>, A.D., 19<u>96</u></p> <p><u>Stuart Alan Hare</u> STUART ALAN HARE</p> <p><u>Donna Hare</u> DONNA HARE</p>
--	---

## AFFIDAVIT OF EXECUTION

CANADA ) I, Wallace Wilson  
 ) of the Hamlet of  
PROVINCE OF ALBERTA ) Alder Flats in the  
 ) Province of Alberta,  
TO WIT: ) MAKE OATH AND SAY:

1. That I was personally present and did see Stuart Alan Hare and Donna Hare named in the within instrument who is personally known to me to be the persons named therein, duly sign and execute the same for the purpose named therein.
2. That the same was executed in the area of Alder Flats, in the Province of Alberta, and that I am the subscribing witness thereto.
3. That I know the said persons and they are in my belief of the full age of eighteen (18) years.

SWORN BEFORE ME IN THE )  
City of Wetaskiwin )  
In the Province of Alberta, this )  
day of November )  
A.D., 19 96 )

Wallace Wilson

Sharon Radis  
A COMMISSIONER FOR OATHS IN  
AND FOR THE PROVINCE OF ALBERTA

SHARON RADIS  
EXP. DATE Jan. 24/98

COPIED  
COPY OF THE  
ORIGINAL.

# CAVEAT

TO THE REGISTRAR OF THE NORTH ALBERTA LAND REGISTRATION DISTRICT

1504  
TAKE NOTICE that WE, THE COUNTY OF WETASKIWIN NO. 10, a Municipal Corporation, of the County of Wetaskiwin, P.O. Box 6960, Wetaskiwin, T9A 2G5, in the Province of Alberta, claim an interest under and by virtue of a Land Acquisition Agreement, having the registered owner as grantor and the caveator as grantee, a copy of the said agreement is hereto attached and covers the following lands, namely:

MERIDIAN 5 RANGE 7 TOWNSHIP 46  
SECTION 5  
QUARTER NORTH WEST  
EXCEPTING THEREOUT ALL MINES AND MINERALS  
AND THE RIGHT TO WORK THE SAME  
AREA: 64.3 HECTARES (159 ACRES) MORE OR LESS

Being lands described in Certificate of Title No. 752 090 172 standing in the register in the name of STUART ALAN HARE AND DONNA HARE and I forbid the registration of any person as transferee or owner of, or of any instrument affecting the said estate or interest, unless the instrument or Certificate of Title, as the case may be, is expressed to be subject to my claim.

I APPOINT The County of Wetaskiwin No. 10 of P.O. Box 6960, Wetaskiwin, T9A 2G5, in the Province of Alberta, as the place at which notices and proceedings relating hereto may be served.

DATED this 25th day of November, A.D. 1993.

Frank Coutney  
FRANK COUTNEY  
County Administrator

CANADA	}	I, FRANK COUTNEY, County Administrator,
PROVINCE OF ALBERTA	}	of the City of Wetaskiwin,
TO WIT	}	in the Province of Alberta,

MAKE OATH AND SAY AS FOLLOWS:

1. THAT I am agent for the above-named Caveator.
2. THAT I believe that the said Caveator has a good and valid claim upon the said lands and I say that this Caveat is not being filed for the purpose of delaying or embarrassing any person interested in or proposing to deal therewith.

SWORN before me at Wetaskiwin,  
in the Province of Alberta  
this 25 day of November  
A.D. 1993

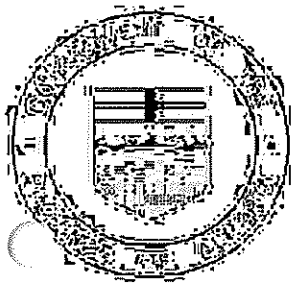
Frank Coutney  
FRANK COUTNEY  
County Administrator

Sharon Pades  
(A Commissioner for Oaths in  
and for the Province of Alberta)

File #3703-9

WETASKIWIN  
1504





LAND TITLE CERTIFICATE

S

LINC

SHORT LEGAL

TITLE NUMBER

0027 364 132

9820458;1;1

982 033 058

LEGAL DESCRIPTION

PLAN 9820458

BLOCK 1

LOT 1

EXCEPTING THEREOUT ALL MINES AND MINERALS

AREA: 1.22 HECTARES (3.01 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

ATS REFERENCE: 5;7;46;5;NW

MUNICIPALITY: COUNTY OF WETASKIWIN NO. 10

REFERENCE NUMBER: 982 032 916

-----  
REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
--------------	-----------	---------------	-------	---------------

-----

982 033 058	02/02/1998	SUBDIVISION PLAN		
-------------	------------	------------------	--	--

OWNERS

THE COUNTY OF WETASKIWIN NO. 10.

OF BOX 6960, WETASKIWIN

ALBERTA T9A 2G5

(DATA UPDATED BY: CHANGE OF ADDRESS 082463535)

-----  
ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION

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

-----

772 201 475	13/10/1977	UTILITY RIGHT OF WAY GRANTEE - ALDER FLATS GAS CO-OP LTD.
-------------	------------	--

862 102 498	20/05/1986	UTILITY RIGHT OF WAY GRANTEE - THE COUNTY OF WETASKIWIN NO. 10. "PART"
-------------	------------	--

962 330 871	02/12/1996	CAVEAT RE : ACQUISITION OF LAND
-------------	------------	------------------------------------

( CONTINUED )

-----  
ENCUMBRANCES, LIENS & INTERESTS

PAGE 2  
# 982 033 058

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

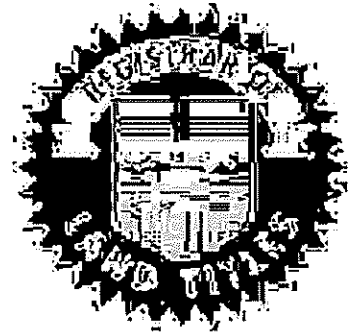
CAVEATOR - THE COUNTY OF WETASKIWIN NO. 10.  
P O BOX 6960  
WETASKIWIN  
ALBERTA T9A2G5  
AGENT - SEAL.

TOTAL INSTRUMENTS: 003

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN  
ACCURATE REPRODUCTION OF THE CERTIFICATE OF  
TITLE REPRESENTED HEREIN THIS 26 DAY OF  
FEBRUARY, 2015 AT 09:04 A.M.

ORDER NUMBER: 27909279

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).

**ALBERTA GOVERNMENT SERVICES  
LAND TITLES OFFICE**

IMAGE OF DOCUMENT REGISTERED AS:

**982033058**

**ORDER NUMBER: 27909437**

**ADVISORY**

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REGISTRATION REPORT  
FOR  
SUBDIVISION PLAN  
9820458

MUNC: COUNTY OF WETASKIWIN NO. 10

TITLES AFFECTED:

CANCELLED AS TO: INSTRUMENTS  
(SURFACE) DROPPED FROM  
FULL/PART REMAINDER  
F  
P 862102498

TITLE NUMBER	EST	RIGHTS	LINE	LAND ID
982032916	FS	S	0027364116	5;7;46;5;NW
982032916001	FS	S	0027364108	5;7;46;5;NW

NEW TITLES CREATED FOR SELF:

NEW BLOCK #:

1

NEW LOT #:

1

LAND AREA (HECTARES)

1.2200

TITLES

INST.

SELECTED

CARRIED

(Y/N):

LIST OF REF #S:

FWD

Y

982032916

A

## APPENDIX C – TRAFFIC COUNT DATA



# DIRECTIONAL TRAFFIC COUNT SUMMARY

HIGHWAY: 13      REFERENCE NO.:      INTERSECTION OF: 4 Street Alder Flats  
 LATITUDE (degrees):      LONGITUDE (degrees):      LEGAL DESCRIPTION:  
 DAY & DATE OF COUNT: Tuesday July 7      COUNT DURATION: 12 HOURS ( 7:00 AM TO 7:00 PM )

	APPROACHING INTERSECTION																														
	FROM WEST HIGHWAY 13														FROM EAST HIGHWAY 13																
INTERVAL	LEFT					THROUGH					RIGHT					LEFT					THROUGH					RIGHT					TOTALS
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
7:00-7:15 AM						4																								8	
7:15 - 7:30						1																								6	
7:30 - 7:45						4				1																				9	
7:45 - 8:00						1				1																				15	
8:00 - 8:15						3																								9	
8:15 - 8:30						3																								10	
8:30 - 8:45																														7	
8:45 - 9:00						3				1																				12	
9:00 - 9:15						2				1																				10	
9:15 - 9:30						4				1																				11	
9:30 - 9:45						4																								12	
9:45 - 10:00						7																								10	
10:00 - 10:15						3				1																				9	
10:15 - 10:30						8																								12	
10:30 - 10:45						2																								7	
10:45 - 11:00						3				1																				13	
11:00 - 11:15						9																								12	
11:15 - 11:30						7				1																				15	
11:30 - 11:45						4				1																				11	
11:45-12:00 PM						6				1																				11	
12:00 - 12:15	1					9																								20	
12:15 - 12:30						8				1																				12	
12:30 - 12:45						7																								15	
12:45 - 1:00						10				2	1																			19	
1:00 - 1:15						10				1																				17	
1:15 - 1:30						6																								10	
1:30 - 1:45						6																								14	
1:45 - 2:00	1					4																								9	
2:00 - 2:15						4				1																				8	
2:15 - 2:30						7																								17	
2:30 - 2:45						6																								13	
2:45 - 3:00	1					3																								13	
3:00 - 3:15						11				2																				19	
3:15 - 3:30						8				1	1																			16	
3:30 - 3:45						6				1																				11	
3:45 - 4:00	1					6				1																				10	
4:00 - 4:15						6	1																							13	
4:15 - 4:30						6				1																				12	
4:30 - 4:45						2				1																				10	
4:45 - 5:00						5																								13	
5:00 - 5:15						10	1																							17	
5:15 - 5:30						6				1																				18	
5:30 - 5:45						1																								7	
5:45 - 6:00						3				1																				8	
6:00 - 6:15						4																								12	
6:15 - 6:30																														7	
6:30 - 6:45						1																								4	
6:45-7:00 PM						1																								4	
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
TOTALS	4	0	0	0	0	235	2	0	17	9	0	0	0	0	0	0	0	0	0	0	0	251	4	0	11	13	11	0	0	0	557
	WL					WT					WR					EL					ET					ER					

LOCATION DIAGRAM ENCLOSED (Y/N):  
 WEATHER CONDITIONS:  
 RECORDER(S):  
 COMMENTS:

**VEHICLE CLASSES**  
 A: PASSENGER VEHICLES    B: RECREATION VEHICLES    C: BUSES  
 D: SINGLE UNIT TRUCKS    E: TRACTOR TRAILER COMBINATIONS



# DIRECTIONAL TRAFFIC COUNT SUMMARY

HIGHWAY: 13      REFERENCE NO.:      INTERSECTION OF: 2 Street Alder Flats  
 LATITUDE (degrees):      LONGITUDE (degrees):      LEGAL DESCRIPTION:  
 DAY & DATE OF COUNT: July 24, 2015      COUNT DURATION: 12 HOURS ( 7:00 AM TO 7:00 PM )

INTERVAL	APPROACHING INTERSECTION																								TOTALS					
	FROM WEST HIGHWAY 13												FROM EAST HIGHWAY 13																	
	LEFT					THROUGH					RIGHT					LEFT					THROUGH					RIGHT				
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E					
7:00-7:15 AM	1					5										4				1						11				
7:15 - 7:30						1										4	1									6				
7:30 - 7:45						1							1			7			2	1						12				
7:45 - 8:00						4										6				1						11				
8:00 - 8:15	1					3										6										10				
8:15 - 8:30						5			1							2				2						10				
8:30 - 8:45						2	1		2	2						1	1									9				
8:45 - 9:00									1							3				1						5				
9:00 - 9:15						5			2	2						2			1							12				
9:15 - 9:30	1					5				3						4			1	1						15				
9:30 - 9:45						6				2						6				2	1					17				
9:45 - 10:00						4										3	1									8				
10:00 - 10:15						3				2						5										10				
10:15 - 10:30						3	1									5	1		1							11				
10:30 - 10:45						1				2						5					1					9				
10:45 - 11:00						8				1						6					1					16				
11:00 - 11:15						10			1							3			1							15				
11:15 - 11:30						6		1					1			2			3		1					14				
11:30 - 11:45						6										4				1						11				
11:45-12:00 PM		1				4	2		1							6			1	2						17				
12:00 - 12:15						8										5	2									15				
12:15 - 12:30						5	2			2						6										14				
12:30 - 12:45						4	2			3						6			1							16				
12:45 - 1:00						7			2	2				2		3			1	1						18				
1:00 - 1:15						5										9			2	3	3					22				
1:15 - 1:30						3				1	1			1		4	4									14				
1:30 - 1:45						5			5							4										14				
1:45 - 2:00						4			1	1	2			1		6	2									17				
2:00 - 2:15						3	1									4										8				
2:15 - 2:30						7	1		1	3						6				3	1			1		23				
2:30 - 2:45	1					6					1					3	1		2	1	1				16					
2:45 - 3:00						6	1				1					5	1								14					
3:00 - 3:15						2				1						6			1						10					
3:15 - 3:30						3			1	3	1					6			1		1				16					
3:30 - 3:45						2			2	1						5			1	1					12					
3:45 - 4:00						7	1		1	1						3			1		3				17					
4:00 - 4:15						5			1							6	3								15					
4:15 - 4:30	1					2			1	1						4									9					
4:30 - 4:45						1				1						3									5					
4:45 - 5:00						7										8			1						16					
5:00 - 5:15						8	3		1							8									20					
5:15 - 5:30						8	1									7	1				1				18					
5:30 - 5:45						4										5	1			1					11					
5:45 - 6:00						9										1	2				3				15					
6:00 - 6:15	1					2	1									7	3								14					
6:15 - 6:30						2										5					3				10					
6:30 - 6:45						9	1			1						5					1				17					
6:45-7:00 pm						3										8	1								12					
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E					
TOTALS	5	1	0	0	0	212	18	1	24	35	6	0	0	0	0	5	0	0	0	0	216	24	0	19	20	608				
	WL					WT					WR					EL					ET					ER				

LOCATION DIAGRAM ENCLOSED (Y/N):

WEATHER CONDITIONS:

RECORDER(S):

COMMENTS:

## VEHICLE CLASSES

A: PASSENGER VEHICLES    B: RECREATION VEHICLES    C: BUSES  
 D: SINGLE UNIT TRUCKS    E: TRACTOR TRAILER COMBINATIONS



# DIRECTIONAL TRAFFIC COUNT SUMMARY

HIGHWAY: 13      REFERENCE NO.:      INTERSECTION OF: range road 74  
LATITUDE (degrees):      LONGITUDE (degrees):      LEGAL DESCRIPTION:  
DAY & DATE OF COUNT: July 8, 2015      COUNT DURATION: 12 HOURS (7:00 AM TO 7:00 PM)

INTERVAL	APPROACHING INTERSECTION																								TOTALS							
	DIRECTION OF TRAVEL ROADWAY NAME From West on hwy. 13												DIRECTION OF TRAVEL ROADWAY NAME From East on Hwy 13																			
	LEFT				THROUGH				RIGHT				LEFT				THROUGH				RIGHT											
7:00-7:15 AM					4																					4						
7:15 - 7:30																										4						
7:30 - 7:45	1				2														1							14						
7:45 - 8:00					2			1					5					10		1						20						
8:00 - 8:15					1													6		1						8						
8:15 - 8:30					3								1					5								9						
8:30 - 8:45																		3								3						
8:45 - 9:00					4								5					2								11						
9:00 - 9:15					3			1		1			2					1								8						
9:15 - 9:30					2				1	1			1					2		2		1				10						
9:30 - 9:45					1				1									2								4						
9:45 - 10:00					1			1										1		1		1				5						
10:00 - 10:15					4													4			1					9						
10:15 - 10:30					1													2		1		1				5						
10:30 - 10:45													1					1		2						4						
10:45 - 11:00					1													3								4						
11:00 - 11:15					3								3					3				1				10						
11:15 - 11:30																		1				1				2						
11:30 - 11:45					2			1										5				1				9						
11:45-12:00 PM					3			1					1			1		4								10						
12:00 - 12:15					1													2		2		4				9						
12:15 - 12:30					4				1				5			1		1				3				15						
12:30 - 12:45					4								2					2								8						
12:45 - 1:00					2								1			1		3								7						
1:00 - 1:15					2								3			1		4		1		1				12						
1:15 - 1:30					3			2										3				1				9						
1:30 - 1:45					1								1													2						
1:45 - 2:00	2				9													1				3				15						
2:00 - 2:15					4																					4						
2:15 - 2:30					2			1	2	1			4					4								14						
2:30 - 2:45					4			1										5				4				14						
2:45 - 3:00					1								2					3				1				7						
3:00 - 3:15					2								1					1		1	1					6						
3:15 - 3:30					3			1					2					3		1		1				11						
3:30 - 3:45					2								2					3						1		8						
3:45 - 4:00					2													1								3						
4:00 - 4:15					5			1	1									4								11						
4:15 - 4:30					2								1					1				1				5						
4:30 - 4:45					4								3					3								10						
4:45 - 5:00					4													1								7						
5:00 - 5:15					3				1				1					3				2				10						
5:15 - 5:30					7								2					2				1				12						
5:30 - 5:45					2			1					5									2		1		11						
5:45 - 6:00													3					4								7						
6:00 - 6:15					4								3					2			1					10						
6:15 - 6:30					1								1					8				3				13						
6:30 - 6:45					4								1					1		1						7						
6:45-7:00 PM					5			1										2				1				9						
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E							
TOTALS	3	0	0	0	0	124	0	0	13	7	3	0	0	0	0	62	0	0	0	0	4	136	0	0	13	4	38	0	0	2	0	409
	WL				WT					WR					EL					ET					ER							

