APPENDIX A

Certificates of Title

DATE: 2013/02/22
TIME: 13:36

MANITOBA

STATUS OF TITLE

TITLE NO: 1838534/4

STATUS OF TITLE.....	ACCEPTED	PRODUCED FOR..	LILIYA CHUNDROVA
ORIGINATING OFFICE...	MORDEN	ADDRESS.....	10 PRAIRIE WAY
REGISTERING OFFICE...	MORDEN		WPG MB R2J 3J8
REGISTRATION DATE....	2001/11/16		
COMPLETION DATE.....	2001/11/19	CLIENT FILE...	NA
		PRODUCED BY...	M.DERKSEN

LEGAL DESCRIPTION:

FAIRHOLM HOLDING CO. LTD.

IS REGISTERED OWNER SUBJECT TO SUCH ENTRIES RECORDED HEREON
IN THE FOLLOWING DESCRIBED LAND:

LEGAL SUBDIVISIONS 4 AND 5
OF SECTION 35-9-8 WPM

ACTIVE TITLE CHARGE(S):

1077213/4 ACCEPTED MORTGAGE **REG'D:** 2004/06/25
FROM/BY: FAIRHOLM HOLDING CO. LTD.
TO: AUSTIN CREDIT UNION LIMITED
CONSIDERATION: $4,000,000.00 **NOTES:**

CHARGES AFFECTING THIS INSTRUMENT:
1100530/4 ACCEPTED AMENDING AGREEMENT

1100530/4 ACCEPTED AMENDING AGREEMENT **REG'D:** 2006/06/19
FROM/BY: AUSTIN CREDIT UNION LIMITED
TO: FAIRHOLM HOLDING CO. LTD.
CONSIDERATION: **NOTES:**

ADDRESS(ES) FOR SERVICE:

EFFECT	NAME AND ADDRESS	POSTAL CODE
ACTIVE	FAIRHOLM HOLDING CO. LTD. BOX 550 PORTAGE LA PRAIRIE MB	R1N 3B9

ORIGINATING INSTRUMENT(S):

REGISTRATION NUMBER	TYPE	REG. DATE	CONSIDERATION	SWORN VALUE
1048924/4	T	2001/11/16	$20,000.00	$20,000.00

PRESENTED BY: TEFFAINE / LABOSSIERE
FROM: LUCILLE MARIE LOUISE CHATEL
TO: FAIRHOLM HOLDING CO. LTD.

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA
STORAGE SYSTEM ON 2013/02/22 OF TITLE NUMBER 1838534/4

********** STATUS OF TITLE 1838534/4 CONTINUED ON NEXT PAGE **********

DATE: 2013/02/22
TIME: 13:34

MANITOBA

STATUS OF TITLE

TITLE NO: 1546211/4

PAGE: 1

STATUS OF TITLE.....	ACCEPTED	PRODUCED FOR..	LILIYA CHUNDROVA
ORIGINATING OFFICE...	MORDEN	ADDRESS.....	10 PRAIRIE WAY
REGISTERING OFFICE...	MORDEN		WPG MB R2J 3J8
REGISTRATION DATE....	1998/01/30		
COMPLETION DATE.....	1998/02/04	CLIENT FILE...	NA
		PRODUCED BY...	M.DERKSEN

LEGAL DESCRIPTION:

FAIRHOLM HOLDING CO. LTD.

IS REGISTERED OWNER SUBJECT TO SUCH ENTRIES RECORDED HEREON IN THE FOLLOWING DESCRIBED LAND:

PARCEL I: NE 1/4 36-9-8 WPM

PARCEL II: N 1/2 OF SE 1/4 36-9-8 WPM

PARCEL III: THE FRAC NW 1/4 35-9-8 WPM

PARCEL IV: NE 1/4 35-9-8 WPM
EXCEPTING THEREOUT - PUBLIC ROAD PLAN 1696 MLTO

PARCEL V: SE 1/4 35-9-8 WPM
EXCEPTING THEREOUT
FIRSTLY - ALL MINES AND MINERALS AS SET FORTH IN TRANSFER OF LAND 46357 MLTO (C DIV)
SECONDLY - PUBLIC ROAD PLAN 1696 MLTO

PARCEL VI: E 1/2 OF SW 1/4 35-9-8 WPM
EXCEPTING THEREOUT - ALL MINES AND MINERALS AS SET FORTH IN TRANSFER OF LAND 46357 MLTO (C DIV)

ACTIVE TITLE CHARGE(S):

37775/4 ACCEPTED — CAVEAT — **REG'D:** 1979/06/08
FROM/BY: THE MANITOBA TELEPHONE SYSTEM
TO:
CONSIDERATION: **NOTES:**

1026735/4 ACCEPTED — CAVEAT — **REG'D:** 2000/01/12
DESCRIPTION: CONSTRUCTION & MAINTENANCE OF A WATER PIPE LINE
FROM/BY: CENTRAL MANITOBA RESOURCE MANAGEMENT LTD.
TO: OREST WILLIAM PRESSEY AS AGENT
CONSIDERATION: **NOTES:** PARCELS I, II, IV, V & VI

1077213/4 ACCEPTED — MORTGAGE — **REG'D:** 2004/06/25
FROM/BY: FAIRHOLM HOLDING CO. LTD.
TO: AUSTIN CREDIT UNION LIMITED
CONSIDERATION: $4,000,000.00 **NOTES:**

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA STORAGE SYSTEM ON 2013/02/22 OF TITLE NUMBER 1546211/4

********** STATUS OF TITLE 1546211/4 CONTINUED ON NEXT PAGE **********

MANITOBA

STATUS OF TITLE

STATUS OF TITLE..... ACCEPTED
ORIGINATING OFFICE... MORDEN
REGISTERING OFFICE... MORDEN
REGISTRATION DATE.... 1998/01/30
COMPLETION DATE..... 1998/02/04

PRODUCED FOR.. LILIYA CHUNDROVA
ADDRESS..... 10 PRAIRIE WAY
WPG MB R2J 3J8

CLIENT FILE... NA
PRODUCED BY... M.DERKSEN

ACTIVE TITLE CHARGE(S):

CHARGES AFFECTING THIS INSTRUMENT:
1100530/4 ACCEPTED AMENDING AGREEMENT

1100530/4 ACCEPTED AMENDING AGREEMENT **REG'D:** 2006/06/19
FROM/BY: AUSTIN CREDIT UNION LIMITED
TO: FAIRHOLM HOLDING CO. LTD.
CONSIDERATION: **NOTES:**

ADDRESS(ES) FOR SERVICE:

EFFECT	NAME AND ADDRESS	POSTAL CODE
ACTIVE	FAIRHOLM HOLDING CO. LTD. BOX 550 PORTAGE LA PRAIRIE MB	R1N 3B9

ORIGINATING INSTRUMENT(S):

REGISTRATION NUMBER	TYPE	REG. DATE	CONSIDERATION	SWORN VALUE
1001401/4	EREQC	1998/01/30	$0.00	$0.00

PRESENTED BY: MORDEN CONVERSION PROJECT
FROM: MORDEN LAND TITLES CONVERSION
TO:

FROM TITLE NUMBER(S):

A81445/4 ALL

LAND INDEX:

LOT	QUARTER SECTION	SECTION	TOWNSHIP	RANGE
	NE	35	9	8W
NOTE:	EX PL 1696			
	NW	35	9	8W
NOTE:	FRAC			
	SE	35	9	8W
NOTE:	EX PL 1696 EX M & M			
	SW	35	9	8W
NOTE:	E 1/2 EX M & M			
	NE	36	9	8W
NOTE:				

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA
STORAGE SYSTEM ON 2013/02/22 OF TITLE NUMBER 1546211/4

********** STATUS OF TITLE 1546211/4 CONTINUED ON NEXT PAGE **********

MANITOBA

STATUS OF TITLE

STATUS OF TITLE.....	ACCEPTED	PRODUCED FOR..	LILIYA CHUNDROVA
ORIGINATING OFFICE...	MORDEN	ADDRESS.....	10 PRAIRIE WAY
REGISTERING OFFICE...	MORDEN		WPG MB R2J 3J8
REGISTRATION DATE....	1998/01/30		
COMPLETION DATE.....	1998/02/04	CLIENT FILE...	NA
		PRODUCED BY...	M.DERKSEN

LAND INDEX:

LOT	QUARTER SECTION	SECTION	TOWNSHIP	RANGE
	SE	36	9	8W

NOTE: N 1/2

ACCEPTED THIS 30TH DAY OF JANUARY, 1998
BY R.GILLETA FOR THE DISTRICT REGISTRAR OF
THE LAND TITLES DISTRICT OF MORDEN.

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA
STORAGE SYSTEM ON 2013/02/22 OF TITLE NUMBER 1546211/4.

********** END OF STATUS OF TITLE 1546211/4 **********

APPENDIX B

Geotechnical Report

GEOTECHNICAL REPORT
FAIRHOLME COLONY MANURE STORAGE POND
PORTAGE LA PRAIRIE, MANITOBA

Prepared for:

Mr. Chris Maendel
Fairholme Colony
Box 550 Portage La Prairie, MB
R1N 3B9

Project No: WE 05 079 00 WE

September, 2005

COCHRANE ENGINEERING LTD.

600 – 5 DONALD STREET
WINNIPEG, MB R3L 2T4

ENGINEERS, SCIENTISTS & PROJECT MANAGERS

1.0 INTRODUCTION

The Fairholm Colony is located about 31 kms southwest of Portage La Prairie and 19 kms northeast of Town of Rathwell. The colony is proposing to construct a new, earthen hog manure storage pond within the boundaries of SW-35-09-08-WPM, northeast of the colony. The proposal involves construction of a new two-cell facility and the installation of a forcemain.

This report deals with the geotechnical investigation for the proposed construction of the hog manure storage pond. A site plan of the colony as well as the testhole locations are shown in Drawing WE04142C01, Appendix A.

2.0 BACKGROUND

Cochrane Engineering Ltd. on July 22, 2005 conducted a geotechnical investigation. A total of six testholes, TH1 to TH6 were drilled at the proposed site using a tracked-mounted drill rig at the colony's preferred location for the proposed hog manure storage treatment facility site and domestic lagoon site. Testholes, TH1 and TH6 were drilled for the proposed domestic lagoon and testholes, TH2 to TH5 were drilled for the proposed hog manure storage site.

The subsoils encountered were visually classified to the full extent in each testhole and soil samples were recovered at random intervals. Selected samples from the clay stratum in testholes, TH5 at 1.5m(5 ft), 3m (10 ft) and 4.5m (15 ft) were submitted for Atterberg limit and particle size analysis for classification and estimated hydraulic conductivity. Any groundwater seepage and sloughing encountered in the testholes were noted.

3.0 TOPOGRAPHY

The proposed site is located in an area known as Lower Assiniboine Delta. The Lower Assiniboine Delta is a smooth sandy lacustrine plain below the Manitoba Escarpment. The topography is usually level to gently sloping.

Surficial deposits are composed of mainly sandy deposits that varies from 1 to 4.6m in thickness and are underlain by lacustrine clays and bouldery till. