



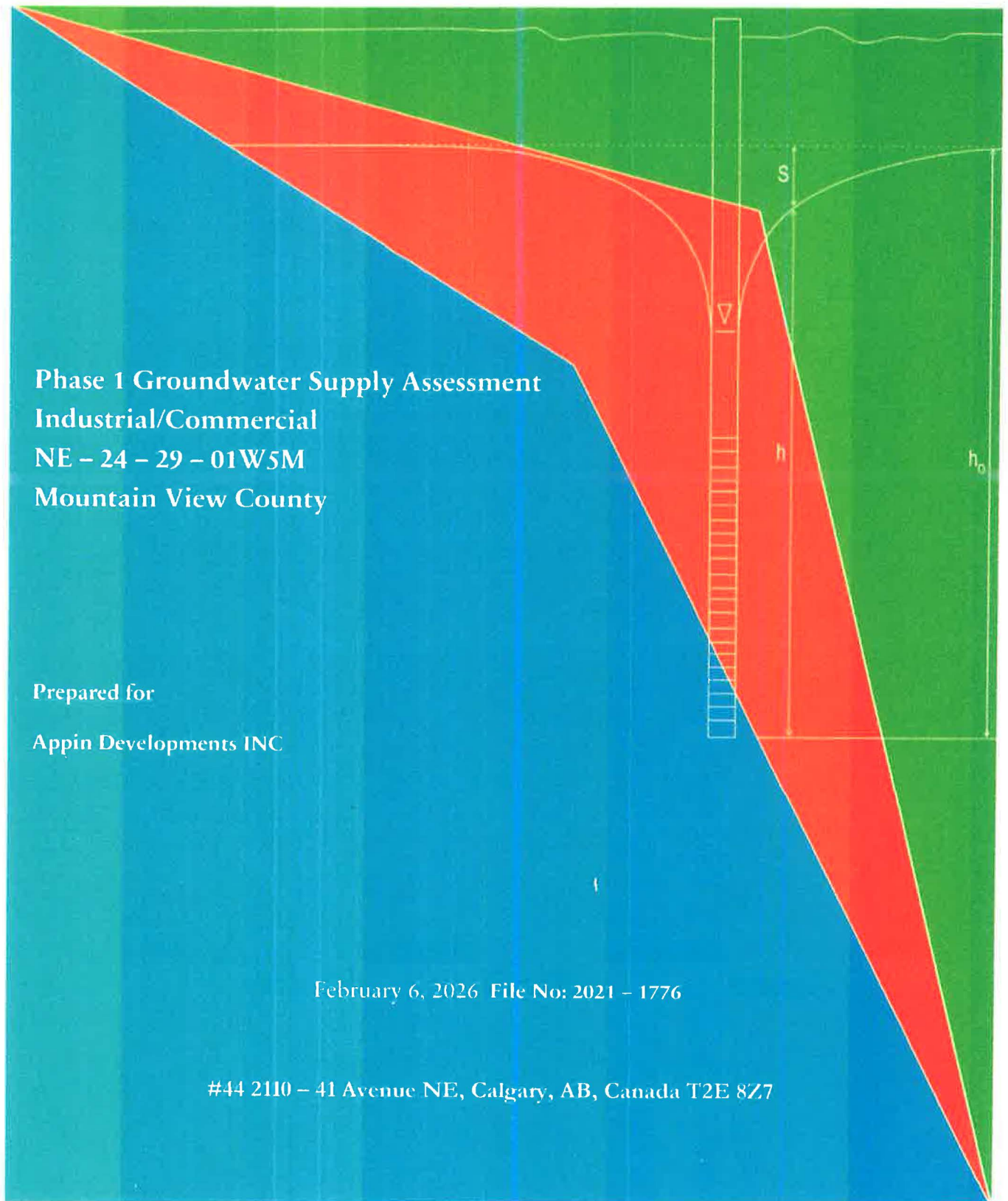
Groundwater Resources
Information Technologies Ltd.

Phase 1 Groundwater Supply Assessment
Industrial/Commercial
NE - 24 - 29 - 01W5M
Mountain View County

Prepared for
Appin Developments INC

February 6, 2026 File No: 2021 - 1776

#44 2110 - 41 Avenue NE, Calgary, AB, Canada T2E 8Z7





Signatures

Prepared by:



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Disclaimer

Groundwater Resources Information Technologies Ltd. (GRIT Ltd.) has performed the work as described below and made the findings and conclusions set out in the report in a manner consistent with the level of care and skill normally exercised by members of the geological science profession practicing under similar conditions at the time the work was performed. This report presents a reasonable review of information available to GRIT Ltd. Within the established scope, work schedule and budgetary constraints, GRIT Ltd. accepts no responsibility for any deficiency, misstatement or inaccuracy in this report resulting from misinformation from any individuals that provided information as part of this report. GRIT Ltd. appreciates the opportunity to present these finding on behalf of the Client. If you have any questions regarding the above report, please do not hesitate to contact the above signed.



Executive Summary

A Phase I Groundwater Site Assessment was undertaken for a proposed industrial and commercial development within the quarter section located in NE ¼ – 24 – 29 – 01W5M to understand the quality and distribution of aquifer resources in the area as they relate to the future development of the property and its water requirements.

Aquifers in the area consist of sandstone channel deposits belonging to the lower Lacombe member of the Paskapoo Formation. These aquifers are found at depths of 30 – 100 meters below ground. Long term recharge to aquifers by surface water sources and precipitation in this area is expected to occur which should continue serve to make aquifer supplies sustainable.

A review of publicly available information showed low to moderate current utilization of the groundwater, including mostly domestic and licensed groundwater users.

Analysis of pumping test data from wells in the area shows a geometric average safe yield of water of 17.6 m³/day (2.7 imperial gallons per minute or 6430 m³/year) for the average supply well. This is sufficient for an individual well on each lot to supply water for typical commercial lots that just need water for sinks and toilets.

A higher capacity well would be needed for community supply wells to supply several commercial lots or lots that that need high volumes of water (such as car washes or greenhouses). Such wells may be present in the area but there is a risk that numerous wells may have to be drilled before a suitable well is found.

No discernable dewatering of the aquifers is occurring, and the aquifer supply appears sustainable in the area.

The groundwater quality in the area is moderate as a drinking water source with some analysis showing slightly elevated Total Dissolved Solids and sulfate concentrations. The water may be acceptable to some users for potable purposes, but some form of treatment such as reverse osmosis or distillation of the water is likely required to improve overall taste for the user.



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Appendix A – Subdivision Boundaries

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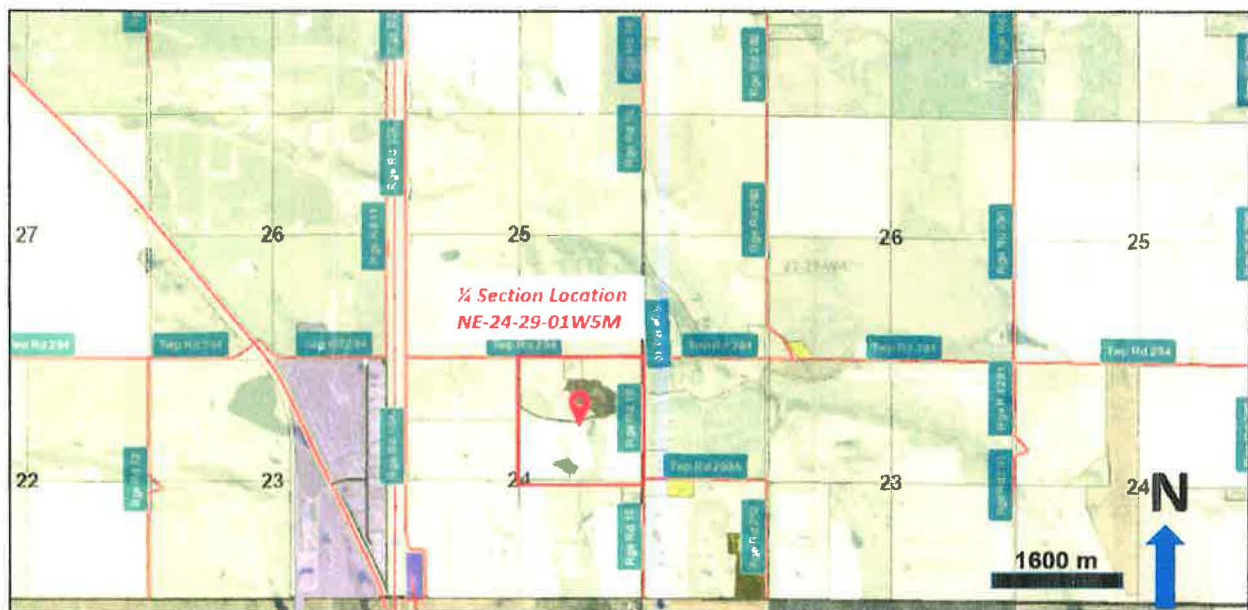


[1.0] Introduction

A Phase I Groundwater Site Assessment was undertaken for a proposed industrial/commercial development located in NE ¼ – 24 – 25 – 01W5M for Appin Developments Inc. to understand the quality and depth of aquifer resources in the area as they relate to the future development of the site.

The site is in the County of Mountain View approximately nine kilometers (km) southwest of Carstairs and eight km north of Crossfield and one kilometer west of Highway 2. The site is in an area predominantly occupied by agricultural district with very low-density residential acreages. A portion of the County land map and subject site quarter section location is shown below:

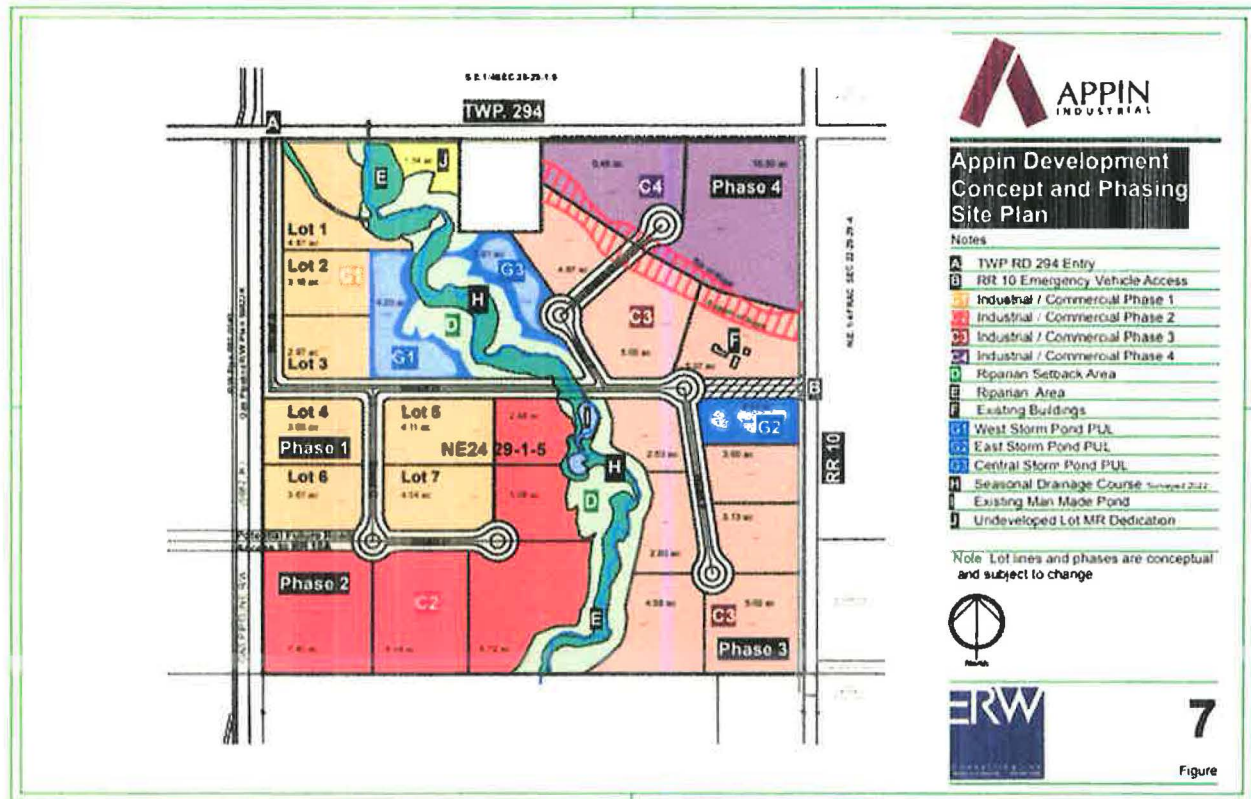
Figure 1: County Land Map and Subject Site ¼ Location



The water is to be used to supply four (4) phases of development of industrial and commercial operations/buildings. The site is planned to contain outdoor storage, industrial buildings, small commercial shops, and potential indoor greenhouse operations. The site plan development may depend on available water resources.

A conceptual site plan showing the development is as follows:

Figure 2: Aerial Photograph of the Subject Site Quarter Section



There are three water well records found on the quarter section, presumably supplying the existing domestic developments/buildings on the quarter section. Wells are between 75 and 195 ft in depth and drilled between 1991 and 2017.

Additional site maps of the planned subdivision showing lot boundaries and setbacks are included in Appendix A.

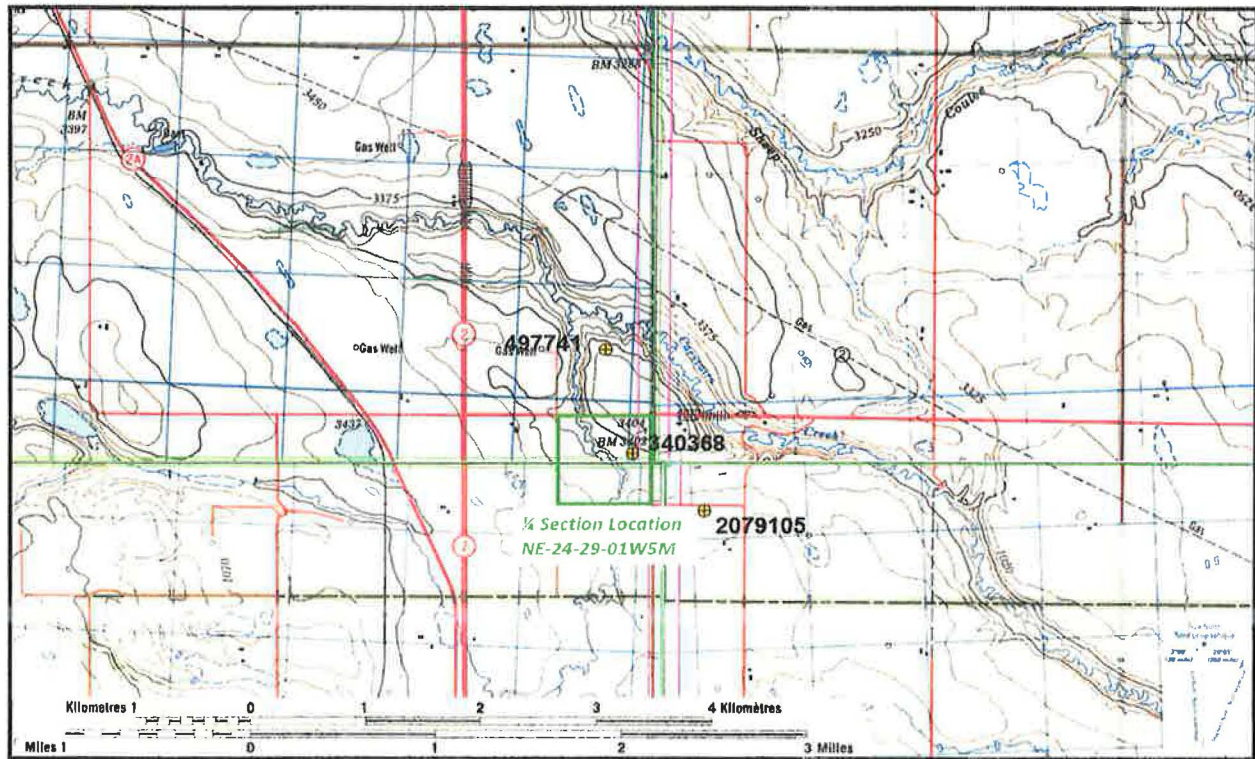
[2.0] Topography

The site is at an approximate elevation of 1030 metres above sea level with sloped surface to the north directing surface runoff along the creek that flows through the middle of the quarter section, where it flows into the Carstairs Creek approximately one kilometer north of the site. The southern portion of the quarter section has an elevation of 1038 masl and the northern portion 1030 masl, with the creek bottom 1024 masl.

A topographic map showing surface topography and surface drainage is as follows:



Figure 3: Topographic Map Site Location and Drainage



The location of the existing water well with available pumping tests data are shown above with their respective government of Alberta water well identification number

(<http://groundwater.alberta.ca/WaterWells/d/>)

[3.0] Nature of Regional Aquifers

[3.1] Surficial Strata

The upper 1 – 10 meters of sediment is described in Water Well Drilling Reports from the site quarter section and surrounding area as predominantly clay bearing undifferentiated tills.

The surficial strata in the area are mapped by Quaternary Geology, Southern Alberta (Shetsen, I., 1987) as a draped moraine till deposit. These tills consist of poorly sorted sand silt and clay deposited glacial processes. The tills are consistent with well log information.



The high clay fraction of the poorly sorted/well graded material produce a highly impermeable barrier for surface waters.

The fine-grained content in surficial deposits is deemed beneficial for well placement as it would aide in the prevention of contaminate migration to deeper bedrock aquifer such as septic field effluent.

[3.2] Bedrock Strata

The underlying bedrock of the site consists of strata belonging to the Lacombe Member of the Paskapoo Formation. The Paskapoo Formation is a non-marine fluvial deposit and is one of Alberta's largest and most prolific aquifers, supporting more wells than any other aquifer in Alberta's prairies (Grasby et al., 2008). These Early/lower Paleocene strata consist of interbedded fluvial sandstone and overbank mudstone and shales with limited bentonites and coals.

Wells in the immediate vicinity seem to be completed in thin sandstone aquifers ranging from 75 – 195 feet below the ground surface. Sandstone thickness vary greatly and are on the order of 2 – 5 metres in thickness. Water well driller reports indicate a significant amount of shale present in this area; this is an indication that the Lacombe member defines the bedrock geology. This is favorable as isolated hydraulic zones reduce the risk of a new supply well lowering neighboring water levels.

[4.0] Area groundwater users

[4.1] Non-Licensed Water Users

A search of the Alberta Environment and Parks water well data base was done to determine the number of water wells and their associated use in the area (one mile radius). The search shows a total of 21 wells within the area. Of these wells, 15 are designated for domestic use or a combination domestic and stock water uses, and five (5) for stock watering.

As per the request of Mountain View County an expanded search radius was undertaken for a 3.2 km radius. Sixty one wells are within a 3.2 km radius, 38 wells are for domestic, or



domestic and stock, 16 are for stock only, and the remainder are for commercial, observation or unknown purposes.

Well depths range from 18 – 152 meters with most wells on the order of 30 – 55 m deep and obtain water from bedrock aquifers. A summary of the well information from AEP database is included in Appendix C.

4.2 Licensed Water Users

A search of AEP's authorization viewer water license database was undertaken to determine if any groundwater licenses are present in the area. A search of licenses and registrations for the subject site and adjoining eight sections was undertaken. A summary of the groundwater licenses and registrations in the area is as follows:

Table 1: Licensed Groundwater users and Registrations

Location	Licences/ Registration	Licensed Depth Interval (m)	Licensed Volume (m ³)	Licensee (use)
13-29-01W5	-/1	-	-	-
14-29-01W5	1/1	22.8-88.4	2724	313680 Alberta Ltd (stock watering)
23-29-01W5	-/-	18.2-24.4 60.9-67.0	1000 394	Schlumberger Canada Ltd Central Alberta Co-op
24-29-01W5	1/1	?-42.7	3632	Viridian Inc/Agrium Inc
25-29-01W5	-/-1	-	-	-
26-29-01W5	-/1	-	-	-
15-29-29W4	-/-	-	-	-
22-29-29W4	-/1	-	-	-
27-29-29W4	-/1	-	-	-

Licenses for surface water withdrawals were not included in the Table 1 summary. Four groundwater licenses were found in the surrounding area. The total licensed diversion for the nine sections totals 7,750 cubic meters per year.

There exists some uncertainty is involved in registrations as they may include surface water diversions or groundwater up to 6,250 m³ per year. Current groundwater utilization is considered low to moderate with majority of accounted diversion coming from rural domestic and stock uses.



[5.0] Aquifer Parameters in the Area

Three well records were selected that were located proximal to the site quarter section of the proposed residential development that have suitable pumping test data. These records were also chosen for their high-quality pumping tests data, variance in completion depths, and proximity to the site location. These wells are interpreted to be completed in bedrock sandstone aquifer units belonging to the Lacombe Member of the Paskapoo Formation.

The pumping tests were analyzed using a radial flow model for confined aquifer conditions with the aid of AQTESOLV software developed by Hydrosoft Inc.

Pump test analysis and driller reports are shown in Appendix B.

A summary of well yield and associated aquifer properties produced from this analysis are as follows:

Table 2: Hydraulic Parameters from Neighboring Water Wells

Well ID	Distance (m)/ Direction from Site	Depth to Aquifer Top (m)	Aquifer Thickness (m)	Aquifer Type	Transmissivity (m ² /day)	Safe Well Yield (Q ₂₀) (m ³ /day)
1240281	~1100 SW	22.2	1.5	Shale & Sandstone	11.2	74.6
2097536	~700 E	72.2	3.4	Sandstone	0.35	8.0
391371	~2,800 N	18.9	6.7	Shale & Sandstone	3.4	41.1
2079105	~400 E	51.8	13.7	Shale & Sandstone	3.8	10.3
497741	~ 1500 m S	36.3	6.1	Sandstone	131	255
340368	On site	46.6	9.4	Sandstone	0.08	1.7
2079105	~ 600 m SW	51.8	1.22	Sandstone	0.4	4.7
*Well is listed in the middle of respective quarter section on the Alberta water well database						

The twenty-year safe yield of the supply wells (Q₂₀) was calculated using the modified Moell method as suggested in Alberta Environments *Guide to Groundwater Authorization* (February 2023) as follows:

$$Q_{20} = \frac{(0.7 \times Q \times H_a)}{s_{100min} + (s_{20yrs} - s_{100th})}$$

Where:

- Q - Pump test flow rate (m^3/day)
- H_a - Available Head (m) = (Top of Aquifer - (Static Water Level – Well Stickup))
- $S_{100 \text{ min}}$ - Observed drawdown at 100 minutes (m)
- $(S_{20 \text{ yrs}} - S_{100 \text{ th}})$ - Difference between theoretical drawdown at 20 years and 100 min (m)
- 0.7 - Safety factor

A geometric average safe yield of water of $17.6 \text{ m}^3/\text{day}$ (2.7 imperial gallons per minute or $6430 \text{ m}^3/\text{year}$) is calculated. This is sufficient for commercial lots that just need water for sinks and toilets.

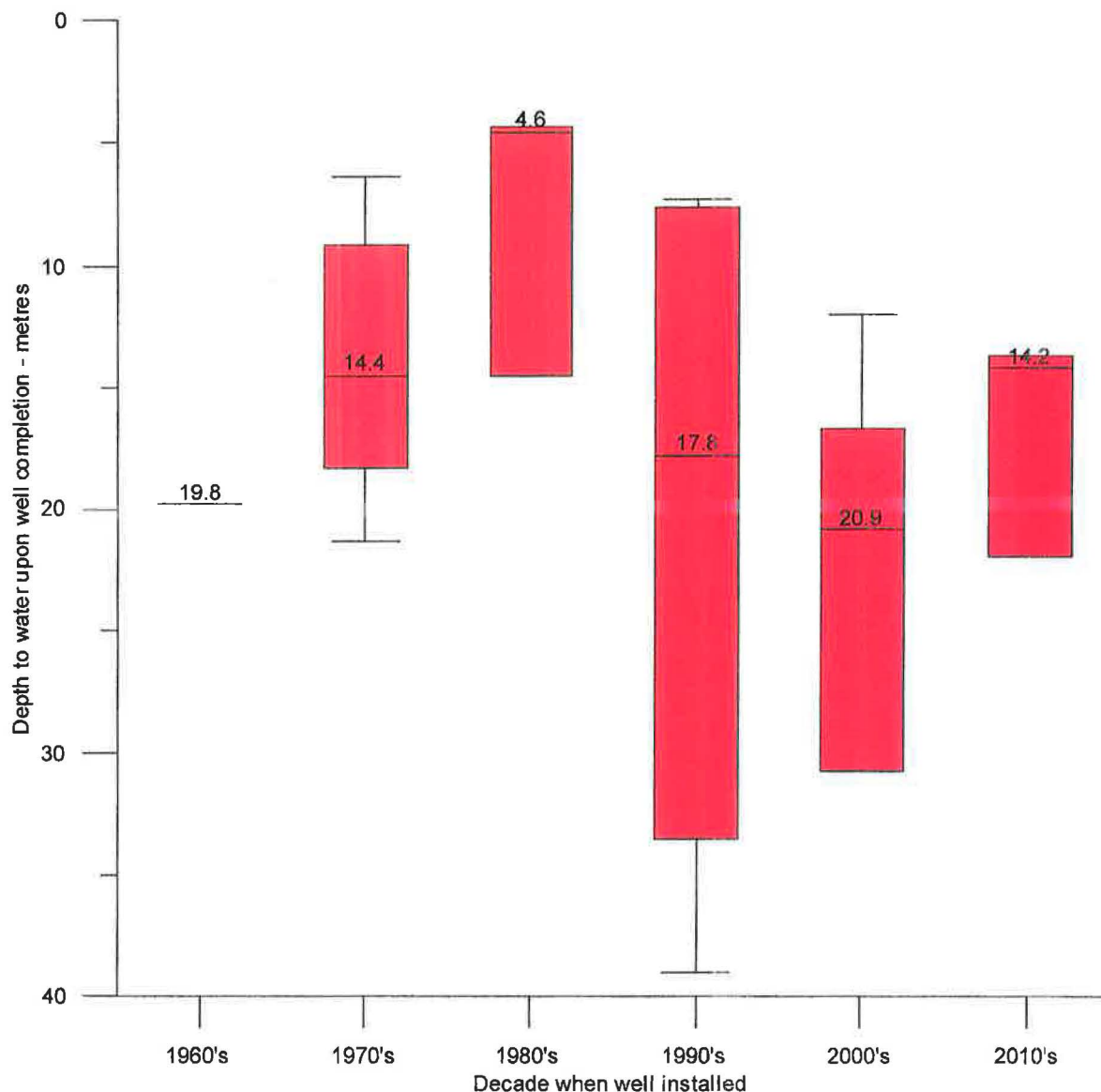
A higher capacity well would be needed for community supply wells that supply several commercial lots or sites that need high volumes of water (such as greenhouses or car washes). Such wells may be present in the area but there is a risk that numerous wells may have to be drilled before a suitable well is found.

[6.0] Changes in Water Levels Versus time

Water level data from wells was collected from the AEP water well database to illustrate temporal trends in water levels and to determine if a declining water level trend is apparent. Wells within 3.2 km radius of the site that had recorded water levels and completion depth were utilized in the analysis. Wells completed over a range of 30 – 55 m were selected to show aquifers not affected by recent precipitation (or lack there of) were selected.

A whisker plot showing hydraulic head (depth of well – static water level) vs decade of installation.

Figure 4: Whisker Plot Initial Hydraulic Heads versus Decade



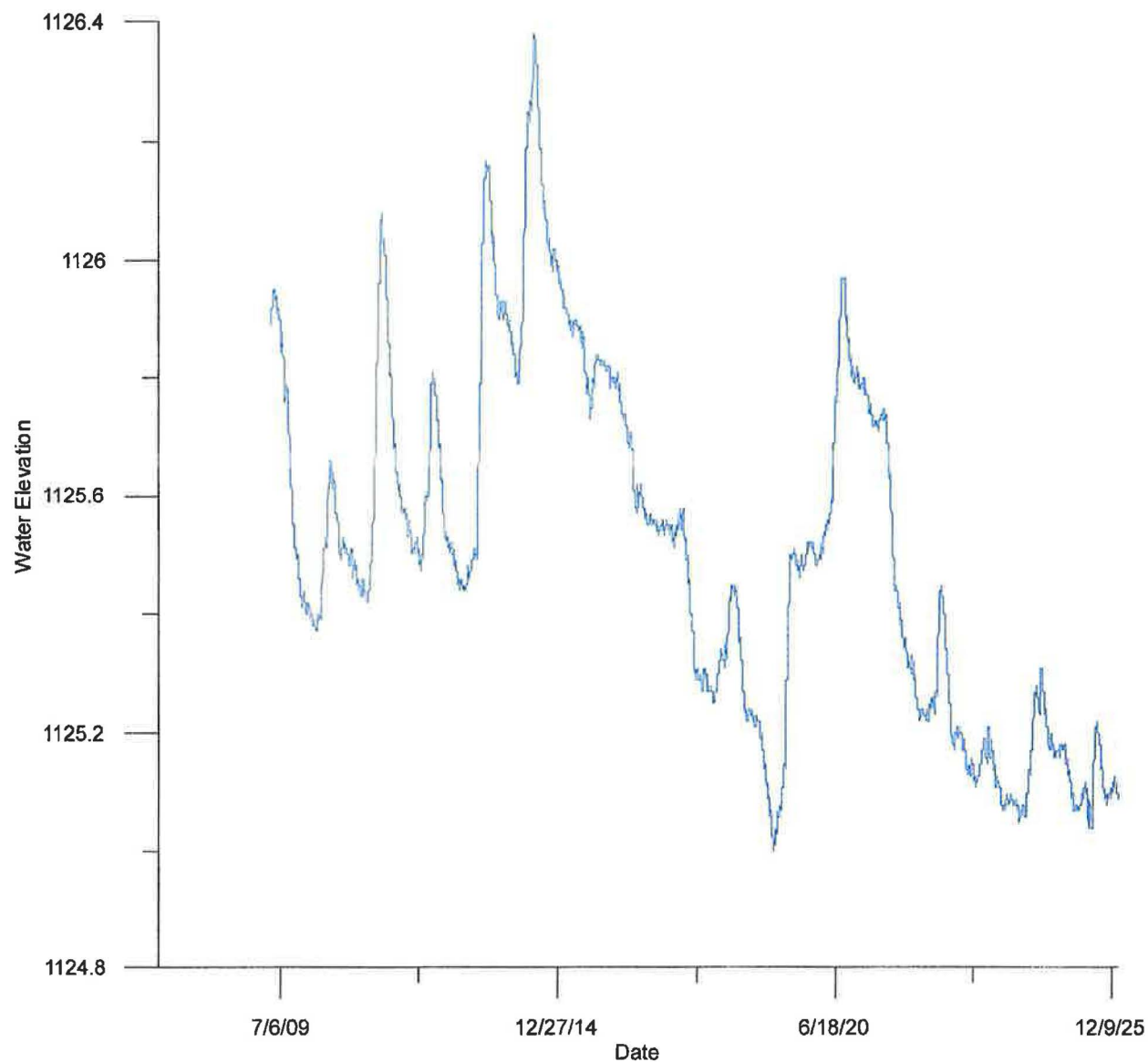
Except for the 1980's where the water levels were much shallower (the value could be due to the paucity of data) the water levels were generally in the 14 – 20 m depth range. Recent values are on the shallower side of this range, and no indications of aquifer dewatering are present.

Water level data is also available from the Alberta Groundwater Observation Well Network (GOWN). Data from a nearby observation well in 4 – 20 – 28- 1W5 is available. This well



(Well ID 1546097) is completed over an interval of 20 – 30.5 m, or slightly shallower than typical wells in the area. A graph showing water levels from 2006 to the present is as follows:

Figure 5: GOWN Well 1546097 Water Levels



A slight downward trend of less than a meter since 2009 is shown. Deeper aquifers would show less drawdown and although no large scale aquifer dewatering is occurring, obtaining water from deeper zones would be preferable.

[7.0] Water Quality

A search of the AEP water well database for water chemistry information in the area was done to illustrate the nature of groundwater quality in the area. Three wells in the area were selected, including one from a baseline water well test to give a more recent analysis. The water analysis reports are attached in Appendix D and a summary of the results, with a comparison to drinking water standards is as follows:

Table 3: Neighboring Water Well Chemistry Analysis

Parameter	Well ID 242819	Well ID 391267	Well ID 291609	Drinking Water Standards
Distance from Subject Site (m)	~1000	~1500	~3000	
Date Sampled	1978-11-23	1972-06-27	2011-10-25	
Well Depth (ft)	90	190	154	
Lab pH	8.2	8.1	6.7	7.0 – 10.5
Lab EC	1692	1810	2651	
Total Alkalinity	378	540	424	
Calcium	210	10	2	
Magnesium	82	101	1.4	
Sodium	89	-	582	200 (AO)
Potassium	3.7	-	3.6	
Chloride	11	4.0	63	250 (AO)
Nitrate	8	0.09	275	10 (MAC)
Sulfate	630	435	386	500 (AO)
Fluoride	0.11	1.52	0.55	1.5 (MAC)
Iron	0.09	0.1	< 0.09	0.3 (AO)
Bicarbonate	461	-	434	
TDS	1288	1421	1643	500 (AO)

All results in mg/L (ppm) except pH in pH units, electrical conductivity in $\mu\text{S}/\text{cm}$.

The groundwater in the area represents a calcium-sodium sulfate type with a moderate to high concentration of dissolved solids at ~1500 mg/L. Aesthetic objectives (AO) for Total Dissolved Solids (TDS) and sulfate are exceeded affecting the overall taste of the water. It is likely that site owners would prefer to treat the water either with reverse osmosis or distillation units to make the water acceptable as a drinking source.

Nitrates are very high in Well 291609 which indicates contamination from surface sources. This well site is of sufficient distance from the subject site such that aquifer contamination should not be a factor. The source of nitrate is likely poor well completion methods or improper drainage in the immediate vicinity of Well 291609.



Water samples from future supply wells be collected and tested prior to using the water from the wells for human consumption and analyzed for routine dissolved constituents and bacterial compounds.

References

- Alberta Environment and Parks. 2020c. Alberta Water Well Information Database. Available: <http://groundwater.alberta.ca/WaterWells/d/>
- Grasby, S. E., Chen, Z., Hamblin, A. P., Wozniak, P. R., & Sweet, A. R. (2008). Regional characterization of the Paskapoo bedrock aquifer system, southern Alberta Geological Survey of Canada Contribution 2008-0479. Canadian Journal of Earth Sciences, 45(12), 1501-1516.
- Health Canada - Guidelines for Canadian drinking water quality summary table "Federal-Provincial-Territorial Committee on Drinking Water of the Federal-Provincial-Territorial Committee on Health and the Environment September 2020"
- Prior, G. J., Hathway, B., Glombick, P. M., Pana, D. I., Banks, C. J., Hay, D. C., ... & Weiss, J. A. (2013). Bedrock geology of Alberta. Alberta Geological Survey, Map, 600, 2013-0813.



APPENDIX A – Subdivision Boundaries



APPENDIX B – Water Well Drilling Reports and Pump Test Analysis



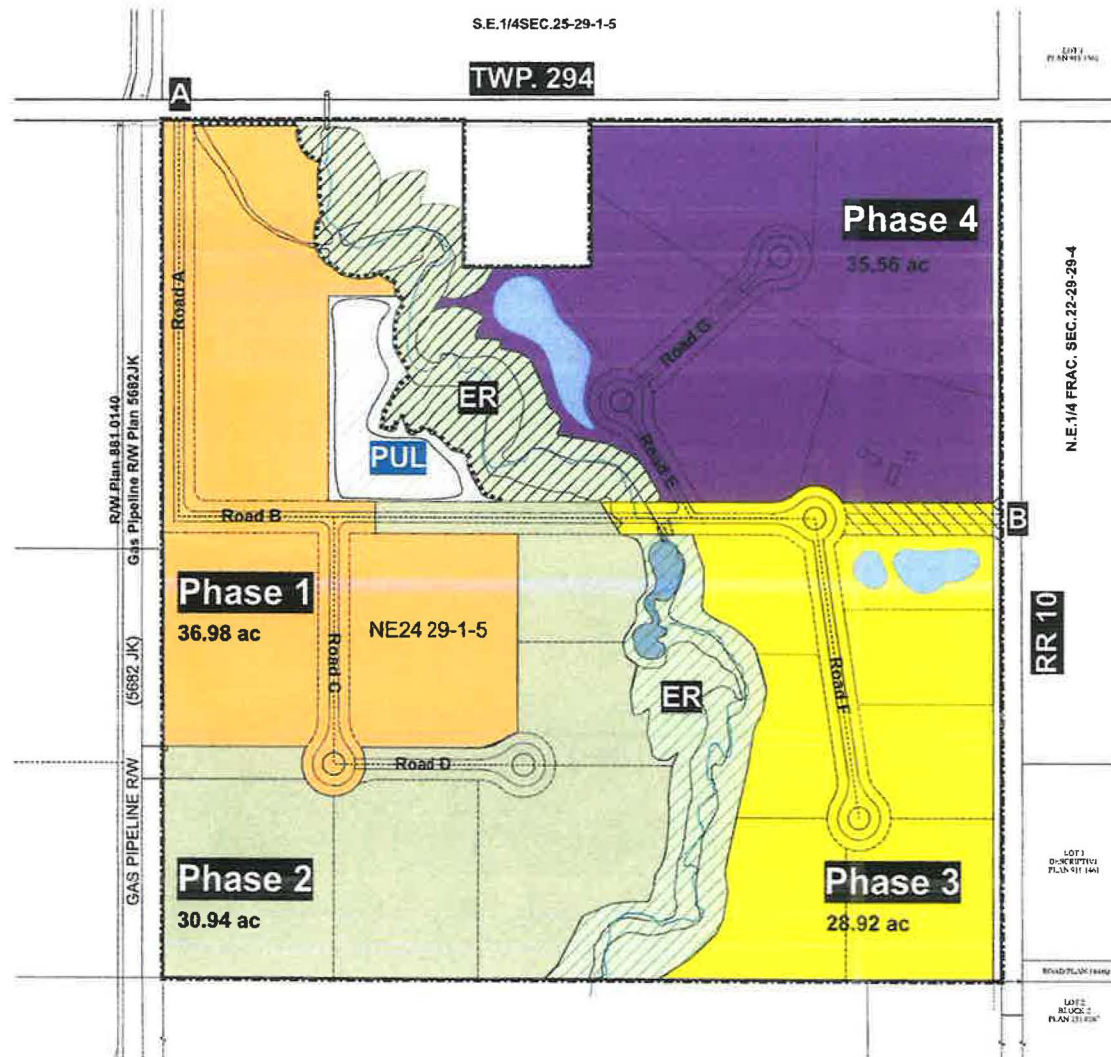
APPENDIX C – Alberta Water Well Reconnaissance Report



APPENDIX D – Alberta Water Well Database Chemistry Reports



APPENDIX A – Subdivision Boundaries



Appin Phase Area Analysis Plan

Notes

	Phase 1 Area	36.98 ac
	Phase 2 Area	30.94 ac
	Phase 3 Area	28.92 ac
	Phase 4 Area	35.56 ac

Note: Lot lines and phases are conceptual and subject to change.



10

Figure



APPENDIX B – Water Well Drilling Reports and Pump Test Analysis



Water Well Drilling Report

View in Imperial Export to Excel

GIC Well ID 391371
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 1980/09/03

GOWN ID

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 Metric	
Owner Name		Address		Town		Province		Country		Postal Code	
OBERLE, LYNN		RR2, CARSTAIRS									
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	NE	36	29	1	5						
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
_____ m from					Latitude 51.529234 Longitude -114.007646					Elevation 1038.76 m	
_____ m from					How Location Obtained					How Elevation Obtained	
					Map					Estimated	

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

Formation Log			Measurement in Metric
Depth from ground level (m)	Water Bearing	Lithology Description	
4.88		Brown Till	
6.40		Gravelly Sand	
9.14		Brown Sandy Till	
14.63		Gray Sand & Till	
17.98		Shale	
18.90		Hard Sandstone	
21.03		Bluish Green Shale	
22.56		Black Soft Sandstone	
23.47		Shale	
24.38		Green Medium Grained Sandstone	
24.99		Shale	
25.60		Sandstone	
27.43		Shale	

Yield Test Summary			Measurement in Metric
Recommended Pump Rate 0.00 L/min			
Test Date	Water Removal Rate (L/min)	Static Water Level (m)	
1979/07/04	45.46	14.02	
1979/07/06	37.87	14.02	

Well Completion		Measurement in Metric
Total Depth Drilled	Finished Well Depth	Start Date
27.43 m		1979/07/04
		End Date
		1979/07/04

Borehole			
Diameter (cm)	From (m)	To (m)	
0.00	0.00	27.43	

Surface Casing (if applicable)		Well Casing/Liner	
Steel		Steel	
Size OD :	14.12 cm	Size OD :	11.43 cm
Wall Thickness :	0.478 cm	Wall Thickness :	0.000 cm
Bottom at :	19.20 m	Top at :	0.00 m
		Bottom at :	27.43 m

Perforations				
From (m)	To (m)	Diameter or Slot Width (cm)	Slot Length (cm)	Hole or Slot Interval (cm)
18.29	27.43	0.318		15.24
Perforated by Torch				

Annular Seal		Driven	
Placed from	0.00 m to	19.20 m	
Amount			
Other Seals			
Type	At (m)		

Screen Type			
Size OD :	0.00 cm		
From (m)	To (m)	Slot Size (cm)	
Attachment			
Top Fittings	Bottom Fittings		

Pack			
Type	Grain Size		
Amount			

Contractor Certification	
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
DOERING DRILLING LTD.	



Water Well Drilling Report

View in Imperial **Export to Excel**

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GoA Well Tag No.
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Owner Name		Address			Town		Province		Country	Postal Code
OBERLE, LYNN		RR2, CARSTAIRS								
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description	
	NE	36	29	1	5					
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)			Elevation		
_____ m from					Latitude 51.529234 Longitude -114.007646			1038.76 m		
_____ m from					How Location Obtained			How Elevation Obtained		
					Map			Estimated		

Yield Test				Taken From Ground Level	Measurement in Metric
				Depth to water level	
Test Date	Start Time	Static Water Level		Pumping (m)	Recovery (m)
1979/07/04	12:00 AM	14.02 m			
Elapsed Time					
Minutes:Sec					
Method of Water Removal					
Type Bailer					
Removal Rate 45.46 L/min					
Depth Withdrawn From 14.33 m					
If water removal period was < 2 hours, explain why					

Yield Test				Taken From Ground Level	Measurement in Metric
				Depth to water level	
Test Date	Start Time	Static Water Level		Pumping (m)	Recovery (m)
1979/07/06	12:00 AM	14.02 m			
Elapsed Time					
Minutes:Sec					
Method of Water Removal					
Type Unknown					
Removal Rate 37.87 L/min					
Depth Withdrawn From 0.00 m					
If water removal period was < 2 hours, explain why					
				1.30	2.27
				1.51	2.08
				1.52	2.06
				1.54	1.97
				1.55	1.91
				1.56	1.89
				1.57	1.87
				1.58	1.86
				1.59	1.85
				1.60	1.85
				1.60	1.84
				1.61	1.84
				1.62	1.82
				1.64	1.81
				1.66	1.79
				1.68	1.77
				1.69	
				1.71	
				1.73	
				1.74	
				1.75	
				1.77	
				1.78	
				1.80	
				1.82	
				1.84	
				1.86	
				1.88	
				1.89	
				1.91	
				1.92	
				1.93	
				1.97	
				2.00	
				2.03	
				2.05	
				2.07	
				2.19	
				2.27	

Contractor Certification	
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
DOERING DRILLING LTD.	



Water Well Drilling Report

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OBERLE, LYNN		RR2, CARSTAIRS										
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		NE	36	29	1	5						
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)							
_____ m from					Latitude 51.529234 Longitude -114.007646					Elevation 1038.76 m		
_____ m from					How Location Obtained					How Elevation Obtained		
					Map					Estimated		
Additional Information										Measurement in Metric		
Distance From Top of Casing to Ground Level _____ cm												
Is Artesian Flow _____										Is Flow Control Installed _____		
Rate _____ L/min										Describe _____		
Recommended Pump Rate _____ 0.00 L/min										Pump Installed _____		
Recommended Pump Intake Depth (From TOC) _____ 0.00 m										Depth _____ m		
										Type _____		
										Make _____		
										H.P. _____		
										Model (Output Rating) _____		
Did you Encounter Saline Water (>4000 ppm TDS) _____										Depth _____ m		
Well Disinfected Upon Completion _____												
Gas _____										Depth _____ m		
Geophysical Log Taken _____												
Remedial Action Taken _____										Submitted to ESRD _____		
										Sample Collected for Potability _____		
										Submitted to ESRD <u>Yes</u>		
Additional Comments on Well _____												

Contractor Certification

Name of Journeyman responsible for drilling/construction of well
UNKNOWN NA DRILLER

Company Name
DOERING DRILLING LTD.

Certification No

1

Copy of Well report provided to owner Date approval holder signed



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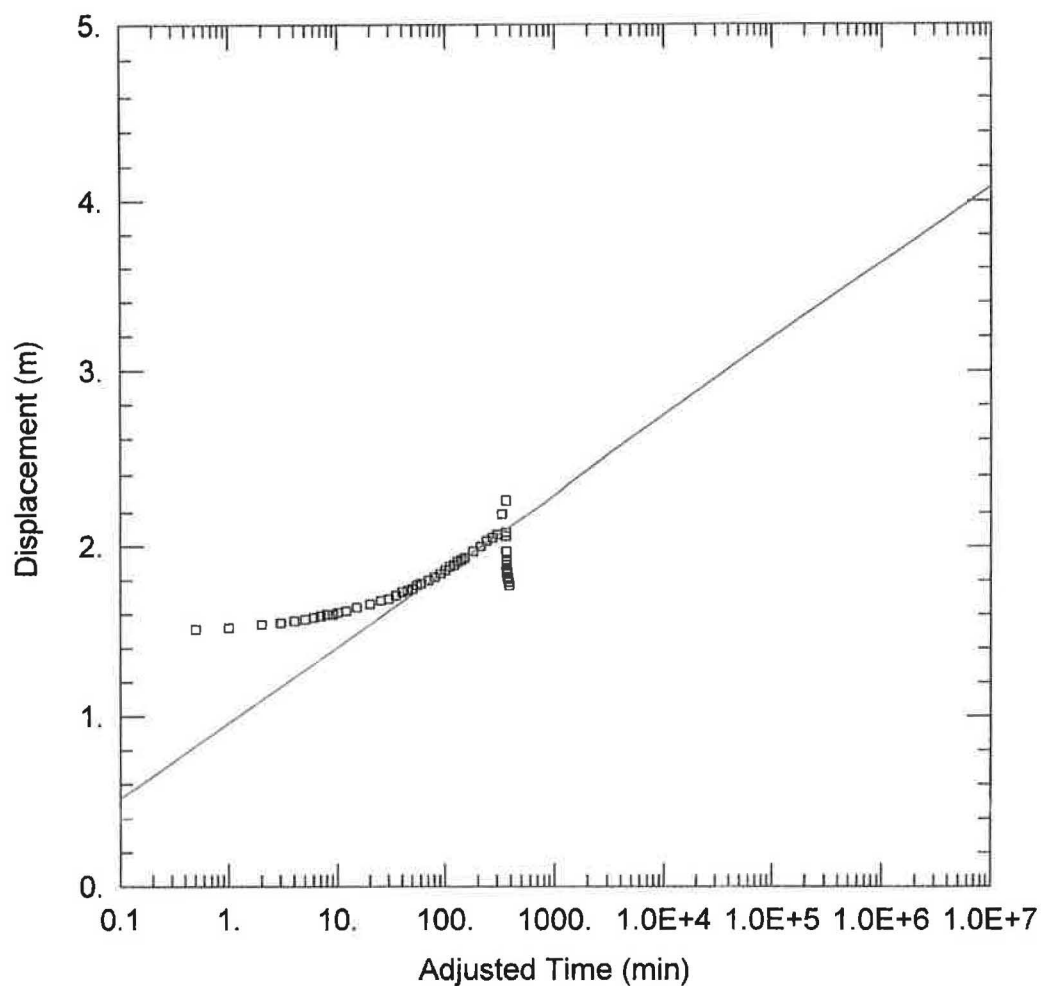
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Well Identification and Location										Measurement in Metric
Owner Name	Address				Town	Province	Country	Postal Code		
OBERLE, LYNN	RR2, CARSTAIRS									
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description	
	NE	36	29	1	5					
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					
_____ m from					Latitude 51.529234		Longitude -114.007646		Elevation 1038.76 m	
_____ m from					How Location Obtained		How Elevation Obtained			
					Map		Estimated			

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

Contractor Certification	
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
DOERING DRILLING LTD.	



WELL TEST ANALYSIS

AQUIFER DATA

Saturated Thickness: 24.3 m

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Pumping Wells

Observation Wells

Well Name	X (m)	Y (m)
391371	0	0

Well Name	X (m)	Y (m)
□ 391371	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 22.4 m²/day

S = 0.05052



Water Well Drilling Report

View in Imperial Export to Excel

GIC Well ID 2097536
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 2016/01/28

GOWN ID

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 Metric	
Owner Name	Address				Town		Province	Country	Postal Code		
FAIR, ROBIN	BOX 8, SITE 7, RR 1				CARSTAIRS		ALBERTA	CANADA	TOM 0N0		
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
16	22	29	29	4							
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
m from					Latitude 51.503315 Longitude -113.991781					Elevation 997.31 m	
m from					How Location Obtained					How Elevation Obtained	
					Phone					Differential corrected handheld GPS 5-10m	

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

Formation Log			Measurement in Metric	Yield Test Summary			Measurement in Metric		
Depth from ground level (m)	Water Bearing	Lithology Description		Recommended Pump Rate	22.73 L/min				
0.61		Brown Loamy Till		Test Date	Water Removal Rate (L/min)	Static Water Level (m)			
8.84		Light Brown Sandy Clay		2016/01/15	9.09	4.33			
10.36		Brown Crumbly Sandstone		Well Completion				Measurement in Metric	
15.85		Brown Sticky Clay		Total Depth Drilled	Finished Well Depth	Start Date	End Date		
21.64		Gray Hard Shale		85.34 m	85.34 m	2015/12/06	2016/01/15		
23.77		Dark Gray Tight Sandstone		Borehole					
36.88	Yes	Gray Sticky Shale		Diameter (cm)	From (m)	To (m)			
38.40		Dark Gray Tight Sandstone		25.40	0.00	6.10			
49.68		Gray Sticky Shale		15.24	6.10	85.34			
51.82		Dark Gray Tight Sandstone		Surface Casing (if applicable)					Well Casing/Liner
61.26		Gray Sticky Shale		Steel	Plastic				
62.18		Dark Gray Tight Sandstone		Size OD :	16.83 cm	Size OD :	11.43 cm		
72.24		Gray Brittle Shale		Wall Thickness :	0.556 cm	Wall Thickness :	0.630 cm		
73.76		Dark Gray Tight Sandstone		Bottom at :	17.37 m	Top at :	12.19 m		
85.34		Gray Hard Shale				Bottom at :	85.34 m		
				Perforations					
				From (m)	To (m)	Diameter or Slot Width (cm)	Slot Length (cm)	Hole or Slot Interval (cm)	
				73.15	79.25	0.318	12.70	60.96	
				Perforated by Saw					
				Annular Seal Bentonite Chips/Tablets					
				Placed from	0.00 m	to	6.10 m		
				Amount	5.00 Bags				
				Other Seals					
				Type	At (m)				
				Drive Shoe	17.37				
				Screen Type					
				Size OD :	cm				
				From (m)	To (m)	Slot Size (cm)			
				Attachment					
				Top Fittings	Bottom Fittings				
				Pack					
				Type	Grain Size				
				Amount					

Contractor Certification		Certification No
Name of Journeyman responsible for drilling/construction of well		96360A
CHRIS BARLING		
Company Name		Copy of Well report provided to owner
WILD WEST DRILLING INC.		Date approval holder signed
		2016/01/28

Water Well Drilling Report

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GIC Well ID	2097536
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GoA Well Tag No.

Drilling Company Well ID

Date Report Received 2016/01/28

GOWN ID

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Well Identification and Location										Measurement in Metric	
Owner Name	Address					Town	Province	Country	Postal Code		
FAIR, ROBIN	BOX 8, SITE 7, RR 1					CARSTAIRS	ALBERTA	CANADA	T0M 0N0		
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	16	22	29	29	4						
Measured from Boundary of						GPS Coordinates in Decimal Degrees (NAD 83)					
_____ m from _____						Latitude <u>51.503315</u> Longitude <u>-113.991781</u>			Elevation <u>997.31 m</u>		
_____ m from _____						How Location Obtained			How Elevation Obtained		
						Phone			Differential corrected handheld GPS 5-10m		

Additional Information		Measurement in Metric	
Distance From Top of Casing to Ground Level	86.36 cm	Is Flow Control Installed	
Is Artesian Flow		Describe	
Rate	L/min		
Recommended Pump Rate	22.73 L/min	Pump Installed	Depth m
Recommended Pump Intake Depth (From TOC)	76.20 m	Type	Make H.P.
			Model (Output Rating)
Did you Encounter Saline Water (>4000 ppm TDS)	Depth m	Well Disinfected Upon Completion	Yes
Gas	Depth m	Geophysical Log Taken	
Remedial Action Taken		Submitted to ESRD	
Additional Comments on Well	Sample Collected for Potability	Submitted to ESRD	

Yield Test			Taken From Top of Casing		Measurement in Metric
Test Date	Start Time	Static Water Level	Pumping (m)	Depth to water level	Recovery (m)
2016/01/15	11:00 AM	4.33 m			
Method of Water Removal					
Type	Pump				
Removal Rate	9.09 L/min				
Depth Withdrawn From	76.20 m				
If water removal period was < 2 hours, explain why					
			4.33	0:00	44.40
			5.24	1:00	43.85
			6.12	2:00	43.31
			6.98	3:00	42.77
			7.82	4:00	42.27
			8.63	5:00	41.75
			9.44	6:00	41.25
			10.20	7:00	40.75
			10.97	8:00	40.27
			11.69	9:00	39.79
			12.41	10:00	39.32
			13.82	12:00	38.42
			15.19	14:00	37.54
			16.51	16:00	36.69
			17.78	18:00	35.87
			19.02	20:00	35.09
			21.99	25:00	33.86
			24.79	30:00	32.91
			27.39	35:00	31.98
			31.17	40:00	31.10
			34.23	50:00	29.80
			36.50	60:00	28.58
			39.58	75:00	25.16
			41.87	90:00	21.88
			43.41	105:00	19.03
			44.40	120:00	16.29
Pump Test Attachments					
AquiferTest.pdf					

Water Diverted for Drilling		
Water Source	Amount Taken	Diversion Date & Time
Contractor Certification Name of Journeyman responsible for drilling/construction of well CHRIS BARLING Company Name WILD WEST DRILLING INC.		
Certification No 96360A Copy of Well report provided to owner Yes		Date approval holder signed 2016/01/28



Water Well Drilling Report

View in Imperial **Export to Excel**

GIC Well ID 2097536
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 2016/01/28

GOWN ID

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 Metric	
Owner Name		Address			Town		Province		Country	Postal Code	
FAIR, ROBIN		BOX 8, SITE 7, RR 1			CARSTAIRS		ALBERTA		CANADA	T0M 0N0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	16	22	29	29	4						
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
_____ m from					Latitude 51.503315 Longitude -113.991781					Elevation 997.31 m	
_____ m from					How Location Obtained					How Elevation Obtained	
					Phone					Differential corrected handheld GPS 5-10m	

L

Contractor Certification

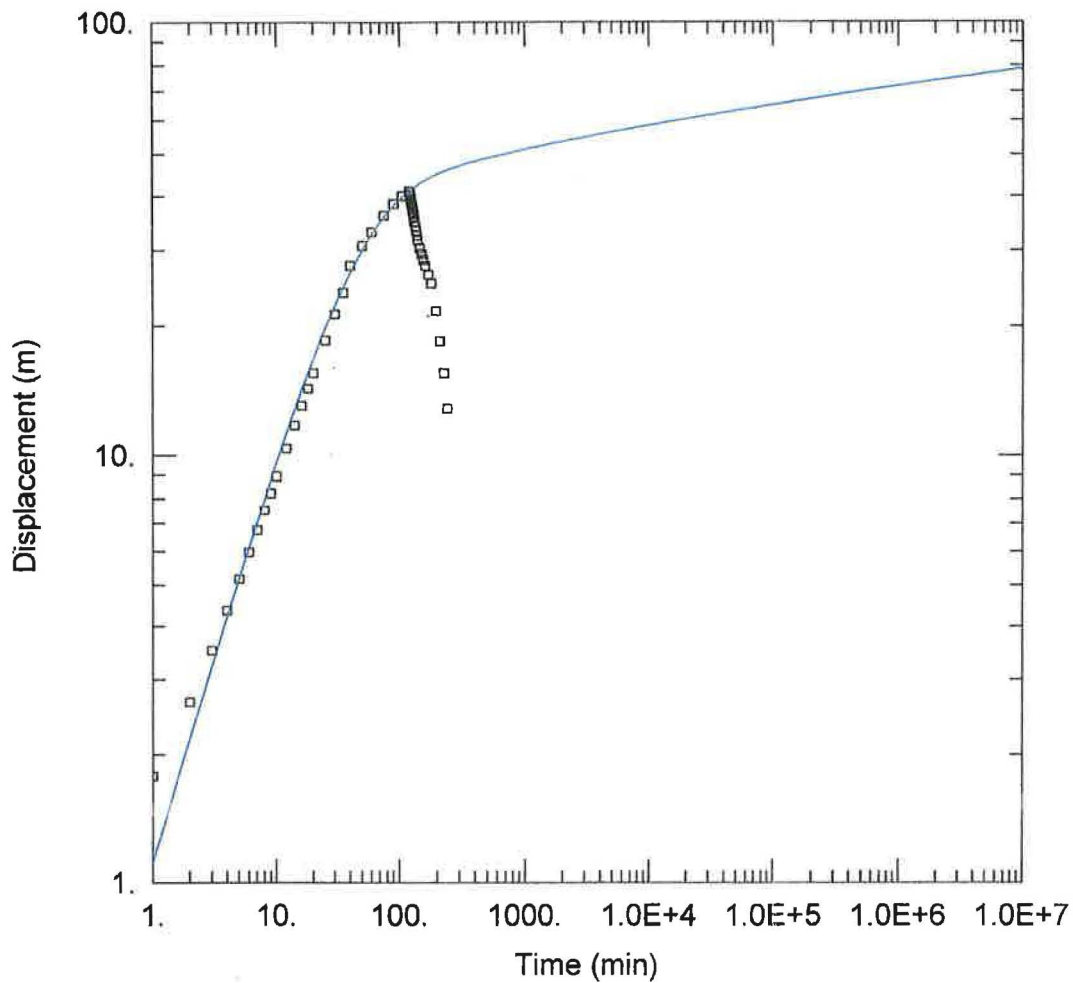
Name of Journeyman responsible for drilling/construction of well
CHRIS BARLING

Company Name
WILD WEST DRILLING INC.

Certification No
98360A

Copy of Well report provided to owner
Yes

Date approval holder signed
2016/01/28



WELL TEST ANALYSIS

AQUIFER DATA

Saturated Thickness: 70.3 m

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
2097536	0	0

Observation Wells

Well Name	X (m)	Y (m)
□ 2097536	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Papadopoulos-Cooper

$T = 0.3526 \text{ m}^2/\text{day}$

$S = 2.574\text{E-}6$

$r(w) = 0.075 \text{ m}$

$r(c) = 0.0505 \text{ m}$



Water Well Drilling Report

View in Imperial **Export to Excel**

GIC Well ID 2079105
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 2018/06/28

GOWN ID

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 Metric
Owner Name 861699 ALBERTA LTD		Address P.O. BOX 429		Town CROSSFIELD		Province ALBERTA		Country CANADA	Postal Code T0M 0S0	
Location	1/4 or LSD 7	SEC 22	TWP 29	RGE 29	W of MER 4	Lot	Block	Plan	Additional Description	
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					
_____ m from					Latitude 51.495584 Longitude -113.996874					Elevation 315.16 m
_____ m from					How Location Obtained					How Elevation Obtained
					Phone					Other

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

Formation Log			Measurement in Metric
Depth from ground level (m)	Water Bearing	Lithology Description	
7.62		Brown Sandy Clay	
9.75		Gray Hard Sandstone	
18.29		Gray Firm Shale	
24.38		Gray Hard Shale	
25.91		Gray Medium Grained Sandstone	
26.21		Gray Hard Shale	
27.43		Gray Fine Grained Sandstone	
51.82		Gray Firm Shale	
53.34		Gray Medium Grained Sandstone	
53.95		Gray Hard Shale	
54.86		Gray Moist Shale	
62.48		Gray Medium Grained Sandstone	
65.84		Gray Hard Shale	
67.06	Yes	Gray Moist Sandstone	
71.02		Gray Hard Shale	

Yield Test Summary			Measurement in Metric
Recommended Pump Rate	13.64 L/min		
Test Date	Water Removal Rate (L/min)	Static Water Level (m)	
2018/06/21	22.73	28.96	

Well Completion				Measurement in Metric
Total Depth Drilled	Finished Well Depth	Start Date	End Date	
71.02 m	71.02 m	2018/06/20	2018/06/21	

Borehole		
Diameter (cm)	From (m)	To (m)
20.32	0.00	9.75
13.97	9.75	71.02

Surface Casing (if applicable)		Well Casing/Liner	
Steel		Plastic	
Size OD :	16.83 cm	Size OD :	12.55 cm
Wall Thickness :	0.478 cm	Wall Thickness :	0.610 cm
Bottom at :	9.75 m	Top at :	7.01 m
		Bottom at :	71.02 m

Perforations				
From (m)	To (m)	Diameter or Slot Width (cm)	Slot Length (cm)	Hole or Slot Interval (cm)
45.72	68.58	0.318	30.48	91.44

Perforated by Saw

Annular Seal	
Bentonite Chips/Tablets	
Placed from	0.00 m to 9.75 m
Amount	7.00 Bags

Other Seals

Type	At (m)
Drive Shoe	9.75
Shale Trap	45.72

Screen Type		
Size OD :	cm	
From (m)	To (m)	Slot Size (cm)
Attachment		
Top Fittings		Bottom Fittings

Pack	
Type	Grain Size
Amount	

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well TONY MYRAM	Certification No 202242A
Company Name MYRAM DRILLING	Copy of Well report provided to owner Yes
	Date approval holder signed 2018/06/27



Water Well Drilling Report

[View in Imperial](#) [Export to Excel](#)

GIC Well ID 2079105
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 2018/06/28

GOWN ID

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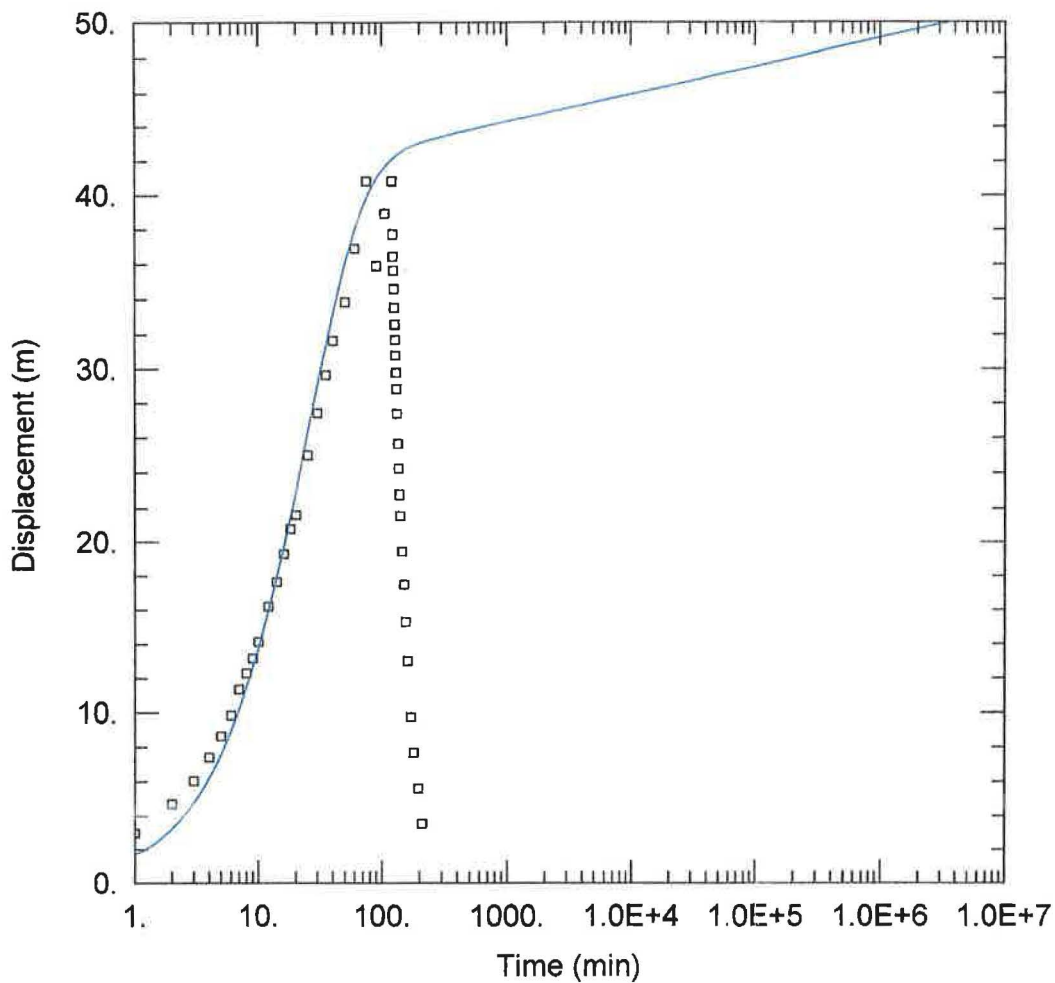
Well Identification and Location										Measurement in Metric
Owner Name		Address		Town		Province		Country	Postal Code	
861699 ALBERTA LTD		P.O. BOX 429		CROSSFIELD		ALBERTA		CANADA	T0M 0S0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description	
	7	22	29	29	4					
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)					
_____ m from					Latitude 51.495584 Longitude -113.996874					Elevation 315.16 m
_____ m from					How Location Obtained					How Elevation Obtained
					Phone					Other

Additional Information		Measurement in Metric
Distance From Top of Casing to Ground Level 60.96 cm		
Is Artesian Flow	Is Flow Control Installed	
Rate _____ L/min	Describe _____	
Recommended Pump Rate 13.64 L/min	Pump Installed _____ Depth _____ m	
Recommended Pump Intake Depth (From TOC) 69.49 m	Type _____ Make _____ H.P. _____	
	Model (Output Rating) _____	
Did you Encounter Saline Water (>4000 ppm TDS) _____	Depth _____ m	Well Disinfected Upon Completion Yes
Gas _____	Depth _____ m	Geophysical Log Taken _____
Remedial Action Taken _____		Submitted to ESRD _____
Additional Comments on Well		Sample Collected for Potability _____ Submitted to ESRD _____
PUMP TEST RATE REDUCED TO 4 IGPM @ 75 MINUTES PUMPING.		

Yield Test		Taken From Top of Casing	Measurement in Metric
Test Date	Start Time	Depth to water level	
2018/06/21	11:00 AM		
Static Water Level		Pumping (m)	Elapsed Time
28.96 m			Minutes:Sec
Recovery (m)			
		29.86	0:00
		31.96	1:00
		33.65	2:00
		35.00	3:00
		36.38	4:00
		37.59	5:00
		38.80	6:00
		40.30	7:00
		41.24	8:00
		42.10	9:00
		43.08	10:00
		45.16	12:00
		46.60	14:00
		48.25	16:00
		49.73	18:00
		50.55	20:00
		53.94	25:00
		56.40	30:00
		58.60	35:00
		60.60	40:00
		62.80	50:00
		65.85	60:00
		69.76	75:00
		64.85	90:00
		67.89	105:00
		69.76	120:00

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

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well	Certification No
TONY MYRAM	202242A
Company Name	Copy of Well report provided to owner
MYRAM DRILLING	Yes
	Date approval holder signed
	2018/06/27



WELL TEST ANALYSIS

AQUIFER DATA

Saturated Thickness: 24.38 m

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
2079105	0	0

Observation Wells

Well Name	X (m)	Y (m)
□ 2079105	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Papadopoulos-Cooper

$T = 3.805 \text{ m}^2/\text{day}$

$S = 8.798\text{E-}26$

$r(w) = 0.07 \text{ m}$

$r(c) = 0.0655 \text{ m}$



Water Well Drilling Report

View in Imperial Export to Excel

GIC Well ID 1240281
GoA Well Tag No.
Drilling Company Well ID
Date Report Received

GOWN ID

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 Metric	
Owner Name		Address		Town		Province		Country		Postal Code	
HORSESHOE CONTRACTING		RR #2		BALZAC		AB		CA		T0M 0E0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
8		23	29	1	5	19	1	0612508	OFFICE		
Measured from Boundary of				GPS Coordinates in Decimal Degrees (NAD 83)				Elevation			
_____ m from				Latitude 51.495050 Longitude -114.028217				1055.22 m			
_____ m 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	Type of Work New Well
Proposed Well Use Domestic	

Formation Log			Measurement in Metric	
Depth from ground level (m)	Water Bearing	Lithology Description		
18.90		Brown Clay & Boulders		
20.73		Gray Shale		
22.25		Gray Fractured Sandstone		
22.86		Gray Shale		
$\text{Aquifer Thickness} = 22.25 - 20.73 = 1.5\text{m}$				

Yield Test Summary			Measurement in Metric	
Recommended Pump Rate	36.37 L/min			
Test Date	2008/07/27	Water Removal Rate (L/min)	36.37	Static Water Level (m)
				10.44

Well Completion			Measurement in Metric	
Total Depth Drilled	22.86 m	Finished Well Depth	2008/07/26	End Date
				2008/07/26
Borehole				
Diameter (cm)	13.34	From (m)	0.00	To (m)
				22.86
Surface Casing (if applicable)		Well Casing/Liner		
Steel		Plastic		
Size OD :	14.12 cm	Size OD :	11.43 cm	
Wall Thickness :	0.478 cm	Wall Thickness :	0.602 cm	
Bottom at :	6.10 m	Top at :	4.57 m	
		Bottom at :	22.86 m	
Perforations relative to ground				
From (m)	To (m)	Diameter or Slot Width (cm)	Slot Length (cm)	Hole or Slot Interval (cm)
16.76	22.86	0.635		20.32
Perforated by Saw				
Annular Seal Driven & Bentonite				
Placed from		0.00 m	to	6.10 m
Amount				
Other Seals				
Type				At (m)
Bentonite Chips/Tabl				16.46
Screen Type Unknown				
Size OD :				
From (m)		To (m)	Slot Size (cm)	
Attachment Unknown				
Top Fittings		Packer	Bottom Fittings	Unknown
Pack				
Type		Unknown		Grain Size
Amount		Unknown		

Contractor Certification

Name of Journeyman responsible for drilling/construction of well
GREGG LEWIS
Company Name
DEN-ALTA DRILLING LTD.

Certification No
41140A

Copy of Well report provided to owner Date approval holder signed



Water Well Drilling Report

View in Imperial **Export to Excel**

GIC Well ID 1240281
GoA Well Tag No.
Drilling Company Well ID
Date Report Received

GOWN ID

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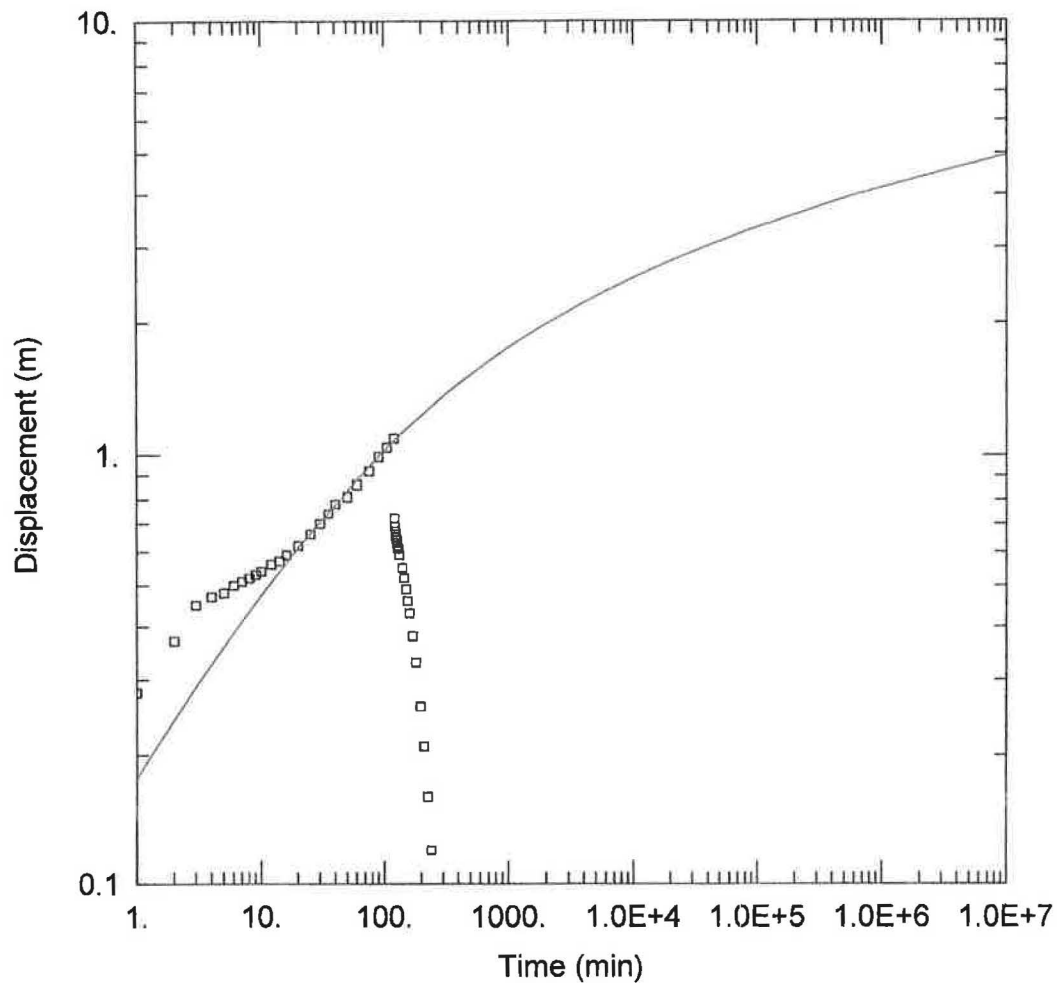
Well Identification and Location										Measurement in Metric	
Owner Name HORSESHOE CONTRACTING		Address RR #2		Town BALZAC		Province AB		Country CA	Postal Code T0M 0E0		
Location	1/4 or LSD 8	SEC 23	TWP 29	RGE 1	W of MER 5	Lot 19	Block 1	Plan 0612508	Additional Description OFFICE		
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
_____ m from					Latitude 51.495050 Longitude -114.028217					Elevation 1055.22 m	
_____ m from					How Location Obtained					How Elevation Obtained	
					Differential corrected handheld GPS 5-10m					Differential corrected handheld GPS 5-10m	

Additional Information		Measurement in Metric
Distance From Top of Casing to Ground Level 45.72 cm		
Is Artesian Flow	Is Flow Control Installed	
Rate _____ L/min	Describe _____	
Recommended Pump Rate 36.37 L/min	Pump Installed _____	Depth _____ m
Recommended Pump Intake Depth (From TOC) 21.34 m	Type _____	Make _____ H.P. _____
		Model (Output Rating) _____
Did you Encounter Saline Water (>4000 ppm TDS) _____	Depth _____ m	Well Disinfected Upon Completion _____
Gas _____	Depth _____ m	Geophysical Log Taken _____
Remedial Action Taken _____	Submitted to ESRD _____	
		Sample Collected for Potability _____ Submitted to ESRD _____
Additional Comments on Well _____		

Yield Test		Taken From Ground Level	Measurement in Metric		
		Depth to water level			
Test Date	Start Time	Static Water Level	Pumping (m)	Elapsed Time	Recovery (m)
2008/07/27	12:00 AM	10.44 m		Minutes:Sec	
Method of Water Removal			10.44	0:00	11.53
Type Pump			10.72	1:00	11.16
Removal Rate 36.37 L/min			10.81	2:00	11.13
Depth Withdrawn From 21.34 m			10.89	3:00	11.11
			10.91	4:00	11.09
			10.92	5:00	11.09
			10.94	6:00	11.08
If water removal period was < 2 hours, explain why			10.95	7:00	11.07
			10.96	8:00	11.06
			10.97	9:00	11.05
			10.98	10:00	11.05
			11.00	12:00	11.03
			11.01	14:00	
			11.03	16:00	
			11.06	20:00	10.99
			11.10	25:00	10.96
			11.14	30:00	10.93
			11.18	35:00	10.90
			11.22	40:00	10.87
			11.25	50:00	10.82
			11.30	60:00	10.77
			11.36	75:00	10.70
			11.43	90:00	10.65
			11.48	105:00	10.60
			11.53	120:00	10.56

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

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well GREGG LEWIS	Certification No 41140A
Company Name DEN-ALTA DRILLING LTD.	Copy of Well report provided to owner Date approval holder signed



WELL TEST ANALYSIS

AQUIFER DATA

Saturated Thickness: 1. m

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
1240281	0	0

Observation Wells

Well Name	X (m)	Y (m)
□ 1240281	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Papadopoulos-Cooper

$T = 11.98 \text{ m}^2/\text{day}$

$S = 33.4$

$r(w) = 0.0615 \text{ m}$

$r(c) = 0.0515 \text{ m}$



Water Well Drilling Report

View in Imperial Export to Excel

GIC Well ID 2079105
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 2018/06/28

GOWN ID

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Well Identification and Location										Measurement in Metric	
Owner Name		Address		Town		Province		Country		Postal Code	
861699 ALBERTA LTD		P.O. BOX 429		CROSSFIELD		ALBERTA		CANADA		T0M 0S0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	7	22	29	29	4						
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
_____ m from					Latitude 51.495584 Longitude -113.996874					Elevation 315.16 m	
_____ m from					How Location Obtained					How Elevation Obtained	
					Phone					Other	

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

Formation Log			Measurement in Metric	
Depth from ground level (m)	Water Bearing	Lithology Description		
7.62		Brown Sandy Clay		
9.75		Gray Hard Sandstone		
18.29		Gray Firm Shale		
24.38		Gray Hard Shale		
25.91		Gray Medium Grained Sandstone		
26.21		Gray Hard Shale		
27.43		Gray Fine Grained Sandstone		
51.82		Gray Firm Shale		
53.34		Gray Medium Grained Sandstone		
53.95		Gray Hard Shale		
54.86		Gray Moist Shale		
62.48		Gray Medium Grained Sandstone		
65.84		Gray Hard Shale		
67.06	Yes	Gray Moist Sandstone		
71.02		Gray Hard Shale		

Yield Test Summary			Measurement in Metric	
Recommended Pump Rate	13.64 L/min			
Test Date	Water Removal Rate (L/min)	Static Water Level (m)		
2018/06/21	22.73	28.96		

Well Completion			Measurement in Metric	
Total Depth Drilled	Finished Well Depth	Start Date	End Date	
71.02 m	71.02 m	2018/06/20	2018/06/21	
Borehole				
Diameter (cm)	From (m)	To (m)		
20.32	0.00	9.75		
13.97	9.75	71.02		
Surface Casing (if applicable)		Well Casing/Liner		
Steel	Plastic			
Size OD : 16.83 cm	Size OD : 12.55 cm			
Wall Thickness : 0.478 cm	Wall Thickness : 0.610 cm			
Bottom at : 9.75 m	Top at : 7.01 m			
	Bottom at : 71.02 m			
Porforations				
From (m)	To (m)	Diameter or Slot Width (cm)	Slot Length (cm)	Hole or Slot Interval (cm)
45.72	68.58	0.318	30.48	91.44
Perforated by Saw				
Annular Seal Bentonite Chips/Tablets				
Placed from	0.00 m	to	9.75 m	
Amount	7.00 Bags			
Other Seals				
Type			At (m)	
Drive Shoe			9.75	
Shale Trap			45.72	
Screen Type				
Size OD : _____ cm				
From (m)	To (m)	Slot Size (cm)		
Attachment _____				
Top Fittings _____	Bottom Fittings _____			
Pack				
Type _____	Grain Size _____			
Amount _____				

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well	Certification No
TONY MYRAM	202242A
Company Name	Copy of Well report provided to owner
MYRAM DRILLING	Yes
	Date approval holder signed
	2018/06/27

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.

[View in Imperial](#) [Export to Excel](#)

GIC Well ID 2079105

GoA Well Tag No.

Drilling Company Well ID

Date Report Received 2018/06/28

GOWN ID

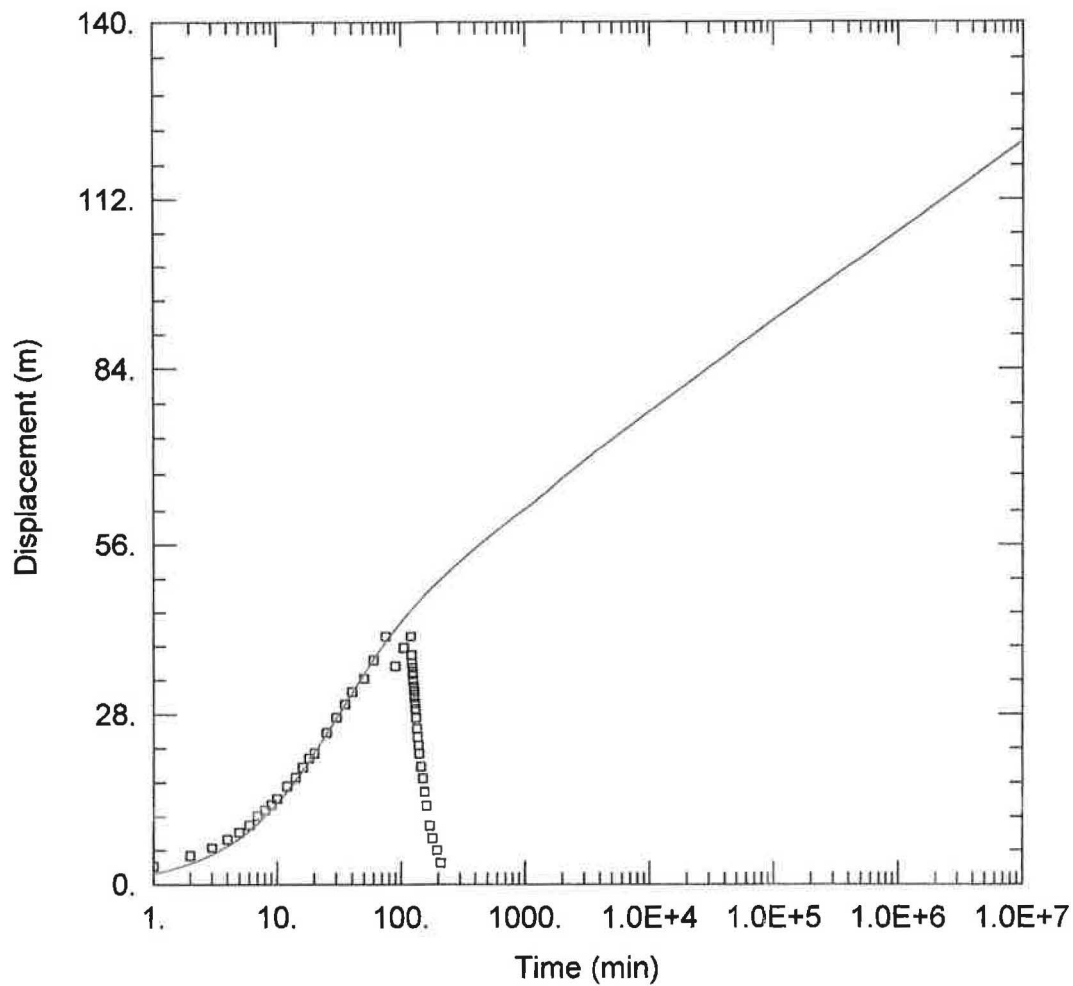
Well Identification and Location										Measurement in Metric	
Owner Name		Address			Town		Province		Country	Postal Code	
861699 ALBERTA LTD		P.O. BOX 429			CROSSFIELD		ALBERTA		CANADA	T0M 0S0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	7	22	29	29	4						
Measured from Boundary of						GPS Coordinates in Decimal Degrees (NAD 83)					
_____ m from _____						Latitude 51.495584		Longitude -113.996874		Elevation 315.16 m	
_____ m from _____						How Location Obtained				How Elevation Obtained	
						Phone				Other	

Additional Information		Measurement in Metric	
Distance From Top of Casing to Ground Level _____	60.96 cm	Is Flow Control Installed _____	
Is Artesian Flow _____		Describe _____	
Rate _____ L/min			
Recommended Pump Rate _____	13.64 L/min	Pump Installed _____	Depth _____ m
Recommended Pump Intake Depth (From TOC) _____	69.49 m	Type _____	Make _____ H.P. _____
			Model (Output Rating) _____
Did you Encounter Saline Water (>4000 ppm TDS) _____	Depth _____ m	Well Disinfected Upon Completion <u>Yes</u>	
Gas _____	Depth _____ m	Geophysical Log Taken _____	
		Submitted to ESRD _____	
Additional Comments on Well		Sample Collected for Potability _____	Submitted to ESRD _____

Yield Test			Taken From Top of Casing		Measurement in Metric
Test Date	Start Time	Static Water Level	Pumping (m)	Elapsed Time	Recovery (m)
2018/06/21	11:00 AM	28.96 m		Minutes:Sec	
<i>Method of Water Removal</i>			29.86	0:00	69.76
	Type	Pump	31.96	1:00	66.70
	Removal Rate	22.73 L/min	33.65	2:00	65.40
	Depth Withdrawn From	70.10 m	35.00	3:00	64.60
			36.38	4:00	63.56
			37.59	5:00	62.48
			38.80	6:00	61.50
			40.30	7:00	60.65
			41.24	8:00	59.75
			42.10	9:00	58.74
			43.08	10:00	57.80
			45.16	12:00	56.35
			46.60	14:00	54.60
			48.25	16:00	53.20
			49.73	18:00	51.78
			50.55	20:00	50.49
			53.94	25:00	48.40
			56.40	30:00	46.45
			58.60	35:00	44.25
			60.60	40:00	41.95
			62.80	50:00	38.70
			65.85	60:00	36.63
			69.76	75:00	34.57
			64.85	90:00	32.50
			67.89	105:00	
			69.76	120:00	

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

Contractor Certification	
<i>Name of Journeyman responsible for drilling/construction of well</i> TONY MYRAM	<i>Certification No</i> 202242A
<i>Company Name</i> MYRAM DRILLING	<i>Copy of Well report provided to owner</i> <i>Date approval holder signed</i> Yes 2018/06/27



NE-24 SUBDIVISION

AQUIFER DATA

Saturated Thickness: 5 m

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
2079105	0	0

Observation Wells

Well Name	X (m)	Y (m)
□ 2079105	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Papadopoulos-Cooper

$T = 0.4059 \text{ m}^2/\text{day}$

$S = 0.007811$

$r(w) = 0.07 \text{ m}$

$r(c) = 0.062 \text{ m}$



Water Well Drilling Report

View in Imperial Export to Excel

GIC Well ID 497741
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 2001/04/23

GOWN ID

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 Metric
Owner Name		Address		Town		Province		Country		Postal Code
PIETERS, GUS		2212 7 ST NE, CALGARY								T2E 4C8
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description	
	SE	25	29	1	5					
Measured from Boundary of				GPS Coordinates in Decimal Degrees (NAD 83)				Elevation		
m from				Latitude 51.507530 Longitude -114.007650				m		
m from				How Location Obtained				How Elevation Obtained		
				Map				Not Obtained		

Drilling Information		Type of Work
Method of Drilling		New Well
Combination		
Proposed Well Use		
Stock		

Formation Log			Measurement in Metric	Yield Test Summary			Measurement in Metric
Depth from ground level (m)	Water Bearing	Lithology Description		Recommended Pump Rate	45.46 L/min	Static Water Level (m)	
0.30		Black Topsoil		Test Date	1999/09/28	45.46	33.07
3.96		Clay & Rocks					
7.92		Sandy Clay & Gravel					
12.19		Soft Shale					
12.50		Hard Shale					
17.68		Soft Shale					
17.98		Hard Shale					
35.05		Soft Shale					
35.36		Hard Sandstone					
36.27		Soft Shale					
38.10		Hard Sandstone					
44.20	Yes	Water Bearing Shale & Sandstone					
				Well Completion			
				Total Depth Drilled	Finished Well Depth	Start Date	End Date
				44.20 m		1999/08/25	1999/08/30
				Borehole			
				Diameter (cm)	From (m)	To (m)	
				0.00	0.00	44.20	
				Surface Casing (if applicable)		Well Casing/Liner	
				Steel		Plastic	
				Size OD :	16.81 cm	Size OD :	12.55 cm
				Wall Thickness :	0.478 cm	Wall Thickness :	0.605 cm
				Bottom at :	35.36 m	Top at :	32.00 m
				Bottom at : 44.20 m			
				Perforations			
				From (m)	To (m)	Diameter or Slot Width (cm)	Slot Length (cm)
				36.58	42.67	0.157	Hole or Slot Interval (cm)
				17.78			
				Perforated by Saw			
				Annular Seal Driven			
				Placed from 0.00 m to 35.36 m			
				Amount			
				Other Seals			
				Type		At (m)	
				Screen Type			
				Size OD : 0.00 cm			
				From (m)		To (m)	Slot Size (cm)
				Attachment			
				Top Fittings		Bottom Fittings	
				Pack			
				Type		Grain Size	
				Amount			

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



Water Well Drilling Report

View in Imperial Export to Excel

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.

GOWN ID

GIC Well ID 497741
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 2001/04/23

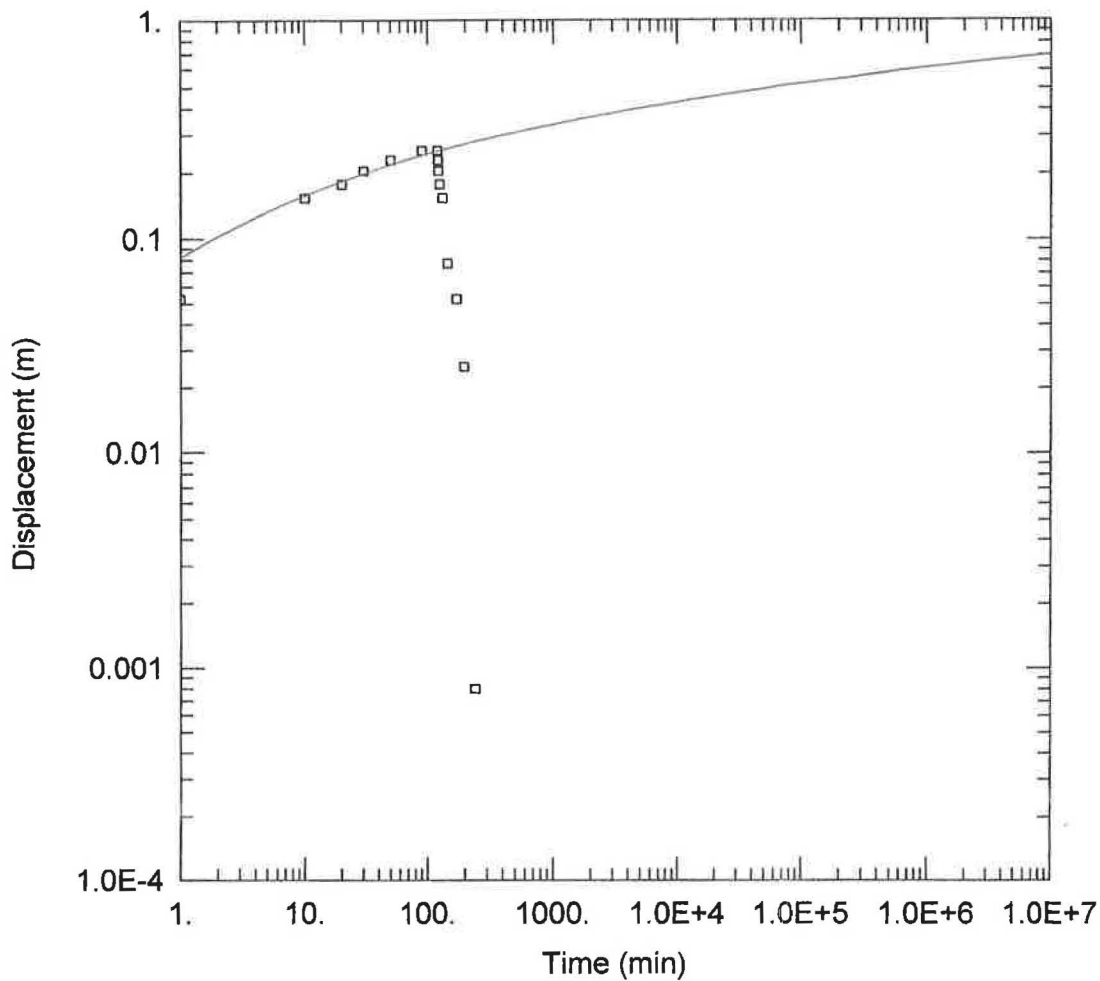
Well Identification and Location										Measurement in Metric	
Owner Name		Address			Town		Province		Country	Postal Code	
PIETERS, GUS		2212 7 ST NE, CALGARY								T2E 4C8	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	SE	25	29	1	5						
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
_____ m from					Latitude 51.507530 Longitude -114.007650					Elevation _____ m	
_____ m from					How Location Obtained					How Elevation Obtained	
					Map					Not Obtained	

Additional Information										Measurement in Metric
Distance From Top of Casing to Ground Level _____ cm										
Is Artesian Flow _____										
Rate _____ L/min										
Is Flow Control Installed _____										
Describe _____										
Recommended Pump Rate 45.46 L/min										
Pump Installed Yes										
Depth _____ m										
Recommended Pump Intake Depth (From TOC) 42.06 m										
Type SUB										
Make GOULD										
H.P. _____										
Model (Output Rating) _____										
Did you Encounter Saline Water (>4000 ppm TDS) _____										
Depth _____ m										
Well Disinfected Upon Completion _____										
Gas _____										
Depth _____ m										
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: 18".										

Yield Test				Taken From Ground Level	Measurement in Metric	
				Depth to water level		
Test Date	Start Time	Static Water Level		Pumping (m)	Elapsed Time	Recovery (m)
1999/09/28	12:00 AM	33.07 m			Minutes:Sec	
Method of Water Removal				33.07	0:00	33.32
Type Pump				33.12	1:00	33.30
Removal Rate 45.46 L/min					2:00	33.28
Depth Withdrawn From 39.62 m					5:00	33.25
				33.22	10:00	
					12:00	33.22
If water removal period was < 2 hours, explain why				33.25	20:00	
					25:00	33.15
				33.28	30:00	
				33.30	50:00	33.12
					75:00	33.10
				33.32	90:00	
				33.32	120:00	33.07

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

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



NE-24 SUBDIVISION

AQUIFER DATA

Saturated Thickness: 5. m

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
497741	0	0

Observation Wells

Well Name	X (m)	Y (m)
□ 497741	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Papadopoulos-Cooper

$T = 130.7 \text{ m}^2/\text{day}$

$S = 8.845$

$r(w) = 0.07 \text{ m}$

$r(c) = 0.062 \text{ m}$



Water Well Drilling Report

View in Imperial Export to Excel

GIC Well ID 340368
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 2002/01/17

GOWN ID

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 Metric	
Owner Name		Address		Town		Province		Country		Postal Code	
BACKS, PAUL		P.O. BOX 1368 CROSSFIELD								T0M 0S0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
NE		24	29	1	5						
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
m from					Latitude 51.500126 Longitude -114.007651					Elevation m	
m from					How Location Obtained					How Elevation Obtained	
					Map					Not Obtained	

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

Formation Log	Measurement in Metric	Yield Test Summary	Measurement in Metric
Depth from ground level (m)	Water Bearing	Lithology Description	Recommended Pump Rate 9.09 L/min
0.30		Black Topsoil	Test Date 2002/01/06
0.91		Light Clay	Water Removal Rate (L/min) 11.37
2.13		Light Sandstone	Static Water Level (m) 16.67
3.35		Soft Shale	
3.66		Sandstone	
4.88		Soft Shale	
7.01		Hard Sandstone	
9.45		Gray Soft Shale	
10.36		Hard Sandstone	
11.89		Siltstone & Sandstone	
18.59		Hard Sandstone	
20.42		Coarse Grained Sandstone	
46.63		Shale & Sandstone	
47.24		Coarse Grained Sandstone	
51.82		Shale & Sandstone	
56.08		Sandstone	
59.44		Shale	
		Well Completion	Measurement in Metric
		Total Depth Drilled 59.44 m	Finished Well Depth 2001/12/17
		Start Date 2001/12/17	End Date 2001/12/28
		Borehole	
		Diameter (cm) 0.00	From (m) 0.00 To (m) 59.44
		Surface Casing (if applicable) Steel	Well Casing/Liner Plastic
		Size OD : 16.81 cm	Size OD : 12.55 cm
		Wall Thickness : 0.478 cm	Wall Thickness : 0.605 cm
		Bottom at : 12.50 m	Top at : 10.36 m
			Bottom at : 59.44 m
		Perforations	
		From (m) 48.77 To (m) 57.91	Diameter or Slot Width (cm) 0.157
			Slot Length (cm) 20.32
		Perforated by Saw	
		Annular Seal Cement/Grout	
		Placed from 0.00 m to 12.50 m	
		Amount	
		Other Seals	
		Type	At (m)
		Screen Type	
		Size OD : 0.00 cm	
		From (m)	To (m) Slot Size (cm)
		Attachment	
		Top Fittings	Bottom Fittings
		Pack	
		Type	Grain Size
		Amount	

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



Water Well Drilling Report

View in Imperial **Export to Excel**

GIC Well ID 340368

GoA Well Tag No.

Drilling Company Well ID

Date Report Received 2002/01/17

GOWN ID

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.

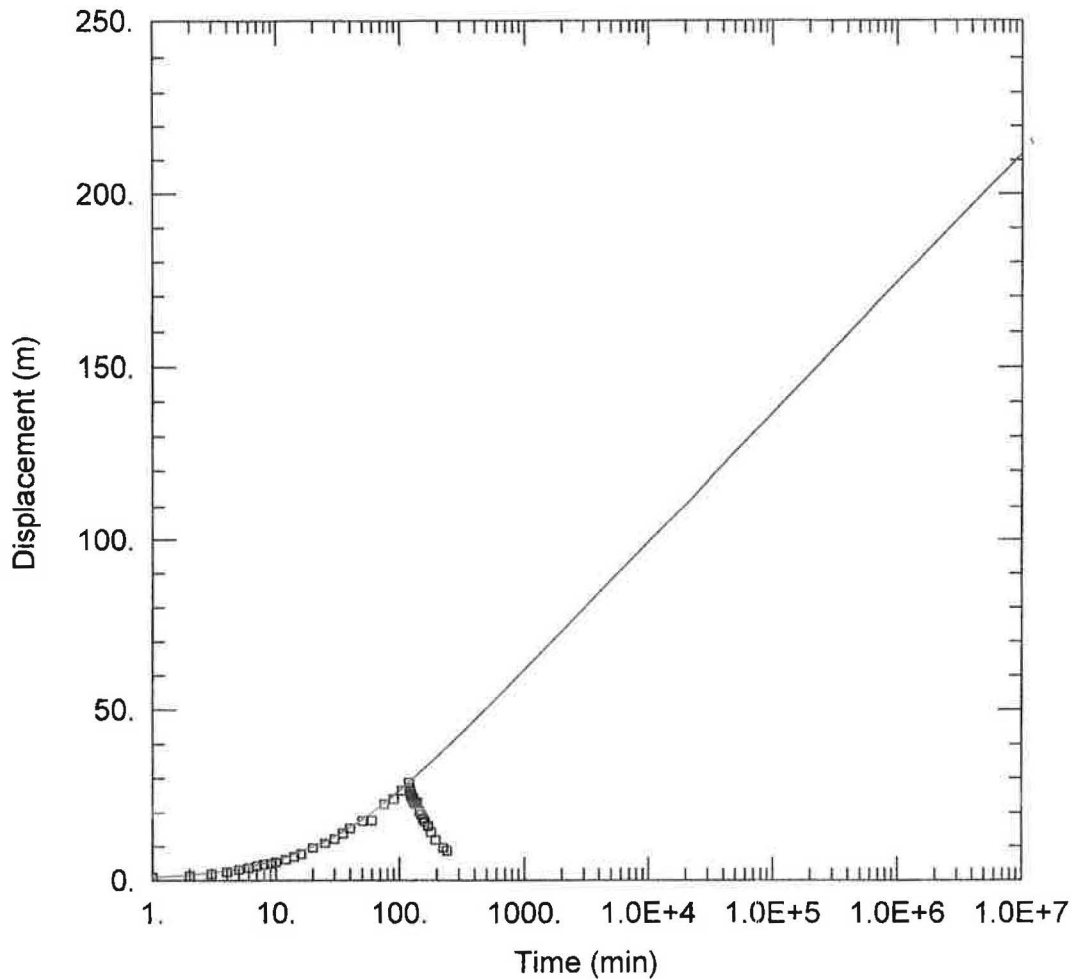
Well Identification and Location										Measurement in Metric	
Owner Name		Address		Town		Province		Country		Postal Code	
BACKS, PAUL		P.O. BOX 1368 CROSSFIELD								T0M 0S0	
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
	NE	24	29	1	5						
Measured from Boundary of				GPS Coordinates in Decimal Degrees (NAD 83)							
_____ m from				Latitude 51.500126 Longitude -114.007651				Elevation _____ m			
_____ m from				How Location Obtained				How Elevation Obtained			
				Map				Not Obtained			

Additional Information										Measurement in Metric	
Distance From Top of Casing to Ground Level _____ cm											
Is Artesian Flow _____											
Rate _____ L/min											
Is Flow Control Installed _____											
Describe _____											
Recommended Pump Rate _____ 9.09 L/min											
Recommended Pump Intake Depth (From TOC) _____ 57.91 m											
Pump Installed _____										Depth _____ m	
Type _____										Make _____ H.P. _____	
										Model (Output Rating) _____	
Did you Encounter Saline Water (>4000 ppm TDS) _____										Depth _____ m	
Gas _____										Depth _____ m	
Well Disinfected Upon Completion _____											
Geophysical Log Taken _____											
Submitted to ESRD _____											
Sample Collected for Potability _____										Submitted to ESRD _____	
Additional Comments on Well											

Yield Test				Taken From Ground Level		Measurement in Metric	
				Depth to water level			
Test Date	Start Time	Static Water Level		Pumping (m)	Elapsed Time	Recovery (m)	
2002/01/06	12:00 AM	16.67 m			Minutes:Sec		
Method of Water Removal				16.64	0:00	45.42	
Type Pump				17.40	1:00	43.76	
				17.91	2:00	42.80	
Removal Rate 11.37 L/min				18.49	3:00	42.29	
				19.07	4:00	41.91	
Depth Withdrawn From 59.13 m				19.64	5:00	41.66	
				20.27	6:00	41.25	
If water removal period was < 2 hours, explain why				20.83	7:00	40.92	
				21.26	8:00	40.67	
				21.56	9:00	40.41	
				21.95	10:00	40.08	
				22.76	12:00	39.70	
				23.57	14:00	39.50	
				24.44	16:00	39.32	
				26.29	20:00	39.55	
				27.66	25:00	37.03	
				29.01	30:00	36.04	
				30.58	35:00	34.95	
				32.13	40:00	34.04	
				34.29	50:00	32.69	
				34.37	60:00	30.86	
				39.14	75:00	28.70	
				40.59	90:00	27.53	
				43.13	105:00	26.29	
				45.42	120:00	25.37	

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

Contractor Certification	
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
TAKS & SONS DRILLING LTD.	



NE-24 SUBDIVISION

AQUIFER DATA

Saturated Thickness: 5. m

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
340368	0	0

Observation Wells

Well Name	X (m)	Y (m)
□ 340368	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Papadopoulos-Cooper

$T = \underline{0.08008 \text{ m}^2/\text{day}}$

$S = \underline{0.1929}$

$r(w) = \underline{0.12 \text{ m}}$

$r(c) = \underline{0.062 \text{ m}}$



APPENDIX C – Alberta Water Well Reconnaissance Report



Reconnaissance Report

[View in Imperial](#)[Export to Excel](#)

Groundwater Wells

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

GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (m)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (m)	TEST RATE (L/min)	SC_DIA (cm)
41072	SW	35	29	29	4	HERTZ DRILLING INC.	2002-08-20	47.24	New Well	Domestic		6	24	WILSON FARMS	29.99	113.65	16.81
113793	NE	14	29	29	4	W. CHAPPELL DRILLING	1974-06-01	30.48	New Well	Stock		5		SIFTON, G.L.	21.34	90.92	14.30
113794	16	14	29	29	4	W. CHAPPELL DRILLING	1977-03-15	45.72	New Well	Domestic	1	11		SIFTON, G.L.	0.00	13.64	13.97
113795	NE	14	29	29	4	UNKNOWN DRILLER	1977-01-01	30.48	Chemistry	Domestic	1			SIFTON, GEORGE	25.91		0.00
113796	SE	15	29	29	4	UNKNOWN DRILLER		38.10	Chemistry	Domestic	1			CARTER, L.A.			0.00
113797	NE	15	29	29	4	CORA LYNN DRILLING CO. LTD.	1988-05-26	78.64	New Well- Decommissioned	Unknown		21		RUDDY, GORDON			0.00
113798	NE	15	29	29	4	CORA LYNN DRILLING CO. LTD.	1988-05-31	90.83	New Well- Decommissioned	Domestic & Stock		12		RUDY, GORDON			0.00
113799	NE	15	29	29	4	CORA LYNN DRILLING CO. LTD.	1988-05-31	66.45	New Well- Decommissioned	Domestic		12		RUDY, GORDON			0.00
113800	NE	15	29	29	4	CORA LYNN DRILLING CO. LTD.	1988-05-31	48.16	New Well- Decommissioned	Domestic & Stock		7		RUDY, GORDON			0.00
113801	SE	23	29	29	4	W. CHAPPELL DRILLING	1973-06-01	54.86	New Well- Decommissioned	Stock		3		WIRTZ, RUEBEN	6.10		0.00
113802	5	24	29	29	4	W. CHAPPELL DRILLING	1967-01-01	29.26	New Well	Domestic		5		WEITZ, RUEBEN	19.81	90.92	0.00
113811	NE	26	29	29	4	FORRESTER WATER WELL DRILLING (1981) LTD.	1977-04-28	39.62	New Well	Domestic	1	8		WILSON FARMS	16.76	90.92	17.78
113812	NE	26	29	29	4	HERTZ DRILLING COMPANY LTD.	1988-10-20	33.83	New Well	Domestic		4		WILSON, WALTER	14.48	136.38	16.84
113813	NE	27	29	29	4	D&B DRLG (1023466 ALBERTA LTD)	1976-06-28	21.34	New Well	Domestic	2	7		KAMP, JOHN	16.76	50.01	14.12
113814	10	27	29	29	4	CHINOOK WATERWELLS LTD.	1984-01-27	46.33	New Well	Stock		10		KAMP, JOHN	34.14	68.19	14.12
113815	SE	34	29	29	4	NORTHERN WATER SUPPLY CO.		31.09	Well Inventory	Unknown		3					0.00
113816	SE	34	29	29	4	UNKNOWN DRILLER		21.34	Chemistry	Domestic	1			KAMP, JOHN	13.72		0.00
113818	SH	35	29	29	4	W. CHAPPELL DRILLING	1963-07-01	29.26	New Well	Unknown		5		WILSON FARMS	5.79	22.73	16.84
113821	SH	35	29	29	4	UNKNOWN DRILLER		24.38	Chemistry	Domestic	1						0.00
150138	SW	26	29	29	4	DEN-ALTA DRILLING LTD.	1990-03-15	73.15	Existing Well- Decommissioned	Domestic		7		HANLAN, ROY	0.00	0.00	0.00

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GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (m)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (m)	TEST RATE (L/min)	SC DIA (cm)
150139	SW	26	29	29	4	DEN-ALTA DRILLING LTD.	1990-03-15	41.15	New Well	Domestic		7		HANLAN, ROY	33.53	22.73	14.12
154652	NE	15	29	29	4	CORA LYNN DRILLING CO. LTD.	1988-05-31	139.90	New Well	Domestic & Stock		23		RUDDY, GORDON	35.66	22.73	14.12
155173	8	27	29	29	4	RRR DRILLING	1991-02-15	48.77	New Well	Domestic		8		SKOT, FLYNN	39.01	34.10	14.12
155174	8	27	29	29	4	RRR DRILLING	1991-02-18	42.67	New Well	Domestic		9		SKOT, FLYNN	26.82	36.37	14.12
155174	8	27	29	29	4	MYWATER DRILLING AND PUMP SERVICES	2020-10-07	59.44	Reconditioned	Domestic & Stock		1	18	TRIPLE EH FARM	31.07	36.37	
155175	2	27	29	29	4	RRR DRILLING	1991-02-20	79.25	New Well	Domestic		8		YEO, BILL	39.01	22.73	14.12
158872	10	22	29	29	4	RRR DRILLING	1991-02-20	30.48	New Well	Domestic		8		WOOD, BETH	7.32	34.10	14.12
161239	16	22	29	29	4	TAKS & SONS DRILLING LTD.	1974-08-27	30.78	New Well	Stock	1	15		FAIR, CAROLE/ROBIN WOODS, CARL	6.40	227.30	16.84
161240	SW	26	29	29	4	UNKNOWN DRILLER		48.77	Chemistry	Domestic				HANLAN, ROY			0.00
161937	NW	23	29	29	4	HERTZ DRILLING COMPANY LTD.	1991-12-30	137.16	New Well	Domestic & Stock		3		SUTMOLLER, HUGO	30.48	6.82	16.81
166848	16	10	29	29	4	M&M DRILLING CO. LTD.	1992-06-25	152.40	New Well- Decommissioned	Domestic		34		BUDGEON, FRED	0.00	6.82	0.00
166914	NW	23	29	29	4	HERTZ DRILLING COMPANY LTD.	1992-04-30	53.34	New Well	Domestic		4		SUTMOLLER, HUGO	21.03	22.73	16.81
167980	NE	27	29	29	4	HERTZ DRILLING COMPANY LTD.	1992-07-24	46.63	New Well	Stock		7	25	KAMP, JOHN	36.58	68.19	16.81
169023	NE	15	29	29	4	PEE WEE DRILLING (2004) LTD.	1992-09-15	51.82	New Well	Domestic		2		DEGAGNE, ADRIEN/PATRICIA	7.62	22.73	14.12
192403	NE	15	29	29	4	PEE WEE DRILLING (2004) LTD.	1992-09-14	51.82	Test Hole- Decommissioned	Domestic		2		DEGAGNE, ADRIAN			0.00
242819	NE	22	29	29	4	UNKNOWN DRILLER	1970-01-01	27.43	Chemistry	Domestic	1			WOOD, JACK/FAIR, ROBIN	24.38		0.00
242819	NE	22	29	29	4	UNKNOWNDRILLINGCOMP11	2013-08-22	51.82	Existing Well- Decommissioned	Unknown		1		ROBIN FAIR			
287334	12	24	29	29	4	DEN-ALTA DRILLING LTD.	1997-08-23	16.76	New Well	Domestic		7	10	KNIGHT, TERRY	5.49	31.82	14.12
288502	12	24	29	29	4	DEN-ALTA DRILLING LTD.	1997-08-22	48.77	Test Hole- Decommissioned	Domestic		10		KNIGHT, TERRY			0.00
294904	SW	26	29	29	4	KRIEGER DRILLING LTD.	2000-05-25	24.38	Dry Hole- Decommissioned	Domestic		9		REIMOND, RYAN			0.00

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GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (m)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (m)	TEST RATE (L/min)	SC_DIA (cm)
294905	SW	26	29	29	4	KRIEGER DRILLING LTD.	2000-05-17	76.20	Dry Hole- Decommissioned	Domestic		8		REIMOND, RYAN			0.00
296663	1	22	29	29	4	DEN-ALTA DRILLING LTD.	2001-04-24	59.44	New Well	Domestic		21	17	IRVINE, SCOTT	24.99		14.12
299116	SW	26	29	29	4	LAYNE CHRISTENSEN CANADA LIMITED	1999-07-23	67.06	Dry Hole- Decommissioned	Domestic		7		FOERSTER, DANIEL #2			0.00
299118	SW	26	29	29	4	LAYNE CHRISTENSEN CANADA LIMITED	1999-07-29	73.76	Test Hole- Decommissioned	Domestic		15		FOERSTER, DANIEL #3	30.18	3.41	0.00
299905	1	22	29	29	4	DEN-ALTA DRILLING LTD.	2002-04-27	73.15	Test Hole- Decommissioned	Stock		29		IRVINE, SCOTT			0.00
299906	8	22	29	29	4	DEN-ALTA DRILLING LTD.	2002-04-28	48.77	New Well	Stock		15	25	IRVINE, SCOTT	30.66	22.87	14.12
340368	NE	24	29	1	5	TAKS & SONS DRILLING LTD.	2001-12-28	59.44	New Well	Domestic		17	25	BACKS, PAUL	16.67	11.37	16.81
350583	NW	13	29	1	5	DOERING DRILLING LTD.	1990-03-26	39.62	New Well	Domestic		10		BOYKO, BERNIE	14.63	68.19	13.97
354374	NE	36	29	1	5	UNKNOWN DRILLER		0.00	Chemistry	Domestic				LAWRANCE, JOHN			0.00
358144	NE	24	29	1	5	TAKS & SONS DRILLING LTD.	1991-03-08	22.86	New Well	Domestic & Stock		7		BACKS, TONY	9.48	113.65	16.81
363504	NW	14	29	1	5	DOERING DRILLING LTD.	1992-04-07	152.40	Deepened	Domestic & Stock		16		POULTRY, M.R.	21.64	6.82	0.00
381923	SW	24	29	1	5	HERTZ DRILLING COMPANY LTD.	1995-12-05	46.94	New Well	Observation		12	23	SENTAR CONSULTANTS LTD	10.42	272.77	16.81
391206	NW	13	29	1	5	UNKNOWN DRILLER		15.24	Chemistry	Domestic	1			KELLER, W.	9.14		0.00
391207	NE	13	29	1	5	UNKNOWN DRILLER	1970-01-01	18.29	Chemistry	Unknown	1			WHITTLETON, E.			0.00
391209	16	13	29	1	5	UNKNOWN DRILLER		45.72	Chemistry	Domestic	2			WHITTLETON, E.	4.57		0.00
391210	16	13	29	1	5	TAKS & SONS DRILLING LTD.	1980-10-03	64.01	New Well	Domestic & Stock		21		CLOWES, LAWRENCE	9.14	13.64	16.84
391211	8	14	29	1	5	TAKS & SONS DRILLING LTD.	1979-07-25	27.43	New Well	Unknown		10		LOW, A.W.	9.14	54.55	14.12
391236	13	14	29	1	5	DOERING DRILLING LTD.	1980-07-17	43.59	New Well	Stock		5		VARIMEE POULTRY FARM	4.57	36.37	14.12
391236	13	14	29	1	5	DOERING DRILLING LTD.	1980-07-17	43.59	New Well	Stock		5	31	VARIMEE POULTRY FARM	4.42	43.64	14.12
391241		14	29	1	5	UNKNOWN DRILLER		15.24	Chemistry	Domestic	1			SANDUSKY, WALTER #WELL 2			0.00