LOCATION DIAGRAM ENCLOSED (Y/N):

WEATHER CONDITIONS:

RECORDER(S):

COMMENTS:

## VEHICLE CLASSES

A: PASSENGER VEHICLES    B: RECREATION VEHICLES    C: BUSES  
D: SINGLE UNIT TRUCKS    E: TRACTOR TRAILER COMBINATIONS

# DIRECTIONAL TRAFFIC COUNT SUMMARY

HIGHWAY: 13      REFERENCE NO.:      INTERSECTION OF: range road 74  
LATITUDE (degrees):      LONGITUDE (degrees):      LEGAL DESCRIPTION:  
DAY & DATE OF COUNT: July 8, 2015      COUNT DURATION: 12 HOURS (7:00 AM TO 7:00 PM)

INTERVAL	APPROACHING INTERSECTION																				TOTALS	GRAND TOTALS										
	DIRECTION OF TRAVEL ROADWAY NAME From North on RR 74										DIRECTION OF TRAVEL ROADWAY NAME From South on RR 74																					
	LEFT					THROUGH					RIGHT					LEFT							THROUGH					RIGHT				
7:00-7:15 AM											1											1					2	6				
7:15 - 7:30																											0	4				
7:30 - 7:45																											1	15				
7:45 - 8:00	1																										2	22				
8:00 - 8:15																											2	10				
8:15 - 8:30	1																										1	12				
8:30 - 8:45																											3	3				
8:45 - 9:00																											2	14				
9:00 - 9:15	1																										1	10				
9:15 - 9:30																											2	11				
9:30 - 9:45																											1	6				
9:45 - 10:00	1																										2	6				
10:00 - 10:15	1																										1	6				
10:15 - 10:30	1																										1	11				
10:30 - 10:45																											2	8				
10:45 - 11:00	1																										1	5				
11:00 - 11:15	1			1																							2	14				
11:15 - 11:30																											4	2				
11:30 - 11:45	1																										1	11				
11:45-12:00 PM	1																										2	14				
12:00 - 12:15																											6	17				
12:15 - 12:30	2																										2	19				
12:30 - 12:45	1																										1	11				
12:45 - 1:00																											5	12				
1:00 - 1:15	1																										1	15				
1:15 - 1:30	1																										3	13				
1:30 - 1:45	1																										2	6				
1:45 - 2:00																											3	18				
2:00 - 2:15																											2	7				
2:15 - 2:30																											5	20				
2:30 - 2:45	2																										1	17				
2:45 - 3:00																											2	14				
3:00 - 3:15																											1	7				
3:15 - 3:30	1																											13				
3:30 - 3:45																											1	8				
3:45 - 4:00				1																							2	5				
4:00 - 4:15	1																										3	15				
4:15 - 4:30	2																										2	9				
4:30 - 4:45	2																											12				
4:45 - 5:00	1																										2	10				
5:00 - 5:15	1																											11				
5:15 - 5:30																											0	12				
5:30 - 5:45				1																							1	13				
5:45 - 6:00	2																										3	12				
6:00 - 6:15	3																											16				
6:15 - 6:30																											3	16				
6:30 - 6:45																											1	9				
6:45-7:00 pm	2																										2	13				
VEH CLASS	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E		
TOTALS	33	0	0	3	0	5	0	0	0	0	1	0	0	0	0	11	0	0	0	0	0	2	0	0	0	0	69	2	0	2	2	
	NL					NT					NR					SL					ST					SR						

LOCATION DIAGRAM ENCLOSED (Y/N):

WEATHER CONDITIONS:

RECORDER(S):

COMMENTS:

## VEHICLE CLASSES

A: PASSENGER VEHICLES    B: RECREATION VEHICLES    C: BUSES  
D: SINGLE UNIT TRUCKS    E: TRACTOR TRAILER COMBINATIONS



# APPENDIX D - PHASE 1 GROUND WATER EVALUATION



**LEVELTON**

824440 Alberta Ltd.

**Phase I Groundwater Evaluation  
SW-4-46-7 W5M**

Wetaskiwin County, Alberta

**Submitted by:**

Levelton Consultants Ltd.  
203-6919 32 Avenue NW  
Calgary AB T3B 0K6  
T: 403.247.1813  
F: 403.247.1814  
calgary@levelton.com

**To:**

824440 Alberta Ltd.  
Box 190  
Alder Flats AB T0C 0A0

Attention: Mr. Lyle Seely

Date: November 25, 2013

Levelton File: R613-2025-00

## Executive Summary

As requested by Mr. Lyle Seely of 824440 Alberta Ltd., Levelton Consultants Ltd. (Levelton) carried out an aquifer assessment within the SW ¼ of Section 4, Township 46, Range 7, West of the 5<sup>th</sup> Meridian, to determine whether sufficient potential exists for groundwater to supply a proposed subdivisions.

Aquifers in the area are usually located within the area the shale, siltstone, sandstones with bentonite, and coal seams of the Dalehurst Member of the Paskapoo Formation, typically at depths of 10 to 150 m below ground surface. The Dalehurst Member is typically a good aquifer with yields generally greater than 100 m<sup>3</sup>/day (15 imperial gallons per minute [igpm]). The area around the subject site indicates well yields range from 10 m<sup>3</sup>/day (1.5 igpm) to 100 m<sup>3</sup>/day (15 igpm). Based on our analysis of the data provided and calculations of well performance, Levelton concludes:

- assuming the aquifers underlying the proposed 61 lot rural subdivision have similar general conditions to those found in the area, sufficient water supplies should be available from the wells to provide 1,250 m<sup>3</sup>/year in accordance with Section 23(3) of the Water Act for the proposed additional development.
- the water quantity obtained from the well in the proposed 61 lot rural subdivision will likely not interfere with nearby household, registered or licensed users assuming the wells are used for domestic/residential use.
- the groundwater supply source, if taken from the Dalehurst Member, is not likely to be susceptible to contamination from nearby surface water.

The results indicated the water was sodium-bicarbonate type water was generally acceptable as a potable water source. The total dissolved solids, sodium, fluoride, and pH parameters in the groundwater exceeded potable drinking water criteria. Levelton recommends water quality samples be collected and submitted to an environmental laboratory for analysis before consumption. Based on the analytical results, water treatment options can be assessed.

Based on the conclusions presented above, Levelton recommends that new wells should be drilled and completed in accordance with the requirements specified in the Water (Ministerial) Regulation AR 205/1998. These wells should be sited to conform to the setback criteria in the Regulation. Pumping tests should be completed on any new wells to assess their long term capability. At the conclusion of pumping groundwater samples should be collected and analyzed for water quality to assess the degree of treatment, if any, that may be required.

In Levelton's opinion, there is potential for groundwater to supply a proposed 61 lot rural subdivision in this portion of Wetaskiwin County.



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## 1. Introduction

At the request of Mr. Lyle Seely of 824440 Alberta Ltd., Levelton undertook a preliminary desktop aquifer evaluation for the proposed subdivision within the SW of Section 4, Township 46, Range 7, West of the 5<sup>th</sup> Meridian. The purpose of the evaluation was to assess whether local groundwater resources have the potential to act as a supply for a proposed 61 lot rural subdivision, without causing effects on existing groundwater users. The proposed rate of extraction is 1,250 m<sup>3</sup>/year per household, as defined in the Water Act.

The locations of the quarter section that contain the proposed subdivisions are shown on the Wetaskiwin County Map (Figure 1). The site is located approximately 1 km west of Alder Flats, Alberta, west of Highway 22 and north of Highway 13. An aerial photograph map (Figure 2) shows the quarter section that contains the proposed subdivisions. The aerial photograph (Figure 2) shows the area of the proposed subdivision is relatively flat. Figures 1 through 3 are shown following the Closure section on Page 8.

## 2. Summary of Strata and Water Well Users

According to the *Surficial Geology of Central Alberta*<sup>1</sup> the subject site area features undulating hummocky topography, with moraine till of uneven thickness. The local relief is 10 to 30 m. The primary sediment types include till, with sand and silt. Surficial deposits are a source of groundwater in Wetaskiwin County<sup>2</sup>; however sand and gravel aquifers with high yields are sparse within the County and relatively absent in the subject site area. The highest authorized groundwater use in the surficial deposits is 9.3 m<sup>3</sup>/day (1.4 imperial gallons per minute [igpm]). A map showing yields for the lower surficial gravel and sand deposits within Wetaskiwin County is presented in Figure 4. Overlying the lower surficial gravel and sand deposits are an upper sand and gravel aquifer, which largely absent in Wetaskiwin County.

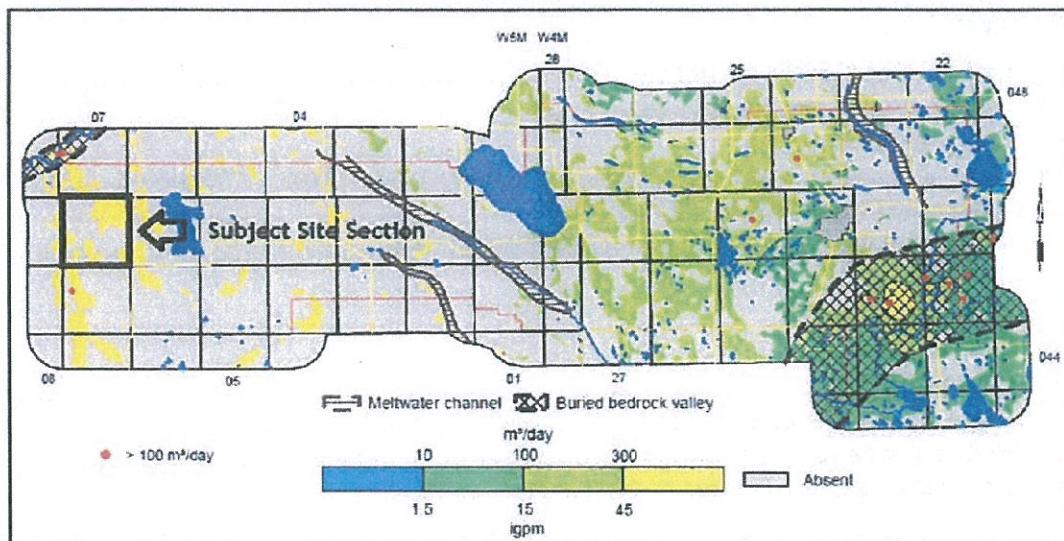


Figure 4: Occurrence and General Yield of Upper Surficial Sediment, County of Wetaskiwin

<sup>1</sup> Shetson, 1990

<sup>2</sup> Hydrogeological Consultants Ltd, 2002. *Regional Groundwater Assessment, Part of North Saskatchewan River Basin*. Prepared for Agriculture and Agri-Food Canada and County of Wetaskiwin.



Underlying the surficial sediments are the shale, siltstone, sandstones with bentonite, and coal seams of the Dalehurst Member of the Paskapoo Formation. The Paskapoo Aquifer consists of the porous and permeable parts of the Paskapoo Formation; within the County the Dalehurst Member underlays the west portion<sup>3</sup> of the County.

Underlying the Dalehurst Member are the sandstone, with some siltstone, shale and coal deposits, of the Lacombe and Haynes Member, also of the Paskapoo Formation. The Lacombe and Haynes Members form the lower part of the Paskapoo Formation. No data was available describing wells drilled within Lacombe and Haynes Members in subject site area. A cross-section showing the approximate depths to the Dalehurst, Lacombe, and Haynes Members in Wetaskiwin County is presented in Figure 5.

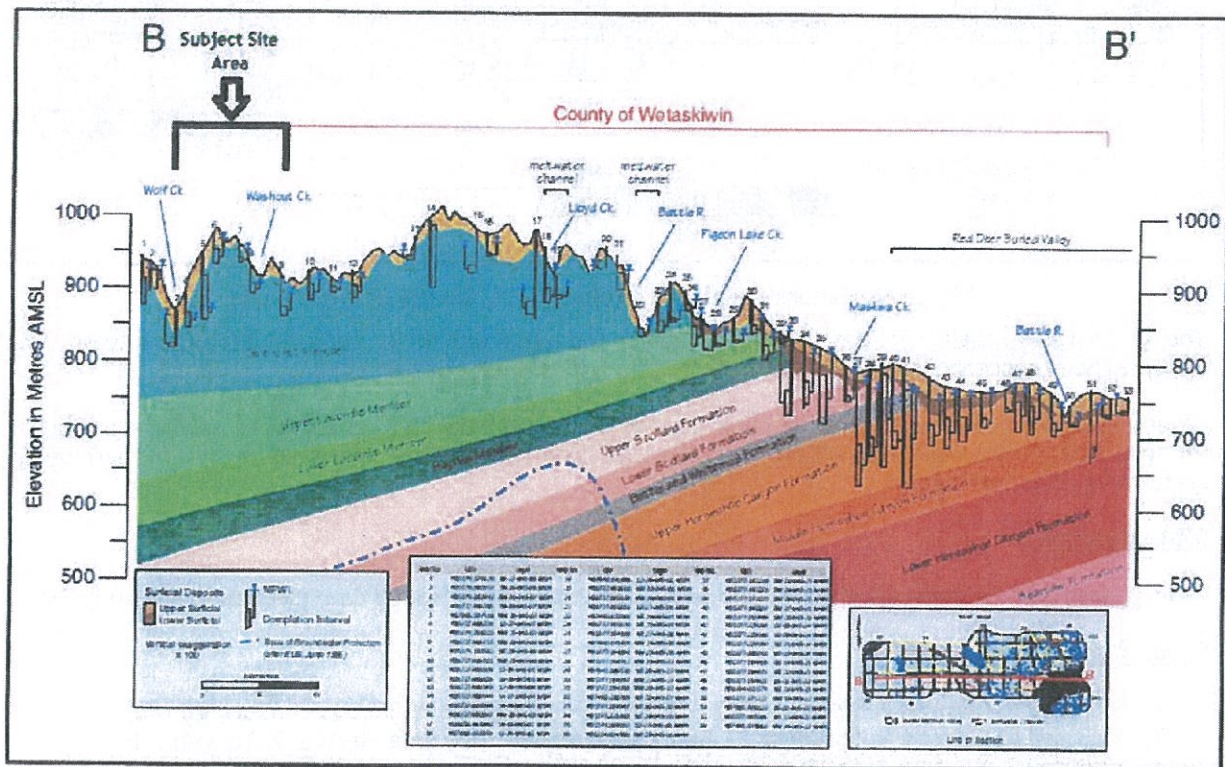


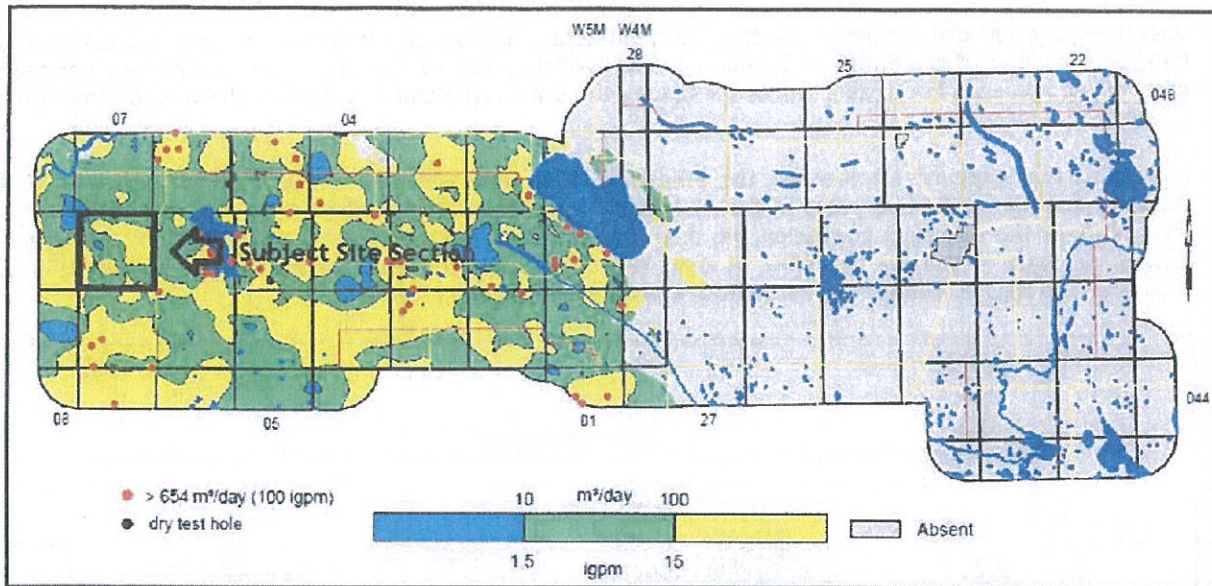
Figure 5: Wetaskiwin County Geological Cross-Section

Levelton reviewed the regional nature of the Dalehurst Aquifer with the aid of the *Regional Groundwater Assessment for Wetaskiwin County*<sup>4</sup>. The map presented in Figure 5 shows the Dalehurst Aquifer typically forms a relatively good aquifer in the subject site section with yields greater than 100 m<sup>3</sup>/day (15 igpm). The area around the subject site has estimated yields that range from 100 m<sup>3</sup>/day (15 igpm) to less than 10 m<sup>3</sup>/day (1.5 igpm). The depth to the Dalehurst Aquifer in the subject site area is approximately 15 m.

<sup>3</sup> *ibid*

<sup>4</sup> *ibid*





**Figure 6: General Dalehurst Aquifer Yield, County of Wetaskiwin**

The groundwater quality in the Dalehurst Aquifer was reported to be sodium-bicarbonate type. Total Dissolved Solid concentrations in samples collected from local wells were approximately 538 mg/L<sup>5</sup>.

Levelton reviewed ESRDs database for water licenses and registrations within Section 4, and the surrounding sections. One license was found within the subject Section 4. Six licenses were found within the surrounding sections for water diversions:

#### Subject Section

1. Licensed to Michael & Delia Scrybalo on 13 Mar. 2002 with no expiry date (Section 4, Township 46).

#### Surrounding Sections

2. Licensed to Caroline Johnson on 29 Oct. 1985 with no expiry date (Section 5, Township 46);
3. Licensed to Wayne Maciborsky on 22 Mar. 2002 with no expiry date (Section 9, Township 46);
4. Licensed to Marvin & Susan Stevens on 15 Mar. 2002 with no expiry date (Section 9, Township 46);
5. Licensed to Robert Stenberg on 22 Mar. 2002 with no expiry date (Section 9, Township 46);
6. Licensed to Regan Seely on 10 Jun. 2002 with no expiry date (Section 33, Township 45); and
7. Licensed to Dave & Shelly Biever 14 Jul. 2004 with no expiry date (Section 33, Township 45);

The data describing the source of water diversion for the Scrybalo licence, found within the Section 4, Township 46 was not available to Levelton. In total, the licence within the subject site section potentially indicated a low groundwater demand in Section 4. The number of licenses in the surrounding sections indicated a moderate demand in the surrounding sections.

<sup>5</sup> Ibid



### 3. Pumping Tests and Interpretation

#### 3.1 Well Parameters

To assess potential well yield, pumping test data from wells in the area were reviewed to determine aquifer hydraulic conductivity. Fourteen well records containing pumping test information from the subject site quarter section were obtained to allow for assessment of aquifer parameters. The pumping tests were short duration and the pumping test data was incomplete, as only recovery data was reported on the well logs. Levelton was unable to interpret this data with any degree of confidence. The pumping test data showed full recovery implying that the pumping rates listed Table 1 were sustainable over the duration of the tests. A summary of the results is presented in Table 1:

Table 1: Local Well Data, Section 4 Township 46.

Well ID	Location	Well Depth (m)	Available Drawdown (m)	Aquifer Type	Initial Test Rate (igpm)	Recovery Duration (minutes)
340721	SW-04	106.1	17.9	Gray Sandstone	10	120
340722	SW-04	99.9	11.9	Gray Sandstone	10	120
340723	SW-04	106.1	8.4	Gray Sandstone & Shale Ledges	7	120
340724	SW-04	109.7	10.7	Gray Sandstone & Shale Ledges	6	120
340725	SW-04	105.2	17.7	Sandstone	30	7
498708	SW-04	82.3	9.1	Gray Sandstone	5	40
1060040	SW-04	85.3	18.6	Gray Sandstone	40	9
1060355	SW-04	123.4	31.7	Gray Sandstone	40	9
1065909	SW-04	109.7	15.5	Gray Sandstone	10	120
1066924	SW-04	115.8	13.4	Gray Sandstone	12	120
1545384	SW-04	87.8	7.0	Gray Sandstone	15	16
2085365	SW-04	109.7	19.8	Gray Sandstone	25	10
2085424	SW-04	103.6	23.8	Gray Sandstone	40	9

An average well yield for the area around the subject site indicated yields ranging from 100 m<sup>3</sup>/day (15 igpm) to 10 m<sup>3</sup>/day (1.5 igpm)<sup>6</sup> from wells drilled into the Dalehurst Member.

### 4. Effect on Neighbouring Users

Levelton reviewed the static water levels reported on well logs in the area to assess whether indications of aquifer overutilization were evident. Initial static water levels from wells within the area from the Dalehurst Aquifer were examined to assess if water level changes had occurred over time. A summary of the average water level in each decade for wells of this depth range is listed in Table 2:

Table 2: Average Reported Static Water Levels

Decade	Number of Wells	Average Depth of Wells (m)	Average Static Water Level (m)
1960s	10	75.3	49.1
1970s	14	77.6	44.6
1980s	6	78.7	56.7
1990s	11	87.1	55.4
2000s	14	97.5	68.5
2010s	3	109.7	77.5

<sup>6</sup> Ibid



The average static water levels from the 1960s to 2010s show an approximate 25 m decline. Levelton attributes the decline to a progressive depth increase of wells in the subject site area. Other possible factors for the variable static water levels include: long term climate change, less active use and limited data for recent/current decades. Detailed assessment of water level changes were beyond the scope of this report.

## 5. Site Considerations

### 5.1 GWUDI

When shallow groundwater supply sources are vulnerable to contamination by pathogens from nearby surface water sources or infiltrating precipitation, they are classified as groundwater under the direct influence of surface water (GWUDI). When GWUDI conditions are present, treatment equivalent to that required for surface sources is necessary. Bedrock aquifers are typically less likely susceptible to surface contamination.

Alberta Environment and Sustainable Resource Development (ESRD) has several conditions and criteria used to assess potential GWUDI wells, including:

1. The source shall not be a spring, infiltration gallery, shallow collector system, artificial recharge system, bored well, or dug well. The water source at the subject site is not classified as within one of these settings.
2. The second criterion discusses proximity to the surface water and establishes a setback of 100 m from surface water. There are numerous nearby ponds located in the area consisting of shallow sloughs and man-made ponds (Figure 2). None of the ponds appear to be within 50 m of the proposed subdivision and the source aquifer at the site is a sufficient depth to not be affected by the surface water from the ponds.
3. The well should be constructed properly according to the Alberta Water (Ministerial) Regulation (Alberta Regulation 205/98). The well's surface casing and grout seal are intended to aid in preventing surface migration to the perforated zone of the well.
4. The raw or treated water from the well shall not exhibit evidence of contamination by surface water such as high nitrates or bacteria.

For wells obtaining water from the Dalehurst Aquifer in the area, groundwater can be considered moderate quality and treatment techniques to improve water quality may likely be required. If the 61 lot subdivision has a community supply wells established, they will require treatment of the water according to the Potable Water Regulation under the Environmental Protection and Enhancement Act. Once the new wells are drilled and installed, water quality samples should be collected and reviewed to assess the level of treatment required, if any.

### 5.2 Distance to Sources of Contamination

As outlined in the *Water Well Regulations of the Environmental Protection and Enhancement Act*, a well for diversion and use of groundwater must be located and drilled at a minimum distance away from certain contamination sources. Table 3 outlines these requirements:

Table 3 Well Diversion Requirement

Source of Substance	Minimum Distance Required
Water tight septic tank or sewage holding tanks	10 m
Sub-surface weeping tile effluent disposal field or an evaporation mound	15 m
Sewage effluent discharge to the ground surface	50 m
Above ground storage tanks containing petroleum substances	50 m



Levelton recommends well setbacks be utilized for all of the above sources, either currently in place or to be installed with development (i.e. the septic field).

## 6. Water Chemistry

To determine the typical groundwater quality near the subject site, Levelton reviewed the analytical results for a groundwater sample in the Alberta Environment and Water database from a nearby well in 14-32-45-7 W5M (Figure 3). The lab report is attached on Figure 6. This analysis was undertaken in 1985 and was collected from a 77.1 m deep well developed/installed from the Dalehurst Aquifer. A summary of the results with a comparison to the Guidelines for Canadian Drinking Water Quality as established by the Health Canada is shown in Table 4:

Table 4: Water Quality Results compared to CCME limits

Parameter	32 - 45 Well	CCME Limits
Well Depth (m)	77.1	-
Calcium	2	-
Magnesium	0	-
Sodium	285	200
Iron	0	0.3
Manganese	-	0.05
Bicarbonate	471	-
Chloride	41.1	250
Fluoride	1.6	1.5
Nitrite	0.	3.2
Potassium	0.82	-
Sulphate	164	500
pH	8.7	6.5 - 8.5
Total Dissolved Solids	738	500

Note: All results are in mg/L (ppm) except pH which is in pH units; N/A - Not Analyzed; Bold exceed criteria

The results indicated the water was sodium-bicarbonate type water was generally acceptable as a potable water source. The total dissolved solids, sodium, fluoride, and pH parameters in the groundwater exceeded potable drinking water criteria. Levelton recommends water quality samples be collected and submitted to an environmental laboratory for analysis before consumption. Based on the analytical results, water treatment options can be assessed.

## 7. Discussion

Based on Levelton's review of available information, the Dalehurst Aquifer, hosted in the Dalehurst Member of the Paskapoo formation, underlies the western portion of the County and forms an important aquifer. Reported well yield range from 10 to 100 m<sup>3</sup>/day (or 1.5 to 15 igpm). The Alberta Water Act requires a well yield of 1,250 m<sup>3</sup>/year (roughly 0.5 igpm) for domestic supply. Levelton also noted that the average static water level in wells drilled since the 1950s has declined approximately 25 m, inferring that groundwater levels are declining in this portion of the County.

The development of a 61 lot subdivision has the potential to impact long term groundwater levels if wells are installed on individual lots. Pumping tests should be conducted on all new wells after drilling, with other nearby well used as observation wells so that distance-drawdown analyses can be completed. Potential interference effects between wells should be estimated based on well drawdowns.



It may be necessary for community supply wells, rather than individual domestic supply well, to be used as a water source for the proposed development. If so, long term pumping tests and detailed analysis of drawdown and recovery data may be required.

Groundwater quality in the subject area is variable and groundwater samples should be collected from each well and submitted for potability analysis. The analytical results should be compared to the Guidelines for Canadian Drinking Water Quality. Based on the water quality results, water treatment may be required.

## 8. Conclusions

Based on Levelton's review of the information for this preliminary desktop aquifer assessment, we have drawn the following conclusions about the hydrogeology of the subject site:

1. The subject site area features undulating hummocky topography, with moraine till of uneven thickness. The local relief ranges from 10 to 30 m. The primary sediment types include till, with sand and silt. Surficial deposits are a source of groundwater in Wetaskiwin County; however sand and gravel aquifers with high yields are sparse within the County and relatively absent in the subject site area. The highest authorized groundwater use in the surficial deposits is 9.3 m<sup>3</sup>/day (1.4 igpm).
2. Underlying the surficial sediments are the shale, siltstone, sandstones with bentonite, and coal seams of the Dalehurst Member of the Paskapoo Formation. The Paskapoo Aquifer consists of the porous and permeable parts of the Paskapoo Formation. The Dalehurst Member underlays the west portion of the County.
3. The Dalehurst Aquifer typically forms a relatively good aquifer in the subject site section with yields potentially greater than 100 m<sup>3</sup>/day. The area around the subject site has estimated well yields ranging from 100 to less than 10 m<sup>3</sup>/day (1.5 igpm). The depth to the Dalehurst Aquifer in the subject site area is approximately 15 m.
4. Underlying the Dalehurst Member are the mainly sandstone the Lacombe and Haynes Members, of the Paskapoo Formation. No data was available describing wells drilled within Lacombe and Haynes Members in subject site area.
5. Levelton reviewed ESRDs database for water licenses and registrations within Section 4, and the surrounding sections. One license was found within the subject Section 4. Six licenses were found within the surrounding sections for water diversions.
6. Levelton used available data to assess potential well yield and reviewed pumping test data from local wells to determine aquifer hydraulic conductivity. Four well records containing incomplete pumping test information were unable to be interpreted with any degree of confidence. The pumping test data showed full recovery implying that the pumping rates listed were sustainable over the duration of the tests.
7. Levelton reviewed the average static water levels from the 1960s to 2010s, which showed an approximate 25 m decline. The decline may due to a progressive depth increase of wells in the subject site area; long term climate change, less active use and limited data for recent/current decades.
8. Existing wells completed in the Dalehurst Member do not appear to be under GWUDI conditions as the aquifer is under confined conditions.
9. Existing wells completed in the surficial deposits may be under GWUDI conditions as the aquifer is under unconfined conditions.



10. Levelton's review of a groundwater sample from a nearby well indicated water was sodium-bicarbonate-sodium type water was generally acceptable as a potable water source; Levelton recommends the water be sampled and analyzed prior to a decision about consumption is made.

## 9. Recommendations

Based on the conclusions presented above, Levelton offers the following recommendations:

1. New wells should be drilled and completed in accordance with the requirements specified in the Water (Ministerial) Regulation AR 205/1998.
2. Pumping tests should be completed on any new wells after drilling and installation to assess long term capability of the wells. If well interference is observed or estimated during data analysis, community supply wells, rather than individual domestic wells, may be necessary to supply the development.
3. Groundwater samples should be collected and analyzed for water quality to assess the degree of treatment, if any, that may be required.
4. New wells should be sited in accordance with setback distances contained in the Water (Ministerial) Regulation AR 205/1998.
5. A suitably qualified professional engineer or hydrogeologist review and interpret the test results. Upon request Levelton will provide a proposal to provide these additional services.

## 10. Closure

This report has been prepared for the exclusive use of 824440 Alberta Ltd. for application to the proposed subdivision within the SW of Section 4, Township 46, Range 7, West of the 5<sup>th</sup> Meridian in Wetaskiwin County, Alberta. The Alberta Environment and Sustainable Resource Development are considered authorized users of this report, subject to the Terms of Engagement under which it was developed. The conclusions and recommendations are based on information provided to Levelton Consultants Ltd. This letter has been prepared in accordance with the attached Terms of Reference for Geotechnical Reports.

We trust this report meets your needs and expectations and we look forward to continuing to work with you on this project. Please do not hesitate to contact us if you have any questions or require further information.

Respectfully submitted,

Levelton Consultants Ltd.



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APEGA Permit to Practice: 8696

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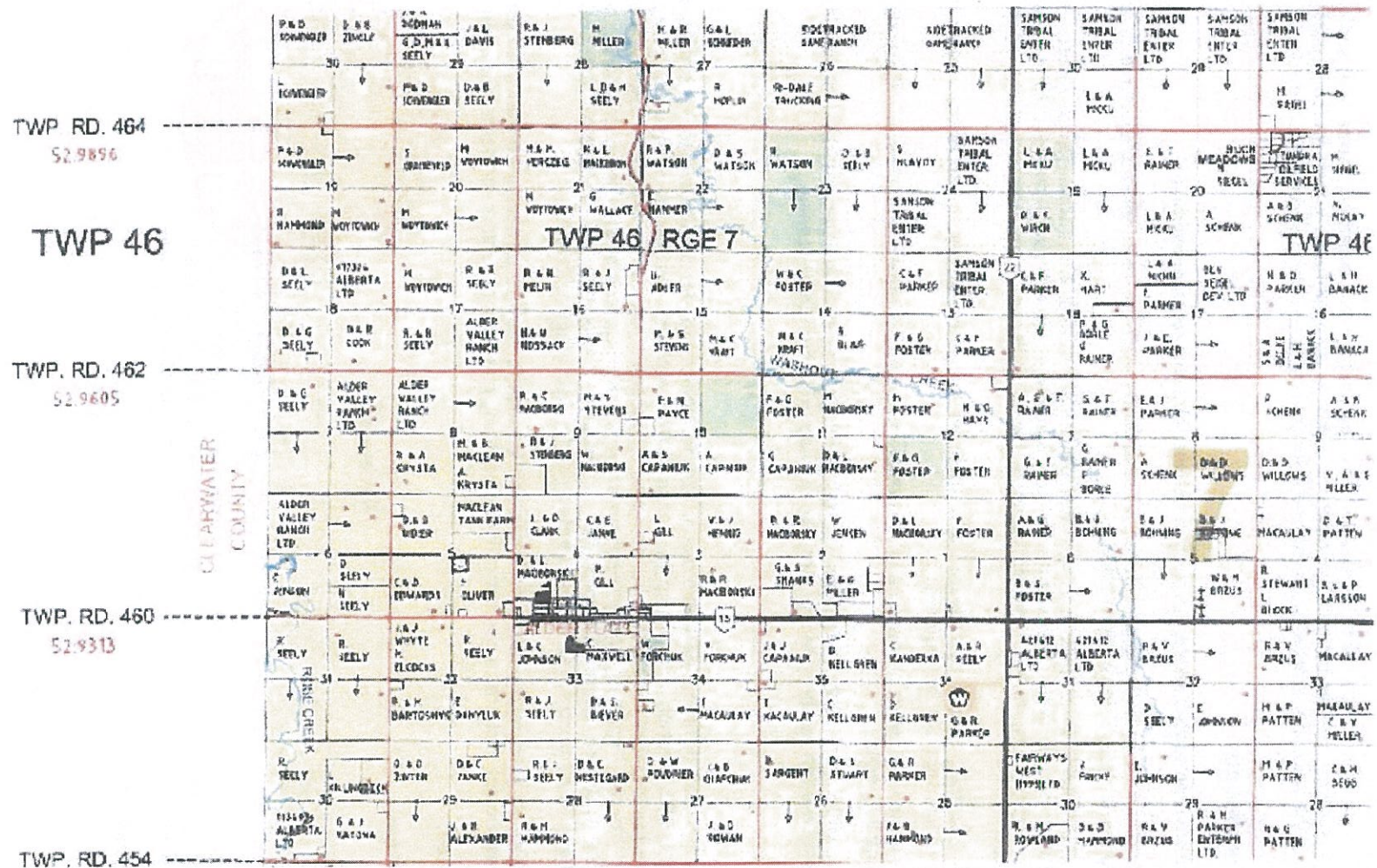






Figure 2: Aerial Photo Showing Subject Site

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of Alberta**

## CHEMICAL ANALYSIS REPORT

WELL NAME DARROCH, JOHN GIC WELL ID 474978  
 LOCATION LSD 14 SEC 32 TWP 045 RG 07 M 5 SAMPLE NO. 170  
 WELL DEPTH 253.00 ft WATER LEVEL  
 AQUIFER LABORATORY AA  
 SAMPLING DATE 1985-12-19

FIELD	MG/L	FIELD	MG/L
BICARBONATE		CARBONATE	
CHLORIDE		CONDUCTIVITY	
DISSOLVED OXYGEN		EH	
IRON		MANGANESE	
PH		SULPHATE	
S2		TEMPERATURE(C)	0
TOTAL ALKALINITY		TOTAL HARDNESS	
LABORATORY		Analysis Date 1986-01-16	
COD		CONDUCTIVITY	1,243
DIC		FLUORIDE	1.5700
ION BALANCE	0.9600	PH	8.70
SAR		SiO2	8.5000
TOTAL ALKALINITY	408.0000	TC	
TDS	738	TN	
DOC		BICARBONATE	471.0475
AMMONIUM-N		CARBONATE	12.9960
CALCIUM	2.0000	MAGNESIUM	-1.0008
CHLORIDE	41.0593	NITRITE-N	-0.0504
NITRATE-N		POTASSIUM	0.8200
PHOSPHATE		SULPHATE	184.2375
SODIUM	284.9999	TOTAL HARDNESS	-5.0000
NO2 + NO3	-0.0504	ARSENIC	
ALUMINUM		BERYLLIUM	
BARIUM		CHROMIUM	
CADMIUM		COPPER	
COBALT		LEAD	
IRON	-0.0200	MERCURY	
MANGANESE		NICKEL	
MOLYBDENUM		STRONTIUM	
SELENIUM		ZINC	
VANADIUM		PESTICIDES	
HYDROCARBONS			
PHENOLICS			

Remarks:

Temperature reported in Degree Centigrade. Conductivity reported in microsiemens/cm, pH in pH units. Alkalinity and Hardness expressed as Calcium Carbonate. FE, VA, PB, AL, AG expressed as extractable. FE in field measurements and all remaining metals expressed as total. \* indicates concentrations less than.

EH	- Oxidation-Reduction Potential	SAR	- Sodium Adsorption Ratio	DIC	- Dissolved Inorganic Carbon
COD	- Chemical Oxygen Demand	DOC	- Dissolved Organic Carbon	TN	- Total Particulate Nitrogen
TDS	- Total Dissolved Solids	TC	- Total Particulate Carbon		

Note: this data may not be fully checked. The Province disclaims all responsibility for its accuracy

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Figure 3: Local Water Chemistry



**APPENDIX A**  
**Reconnaissance Report**

# Reconnaissance Report

[View in Metric](#)

[Export to Excel](#)

## Groundwater Wells

Please click the water Well ID to generate the Water Well Drilling Report.

Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (igpm)
<a href="#">340721</a>	SW	04	046	07	5	MORRILL'S WATER WELL DRILLING LTD.	2002-05-09	348.00	New Well	Domestic		12	8	GULKA, JOHN	249.00	10.00
<a href="#">340722</a>	SW	04	046	07	5	MORRILL'S WATER WELL DRILLING LTD.	2002-05-10	328.00	New Well	Domestic		9	7	JANKE, LARRY	249.00	10.00
<a href="#">340723</a>	SW	04	046	07	5	MORRILL'S WATER WELL DRILLING LTD.	2002-05-03	348.00	New Well	Domestic		13	10	JEFFCOTT, RHEINHOLD	280.40	7.00
<a href="#">340724</a>	SW	04	046	07	5	MORRILL'S WATER WELL DRILLING LTD.	2002-05-07	360.00	New Well	Domestic		12	12	CHIDLEY, DALE	265.00	6.00
<a href="#">340725</a>	SW	04	046	07	5	ALKEN BASIN DRILLING LTD.	2002-05-09	345.00	New Well	Domestic		10	7	LOCKHART, TED	257.00	30.00
<a href="#">351687</a>	SE	04	046	07	5	MORRILL'S WATER WELL DRILLING LTD.	1990-07-09	258.00	New Well	Domestic		17		HARE, DOUG	185.00	15.00
<a href="#">352060</a>	02	04	046	07	5	PANKY'S CONSOLIDATED LTD.	1990-09-07	250.00	New Well	Domestic		7		OLIVER, WAYNE	166.00	12.00
<a href="#">352187</a>	SW	04	046	07	5	ALKEN BASIN DRILLING LTD.	1990-09-22	360.00	New Well	Domestic		8		HARWOOD, DARRELL	240.00	20.00
<a href="#">362800</a>	SE	04	046	07	5	MORRILL'S WATER WELL DRILLING LTD.	1992-01-23	248.00	New Well	Domestic & Stock		18		MACIBORSKY, TED	155.00	25.00
<a href="#">365588</a>	NE	05	046	07	5	BIG IRON DRILLING LTD.	1992-07-28	230.00	New Well	Domestic		11		CLARK, LLOYD	147.00	4.00
<a href="#">376717</a>	NW	33	045	07	5	PANKY'S CONSOLIDATED LTD.	1993-10-29	370.00	New Well	Domestic		14		FULFORD, KEN	262.00	20.00
<a href="#">401708</a>	13	33	045	07	5	GLEN JOHNSON WATER WELL DRILLING	1994-10-21	300.00	New Well	Stock		6	8	MILLER, LEIGH	256.00	7.00
<a href="#">443144</a>	SW	4	46	7	5	GLEN JOHNSON WATER WELL DRILLING	1968-09-12	460.00	New Well	Domestic	2	4		ALDER FLATS SCHOOL	280.00	20.00
<a href="#">443144</a>	SW	4	46	7	5	MORRILL'S WATER WELL DRILLING LTD.	1996-02-09	460.00	Reconditioned	Domestic			18	ALDER FLATS SCHOOL	280.00	20.00
<a href="#">469868</a>	NE	33	045	07	5	MORRILL'S WATER WELL DRILLING LTD.	1997-12-29	308.00	New Well	Domestic		11	25	PETRO CAN#PEMBINA OFFICE	53.00	3.00
<a href="#">469928</a>	SE	04	046	07	5	FRASER, RON	1998-07-28	200.00	New Well	Domestic		12	9	JEFFCOTT, JARVIS	150.60	5.00
<a href="#">469929</a>	NE	04	046	07	5	ALKEN BASIN DRILLING LTD.	1998-06-12	160.00	New Well	Domestic		15	5	BURNETT, DOUG/COLLEEN	104.00	40.00
<a href="#">474977</a>	08	32	045	07	5	GLEN JOHNSON WATER WELL DRILLING	1967-10-24	300.00	New Well	Domestic & Stock		2		HAMMOND, E.M.	174.00	10.00
<a href="#">474978</a>	14	32	045	07	5	GLEN JOHNSON WATER WELL DRILLING	1979-08-14	253.00	New Well	Domestic & Stock	1	2		DARROCH, JOHN	150.00	8.00
<a href="#">474980</a>	16	32	045	07	5	GLEN JOHNSON WATER WELL DRILLING	1970-03-18	250.00	New Well	Domestic & Stock		3		BATUCIK, ADAM	150.00	12.00



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Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (igpm)
474985	NW	33	045	07	5	UNKNOWN DRILLER		236.00	Chemistry	Domestic	1			BLADES LUNCH	200.00	
474986	NW	33	045	07	5	GLEN JOHNSON WATER WELL DRILLING	1973-06-06	308.00	New Well	Domestic		2		BLADES, R.	190.00	8.00
474987	NW	33	045	07	5	UNKNOWN DRILLER		0.00	Chemistry	Domestic				ANDERSON, DARLENE		
474988	NW	33	045	07	5	MORRILL'S WATER WELL DRILLING LTD.	1988-09-23	420.00	Deepened	Domestic		6		LEE, JOHN	280.00	4.00
474993	13	34	045	07	5	GLEN JOHNSON WATER WELL DRILLING	1963-08-31	260.00	New Well	Domestic		3		ALTA LANDS & FORESTS	170.00	3.00
476192	12	03	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1977-08-09	330.00	New Well	Domestic & Stock		3		MACIBORSKI, TED	100.00	7.00
476195	12	03	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1967-10-17	113.00	New Well	Domestic & Stock		2		MACIBORSKI, TED	40.00	12.00
476199	01	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1970-03-07	120.00	New Well	Domestic & Stock		3		SARGENT, DALE	90.00	5.00
476200	01	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1970-11-18	170.00	New Well	Domestic & Stock		3		SARGENT, DALE	30.00	10.00
476201	SE	04	046	07	5	UNKNOWN DRILLER		230.00	Chemistry	Domestic	1			FOSS, GORDON	90.00	
476202	01	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1976-10-24	173.00	New Well	Domestic		5		SCHAURTE, O.J.	110.00	8.00
476203	SE	04	046	07	5	UNKNOWN DRILLER		300.00	Chemistry	Domestic	1			STENSTROM, JAMES		
476204	SE	04	046	07	5	PANKY'S CONSOLIDATED LTD.	1980-09-17	200.00	New Well	Domestic		13		SCHAURTE	146.00	8.00
476205	SE	04	046	07	5	UNKNOWN DRILLER		150.00	Chemistry	Domestic	1			BEALE, RICHARD		
476206	SE	04	046	07	5	UNKNOWN DRILLER		145.00	Chemistry	Domestic	1			TURNER, IVOR	122.00	
476207	01	04	046	07	5	PANKY'S CONSOLIDATED LTD.	1983-10-06	200.00	New Well	Domestic		7		DUNN, NORMAN	140.00	6.00
476208	SE	04	046	07	5	UNKNOWN DRILLER		0.00	Chemistry	Domestic				HALUSZKA, BEN		
476209	SE	04	046	07	5	UNKNOWN DRILLER		120.00	Chemistry	Domestic	1			MACIBORSKI, TOM		
476210	SE	04	046	07	5	UNKNOWN DRILLER		265.00	Chemistry	Domestic				OLSEN, ANNE		
476211	01	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1963-10-31	190.00	Well Inventory	Domestic		2		MELIS, W.	130.00	5.00



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Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (igpm)
476212	01	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1967-10-18	93.00	New Well	Domestic & Stock		2		GRANT, FRANK	70.00	8.00
476213	SH	04	046	07	5	UNKNOWN DRILLER		0.00	Chemistry	Domestic				VAN LOENEN, JOHN		
476214	SW	04	046	07	5	UNKNOWN DRILLER		100.00	Chemistry	Domestic	3			ALDER FLATS SCHOOL		
476215	SW	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1971-06-01	300.00	New Well	Domestic		3		CANADIAN DELTA OIL LTD	178.00	10.00
476216	03	04	046	07	5	DOUBLE H DRILLING	1978-08-02	300.00	Deepened	Domestic		26		WETASKIWIN 10, COUNTY OF	29.00	5.00
476217	03	04	046	07	5	ALDER W W DRLG LTD	1982-10-29	222.00	New Well	Domestic		11		JENSEN, PAUL	175.00	15.00
476218	SW	04	046	07	5	UNKNOWN DRILLER		135.00	Chemistry	Domestic	1			BRADSHAW, GERALD		
476219	SW	04	046	07	5	UNKNOWN DRILLER		300.00	Chemistry	Domestic	1			SACKELA, ROSEMARIE		
476220	SW	04	046	07	5	UNKNOWN DRILLER		265.00	Chemistry	Domestic	1			FISK, L.		
476221	NW	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1972-03-01	293.00	New Well	Domestic		3		THEBAULT, SAM	200.00	8.00
476222	12	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1964-02-14	270.00	New Well	Domestic & Stock		2		SCRYBELO, MIKE	183.00	5.00
476223	NE	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1971-10-12	290.00	New Well	Domestic		3		SEELY, J.L.	245.00	6.00
476224	00	04	046	07	5	UNKNOWN DRILLER		40.00	Chemistry	Domestic	1			MERGLE, J.		
476225	SE	04	046	07	5	SCOTT, H.A. DRILLING	1962-02-07	210.00	Well Inventory	Domestic		6		OLSON, A.	175.00	7.00
476226	00	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1963-06-10	270.00	Well Inventory	Domestic		2		DUNN, MORRIS	200.00	8.00
476227	SE	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1970-10-17	290.00	New Well	Domestic		4		LEE, ERNIE	200.00	5.00
476228	03	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1970-01-01	280.00	New Well	Domestic		4		VASS	200.00	7.00
476229	SE	05	046	07	5	UNKNOWN DRILLER		180.00	Chemistry	Domestic	1			ZIELKE, VICTOR		
476230	SE	05	046	07	5	PANKY'S CONSOLIDATED LTD.	1986-10-14	300.00	New Well	Domestic		15		OLIVER, VICTOR	215.00	15.00
476233	NE	05	046	07	5	UNKNOWN DRILLER		100.00	Chemistry	Domestic	1			JANKE, CARL		



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Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (gpm)
476244	01	08	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1973-06-09	170.00	New Well	Domestic		2		MAIABORSKI, PAUL	120.00	5.00
477406	14	33	045	07	5	GLEN JOHNSON WATER WELL DRILLING	1967-10-23	303.00	New Well	Domestic		3		JOHNSON, ROY	190.00	7.00
477407	NW	33	045	07	5	UNKNOWN DRILLER		305.00	Well Inventory	Domestic				BLADES, RON	200.00	
477461	02	04	046	07	5	GLEN JOHNSON WATER WELL DRILLING	1976-05-06	303.00	New Well	Domestic		3			202.00	6.00
477462	SW	04	046	07	5	UNKNOWN DRILLER		303.00	Chemistry	Domestic	1			SULPETRO LTD #HOUSE 3		
497907	NW	33	045	07	5	ALKEN BASIN DRILLING LTD.	2001-03-02	340.00	New Well	Industrial		13	6	CHUBBIES RES LTD	243.00	60.00
498708	SW	04	046	07	5	ACTION WATER WELLS LTD.	2001-03-14	270.00	New Well	Domestic		17	24	JEFFCOTT, JERRY	182.00	5.00
499234	NW	33	045	07	5	MORRILL'S WATER WELL DRILLING LTD.	1989-12-12	208.00	New Well	Domestic		16		BUCKLAKE ALDER FLATS(FIRE DEPT	160.00	25.00
1060040	3	4	46	7	5	ALKEN BASIN DRILLING LTD.	2003-07-21	280.00	New Well	Domestic		11	10	SEELEY, LYLE	189.00	40.00
1060355	SW	04	046	07	5	ALKEN BASIN DRILLING LTD.	2004-07-15	405.00	New Well	Domestic		13	8	ALDER FLATS AG SOCIETY	266.00	40.00
1065853	SW	4	46	7	5	ALKEN BASIN DRILLING LTD.		291.00	Old Well-Abandoned	Unknown		1		SEELY, LYLE		
1065909	03	4	46	7	5	ALKEN BASIN DRILLING LTD.	2009-07-09	360.00	New Well	Domestic		11	12	SEELY, LYLE	269.00	35.00
1066924	3	4	46	7	5	ALKEN BASIN DRILLING LTD.	2013-04-25	380.00	New Well	Domestic		5	19	DODD, DEREK	276.00	12.00
1130604	14	33	45	7	5	BIG IRON DRILLING LTD.	2008-08-11	380.00	New Well	Domestic		12	11	BRACE, DARREN & CRAWFORD, RITA	275.00	10.00
1545384	3	4	46	7	5	MORRILL'S WATER WELL DRILLING LTD.	2002-12-10	288.00	New Well	Domestic		16	12	MONDS, MATT	185.00	15.00
1735509	4	3	46	7	5	TALL PINE DRILLING LTD.	2009-07-08	205.00	New Well	Domestic		11	15	HOFLIN, LARRY	124.58	11.00
1780223	2	4	46	7	5	WARNKE DRILLING LTD.	2008-05-07	220.00	New Well	Domestic		6	21	MACIBORSKI, HAROLD	131.89	3.50
2085365	4	4	46	7	5	BLACK DOG DRILLING & ENV SERV. LTD.	2012-06-09	360.00	New Well	Domestic		7	13	HEATH, DOUG	255.00	25.00
2085427	4	4	46	7	5	BLACK DOG DRILLING & ENV SERV. LTD.	2012-09-27	340.00	New Well	Domestic		6	12	MYERS, JIM	232.00	40.00



**APPENDIX B**  
**Well Logs**

GIC Well ID 340721  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2002/07/09

<b>Well Identification and Location</b>										<b>Measurement in Imperial</b>	
Owner Name GULKA, JOHN		Address P.O. BOX 218 ALDER FLATS				Town		Province		Country	
Location SW		1/4 or LSD 04	SEC 046	TWP 07	RGE 5	W of MER	Lot	Block	Plan	Additional Description	
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude 52.935109 Longitude -114.962100					ft	
ft from					How Location Obtained					How Elevation Obtained	
					Not Verified					Not Obtained	

<b>Drilling Information</b>	
Method of Drilling Rotary	Type of Work New Well
Proposed Well Use Domestic	

<b>Formation Log</b>		<b>Measurement in Imperial</b>	
Depth from ground level (ft)	Water Bearing	Lithology Description	
17.00		Brown Clay & Boulders	
27.00		Gray Clay & Boulders	
47.00		Gray Sandy Clay & Boulders	
87.00		Gray Clay	
107.00		Gray Clay & Boulders	
127.00		Gray Clay	
156.00		Gray Clay & Boulders	
208.00		Gray Shale & Sandstone Ledges	
248.00		Gray Shale	
288.00		Gray Sandstone & Shale Ledges	
308.00		Gray Sandstone	
348.00		Gray Sandstone & Shale Ledges	

<b>Yield Test Summary</b>			<b>Measurement in Imperial</b>	
Recommended Pump Rate 10.00 igpm				
Test Date	Water Removal Rate (igpm)	Static Water Level (ft)		
2002/05/09	10.00	249.00		

<b>Well Completion</b>				<b>Measurement in Imperial</b>	
Total Depth Drilled	Finished Well Depth	Start Date	End Date		
348.00 ft		2002/05/08	2002/05/09		
<b>Borehole</b>					
Diameter (in)	From (ft)	To (ft)			
0.00	0.00	348.00			
<b>Surface Casing (if applicable)</b>			<b>Well Casing/Liner</b>		
Plastic			Plastic		
Size OD :	5.50 in	Size OD :	4.50 in		
Wall Thickness :	0.375 in	Wall Thickness :	0.237 in		
Bottom at :	218.00 ft	Top at :	208.00 ft		
		Bottom at :	348.00 ft		
<b>Perforations</b>					
From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)	
308.00	348.00	0.250		12.00	
Perforated by Machine					
<b>Annular Seal</b> Driven & Bentonite					
Placed from 0.00 ft to 218.00 ft					
Amount					
Other Seals					
Type At (ft)					
<b>Screen Type</b>					
Size OD : 0.00 in					
From (ft)	To (ft)	Slot Size (in)			
Attachment					
Top Fittings			Bottom Fittings		
<b>Pack</b>					
Type Grain Size					
Amount					

<b>Contractor Certification</b>		Certification No	
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER		1	
Company Name MORRILL'S WATER WELL DRILLING LTD.		Copy of Well report provided to owner Date approval holder signed	



# Water Well Drilling Report

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

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GIC Well ID 340721  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2002/07/09

Well Identification and Location										Measurement in Imperial
Owner Name GULKA, JOHN		Address P.O. BOX 218 ALDER FLATS			Town		Province		Country	Postal Code T0C 0A0
Location	1/4 or LSD SW	SEC 04	TWP 046	RGE 07	W of MER 5	Lot	Block	Plan	Additional Description	
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)			Elevation _____ ft		
_____ ft from					Latitude 52.935109 Longitude -114.882100			How Elevation Obtained		
_____ ft from					How Location Obtained			Not Obtained		
					Not Verified					

Additional Information										Measurement in Imperial
Distance From Top of Casing to Ground Level _____ in					Is Flow Control Installed _____					
Is Artesian Flow _____					Rate _____ l/gpm					Describe _____
Recommended Pump Rate _____ 10.00 l/gpm					Pump Installed Yes _____					Depth _____ ft
Recommended Pump Intake Depth (From TCC) _____ 290.00 ft					Type SUB _____					Make GOULDS H.P. 1
					Model (Output Rating) _____					
Did you Encounter Saline Water (>4000 ppm TDS) _____					Depth _____ ft					Well Disinfected Upon Completion _____
Gas _____					Depth _____ ft					Geophysical Log Taken _____
					Submitted to ESRD _____					
Additional Comments on Well _____					Sample Collected for Potability _____					Submitted to ESRD _____
DRILLER REPORTS DISTANCE FROM TOP OF CASING TO GROUND LEVEL: 2'.										

Yield Test				Taken From Ground Level	Measurement in Imperial
Test Date	Start Time	Static Water Level		Depth to water level	
2002/05/09	12:00 AM	249.00 ft	Drawdown (ft)	Elapsed Time Minutes:Sec	Recovery (ft)
			348.00	0:00	
<b>Method of Water Removal</b>				1:00	280.58
Type Air _____				2:00	253.08
Removal Rate _____ 10.00 l/gpm				3:00	251.67
Depth Withdrawn From _____ 348.00 ft				4:00	249.42
				5:00	249.25
				6:00	249.17
				120:00	249.00
If water removal period was < 2 hours, explain why _____					

Water Diverted for Drilling		
Water Source	Amount Taken _____ ig	Diversion Date & Time

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER	Certification No 1
Company Name MORRILL'S WATER WELL DRILLING LTD.	Copy of Well report provided to owner Date approval holder signed

Well Identification and Location										Measurement in Imperial	
Owner Name JANKE, LARRY		Address P.O. BOX 113 ALDER FLATS			Town		Province		Country	Postal Code T0C 0A0	
Location	1/4 or LSD SW	SEC 04	TWP 048	RGE 07	W of MER 5	Lot 22	Block 1	Plan	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
ft from					Latitude 52.935109 Longitude -114.962100					Elevation ft	
ft from					How Location Obtained Not Verified					How Elevation Obtained Not Obtained	

Drilling Information		Type of Work
Method of Drilling Rotary		New Well
Proposed Well Use Domestic		

Formation Log			Yield Test Summary			Well Completion		
Depth from ground level (ft)	Water Bearing	Lithology Description	Recommended Pump Rate	Test Date	Water Removal Rate (lgpm)	Static Water Level (ft)	Total Depth Drilled	Finished Well Depth
14.00		Brown Clay & Boulders	10.00 lgpm	2002/05/10	10.00	249.00	328.00 ft	328.00 ft
33.00		Gray Clay & Boulders						
47.00		Gray Loose Clay & Sand						
146.00		Gray Loose Sand						
167.00		Gray Clay & Shale						
208.00		Gray Shale & Sandstone Ledges						
248.00		Gray Shale						
308.00		Gray Sandstone & Shale Ledges						
328.00		Gray Sandstone						

Borehole			Surface Casing (if applicable)			Well Casing/Liner		
Diameter (in)	From (ft)	To (ft)	Steel	Size OD	Wall Thickness	Plastic	Size OD	Wall Thickness
0.00	0.00	328.00		5.50 in	0.258 in		4.50 in	0.237 in
			Bottom at: 188.00 ft			Top at: 188.00 ft		
						Bottom at: 328.00 ft		

Perforations					
From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)	
288.00	328.00	0.250		12.00	

Perforated by		Machine
Annular Seal		Driven
Placed from	0.00 ft	to 188.00 ft
Amount		
Other Seals		
Type	At (ft)	
Screen Type		
Size OD	0.00 in	
From (ft)	To (ft)	Slot Size (in)
Attachment		
Top Fittings	Bottom Fittings	
Pack		
Type	Grain Size	
Amount		

Contractor Certification		Certification No
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER		1
Company Name MORRILL'S WATER WELL DRILLING LTD.		Copy of Well report provided to owner Date approval holder signed



The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

GIC Well ID	340722
GoA Well Tag No.	
Drilling Company Well ID	
Date Report Received	2002/07/09

Well Identification and Location										Measurement in Imperial	
Owner: Name		Address			Town		Province		Country		Postal Code
JANKE, LARRY		P.O. BOX 113 ALDER FLATS									T0C 0A0
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
SW		04	046	07	5	22	1				
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)				Elevation		
ft from					Latitude 52.935109 Longitude -114.982100				ft		
ft from					How Location Obtained				How Elevation Obtained		
					Not Verified				Not Obtained		

<b>Additional Information</b>		<b>Measurement in Imperial</b>	
Distance From Top of Casing to Ground Level _____ in	Is Flow Control Installed _____		
Is Artesian Flow _____	Describe _____		
Rate _____ igpm			
Recommended Pump Rate _____ 10.00 igpm	Pump Installed <b>Yes</b> _____	Depth _____ ft	
Recommended Pump Intake Depth (From TOC) _____ 290.00 ft	Type <b>SUB</b> _____	Make <b>GOULDS</b> _____	H.P. <b>.75</b> _____
		Model (Output Rating) _____	
Did you Encounter Saline Water (>4000 ppm TDS) _____	Depth _____ ft	Well Disinfected Upon Completion _____	
Gas _____	Depth _____ ft	Geophysical Log Taken _____	
		Submitted to ESRD _____	
	Sample Collected for Potability _____	Submitted to ESRD _____	
Additional Comments on Well _____			
<b>DRILLER REPORTS DISTANCE FROM TOP OF CASING TO GROUND LEVEL: 2'. ALDER FLATS.</b>			

Yield Test			Taken From Ground Level Depth to water level		Measurement in Imperial
Test Date	Start Time	Static Water Level	Drawdown (ft)	Elapsed Time Minutes:Sec	Recovery (ft)
2002/05/10	12:00 AM	249.00 ft	328.00	0:00	
<b>Method of Water Removal</b>				1:00	251.00
Type	Air			2:00	250.00
Removal Rate	10.00 l/gpm			3:00	250.00
Depth Withdrawn From	328.00 ft			4:00	249.83
				5:00	249.83
				120:00	249.00
If water removal period was < 2 hours, explain why					

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
	ig	

<b>Contractor Certification</b>		
Name of Journeyman responsible for drilling/construction of well	Certification No	
UNKNOWN NA DRILLER	1	
Company Name	Copy of Well report provided to owner	Date approval holder signed
MORRILL'S WATER WELL DRILLING LTD.		



Well Identification and Location										Measurement in Imperial	
Owner Name		Address			Town		Province		Country		Postal Code
JEFFCOTT, JERRY		P.O. BOX 335			ALDER FLATS		AB		CA		T0C 0A0
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	SW	04	046	07	5	17	2				
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude 52.935109 Longitude -114.962100					ft	
ft from					How Location Obtained					How Elevation Obtained	
					Not Verified					Not Obtained	

Drilling Information	
Method of Drilling Rotary	Type of Work New Well
Proposed Well Use Domestic	

Formation Log			Measurement in Imperial		Yield Test Summary			Measurement in Imperial	
Depth from ground level (ft)	Water Bearing	Lithology Description	Recommended Pump Rate	5.00 lpgm	Test Date	Water Removal Rate (lpgm)	Static Water Level (ft)		
46.00		Brown Clay & Rocks	2001/03/13	5.00	2001/03/13	5.00	182.00		
128.00		Blue Clay & Rocks							
136.00		Gray Soft Shale							
147.00		Green Shale							
152.00		Gray Shale							
165.00		Gray Sandy Shale							
168.00		Sandstone							
184.00		Gray Sandy Shale							
187.00		Green Shale							
212.00		Gray Sandy Shale							
215.00		Sandstone							
233.00		Gray Sandy Shale							
237.00		Sandstone							
255.00		Gray Sandy Shale							
259.00		Sandstone							
268.00		Gray Sandy Shale							
270.00		Gray Shale							
			<b>Well Completion</b> Total Depth Drilled 270.00 ft Finished Well Depth 270.00 ft Start Date 2001/03/12 End Date 2001/03/14 <b>Borehole</b> Diameter (in) 0.00 From (ft) 0.00 To (ft) 270.00 <b>Surface Casing (if applicable)</b> Plastic Size OD: 6.00 in Wall Thickness: 0.437 in Bottom at: 140.00 ft <b>Well Casing/Liner</b> Plastic Size OD: 4.50 in Wall Thickness: 0.237 in Top at: 110.00 ft Bottom at: 270.00 ft <b>Perforations</b> From (ft) 170.00 To (ft) 270.00 Diameter or Slot Width (in) 0.020 Slot Length (in) 6.00 Hole or Slot Interval (in) 6.00 Perforated by Saw <b>Annular Seal</b> Driven Placed from 0.00 ft to 140.00 ft Amount Other Seals Type At (ft) <b>Screen Type</b> Size OD: 0.00 in From (ft) To (ft) Slot Size (in) Attachment Top Fittings Bottom Fittings <b>Pack</b> Type Grain Size Amount						

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER	Certification No 1
Company Name ACTION WATER WELLS LTD.	Copy of Well report provided to owner Date approval holder signed



# Water Well Drilling Report

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GIC Well ID 496708  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2001/05/17

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

Well Identification and Location										Measurement in Imperial	
Owner Name JEFFCOTT, JERRY		Address P.O. BOX 335		Town ALDER FLATS		Province AB		Country CA		Postal Code T0C 0A0	
Location	1/4 or LSD SW	SEC 04	TWP 046	RGE 07	W of MER 5	Lot 17	Block 2	Plan	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation _____ ft	
_____ ft from					Latitude 52.935109 Longitude -114.962100					Flow Elevation Obtained	
_____ ft from					How Location Obtained					Not Obtained	
					Not Verified						

Additional Information				Measurement in Imperial	
Distance From Top of Casing to Ground Level _____ In		Is Flow Control Installed _____		Describe _____	
Is Artesian Flow _____		Rate _____ igpm			
Recommended Pump Rate _____ 5.00 igpm		Pump Installed _____		Depth _____ ft	
Recommended Pump Intake Depth (From TOC) _____ 260.00 ft		Type _____		Make _____ H.P. _____	
				Model (Output Rating) _____	
Did you Encounter Saline Water (>4000 ppm TDS) _____		Depth _____ ft		Well Disinfected Upon Completion _____	
Gas _____		Depth _____ ft		Geophysical Log Taken _____	
				Submitted to ESRD _____	
Additional Comments on Well _____		Sample Collected for Potability _____		Submitted to ESRD _____	
DRILLER REPORTS DISTANCE FROM TOP OF CASING TO GROUND LEVEL: 2'.					

