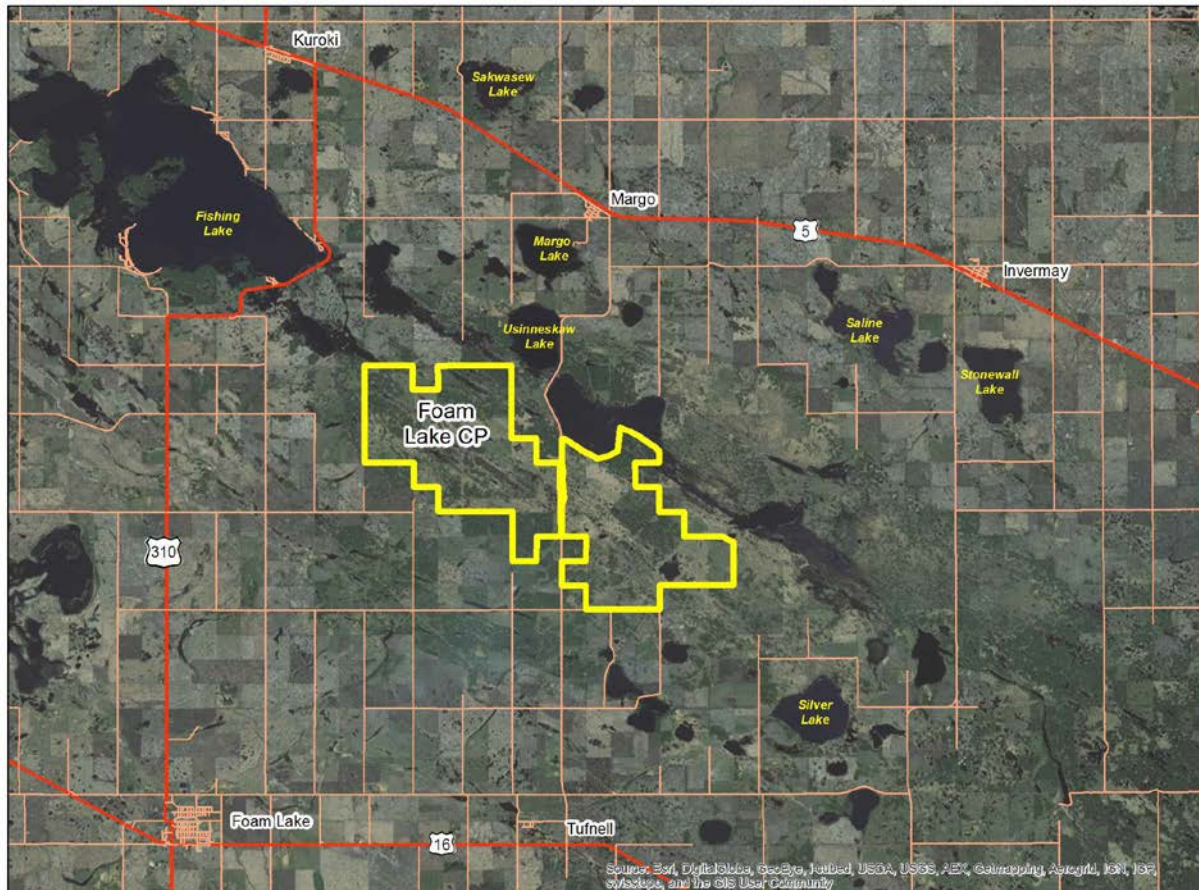


Statement of Work Foam Lake Production Wells

Background

Foam Lake Community Pasture is located in an agricultural/ranch area approximately 8 km north of the hamlet of Tuffnell and 15 km northeast of the Town of Foam Lake in the Rural Municipality (RM) of Foam Lake No. 276, Saskatchewan. The Site is approximately 170 km northeast of Regina.



Agriculture and Agri-Food Canada (“AAFC”) undertook to perform certain transitional activities specific to this pasture as part of its community pasture divestiture project to surrender and/or revert the Provincial Crown lands in this pasture back to the Province. These activities include the decommissioning of abandoned water wells.

On September 3 2015 a site visit was conducted by AAFC Rep. Kirk Brossart at Foam Lake Pasture to assess wells to be decommissioned. Kirk was taken to six well sites on a side by side ATV operated by pasture manager Steven Miller. Five (5) out of six (6) wells visited require decommissioning and one of the wells was found to have been previously decommissioned.

Summary of work required

The 5 wells to be decommissioned are constructed of 4 inch casing and range in depth from 92ft. to 143 ft. All the wells exhibit slight flowing conditions. The visible portion of the casing shows severe degradation and the wells are all plugged with debris to varying depths, therefore requiring over drilling before proper decommissioning can occur.

Decommissioning shall be done by pumping a cement grout with a specific gravity heavy enough to control the flowing water through a tremie line filling the wells from bottom to top.

Obstructions surrounding the wells include wood fencing around all the wells and windmills on 3 of the wells to be decommissioned. These obstructions are to be removed and disposed of off-site.

Details and photographs of individual well sites are listed below.

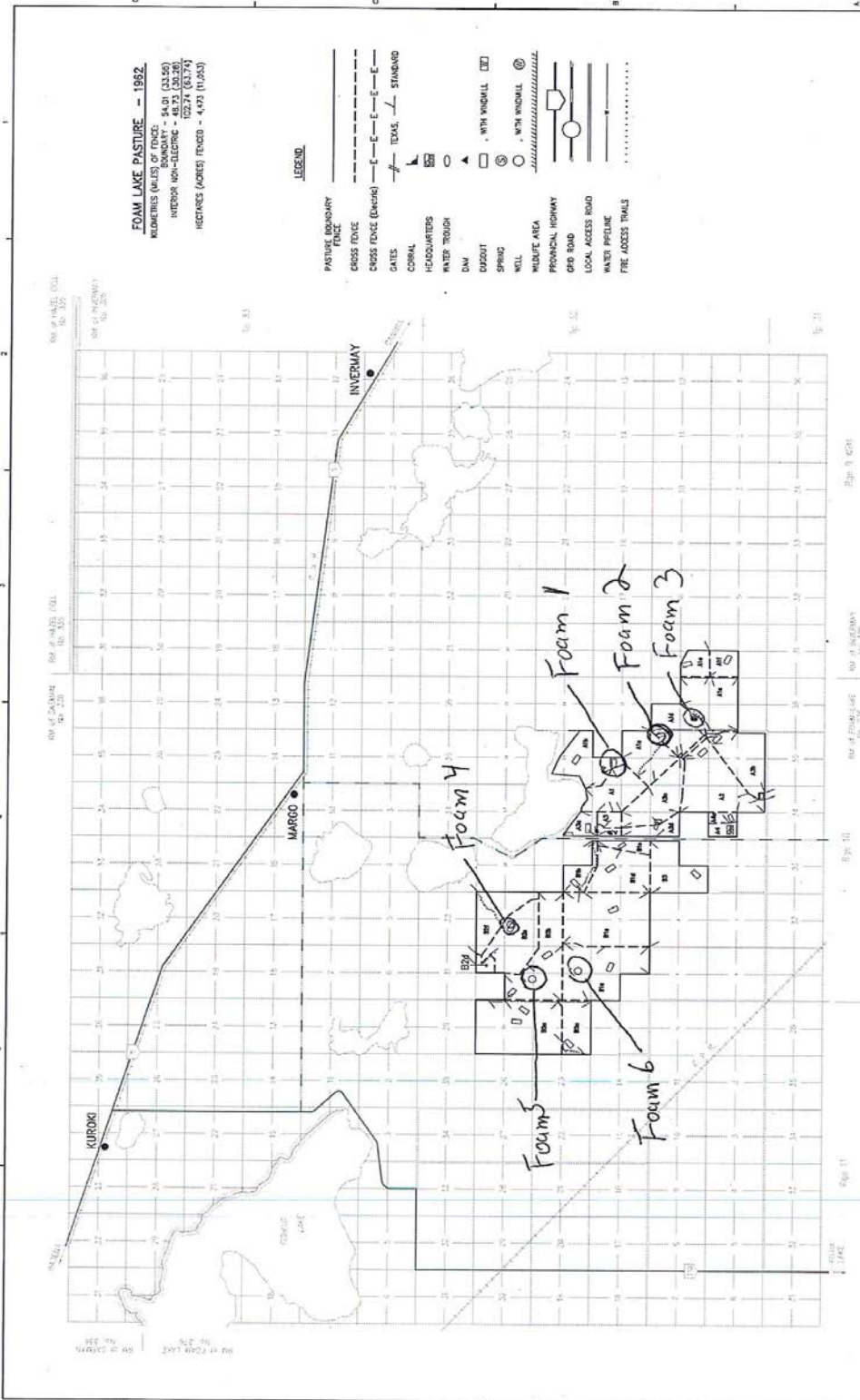
Site accessibility

Access to the well sites is through the pasture that is over very rough terrain. Pathways that are not well defined and can contain large rocks. Some of the pathways have been overgrown with trees with fallen trees across pathways.

There are also wet conditions that exist in some parts of the pasture especially around the flowing wells. Due to the wet conditions it is suggested that this work takes place during the 2015/2016 winter months.

A dozer will be required to provide access to a couple of sites where the path is narrow due to overgrown and fallen trees. The dozer might also be needed to provide access to other sites depending on snow fall amounts. Providing physical access to sites will be the responsibility of the well decommissioning contractor.

Map below provides an approximate location of the wells.



AESB - DGSA <small>Alberta Environmental Services Branch</small> <small>Division of Parks and Recreation</small>		FOAM LAKE COMMUNITY PASTURE PASTURE NO. 45	
Project Name Location Date Drawn Checked Approved	Date Date Date Date Date	Scale North East West South	Page 1 of 2 of 2

Map Number 12 / 2013

Foam 1

Well Description

Foam 1 is located NW 14-32-10-w2 (GPS 13u 0615906e 5734118n)

It is a 4" steel casing flowing well located beside a dugout

AAFC was able to measure 18 ft. down the well. The water level was 1 ft. above ground in the casing.

According to WSA record # 019600 a well was drilled on this quarter in 1962

The bottom of the screen is at 102 ft. the log states that soils are a clay material to 97 ft. and then sand from 97 ft. to 102 ft.

Remediation work

To decommission this well, the existing well will have to be drilled out and be clear of debris so a cement grout with a specific gravity heavy enough to control the flowing water can then be pumped into the well close to the 102 ft. level from bottom to top.

The well should be cut off at or below ground and buried with local fill.

Fencing and related debris around well shall be cleaned up and disposed of off-site.

Access to this site is over rough terrain and some pasture fence will have to be temporarily taken down to access the well.

Foam 1 (2 pictures)



PFRA REGINA

 Completion **08/01/1962**

Foam 1

 WWDR# **019600**

 RM
 Major Basin **11**
 SubBasin **31**
 NTS Map **62M00**
Well Location

LSD	Quarter	Section	Township	Range	Meridian	Reserve	Riverlot	
00	NW	14	032	10	2			Location of Well (in Quarter)
Zone	Easting	Northing	Source	Accuracy				0.00 ft from N/S Boundary
								0.00 ft from E/W Boundary

Well Information

Driller #	MILLS DRILLING							
Water Use	Domestic							
Hole #								
Well Use	Withdrawal							
Installation Method	Other	Well Casings Length (ft)	0.00	Btm (ft)	97.00	Dia (in)	4.00	Description
Depth	222.00		0.00		0.00		0.00	Steel
Water Level	4.00		0.00		0.00		0.00	
Bit	4.00							
Flowing Head	0.00							
		Screens Length (ft)	5.00	Btm (ft)	102.00	Dia (in)	4.00	Slot (in)
			0.00		0.00		0.00	20.00
			0.00		0.00		0.00	Unknown