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GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (m)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (m)	TEST RATE (L/min)	SC DIA (cm)
391242		14	29	1	5	UNKNOWN DRILLER		18.29	Chemistry	Domestic	2			SANDUSKY, W. #WELL 1			0.00
391265	3	23	29	1	5	TAKS & SONS DRILLING LTD.	1981-11-16	18.29	New Well	Stock		13		LOWE, ALBERT	0.61	18.18	16.84
391266	SE	24	29	1	5	TAKS & SONS DRILLING LTD.	1973-05-01	56.39	New Well	Domestic & Stock	1	9		BACKS, TONY	9.14	90.92	15.88
391267	SW	24	29	1	5	UNKNOWN DRILLER	1972-01-01	57.91	Chemistry	Domestic	1			WESSEX SVC STN	36.58		0.00
391268	13	24	29	1	5	TAKS & SONS DRILLING LTD.	1985-05-08	22.86	New Well	Domestic & Stock		7		CHRISTIAN, CHESTER	13.72	50.01	16.84
391269	NW	24	29	1	5	UNKNOWN DRILLER		0.00	Chemistry	Unknown				CHRISTINSEN, CHESTER			0.00
391270	SE	25	29	1	5	TAKS & SONS DRILLING LTD.	1975-04-01	45.72	New Well	Stock		8		PEITERS, GUS	9.14	90.92	15.88
391271	SE	25	29	1	5	TAKS & SONS DRILLING LTD.	1973-05-01	47.24	Unknown	Unknown	1	8		PEITERS, GUS			16.51
391272	SE	26	29	1	5	UNKNOWN DRILLER		0.00	Chemistry	Domestic				NEILSON, D.			0.00
391273	SE	26	29	1	5	UNKNOWN DRILLER		44.81	Well Inventory	Contaminati on Invest.				DUGGAN, C.E.			0.00
391274	2	26	29	1	5	DEN-ALTA DRILLING LTD.	1976-10-27	65.53	New Well	Stock		2		DUGGAN, C.E.	23.16	13.64	14.12
391275	SE	26	29	1	5	DEN-ALTA DRILLING LTD.	1987-04-06	16.76	New Well	Stock		4		DUGGIN EST	4.57	90.92	14.12
391276	SE	26	29	1	5	UNKNOWN DRILLER		0.00	Chemistry	Domestic & Stock				A.C.A. REALTY			0.00
391277	SE	26	29	1	5	UNKNOWN DRILLER		0.00	Chemistry	Domestic & Stock				A.C.A. REALTY			0.00
391278	SE	26	29	1	5	UNKNOWN DRILLER		0.00	Chemistry	Domestic & Stock				SACKETT, DON			0.00
391360	SE	35	29	1	5	UNKNOWN DRILLER	1910-01-01	4.88	Chemistry	Domestic	3			RIDDLE, W.			0.00
391361	1	35	29	1	5	W. CHAPPELL DRILLING	1978-04-03	35.05	New Well	Domestic	2	7		RIDDLE, W.	12.19	22.73	16.84
391362	1	35	29	1	5	W. CHAPPELL DRILLING	1978-04-14	62.48	New Well- Decommissioned	Stock		24		RIDDLE, W.	13.72	13.64	0.00
391363	1	35	29	1	5	W. CHAPPELL DRILLING	1978-05-03	71.63	New Well	Stock		39		RIDDLE, W. #3	0.00	14.77	16.84
391364	1	35	29	1	5	W. CHAPPELL DRILLING	1978-08-21	54.25	New Well	Domestic	1	14		RIDDLE, W.	18.29	68.19	0.00



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391365	SE	35	29	1	5	UNKNOWN DRILLER	1978-09-01	48.77	Chemistry	Domestic	1			RIDDLE, W.K. #WELL 2			0.00
391366	SE	35	29	1	5	UNKNOWN DRILLER	1978-07-01	54.86	Chemistry	Domestic	2			RIDDLE, W.K. #WELL 1			0.00
391369	NE	36	29	1	5	UNKNOWN DRILLER		24.38	Chemistry	Domestic	2			OBERLE, LYNN	12.19		0.00
391370	NE	36	29	1	5	UNKNOWN DRILLER		24.38	Chemistry	Domestic	1			HUNGLE			0.00
391371	NE	36	29	1	5	DOERING DRILLING LTD.	1979-07-04	27.43	New Well	Domestic	1	13		OBERLE, LYNN	14.02	45.46	14.12
391371	NE	36	29	1	5	DOERING DRILLING LTD.	1979-07-04	27.43	New Well	Domestic	1	13	39	OBERLE, LYNN	14.02	37.87	14.12
391372	NE	36	29	1	5	DOERING DRILLING LTD.	1979-07-03	88.39	Test Hole	Unknown			22	OBERLE, LYNN	0.00	1.14	0.00
391373	EH	36	29	1	5	UNKNOWN DRILLER		27.43	Chemistry	Domestic	1			KLAMMER, ALEX	9.14		0.00
399688	2	26	29	1	5	DEN-ALTA DRILLING LTD.	1994-07-06	16.76	New Well	Stock		6	3	RAIRDAN, SCOTT	5.18	90.92	14.12
466162	NE	26	29	1	5	HERTZ DRILLING COMPANY LTD.	1996-08-29	41.15	New Well	Domestic		9	23	BILLS, KEN	13.35	27.28	16.81
469313	SE	26	29	1	5	TAKS & SONS DRILLING LTD.	1997-05-24	32.92	New Well	Stock		11	12	DAVIS, ROGER	7.53	27.28	16.81
469314	SE	26	29	1	5	TAKS & SONS DRILLING LTD.	1997-05-12	65.53	New Well	Stock		17	19	DAVIS, ROGER	9.14	13.64	16.81
497741	SE	25	29	1	5	TAKS & SONS DRILLING LTD.	1999-08-30	44.20	New Well	Stock		12	13	PIETERS, GUS	33.07	45.46	16.81
498427	NW	14	29	1	5	PEE WEE DRILLING (2004) LTD.	2001-06-11	42.67	New Well	Domestic		6	25	CAMPBELL, JOHN	12.01	50.01	16.81
1240281	8	23	29	1	5	DEN-ALTA DRILLING LTD.	2008-07-26	22.86	New Well	Domestic		4	25	HORSESHOE CONTRACTING	10.44	36.37	14.12
1240318	15	23	29	1	5	DEN-ALTA DRILLING LTD.	2006-09-17	54.86	New Well	Other		20		SCHLUMBERGER DRIVING CENTER			16.84
1240318	15	23	29	1	5	DEN-ALTA DRILLING LTD.	2006-12-09	54.86	Reconditioned	Other		1		SCHLUMBERGER DRIVING CENTER			16.84
1590144	7	23	29	1	5	PARSONS WATER WELLS LTD (o/a AMA Drilling)	2015-12-30	91.44	New Well	Other		16	30	CENTRAL ALBERTA CO-OP	11.95	2.27	15.24
1590144	7	23	29	1	5	PARSONS WATER WELLS LTD (o/a AMA Drilling)	2015-12-30	91.44	New Well	Other		16	6	CENTRAL ALBERTA CO-OP	11.95	0.23	15.24
1725055	NW	14	29	29	4	TAKS & SONS DRILLING LTD.	2008-04-28	77.72	New Well- Decommissioned	Domestic		20		SEFTON, GLEN	13.59	4.55	



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1725063	NE	25	29	1	5	TAKS & SONS DRILLING LTD.	2006-04-26	41.15	New Well	Domestic		21	12	KENNEDY, ANTHONY	25.24	64.42	16.83
2079105	7	22	29	29	4	MYRAM DRILLING	2018-06-21	71.02	New Well	Domestic		17	26	861699 ALBERTA LTD	28.96	22.73	16.83
2085873	13	23	29	29	4	BLACK DOG DRILLING & ENW SERV. LTD.	2016-04-15	115.82	New Well	Domestic		14	26	FISHER, GERRY	26.52	10.46	14.13
2086022	10	24	29	1	5	BLACK DOG DRILLING & ENW SERV. LTD.	2017-05-02	48.77	New Well	Domestic		8		MCCLOUGHLIN, MAURICE	21.95	109.11	14.13
2095002	NE	22	29	29	4	UNKNOWNDRILLINGCOMP11	1991-07-18	54.86	New Well	Domestic		16	2	WOOD, BETH	8.84	9.09	14.13
2097536	16	22	29	29	4	WILD WEST DRILLING INC.	2016-01-15	85.34	New Well	Domestic		15	28	FAIR, ROBIN	4.33	9.09	16.83
10136063	16	23	29	1	5	BLACK DOG DRILLING INC.	2023-07-19	36.58	New Well	Commercial		5	10	D BAR D BUILDING SOLUTIONS	13.72	81.83	14.13
10136223	8	22	29	29	4	BLACK DOG DRILLING INC.	2024-09-21	85.34	New Well	Domestic		17	26	861699 AB LTD	29.99	6.82	15.24
10141007	11	24	29	1	5	EVOLUTION DRILLING LTD.	2023-10-13	39.01	New Well	Domestic & Stock		8	2	HOMES BY MARICEL LTD	14.17	36.37	17.78



APPENDIX D – Alberta Water Well Database Chemistry Reports

WELL NAME	WESSEX SVC STN	GIC WELL ID	391267
LOCATION	LSD SW SEC 24 TWP 29 RG 1 M 5	SAMPLE NO.	1832
WELL DEPTH	190.00 ft	WATER LEVEL	120.00 ft
AQUIFER		LABORATORY	AE
SAMPLING DATE	1972-06-27		

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	1972-07-14
COD		CONDUCTIVITY	1,810
DIC		FLUORIDE	1.5200
ION BALANCE		PH	8.10
SAR		SIO2	
TOTAL ALKALINITY	540.0000	TC	
TDS	1,421	TN	
DOC		BICARBONATE	
AMMONIUM-N		CARBONATE	
CALCIUM	10.0000	MAGNESIUM	101.0836
CHLORIDE	4.0044	NITRITE-N	
NITRATE-N		POTASSIUM	
PHOSPHATE		SULPHATE	435.6321
SODIUM		TOTAL HARDNESS	448.0000
NO2 + NO3	0.0994	ARSENIC	
ALUMINUM		BERYLLIUM	
BARIUM		CHROMIUM	
CADMIUM		COPPER	
COBALT		LEAD	
IRON	0.1000	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



CHEMICAL ANALYSIS REPORT

WELL NAME	WOOD, JACK/FAIR, ROBIN	GIC WELL ID	242819
LOCATION	LSD NE SEC 22 TWP 29 RG 29 M 4	SAMPLE NO.	12872
WELL DEPTH	90.00 ft	WATER LEVEL	80.00 ft
AQUIFER		LABORATORY	AE
SAMPLING DATE	1978-11-23		

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	1978-12-04
COD		CONDUCTIVITY	1,692
DIC		FLUORIDE	0.1100
ION BALANCE	0.9900	PH	8.20
SAR		SiO2	10.0000
TOTAL ALKALINITY	378.0000	TC	
TDS	1,288	TN	
DOC		BICARBONATE	461.0453
AMMONIUM-N		CARBONATE	
CALCIUM	210.9992	MAGNESIUM	82.0678
CHLORIDE	11.0157	NITRITE-N	-0.0504
NITRATE-N		POTASSIUM	3.7840
PHOSPHATE		SULPHATE	630.9181
SODIUM	89.0008	TOTAL HARDNESS	864.0000
NO2 + NO3	7.9450	ARSENIC	
ALUMINUM		BERYLLIUM	
BARIUM		CHROMIUM	
CADMIUM		COPPER	
COBALT		LEAD	
IRON	0.0900	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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Baseline Water Well Test Report

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The data in this report is provided by the resource company or its contractor. The province disclaims responsibility for its accuracy.

Baseline Water Well Testing Report		
Test ID	Date Of Test	Resource Development Company
2000331	October 25, 2011	Ember Resources Inc.

Background Information				Contact Information		
Purpose of Well Test	Is the resource well completed above or below the Base of Groundwater Protection?	Is this a Pre-or-Post-drill Test?	Did the Landowner refuse testing?	APEGA overseer company name	Yield test company name	Water sampler company name
CBM Development	Below	Pre-Test	NO	Technosol Engineering Ltd.	Summit Liability Solutions Inc.	Summit Liability Solutions Inc.

Water Well Information								
GIC Well ID	Legal Land Location	GPS Coordinates	Elevation * amsl(m)	Description of water well location	Current well use	Year Drilled	Well Depth	Is the well in a pit?
	SW-20-029-28-4	51.493147N, -113.918747W	1027.00 metres	Northeast of the house	Domestic	1999	47.24 metres	NO
*amsl = above mean sea level								
Landowner Comments								

Water Quality			
Lab Name	Lab Location	Lab Sample Number	Date received by lab
Central Labs	Red Deer	110220-104	October 25, 2011
Description of sampling location		Comments on sample collection	
From tap on west side of house		Well pumped clear	
Parameter Name	Result	GCDWQ Criteria	Type of objective: MAC or Aesthetic
Bicarbonate	433.575 mg/L		
Calcium	1.86 mg/L		
Carbonate	< 0.005 mg/L		
Chloride	62.78 mg/L	250 mg/L	Aesthetic
Electrical Conductivity	2651 µS/cm		
Escherichia coli	< 1 cfu/100mL	0 cfu/100mL	MAC
Fluoride	0.55 mg/L	1.5 mg/L	MAC
Hydroxide	< 0.005 mg/L		
Ionic Balance	120 %		
Iron	< 0.09 mg/L	0.3 mg/L	Aesthetic
Iron (Total)	< 0.11 mg/L	0.3 mg/L	Aesthetic
Iron Related Bacteria	9000 cfu/mL		
Magnesium	1.43 mg/L		
Manganese	< 0.10 mg/L	0.05 mg/L	Aesthetic
Manganese (total)	< 0.10 mg/L	0.05 mg/L	Aesthetic
Nitrate as Nitrogen	275.77 mg/L	10 mg/L	MAC
Nitrite + Nitrate as Nitrogen	276.24 mg/L	10 mg/L	MAC
Nitrite as Nitrogen	< 0.47 mg/L	1 mg/L	MAC
pH	6.72	6.5 - 8.5	Aesthetic
Potassium	3.62 mg/L		
Sodium	582.3 mg/L	200 mg/L	Aesthetic
Sulphate	385.98 mg/L	500 mg/L	Aesthetic
Sulphate Reducing Bacteria	< 200 cfu/mL		
Temperature of sample upon receipt by lab	8.4 °C	4 °C	CBM Standard
Total alkalinity	424.35 mg/L		
Total Coliforms	68.2 cfu/100mL	0 cfu/100mL	MAC
Total dissolved solids	1643.31 mg/L	500 mg/L	Aesthetic
Total hardness	0.62 mg/L		
Turbidity	0.18 NTU	0.3 NTU	MAC
Water Analysis Comments			
The reported detection limit for manganese (0.10 mg/L) is above the Canadian Drinking Water Quality Guideline (0.05 mg/L).			
Bacterial Analysis Comments			

Gas Composition		
Lab Name	Lab Location	Lab Sample Number
Compound	Concentration (ppm)	Detection Limit (ppm)

Iso Analysis *		
Lab Name	Lab Location	Lab Sample Number
Compound	Stable carbon isotope ratio (delta-13C per mil PDB)	
Gas Analysis Comments		

Field Measurements and Observations	
Electrical Conductivity	1580.00 µS/cm
Dissolved Oxygen	
pH	7.14 pH
Temperature	7.40 °C
Colour	Clear
Odour	Not Noted
Sediment	Not Noted
Turbidity	Not Noted
Debris	Not Noted

Exceedances	
Was there an exceedance of the GCDWQ criteria?	YES
If yes, when was the Landowner notified?	December 1, 2011



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Yield Test						
Distance from ground to top of casing	Location from which water level measurements taken	Non-pumping water level	Is the well flowing?	Was the pressure system disconnected?	If not, explain	Constant pumping rate
0.50 metres	Top of casing	24.700 metres		No	Yes	

Was a yield test performed?	If no, explain	If a spring, what is the flow rate
Yes		

Was free gas observed in FTC?	Flow rate of water through FTC	Total volume of water passed through FTC	Total volume of gas collected in FTC	Location of sample in water distribution system	Sample collected after pressure tank?
No	11.38 L/min		0,000 Litres	From tap on the west side of the house	No

FTC = Flow Through Cell

Drawdown			Recovery	
Time of Measurement (min)	Water Level (m)	Discharge Rate (L/min)	Time of Measurement (min)	Water Level (m)
0.00	24.730		0.00	30.940
1.00	24.730		1.00	30.940
2.00	24.730		2.00	30.940
3.00	24.730		3.00	29.220
4.00	24.890		4.00	28.090
5.00	25.610		5.00	26.730
6.00	26.770		6.00	25.640
7.00	27.890		7.00	25.090
8.00	29.590		8.00	24.910
9.00	30.480		9.00	24.870
10.00	31.110		10.00	24.850
15.00	30.820		15.00	24.820
20.00	29.710		20.00	24.820
25.00	30.120			
30.00	29.020			
40.00	28.330			
50.00	29.660			
60.00	30.260			
70.00	31.030			
80.00	30.140			
90.00	30.850			
100.00	30.060			
120.00	30.940			

Yield Test Comments
The well pumped clear. The casing is 0.5 meters above the ground. The pump cycled during the test. This is the main well.