Yield Test			Taken From Ground Level		Measurement in Imperial	
Test Date	Start Time	Static Water Level	Depth to water level			
2001/03/13	12:00 AM	182.00 ft	Drawdown (ft)	Elapsed Time Minutes:Sec	Recovery (ft)	
			187.00	1:00	238.00	
			191.00	2:00	232.00	
			195.00	3:00	227.00	
			199.00	4:00	222.00	
			201.00	5:00	218.00	
			204.00	6:00	214.00	
			207.00	7:00	210.00	
			210.00	8:00	206.00	
			213.00	9:00	202.00	
			216.00	10:00	199.00	
			220.00	12:00	196.00	
			224.00	14:00	194.00	
			227.00	16:00	192.00	
			231.00	20:00	189.00	
			234.00	25:00	186.00	
			236.00	30:00	184.00	
			238.00	35:00	183.00	
			240.00	40:00	182.00	
			241.50	50:00		
			242.00	60:00		
			242.50	75:00		
			243.00	90:00		
			243.50	105:00		
			244.00	120:00		

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
	ig	

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER	Certification No 1
Company Name ACTION WATER WELLS LTD.	Copy of Well report provided to owner Date approval holder signed



Well Identification and Location										Measurement in Imperial	
Owner Name LOCKHART, TED		Address P.O. BOX 561 ALDER FLATS			Town		Province		Country	Postal Code T0C 0A0	
Location	1/4 or LSD SW	SEC 04	TWP 046	RGE 07	W of MER 5	Lot 29	Block	Plan	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude 52.935109 Longitude -114.962100					ft	
ft from					How Location Obtained					How Elevation Obtained	
					Not Verified					Not Obtained	

Drilling Information		Type of Work
Method of Drilling Rotary		New Well
Proposed Well Use Domestic		

Formation Log			Yield Test Summary		Well Completion	
Depth from ground level (ft)	Water Bearing	Lithology Description	Recommended Pump Rate	Test Date	Water Removal Rate (lgpm)	Static Water Level (ft)
20.00		Brown Clay	8.00 lgpm	2002/05/09	30.00	257.00
100.00		Gray Clay				
114.00		Gray Sandstone				
123.00		Brownish Gray Shale				
169.00		Gray Shale				
200.00		Gray Sandstone				
247.00		Gray Shale				
258.00		Gray Sandstone				
276.00		Gray Shale				
345.00		Gray Sandstone				

Borehole		Surface Casing (if applicable)		Well Casing/Liner	
Diameter (in)	From (ft)	To (ft)	Size OD	Wall Thickness	Bottom at
0.00	0.00	345.00	5.50 in	0.244 in	159.00 ft
			4.50 in	0.214 in	125.00 ft
					345.00 ft

Perforations		Annular Seal		Screen Type	
From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)	Attachment
315.00	335.00	0.500		0.50	
Perforated by Hand Drill					
Placed from 0.00 ft to 159.00 ft					
Amount					
Other Seals					
Type At (ft)					
Size OD 0.00 in					
From (ft) To (ft) Slot Size (in)					
Attachment					
Top Fittings Bottom Fittings					
Pack					
Type Grain Size					
Amount					

Contractor Certification		Certification No
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER		1
Company Name ALKEN BASIN DRILLING LTD.		Copy of Well report provided to owner Date approval holder signed

# Water Well Drilling Report

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GIC Well ID 340725  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2002/05/28

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

Well Identification and Location										Measurement in Imperial	
Owner Name LOCKHART, TED		Address P.O. BOX 561 ALDER FLATS			Town		Province		Country	Postal Code T0C 0A0	
Location	1/4 or LSD SW	SEC 04	TWP 046	RGE 07	W of MER 5	Lot 29	Block	Plan	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation _____ ft	
_____ ft from					Latitude 52.935109 Longitude -114.962100					How Elevation Obtained	
_____ ft from					How Location Obtained					Not Obtained	
					Not Verified						

Additional Information										Measurement in Imperial
Distance From Top of Casing to Ground Level _____ in										
Is Artesian Flow _____										Is Flow Control Installed _____
Rate _____ igpm										Describe _____
Recommended Pump Rate 8.00 igpm										Pump Installed _____ Depth _____ ft
Recommended Pump Intake Depth (From TOC) 315.00 ft										Type _____ Make _____ H.P. _____
										Model (Output Rating) _____
Did you Encounter Saline Water (>4000 ppm TDS) _____										Well Disinfected Upon Completion _____
Gas _____										Geophysical Log Taken _____
Depth _____ ft										Submitted to ESRD _____
Sample Collected for Potability _____										Submitted to ESRD _____
Additional Comments on Well										
DRILLER REPORTS DISTANCE FROM TOP OF CASING TO GROUND LEVEL: 1.5'.										

Yield Test			Taken From Ground Level		Measurement in Imperial
Test Date	Start Time	Static Water Level	Drawdown (ft)	Elapsed Time	Recovery (ft)
2002/05/09	12:00 AM	257.00 ft		Minutes:Sec	
Method of Water Removal					
Type Air					
Removal Rate 30.00 igpm					
Depth Withdrawn From 345.00 ft					
If water removal period was < 2 hours, explain why					
				1:00	285.00
				2:00	273.00
				3:00	266.00
				4:00	261.00
				5:00	259.00
				6:00	258.00
				7:00	257.00

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
	ig	

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER	Certification No 1
Company Name ALKEN BASIN DRILLING LTD.	Copy of Well report provided to owner Date approval holder signed



Well Identification and Location										Measurement in Imperial	
Owner Name <b>CHIDLEY, DALE</b>		Address <b>P.O. BOX 18 BUCK LAKE</b>			Town		Province		Country		Postal Code <b>T0C 0T0</b>
Location	1/4 or LSD <b>SW</b>	SEC <b>04</b>	TWP <b>048</b>	RGE <b>07</b>	W of MER <b>5</b>	Lot <b>24</b>	Block <b>1</b>	Plan <b>8021370</b>	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude <b>52.935109</b> Longitude <b>-114.962100</b>					ft	
ft from					How Location Obtained					How Elevation Obtained	
					Not Verified					Not Obtained	

Drilling Information	
Method of Drilling Rotary	Type of Work New Well
Proposed Well Use Domestic	

Formation Log			Measurement in Imperial	
Depth from ground level (ft)	Water Bearing	Lithology Description		
21.00		Brown Clay & Boulders		
47.00		Brownish Gray Clay		
87.00		Gray Clay & Boulders		
107.00		Black Clay & Boulders		
127.00		Gray Clay & Sandstone Layers		
147.00		Gray Clay		
167.00		Black Clay & Sandstone Layers		
182.00		Gray Clay		
207.00		Gray Shale		
267.00		Gray Shale & Sandstone Ledges		
347.00		Gray Sandstone & Shale Ledges		
360.00		Gray Sandstone		

Yield Test Summary			Measurement in Imperial	
Recommended Pump Rate	10.00 igpm			
Test Date	Water Removal Rate (igpm)	Static Water Level (ft)		
2002/05/07	6.00	265.00		

Well Completion				Measurement in Imperial	
Total Depth Drilled	Finished Well Depth	Start Date	End Date		
360.00 ft		2002/05/06	2002/05/07		
<b>Borehole</b>					
Diameter (in)	From (ft)	To (ft)			
0.00	0.00	360.00			
<b>Surface Casing (if applicable)</b>			<b>Well Casing/Liner</b>		
Plastic	Size OD	5.50 in	Plastic	Size OD	4.50 in
Wall Thickness	0.375 in		Wall Thickness	0.237 in	
Bottom at	233.00 ft		Top at	220.00 ft	
			Bottom at	360.00 ft	
<b>Perforations</b>					
From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)	
300.00	360.00	0.250		12.00	
Perforated by Machine					
<b>Annular Seal</b> Driven & Bentonite					
Placed from 0.00 ft to 233.00 ft					
Amount					
<b>Other Seals</b>					
Type At (ft)					
<b>Screen Type</b>					
Size OD: 0.00 in					
From (ft) To (ft) Slot Size (in)					
Attachment					
Top Fittings Bottom Fittings					
<b>Pack</b>					
Type Grain Size					
Amount					

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well <b>UNKNOWN NA DRILLER</b>	Certification No 1
Company Name <b>MORRILL'S WATER WELL DRILLING LTD.</b>	Copy of Well report provided to owner Date approval holder signed



# Water Well Drilling Report

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

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GIC Well ID 340724  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2002/07/09

Well Identification and Location										Measurement in Imperial	
Owner Name <b>CHIDLEY, DALE</b>		Address <b>P.O. BOX 16 BUCK LAKE</b>			Town		Province		Country	Postal Code <b>T0C 0T0</b>	
Location	1/4 or LSD <b>SW</b>	SEC <b>04</b>	TWP <b>046</b>	RGE <b>07</b>	W of MER <b>5</b>	Lot <b>24</b>	Block <b>1</b>	Plan <b>8021370</b>	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation _____ ft	
_____ ft from					Latitude <b>52.935109</b> Longitude <b>-114.962100</b>					How Elevation Obtained	
_____ ft from					How Location Obtained					Not Obtained	
					Not Verified						

Additional Information										Measurement in Imperial
Distance From Top of Casing to Ground Level _____ in										
Is Artesian Flow _____										Is Flow Control Installed _____
Rate _____ l/gpm										Describe _____
Recommended Pump Rate _____ 10.00 l/gpm										Pump Installed <b>Yes</b>
Recommended Pump Intake Depth (From TOC) _____ 310.00 ft										Depth _____ ft
										Type <b>SUB</b>
										Make <b>GOULDS</b>
										H.P. <b>1</b>
										Model (Output Rating) _____
Did you Encounter Saline Water (>4000 ppm TDS) _____										Depth _____ ft
Gas _____										Depth _____ ft
										Well Disinfected Upon Completion _____
										Geophysical Log Taken _____
										Submitted to ESRD _____
										Sample Collected for Potability _____
										Submitted to ESRD _____
Additional Comments on Well										
DRILLER REPORTS DISTANCE FROM TOP OF CASING TO GROUND LEVEL: 1.3'										

Yield Test			Taken From Ground Level		Measurement in Imperial
Test Date	Start Time	Static Water Level	Drawdown (ft)	Elapsed Time	Recovery (ft)
2002/05/07	12:00 AM	265.00 ft	348.00	Minutes:Sec	
Method of Water Removal					
Type <b>Air</b>					
Removal Rate _____ 6.00 l/gpm					
Depth Withdrawn From _____ 348.00 ft					
If water removal period was < 2 hours, explain why					
				0:00	307.00
				1:00	287.00
				2:00	276.00
				3:00	269.50
				4:00	266.25
				5:00	265.00
				6:00	265.75
				7:00	265.58
				8:00	265.50
				9:00	265.50
				10:00	265.50
				120:00	265.00

Water Diverted for Drilling		
Water Source	Amount Taken _____ ig	Diversion Date & Time

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well <b>UNKNOWN NA DRILLER</b>	Certification No <b>1</b>
Company Name <b>MORRILL'S WATER WELL DRILLING LTD.</b>	Copy of Well report provided to owner: _____ Date approval holder signed



Well Identification and Location										Measurement in Imperial	
Owner Name		Address			Town		Province		Country		Postal Code
JEFFCOTT, RHEINHOLD		P.O. BOX 141 ALDER FLATS									T0C 0A0
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	SW	04	046	07	5	23	1	8021370			
Measured from Boundary of				GPS Coordinates in Decimal Degrees (NAD 83)				Elevation			
ft from				Latitude 52.935109 Longitude -114.962100				ft			
ft from				How Location Obtained				How Elevation Obtained			
				Not Verified				Not Obtained			

Drilling Information	
Method of Drilling Rotary	Type of Work New Well
Proposed Well Use Domestic	

Formation Log			Measurement in Imperial	
Depth from ground level (ft)	Water Bearing	Lithology Description		
21.00		Brown Clay		
47.00		Gray Clay & Coal		
67.00		Gray Clay		
87.00		Gray Clay & Coal		
117.00		Gray Clay & Boulders		
127.00		Gray Shale		
147.00		Gray Clay & Shale		
167.00		Gray Shale & Sandstone Ledges		
221.00		Gray Sandstone		
248.00		Gray Shale & Sandstone Ledges		
268.00		Gray Sandy Shale & Sandstone Ledges		
328.00		Gray Shale & Sandstone Ledges		
348.00		Gray Sandstone & Shale Ledges		

Yield Test Summary			Measurement in Imperial	
Recommended Pump Rate 10.00 l/gpm				
Test Date	Water Removal Rate (l/gpm)	Static Water Level (ft)		
2002/05/03	7.00	260.40		

Well Completion				Measurement in Imperial	
Total Depth Drilled	Finished Well Depth	Start Date	End Date		
348.00 ft		2002/05/02	2002/05/03		
<b>Borehole</b>					
Diameter (in)	From (ft)	To (ft)			
0.00	0.00	348.00			
<b>Surface Casing (if applicable)</b>			<b>Well Casing/Liner</b>		
Plastic	Size OD: 5.50 in	Plastic Size OD: 4.50 in			
Wall Thickness: 0.375 in	Wall Thickness: 0.237 in				
Bottom at: 225.00 ft	Top at: 208.00 ft				
Bottom at: 348.00 ft					
<b>Perforations</b>					
From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)	
288.00	348.00	0.250		12.00	
Perforated by Machine					
<b>Annular Seal</b> Driven & Bentonite					
Placed from 0.00 ft to 225.00 ft					
Amount					
Other Seals					
Type At (ft)					
<b>Screen Type</b>					
Size OD: 0.00 in					
From (ft) To (ft) Slot Size (in)					
Attachment					
Top Fittings Bottom Fittings					
<b>Pack</b>					
Type Grain Size					
Amount					

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER	Certification No 1
Company Name MORRILL'S WATER WELL DRILLING LTD	Copy of Well report provided to owner Date approval holder signed



# Water Well Drilling Report

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

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GIC Well ID 340723  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2002/07/09

Well Identification and Location										Measurement in Imperial
Owner Name JEFFCOTT, RHEINHOLD		Address P.O. BOX 141 ALDER FLATS			Town		Province		Country	Postal Code T0C 0A0
Location	1/4 or LSD SW	SEC 04	TWP 046	RGE 07	W of MER 5	Lot 23	Block 1	Plan 8021370	Additional Description	
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)				Elevation _____ ft	
_____ ft from					Latitude 52.935108 Longitude -114.962100				How Elevation Obtained	
_____ ft from					How Location Obtained				Not Obtained	
					Not Verified					

Additional Information										Measurement in Imperial
Distance From Top of Casing to Ground Level _____ in					Is Flow Control Installed _____					
Is Artesian Flow _____					Rate _____ igpm					Describe _____
Recommended Pump Rate _____ 10.00 igpm					Pump Installed _____					Depth _____ ft
Recommended Pump Intake Depth (From TOC) _____ 290.00 ft					Type _____					Make _____ H.P. _____
					Model (Output Rating) _____					
Did you Encounter Saline Water (>4000 ppm TDS) _____					Depth _____ ft					Well Disinfected Upon Completion _____
Gas _____					Depth _____ ft					Geophysical Log Taken _____
					Submitted to ESRD _____					
Additional Comments on Well _____					Sample Collected for Potability _____					Submitted to ESRD _____
DRILLER REPORTS DISTANCE FROM TOP OF CASING TO GROUND LEVEL: 2'										

Yield Test			Taken From Ground Level	Measurement in Imperial
Test Date	Start Time	Static Water Level	Depth to water level	
2002/05/03	12:00 AM	260.40 ft	Drawdown (ft)	Recovery (ft)
			348.00	
Method of Water Removal			Elapsed Time	
Type Air			Minutes:Sec	
Removal Rate _____ 7.00 igpm			0:00	
Depth Withdrawn From _____ 348.00 ft			1:00	
			2:00	
			3:00	
			4:00	
			5:00	
			6:00	
			7:00	
			8:00	
			120:00	
If water removal period was < 2 hours, explain why _____				

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
	ig	

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER	Certification No 1
Company Name MORRILL'S WATER WELL DRILLING LTD.	Copy of Well report provided to owner _____ Date approval holder signed _____

GIC Well ID	1060040
GoA Well Tag No.	
Drilling Company Well ID	
Date Report Received	2003/07/28

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

Well Identification and Location										Date Report Received 2003/07/28	
Owner Name SEELEY, LYLE		Address P.O. BOX 190			Town ALDER FLATS		Province ALBERTA		Country CA	Postal Code T0C 0A0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	3	4	46	7	5	9	2	6055HW			
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83):						
ft from					Latitude 52.932788		Longitude -114.958254		Elevation 0.00 ft		
ft from					How Location Obtained		How Elevation Obtained				
					Lat/Long calculated to centre of lot					Not Obtained	

Additional Information		Measurement in Imperial	
Distance From Top of Casing to Ground Level	12.00 in	Is Flow Control Installed	
Is Artesian Flow		Describe	
Rate	igpm		
Recommended Pump Rate	8.00 igpm	Pump Installed	Depth ft
Recommended Pump Intake Depth (From TOC)	240.00 ft	Type	Make H.P.
			Model (Output Rating)
Did you Encounter Saline Water (>4000 ppm TDS)	Depth ft	Well Disinfected Upon Completion	
Gas	Depth ft	Geophysical Log Taken	
		Submitted to ESRD	
Additional Comments on Well	Sample Collected for Potability	Submitted to ESRD	

Yield Test			Taken From Ground Level		Measurement in Imperial
Test Date	Start Time	Static Water Level	Drawdown (ft)	Depth to water level	
2003/07/21	12:00 AM	189.00 ft			
<b>Method of Water Removal</b>			189.00	Elapsed Time Minutes:Sec	Recovery (ft)
Type <u>Air</u>				0:00	280.00
Removal Rate <u>40.00 lpgm</u>				1:00	229.00
Depth Withdrawn From <u>280.00 ft</u>				2:00	219.00
				3:00	211.00
				4:00	204.00
				5:00	199.00
				6:00	195.00
				7:00	192.00
				8:00	190.00
				9:00	189.00

If water removal period was < 2 hours, explain why

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
	ig	

<b>Contractor Certification</b>			
Name of Journeyman responsible for drilling/construction of well	LEONARD BLAIR	Certification No	VA3129
Company Name	ALKEN BASIN DRILLING LTD.	Copy of Well report provided to owner	Date approval holder signed
		Yes	2003/07/21



# Water Well Drilling Report

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

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GIC Well ID 1060355  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received

Well Identification and Location										Measurement in Imperial	
Owner Name ALDER FLATS AG SOCIETY		Address		Town ALDER FLATS		Province AB		Country CA		Postal Code T0C 0A0	
Location	1/4 or LSD SW	SEC 04	TWP 046	RGE 07	W of MER 5	Lot	Block	Plan	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation _____ ft	
_____ ft from					Latitude <u>52.935000</u> Longitude <u>-114.982000</u>					How Elevation Obtained	
_____ ft from					How Location Obtained					Not Obtained	
					Not Verified						

Drilling Information		Type of Work
Method of Drilling Rotary		New Well
Proposed Well Use Domestic		