Pump Test

Draw Down	65.00 ft				
Duration	3.00 hrs	Elevation	1,740.00 ft	Aquifer	
Pumping Rate	3.00 igpm	Rec. Pumping Rate	0.00	E-Log	No
Temp	0.00 deg. F	Intake	0.00	Phys	E02

Lithology List

Depth (ft)	Material	Colour	Description
12.00	Topsoil	Unknown	Clayey
97.00	Clay	Blue	Unknown
102.00	Sand	Unknown	Unknown
222.00	Clay	Blue	Unknown

Foam 2

Well Description

Foam 2 is located NE 11-32-10-w2 (GPS 13u 0616737e 5732757n)

It is a 4" steel casing flowing well that seems to have a plastic pipe inside

AAFC was able to measure 20 ft. down the well. The water was flowing out of and around the casing.

According to WSA record # 019599 a well was drilled on this quarter in 1962

The bottom of the screen is at 128 ft. the log states that the soils are a clay material to 123 ft. and then sand from 123 ft. to 143 ft.

Remediation work

To decommission this well, the existing well will have to be drilled out and be clear of debris so a cement grout with a specific gravity heavy enough to control the flowing water can then be pumped into the well close to the 143 ft. level from bottom to top.

The well should be cut off at or below ground and buried with local fill.

Fencing and related debris around well shall be cleaned up and disposed of off-site.

Access to this well is over rough terrain and wet conditions exist around the well.

Wood fence around the well will have to be removed



Water Well Driller's Report

Page 1 of 1
 9/15/2015
 WSaskWDR01
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PFRA REGINA	Completion 08/02/1962
Foam 2	RM
WWDR# 019599	Major Basin 11
	SubBasin 31
	NTS Map 62M00

Well Location							
LSD	Quarter	Section	Township	Range	Meridian	Reserve	Riverlot
00	NE	11	032	10	2		
Zone	Easting	Northing	Source	Accuracy	Location of Well (in Quarter)		
					0.00 ft from N/S Boundary		
					0.00 ft from E/W Boundary		

Well Information						
Driller #	MILLS DRILLING					
Water Use	Domestic					
Hole #		Well Casings				
Well Use	Withdrawal	Length (ft)	Btm (ft)	Dia (in)	Description	
Installation Method	Other	0.00	143.00	4.00	Steel	
Depth	143.00	0.00	0.00	0.00		
Water Level	0.00	0.00	0.00	0.00		
Bit	4.00	Screens				
Flowing Head	4.00	Length (ft)	Btm (ft)	Dia (in)	Slot (in)	Description
		6.00	128.00	4.00	20.00	Unknown
		0.00	0.00	0.00	0.00	
		0.00	0.00	0.00	0.00	
Pump Test						
Draw Down	0.00 ft					
Duration	0.00 hrs	Elevation	1,750.00 ft	Aquifer		
Pumping Rate	0.00 igpm	Rec. Pumping Rate	15.00	E-Log	No	
Temp	0.00 deg. F	Intake	0.00	Phys	E02	

Lithology List				
Depth (ft)	Material	Colour	Description	
15.00	Clay	Yellow	Unknown	
123.00	Clay	Blue	Unknown	
143.00	Sand	Unknown	Gravelly	

Foam 2 (2 pictures)



Foam 3

Foam 3 is located SW 12-32-10-w2 (GPS 13u 0617216e 5731643n)

Was thought to be a well that needed to be decommissioned but when it was just a fenced area with and old pipe that was removed from the ground

This well has be previously decommissioned

No additional work required



Foam 4

Well Description

Foam 4 is located SW 29-32-10-w2 (GPS 13u 06111056e 5736767n)

It is a 4" steel casing flowing well located under a windmill

AAFC was able to measure 5 ft. down the well. The water was flowing out of and around the casing.

According to WSA record # 019606 a well was drilled on this quarter in 1962

The bottom of the well is at 95ft and there is no record of a screen, the log states that the soils are a clay material to 91 ft. and then gravel from 91ft to 95ft

Remediation work

To decommission this well the windmill will have to be removed. The existing well will have to be drilled out and be clear of debris so a cement grout with a specific gravity heavy enough to control the flowing water can then be pumped into the well close to the 95 ft. level from bottom to top.

The well should be cut off at or below ground and buried with local fill.

Windmill, fencing, and related debris around well shall be cleaned up and disposed of off site

Access to this site is over rough terrain. There should be an access trail from the Ne corner of section 29

Wet conditions exist around the well.



Water Well Driller's Report

Page 1 of 1
 9/15/2015
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PFRA REGINA

Completion **07/13/1962**

Foam 4

RM
 Major Basin **11**
 SubBasin **31**
 NTS Map **62M00**

WWDR# **019606**

Well Location

LSD	Quarter	Section	Township	Range	Meridian	Reserve	Riverlot	
00	SE	29	032	10	2			Location of Well (in Quarter)
Zone	Easting	Northing	Source	Accuracy				0.00 ft from N/S Boundary
								0.00 ft from E/W Boundary

Well Information

Driller #	MILLS DRILLING					
Water Use	Domestic					
Hole #		Well Casings				
Well Use	Withdrawal	Length (ft)	Btm (ft)	Dia (in)	Description	
Installation Method	Other	0.00	95.00	6.00	Steel	
Depth	95.00	0.00	0.00	0.00		
Water Level	0.00	0.00	0.00	0.00		
Bit	4.00	Screens				
Flowing Head	999.00	Length (ft)	Btm (ft)	Dia (in)	Slot (in)	Description
		0.00	0.00	0.00	0.00	
		0.00	0.00	0.00	0.00	
		0.00	0.00	0.00	0.00	
Pump Test						
Draw Down	4.00 ft					
Duration	3.00 hrs	Elevation	1,750.00 ft	Aquifer		
Pumping Rate	10.00 igpm	Rec. Pumping Rate	0.00	E-Log	No	
Temp	0.00 deg. F	Intake	0.00	Phys	E02	

Lithology List

Depth (ft)	Material	Colour	Description
15.00	Clay	Yellow	Unknown
91.00	Clay	Blue	Unknown
95.00	Gravel	Unknown	Unknown

Foam 4 (3 Pictures)





Foam 5

Well Description

Foam 5 is located SW 30-32-10-w2 (GPS 13u 0609362e 5736158n)

It is a 4" steel casing well located under a windmill

AAFC was able to measure 22 ft. down the well. The water was flowing out of and around the casing.

According to WSA record # 019608 a well was drilled on this quarter in 1962

The bottom of the well is at 140ft and there is no record of a screen, the log states that it is a clay material to 6 ft. and then gravel from 6ft to 17ft clay from 17ft to 19ft then sand from 19ft to 43ft then clay to 138ft and gravel from 138ft to 140ft

Remediation work

To decommission this well the windmill will have to be removed. The existing well will have to be drilled out and be clear of debris so a cement grout with a specific gravity heavy enough to control the flowing water can then be pumped into the well close to the 140 ft. level from bottom to top.

The well should be cut off at or below ground and buried with local fill.

Windmill, fencing, and related debris around well shall be cleaned up and disposed of off-site.

Access to this site is over very rough terrain and through some narrow paths through trees. A dozer will be needed to push pathway wide enough for drill to access well. Wet conditions exist around the well.

PFRA FOAM LAKE PASTUI

 Completion **08/15/1962**

Foam 5

 WWDR# **019608**

 RM
 Major Basin **11**
 SubBasin **31**
 NTS Map **62M00**
Well Location

LSD	Quarter	Section	Township	Range	Meridian	Reserve	Riverlot	
00	SW	30	032	10	2			Location of Well (in Quarter)
Zone	Easting	Northing	Source	Accuracy				0.00 ft from N/S Boundary
								0.00 ft from E/W Boundary

Well Information

Driller #	MILLS DRILLING					
Water Use	Domestic					
Hole #						
Well Use	Withdrawal	Well Casings				
Installation Method	Other	Length (ft)	Btm (ft)	Dia (in)	Description	
Depth	140.00	0.00	0.00	4.00	Steel	
Water Level	4.00	0.00	0.00	0.00		
Bit	4.00	Screens				
Flowing Head	0.00	Length (ft)	Btm (ft)	Dia (in)	Slot (in)	Description
		0.00	0.00	0.00	0.00	
		0.00	0.00	0.00	0.00	
		0.00	0.00	0.00	0.00	

Pump Test

Draw Down	50.00 ft	Elevation	1,760.00 ft	Aquifer	
Duration	3.00 hrs	Rec. Pumping Rate	0.00	E-Log	No
Pumping Rate	4.00 igpm	Intake	0.00	Phys	E02
Temp	0.00 deg. F				

Lithology List

Depth (ft)	Material	Colour	Description
6.00	Clay	Unknown	Unknown
17.00	Gravel	Unknown	Unknown
19.00	Clay	Blue	Unknown
43.00	Sand	Unknown	Fine
138.00	Clay	Blue	Unknown
140.00	Gravel	Unknown	Coarse

Foam 5 (3 pictures)





Foam 6

Well Description

Foam 6 is located SE 19-32-10-w2 (GPS 13u 0609705e 5734836n)

It is a 4" steel casing well located under a windmill

AAFC was not able to measure down the well. The water was flowing out of and around the casing.

According to WSA record # 019602 a well was drilled on this quarter in 1962

The bottom of the well is at 92ft and there is no record of a screen, the log states that the soils are a clay material to 88 ft. and then coarse gravel from 88ft to 92ft

Remediation work

To decommission this well the windmill will have to be removed. The existing well will have to be drilled out and be clear of debris so a cement grout with a specific gravity heavy enough to control the flowing water can then be pumped into the well close to the 92 ft. level from bottom to top.

The well should be cut off at or below ground and buried with local fill.

Windmill, fencing, and related debris around well shall be cleaned up and disposed of off-site.

Access to this site is over very rough terrain and through some narrow paths through trees. Will need dozer to push pathway wide enough for drill to access well

Wet conditions exist around the well.



Water Well Driller's Report

PFRA REGINA		Completion	07/05/1962
Foam 6			RM
			Major Basin 11
WWDR#	019602		SubBasin 31
			NTS Map 62M00

Well Location							
LSD	Quarter	Section	Township	Range	Meridian	Reserve	Riverlot
00	SE	19	032	10	2		
Zone	Easting	Northing	Source	Accuracy	Location of Well (in Quarter)		
					0.00 ft from N/S Boundary		
					0.00 ft from E/W Boundary		

Well Information						
Driller #	MILLS DRILLING					
Water Use	Domestic					
Hole #	002	Well Casings				
Well Use	Withdrawal	Length (ft)	Btm (ft)	Dia (in)	Description	
Installation Method	Other	0.00	92.00	6.00	Steel	
Depth	92.00	0.00	0.00	0.00		
Water Level	2.00	0.00	0.00	0.00		
Bit	4.00	Screens				
Flowing Head	0.00	Length (ft)	Btm (ft)	Dia (in)	Slot (in)	Description
		0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00
Pump Test						
Draw Down	12.00 ft	Elevation		1,760.00 ft	Aquifer	
Duration	4.00 hrs	Rec. Pumping Rate		0.00	E-Log No	
Pumping Rate	20.00 igpm	Intake		0.00	Phys E02	
Temp	0.00 deg. F					

Lithology List				
Depth (ft)	Material	Colour	Description	
18.00	Clay	Yellow	Unknown	
88.00	Clay	Blue	Unknown	
92.00	Gravel	Unknown	Coarse	

Foam 6 (3 Pictures)





Water well decommission reports must be submitted to Saskatchewan water security agency and a copy also provided to Ag Canada Community Pasture Program Att. Kirk Brossart

Work to be completed by March 15, 2016

Questions may be directed to:

Kirk Brossart

Senior Geoenvironmental Technician

Community Pastures Program

Agriculture & Agri-Food Canada | Agriculture et Agroalimentaire Canada

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