Formation Log			Measurement in Imperial		Yield Test Summary			Measurement in Imperial	
Depth from ground level (ft)	Water Bearing	Lithology Description	Recommended Pump Rate	28.00 igpm	Test Date	Water Removal Rate (igpm)	Static Water Level (ft)		
14.00		Brown Clay	2004/07/15	40.00	266.00				
114.00		Gray Clay & Rocks							
128.00		Gray Shale							
134.00		Gray Sandstone							
181.00		Gray Shale							
224.00	Yes	Gray Water Bearing Sandstone							
247.00		Gray Shale							
256.00		Gray Sandstone							
268.00		Gray Shale							
372.00		Gray See Comments Sandstone							
389.00		Gray See Comments Sandstone							
391.00		Dark Gray Shale							
405.00		Gray See Comments Sandstone							
			Well Completion						
			Total Depth Drilled	Finished Well Depth	Start Date	End Date			
			405.00 ft		2004/07/15	2004/07/15			
			Borehole						
			Diameter (in)	From (ft)	To (ft)				
			5.00	0.00	405.00				
			Surface Casing (if applicable)		Well Casing/Liner				
			Steel		Plastic				
			Size OD	5.50 in	Size OD	4.50 in			
			Wall Thickness	0.244 in	Wall Thickness	0.214 in			
			Bottom at	128.00 ft	Top at	105.00 ft			
					Bottom at	405.00 ft			
			Perforations						
			From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)		
			370.00	395.00	0.500		0.50		
			Perforated by Hand Drill						
			Annular Seal Driven						
			Placed from 0.00 ft to 128.00 ft						
			Amount						
			Other Seals						
			Type At (ft)						
			Screen Type						
			Size OD in						
			From (ft) To (ft) Slot Size (in)						
			Attachment						
			Top Filings Bottom Filings						
			Pack						
			Type Unknown Grain Size						
			Amount Unknown						

Contractor Certification		Certification No
Name of Journeyman responsible for drilling/construction of well LEONARD BLAIR		VA3129
Company Name ALKEN BASIN DRILLING LTD.		Copy of Well report provided to owner Date approval holder signed



# Water Well Drilling Report

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GIC Well ID 1060355  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

Well Identification and Location										Measurement in Imperial
Owner Name ALDER FLATS AG SOCIETY		Address			Town ALDER FLATS		Province AB	Country CA	Postal Code T0C 0A0	
Location	1/4 or LSD SW	SEC 04	TWP 048	RGE 07	W of MER 5	Lot	Block	Plan	Additional Description	
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)			Elevation		
ft from					Latitude 52.935000 Longitude -114.962000			ft		
ft from					How Location Obtained Not Verified			How Elevation Obtained Not Obtained		

Additional Information										Measurement in Imperial	
Distance From Top of Casing to Ground Level					24.00 in						
Is Artesian Flow					Is Flow Control Installed						
Rate					igpm					Describe	
Recommended Pump Rate					28.00 igpm					Depth	
Recommended Pump Intake Depth (From TOC)					395.00 ft					H.P.	
					Type					Model (Output Rating)	
Did you Encounter Saline Water (>4000 ppm TDS)					Depth					ft	
Gas					Depth					ft	
					Well Disinfected Upon Completion						
					Geophysical Log Taken						
					Submitted to ESRD						
Additional Comments on Well					Sample Collected for Potability					Submitted to ESRD	
AT DEPTH 288-372, COARSE SANDSTONE, WB AT 360'. 372'-389' & 391'-405' FINE GRAINED, WATER BEARING.											

Yield Test			Taken From Ground Level Depth to water level		Measurement in Imperial
Test Date 2004/07/15	Start Time 12:00 AM	Static Water Level 266.00 ft	Drawdown (ft)	Elapsed Time Minutes:Sec	Recovery (ft)
Method of Water Removal				1:00	320.00
Type Air				2:00	295.00
Removal Rate 40.00 igpm				3:00	277.00
Depth Withdrawn From 405.00 ft				4:00	273.00
				5:00	270.00
				6:00	268.00
				7:00	267.00
				9:00	266.00
If water removal period was < 2 hours, explain why					

Water Diverted for Drilling		
Water Source	Amount Taken ig	Diversion Date & Time

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well LEONARD BLAIR	Certification No VA3129
Company Name ALKEN BASIN DRILLING LTD.	Copy of Well report provided to owner Date approval holder signed

# Water Well Drilling Report

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

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GIC Well ID 1065909  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2009/09/04

Well Identification and Location										Measurement in Imperial	
Owner Name SEELY, LYLE		Address P.O. BOX 190			Town ALDER FLATS		Province ALBERTA		Country CA	Postal Code T0C 0A0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	03	4	46	7	5	7	1	6055HW			
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude 52.931550 Longitude -114.962710					3113.52 ft	
ft from					How Location Obtained					How Elevation Obtained	
					Differential corrected handheld GPS 5-10m					Differential corrected handheld GPS 5-10m	

Drilling Information		Type of Work
Method of Drilling Cable Tool		New Well
Proposed Well Use Domestic		

Formation Log			Measurement in Imperial		Yield Test Summary			Measurement in Imperial	
Depth from ground level (ft)	Water Bearing	Lithology Description	Recommended Pump Rate	10.00 igpm	Test Date	Water Removal Rate (igpm)	Static Water Level (ft)		
56.00		Gray Clay	2009/07/09	35.00	2009/07/09	35.00	269.00		
63.00		Gray Sandstone							
115.00		Gray Clay							
185.00		Gray Shale							
216.00		Gray Sandstone							
240.00		Gray Shale							
256.00		Gray Sandstone							
270.00		Gray Shale							
279.00		Gray Sandstone							
293.00		Gray Shale							
360.00	Yes	Gray Water Bearing Sandstone							
			<b>Well Completion</b>			Measurement in Imperial			
			Total Depth Drilled	Finished Well Depth	Start Date	End Date			
			360.00 ft	360.00 ft	2009/07/09	2009/07/09			
			<b>Borehole</b>						
			Diameter (in)	From (ft)	To (ft)				
			6.25	0.00	158.00				
			5.00	158.00	360.00				
			<b>Surface Casing (if applicable)</b>			<b>Well Casing/Liner</b>			
			Steel			Plastic			
			Size OD :	5.56 in	Size OD :	4.50 in			
			Wall Thickness :	0.258 in	Wall Thickness :	0.237 in			
			Bottom at :	158.00 ft	Top at :	140.00 ft			
						Bottom at :	360.00 ft		
			<b>Perforations</b>						
			From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)		
			320.00	340.00	0.375		12.00		
			Perforated by Drill						
			<b>Annular Seal</b> Bentonite Chips/Tablets						
			Placed from	0.00 ft	to	158.00 ft			
			Amount	1.00 Bags					
			<b>Other Seals</b>						
			Type				At (ft)		
			Drive Shoe				158.00		
			<b>Screen Type</b>						
			Size OD :			in			
			From (ft)			To (ft)	Slot Size (in)		
			Attachment						
			Top Filings			Bottom Filings			
			<b>Pack</b>						
			Type	Unknown		Grain Size			
			Amount	Unknown					

Contractor Certification		Certification No	
Name of Journeyman responsible for drilling/construction of well RILEY PEARSON		83061A	
Company Name ALKEN BASIN DRILLING LTD.		Copy of Well report provided to owner	Date approval holder signed
		Yes	2009/07/09



# Water Well Drilling Report

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GIC Well ID 2085427  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2012/11/12

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

Well Identification and Location										Measurement in Imperial	
Owner Name MYERS, JIM		Address P.O. BOX 164			Town ALDER FLATS		Province ALBERTA		Country CANADA		Postal Code T0C 0A0
Location	1/4 or LSD 4	SEC 4	TWP 46	RGE 7	W of MER 5	Lot	Block	Plan	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude 52.931750 Longitude -114.967220					3017.00 ft	
ft from					How Location Obtained					How Elevation Obtained	
					Hand held autonomous GPS 20-30m					Hand held autonomous GPS 20-30m	

Drilling Information	
Method of Drilling Rotary - Air	Type of Work New Well
Proposed Well Use Domestic	

Formation Log			Measurement in Imperial		Yield Test Summary			Measurement in Imperial	
Depth from ground level (ft)	Water Bearing	Lithology Description	Recommended Pump Rate	10.00 igpm	Test Date	Water Removal Rate (igpm)	Static Water Level (ft)		
54.00		Clay	2012/09/27	40.00	2012/09/27	40.00	232.00		
130.00		Gray Shale							
170.00		Gray Sandstone							
241.00		Gray Shale							
330.00	Yes	Gray Sandstone							
340.00		Gray Shale							
			Well Completion			Measurement in Imperial			
			Total Depth Drilled	Finished Well Depth	Start Date	End Date			
			340.00 ft	340.00 ft	2012/09/27	2012/09/27			
			Borehole						
			Diameter (in)	From (ft)	To (ft)				
			8.75	0.00	98.00				
			5.13	98.00	340.00				
			Surface Casing (if applicable)			Well Casing/Liner			
			Plastic			Plastic			
			Size OD :	6.00 in	Size OD :	4.50 in			
			Wall Thickness :	0.390 in	Wall Thickness :	0.231 in			
			Bottom at :	98.00 ft	Top at :	80.00 ft			
						Bottom at :	340.00 ft		
			Perforations						
			From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)		
			310.00	330.00	0.500		12.00		
			Perforated by Drill						
			Annular Seal Bentonite Chips/Tablets						
			Placed from 0.00 ft to 98.00 ft						
			Amount 1350.00 Pounds						
			Other Seals						
			Type Drive Shoe At (ft) 98.00						
			Screen Type						
			Size OD : in						
			From (ft) To (ft) Slot Size (in)						
			Attachment						
			Top Fittings Bottom Fittings						
			Pack						
			Type Grain Size						
			Amount						

Contractor Certification		Certification No	
Name of Journeyman responsible for drilling/construction of well RUSSELL POLLITT		101855A	
Company Name BLACK DOG DRILLING & ENV SERV. LTD.		Copy of Well report provided to owner Date approval holder signed Yes 2012/09/27	



# Water Well Drilling Report

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

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GIC Well ID 2085427  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2012/11/12

Well Identification and Location										Measurement in Imperial	
Owner Name MYERS, JIM		Address P.O. BOX 184			Town ALDER FLATS		Province ALBERTA		Country CANADA	Postal Code T0C 0A0	
Location	1/4 or LSD 4	SEC 4	TWP 46	RGE 7	W of MER 5	Lot	Block	Plan	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation 3017.00 ft	
ft from					Latitude 52.931750 Longitude -114.987220					How Elevation Obtained	
ft from					How Location Obtained					Hand held autonomous GPS 20-30m	
					Hand held autonomous GPS 20-30m						

Additional Information										Measurement in Imperial
Distance From Top of Casing to Ground Level 24.00 in										
Is Artesian Flow										Is Flow Control Installed
Rate lgpm										Describe
Recommended Pump Rate 10.00 lgpm										Pump Installed
Recommended Pump Intake Depth (From TOC) 300.00 ft										Depth ft
										Type
										Make
										H.P.
										Model (Output Rating)
Did you Encounter Saline Water (>4000 ppm TDS)										Depth ft
Gas										Depth ft
										Well Disinfected Upon Completion Yes
										Geophysical Log Taken
										Submitted to ESRD
										Sample Collected for Potability
										Submitted to ESRD
Additional Comments on Well										

Yield Test				Taken From Top of Casing	Measurement in Imperial
				Depth to water level	
Test Date 2012/09/27	Start Time 3:00 PM	Static Water Level 232.00 ft		Drawdown (ft)	Recovery (ft)
				232.00	
Method of Water Removal				Elapsed Time	
Type Air				Minutes:Sec	
Removal Rate 40.00 lgpm				0:00	340.00
Depth Withdrawn From 340.00 ft				1:00	301.00
				2:00	286.00
				3:00	271.00
				4:00	253.00
				5:00	246.00
				6:00	239.00
				7:00	235.00
				8:00	233.00
				9:00	232.00
				30:00	232.00
				120:00	232.00
If water removal period was < 2 hours, explain why					

Water Diverted for Drilling		
Water Source SHOP	Amount Taken 2000.00 lg	Diversion Date & Time 2012/09/26 3:00 PM

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well RUSSELL POLLITT	Certification No 101855A
Company Name BLACK DOG DRILLING & ENV SERV LTD	Copy of Well report provided to owner Yes
	Date approval holder signed 2012/09/27



# Water Well Drilling Report

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GIC Well ID 2085385  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2012/06/20

Well Identification and Location										Measurement in Imperial	
Owner Name HEATH, DOUG		Address P.O. BOX 36			Town ALDER FLATS		Province ALBERTA		Country CANADA		Postal Code T0C 0A0
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	4	4	46	7	5	30	1	8021370			
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude 52.932267 Longitude -114.963800					357.00 ft	
ft from					How Location Obtained					How Elevation Obtained	
					Hand held autonomous GPS 20-30m					Hand held autonomous GPS 20-30m	

Drilling Information	
Method of Drilling Rotary - Air	Type of Work New Well
Proposed Well Use Domestic	

Formation Log			Yield Test Summary		Well Completion	
Depth from ground level (ft)	Water Bearing	Lithology Description	Recommended Pump Rate	Water Removal Rate (igpm)	Static Water Level (ft)	End Date
107.00		Clay & Rocks	10.00 igpm			2012/06/09
113.00		Gray Sandstone		25.00	255.00	
132.00		Gray Shale				
167.00		Gray Sandstone				
260.00		Gray Shale				
347.00	Yes	Gray Sandstone				
360.00		Gray Shale				

Surface Casing (if applicable)		Well Casing/Liner	
Plastic	Plastic		
Size OD : 6.00 in	Size OD : 4.50 in		
Wall Thickness : 0.390 in	Wall Thickness : 0.231 in		
Bottom at : 122.00 ft	Top at : 60.00 ft		
	Bottom at : 360.00 ft		

Perforations				
From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)
320.00	340.00	0.500		12.00

Performed by Drill

**Annular Seal** Bentonite Chips/Tables  
Placed from 0.00 ft to 122.00 ft  
Amount 1150.00 Pounds

Other Seals  
Type Drive Shoe At (ft) 122.00

**Screen Type**  
Size OD : in  
From (ft) To (ft) Slot Size (in)  
Attachment  
Top Fittings Bottom Fittings

**Pack**  
Type Grain Size  
Amount

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well RUSSELL POLLITT	Certification No 101855A
Company Name BLACK DOG DRILLING & ENV SERV. LTD.	Copy of Well report provided to owner Yes
	Date approval holder signed 2012/06/09



# Water Well Drilling Report

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The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

GIC Well ID 2065365  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2012/06/20

Well Identification and Location										Measurement in Imperial
Owner Name HEATH, DOUG		Address P.O. BOX 36		Town ALDER FLATS		Province ALBERTA		Country CANADA		Postal Code T0C 0A0
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description	
	4	4	46	7	5	30	1	8021370		
Measured from Boundary of				GPS Coordinates in Decimal Degrees (NAD 83)				Elevation		
ft from				Latitude 52.932267 Longitude -114.963800				357.00 ft		
ft from				How Location Obtained				How Elevation Obtained		
				Hand held autonomous GPS 20-30m				Hand held autonomous GPS 20-30m		

Additional Information		Measurement in Imperial
Distance From Top of Casing to Ground Level		24.00 in
Is Artesian Flow	Rate	igpm
Is Flow Control Installed		Describe
Recommended Pump Rate	10.00 igpm	Pump Installed
Recommended Pump Intake Depth (From TOC)	320.00 ft	Depth
		ft
		Type
		Make
		H.P.
		Model (Output Rating)
Did you Encounter Saline Water (>4000 ppm TDS)	Depth	ft
Gas	Depth	ft
Well Disinfected Upon Completion		Yes
Geophysical Log Taken		
Submitted to ESRD		
Sample Collected for Potability		Submitted to ESRD
Additional Comments on Well		

Yield Test		Taken From Top of Casing	Measurement in Imperial
		Depth to water level	
Test Date	Start Time	Static Water Level	
2012/06/09	1:00 PM	255.00 ft	
		Drawdown (ft)	
		255.00	
Method of Water Removal		Elapsed Time	Recovery (ft)
Type Air		Minutes:Sec	
Removal Rate		0:00	360.00
25.00 igpm		1:00	335.00
Depth Withdrawn From		2:00	318.00
360.00 ft		3:00	301.00
		4:00	286.00
		5:00	276.00
		6:00	268.00
		7:00	262.00
		8:00	258.00
		9:00	256.00
		10:00	255.00
		30:00	255.00
		120:00	255.00
If water removal period was < 2 hours, explain why			

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
SHOP	2000.00 kg	2012/06/08 7:00 AM

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well	Certification No
RUSSELL POLLITT	101855A
Company Name	Copy of Well report provided to owner
BLACK DOG DRILLING & ENV SERV. LTD.	Yes
	Date approval holder signed
	2012/06/09



GIC Well ID 1545384  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2003/03/11

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

<b>Well Identification and Location</b>										
Owner Name MONDS, MATT		Address P.O. BOX 582		Town ALDER FLATS		Province ALBERTA		Country CA		Postal Code TOC 0A0
Location	1/4 or LSD 3	SEC 4	TWP 46	RGE 7	W of MER 5	Lot 10	Block 2	Plan 6055HW	Additional Description	
Measured from Boundary of				GPS Coordinates in Decimal Degrees (NAD 83)				Elevation		
ft from				Latitude 52.932691 Longitude -114.958103				ft		
ft from				How Location Obtained				How Elevation Obtained		
				Lat/Long calculated to centre of lot				Not Obtained		

<b>Drilling Information</b>	
Method of Drilling Rotary	Type of Work New Well
Proposed Well Use Domestic	

<b>Formation Log</b>		<b>Measurement in Imperial</b>	
Depth from ground level (ft)	Water Bearing	Lithology Description	
16.00		Brown Sandy Clay	
41.00		Gray Sandy Clay	
78.00		Clay & Boulders	
126.00		Brown Sandy Clay	
137.00		Gray Clay & Boulders	
140.00		Gray Shale	
142.00		Gray Sandstone	
158.00		Gray Shale	
164.00		Gray Sandstone	
171.00		Gray Shale	
176.00		Gray Sandstone	
194.00		Gray Shale	
239.00		Gray Fine Grained Sand	
271.00		Gray Sandstone	
280.00		Gray Shale & Sandstone Ledges	
286.00		Gray Shale	

<b>Yield Test Summary</b>			<b>Measurement in Imperial</b>	
Recommended Pump Rate	10.00 igpm			
Test Date	Water Removal Rate (igpm)	Static Water Level (ft)		
2002/10/10	15.00	185.00		

<b>Well Completion</b>				<b>Measurement in Imperial</b>	
Total Depth Drilled	Finished Well Depth	Start Date	End Date		
298.00 ft	288.00 ft	2002/12/10	2002/12/10		
<b>Borehole</b>					
Diameter (in)	From (ft)	To (ft)			
6.75	0.00	288.00			
<b>Surface Casing (if applicable)</b>			<b>Well Casing/Liner</b>		
Plastic			Plastic		
Size OD :	5.50 in	Size OD :	4.50 in		
Wall Thickness :	0.375 in	Wall Thickness :	0.237 in		
Bottom at :	180.00 ft	Top at :	170.00 ft		
		Bottom at :	288.00 ft		
<b>Perforations</b>					
From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)	Hole or Slot Interval (in)	
208.00	288.00	0.250		12.00	
Perforated by Machine					
<b>Annular Seal</b> Bentonite Chips/Tables					
Placed from		0.00 ft	to		180.00 ft
Amount					
Other Seals					
Type		At (ft)			
<b>Screen Type</b>					
Size OD :		in			
From (ft)	To (ft)	Slot Size (in)			
Attachment					
Top Fittings		Bottom Fittings			
<b>Pack</b>					
Type	Unknown		Grain Size		
Amount	Unknown				

<b>Contractor Certification</b>		Certification No VB4952	
Name of Journeyman responsible for drilling/construction of well WAYNE MORRILL		Copy of Well report provided to owner	
Company Name MORRILL'S WATER WELL DRILLING LTD.		Date approval holder signed 2002/12/10	



# Water Well Drilling Report

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The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

GIC Well ID 1545384  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2003/03/11

Well Identification and Location										Measurement in Imperial	
Owner Name <b>MONDS, MATT</b>		Address <b>P.O. BOX 582</b>			Town <b>ALDER FLATS</b>		Province <b>ALBERTA</b>		Country <b>CA</b>	Postal Code <b>TOC 0A0</b>	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	<b>3</b>	<b>4</b>	<b>46</b>	<b>7</b>	<b>5</b>	<b>10</b>	<b>2</b>	<b>6055HW</b>			
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
ft from					Latitude <b>52.932691</b> Longitude <b>-114.958103</b>					Elevation _____ ft	
ft from					How Location Obtained					How Elevation Obtained	
					Lat/Long calculated to centre of lot					Not Obtained	

Additional Information				Measurement in Imperial
Distance From Top of Casing to Ground Level <b>24.00 in</b>				
Is Artesian Flow		Is Flow Control Installed		
Rate _____ igpm		Describe _____		
Recommended Pump Rate <b>10.00 igpm</b>		Pump Installed <b>Yes</b>		Depth _____ ft
Recommended Pump Intake Depth (From TOC) <b>250.00 ft</b>		Type <b>SUB @ 250'</b>	Make <b>GOULDS</b>	H.P. <b>1</b>
Model (Output Rating) _____				
Did you Encounter Saline Water (>4000 ppm TDS) _____		Depth _____ ft		Well Disinfected Upon Completion _____
Gas _____		Depth _____ ft		Geophysical Log Taken _____
Submitted to ESRD _____				
Sample Collected for Potability _____ Submitted to ESRD _____				
Additional Comments on Well				
<b>BOREHOLE DIAMETER WAS ALSO 4.75 INCH</b>				

Yield Test		Taken From Ground Level		Measurement in Imperial
		Depth to water level		
Test Date <b>2002/10/10</b>	Start Time <b>12:00 AM</b>	Static Water Level <b>185.00 ft</b>	Drawdown (ft)	Recovery (ft)
			Elapsed Time Minutes:Sec	
<b>Method of Water Removal</b>		<b>185.00</b>	<b>0:00</b>	<b>280.00</b>
Type <b>Air</b>			<b>2:00</b>	<b>242.70</b>
Removal Rate <b>15.00 igpm</b>			<b>3:00</b>	<b>224.00</b>
Depth Withdrawn From <b>280.00 ft</b>			<b>4:00</b>	<b>211.20</b>
			<b>5:00</b>	<b>202.00</b>
			<b>6:00</b>	<b>195.60</b>
			<b>7:00</b>	<b>191.30</b>
			<b>8:00</b>	<b>189.10</b>
			<b>9:00</b>	<b>188.90</b>
			<b>10:00</b>	<b>188.40</b>
			<b>16:00</b>	<b>187.80</b>
If water removal period was < 2 hours, explain why		<b>280.00</b>	<b>120:00</b>	

Water Diverted for Drilling		
Water Source	Amount Taken ig	Diversion Date & Time

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well <b>WAYNE MORRILL</b>	Certification No <b>V84852</b>
Company Name <b>MORRILL'S WATER WELL DRILLING LTD.</b>	Copy of Well report provided to owner <b>Yes</b>
	Date approval holder signed <b>2002/12/10</b>



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GIC Well ID 1066824  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2013/05/15

Well Identification and Location										Measurement in Imperial	
Owner Name DODD, DEREK		Address P.O. BOX 88		Town ALDER FLATS		Province ALBERTA		Country CANADA		Postal Code T0C 0A0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	3	4	46	7	5				SW		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
ft from					Latitude 52.932470 Longitude -114.959930					Elevation 3182.00 ft	
ft from					How Location Obtained					How Elevation Obtained	
					Differential corrected handheld GPS 5-10m					Differential corrected handheld GPS 5-10m	

Drilling Information	
Method of Drilling Rotary - Air	Type of Work New Well
Proposed Well Use Domestic	

Formation Log			Measurement in Imperial	Yield Test Summary			Measurement in Imperial
Depth from ground level (ft)	Water Bearing	Lithology Description		Recommended Pump Rate	10.00 lgpm		
124.00		Gray Clay		Test Date	Water Removal Rate (lgpm)	Static Water Level (ft)	
152.00		Gray Shale		2013/04/26	12.00	276.00	
225.00		Gray Sandstone					
290.00		Gray Shale					
380.00	Yes	Gray Sandstone					
				Well Completion			
				Total Depth Drilled	Finished Well Depth	Start Date	End Date
				380.00 ft	380.00 ft	2013/04/25	2013/04/25
				Borehole			
				Diameter (in)	From (ft)	To (ft)	
				6.75	0.00	130.00	
				5.00	130.00	380.00	
				Surface Casing (if applicable)		Well Casing/Liner	
				Steel		Plastic	
				Size OD:	5.56 in	Size OD:	4.50 in
				Wall Thickness:	0.258 in	Wall Thickness:	0.237 in
				Bottom at:	130.00 ft	Top at:	100.00 ft
				Bottom at: 380.00 ft			
				Perforations			
				From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)
				320.00	360.00	0.046	Hole or Slot Interval (in)
				12.00			
				Perforated by Drill			
				Annular Seal Bentonite Chips/Tablets			
				Placed from: 0.00 ft to 130.00 ft			
				Amount 100.00 Pounds			
				Other Seals			
				Type	At (ft)		
				Drive Shoe	130.00		
				Shale Trap	300.00		
				Screen Type			
				Size OD:	in		
				From (ft)	To (ft)	Slot Size (in)	
				Attachment			
				Top Fittings		Bottom Fittings	
				Pack			
				Type	Grain Size		
				Amount			

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well RILEY PEARSON	Certification No 83061A
Company Name ALKEN BASIN DRILLING LTD.	Copy of Well report provided to owner Yes
	Date approval holder signed 2013/04/26



## Water Well Drilling Report

View in Metric Export to Excel

GIC Well ID 1086924  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2013/05/15

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

Well Identification and Location										Measurement in Imperial	
Owner Name DODD, DEREK		Address P.O. BOX 88		Town ALDER FLATS		Province ALBERTA		Country CANADA	Postal Code T0C 0A0		
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	3	4	46	7	5				SW		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude 52.932470 Longitude -114.959930					3182.00 ft	
ft from					How Location Obtained					How Elevation Obtained	
					Differential corrected handheld GPS 5-10m					Differential corrected handheld GPS 5-10m	

Additional Information		Measurement in Imperial
Distance From Top of Casing to Ground Level		24.00 in
Is Artesian Flow	Rate	igpm
Is Flow Control Installed		Describe
Recommended Pump Rate	10.00 igpm	Pump Installed
Recommended Pump Intake Depth (From TOC)	340.00 ft	Depth
Type		Make
		Model (Output Rating)
Did you Encounter Saline Water (>4000 ppm TDS)	Depth	ft
Gas	Depth	ft
Well Disinfected Upon Completion		Yes
Geophysical Log Taken		Submitted to ESRD
Sample Collected for Potability		Submitted to ESRD
Additional Comments on Well		

Yield Test		Taken From Top of Casing	Measurement in Imperial
Test Date	Start Time	Static Water Level	Drawdown (ft)
2013/04/26	6:00 AM	276.00 ft	
Method of Water Removal		Elapsed Time	Recovery (ft)
Type AIR		Minutes:Sec	
Removal Rate		0:00	380.00
Depth Withdrawn From		1:00	360.00
12.00 igpm		2:00	350.00
380.00 ft		3:00	340.00
		4:00	333.00
		5:00	325.00
		6:00	320.00
		7:00	315.00
		8:00	310.00
		9:00	306.00
		10:00	301.00
		12:00	295.00
		14:00	290.00
		16:00	285.00
		18:00	281.00
		20:00	278.00
		25:00	277.00
		30:00	276.00
		120:00	276.00
If water removal period was < 2 hours, explain why			

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
SHOP	1200.00 ig	2013/04/24 7:00 AM

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well	Certification No
RILEY PEARSON	83061A
Company Name	Copy of Well report provided to owner
ALKEN BASIN DRILLING LTD.	Yes
	Date approval holder signed
	2013/04/26



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GIC Well ID 1065909  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2009/09/04

Well Identification and Location										Measurement in Imperial	
Owner Name <b>SEELY, LYLE</b>		Address <b>P.O. BOX 190</b>			Town <b>ALDER FLATS</b>		Province <b>ALBERTA</b>		Country <b>CA</b>	Postal Code <b>T0C 0A0</b>	
Location	1/4 or LSD <b>03</b>	SEC <b>4</b>	TWP <b>46</b>	RGE <b>7</b>	W of MER <b>5</b>	Lot <b>7</b>	Block <b>1</b>	Plan <b>6055HW</b>	Additional Description		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					Elevation	
ft from					Latitude <b>52.931550</b> Longitude <b>-114.962710</b>					3113.52 ft	
ft from					How Location Obtained					How Elevation Obtained	
					Differential corrected handheld GPS 5-10m					Differential corrected handheld GPS 5-10m	

Drilling Information		Type of Work
Method of Drilling Cable Tool		New Well
Proposed Well Use Domestic		

Formation Log			Measurement in Imperial	Yield Test Summary			Measurement in Imperial
Depth from ground level (ft)	Water Bearing	Lithology Description		Recommended Pump Rate	10.00 igpm	Static Water Level (ft)	
56.00		Gray Clay		Test Date	2009/07/09	Water Removal Rate (igpm)	35.00
63.00		Gray Sandstone					269.00
115.00		Gray Clay		<b>Well Completion</b>			
185.00		Gray Shale		Total Depth Drilled	360.00 ft	Finished Well Depth	360.00 ft
216.00		Gray Sandstone		Start Date	2009/07/09	End Date	2009/07/09
240.00		Gray Shale		<b>Borehole</b>			
256.00		Gray Sandstone		Diameter (in)	From (ft)	To (ft)	
270.00		Gray Shale		6.25	0.00	158.00	
279.00		Gray Sandstone		5.00	158.00	360.00	
293.00		Gray Shale		<b>Surface Casing (if applicable)</b>			
360.00	Yes	Gray Water Bearing Sandstone		Steel	<b>Well Casing/Liner</b>		
				Size OD : 5.56 in	Plastic		
				Wall Thickness : 0.258 in	Size OD : 4.50 in		
				Bottom at : 158.00 ft	Wall Thickness : 0.237 in		
					Top at : 140.00 ft		
					Bottom at : 360.00 ft		
				<b>Perforations</b>			
				From (ft)	To (ft)	Diameter or Slot Width (in)	Slot Length (in)
				320.00	340.00	0.375	Hole or Slot Interval (in)
							12.00
				Perforated by Drill			
				<b>Annular Seal</b> Bentonite Chips/Tables			
				Placed from 0.00 ft to 158.00 ft			
				Amount 1.00 Bags			
				Other Seals			
				Type	At (ft)		
				Drive Shoe	158.00		
				<b>Screen Type</b>			
				Size OD : in			
				From (ft)	To (ft)	Slot Size (in)	
				Attachment			
				Top Filtings		Bottom Filtings	
				<b>Pack</b>			
				Type Unknown	Grain Size		
				Amount Unknown			

Contractor Certification		Certification No
Name of Journeyman responsible for drilling/construction of well <b>RILEY PEARSON</b>		<b>83061A</b>
Company Name <b>ALKEN BASIN DRILLING LTD.</b>		Copy of Well report provided to owner Yes
		Date approval holder signed 2009/07/09



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GIC Well ID 1065909  
GoA Well Tag No.  
Drilling Company Well ID  
Date Report Received 2009/09/04

Well Identification and Location										Measurement in Imperial
Owner Name <b>SEELY, LYLE</b>		Address <b>P.O. BOX 190</b>			Town <b>ALDER FLATS</b>		Province <b>ALBERTA</b>		Country <b>CA</b>	Postal Code <b>T0C 0A0</b>
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description	
	<b>03</b>	<b>4</b>	<b>46</b>	<b>7</b>	<b>5</b>	<b>7</b>	<b>1</b>	<b>6055HW</b>		
Measured from Boundary of				GPS Coordinates in Decimal Degrees (NAD 83)				Elevation		
ft from				Latitude <b>52.931550</b> Longitude <b>-114.962710</b>				3113.52 ft		
ft from				How Location Obtained				How Elevation Obtained		
				Differential corrected handheld GPS 5-10m				Differential corrected handheld GPS 5-10m		

Additional Information										Measurement in Imperial
Distance From Top of Casing to Ground Level										36.00 in
Is Artesian Flow										
Rate										igpm
Is Flow Control installed										
Describe										
Recommended Pump Rate										10.00 igpm
Pump Installed										Depth
Recommended Pump Intake Depth (From TOC)										320.00 ft
Type										Make
										H.P.
										Model (Output Rating)
Did you Encounter Saline Water (>4000 ppm TDS)										Depth
										ft
Well Disinfected Upon Completion										Yes
Gas										Depth
										ft
Geophysical Log Taken										
Submitted to ESRD										
Sample Collected for Potability										Submitted to ESRD
Additional Comments on Well										

Yield Test			Taken From Top of Casing		Measurement in Imperial
			Depth to water level		
Test Date	Start Time	Static Water Level	Drawdown (ft)	Elapsed Time	Recovery (ft)
2009/07/09	5:00 PM	269.00 ft		Minutes:Sec	
			269.00	0:00	360.00
				1:00	300.00
				2:00	280.00
				3:00	275.00
				4:00	271.00
				5:00	269.00
				6:00	269.00
				7:00	269.00
				8:00	269.00
				9:00	269.00
				10:00	269.00
				12:00	269.00
Method of Water Removal					
Type Pump & Air					
Removal Rate					
35.00 igpm					
Depth Withdrawn From					
360.00 ft					
If water removal period was < 2 hours, explain why					
AIR LIFT STEM IN HOLE, PUMPED @ 70 IGPM FROM 300'.					

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
SHOP	1200.00 ig	2009/07/09 7:30 PM

Contractor Certification		
Name of Journeyman responsible for drilling/construction of well		
RILEY PEARSON		
Company Name		
ALKEN BASIN DRILLING LTD.		
Certification No		Date approval holder signed
83061A		2009/07/09
Copy of Well report provided to owner		
Yes		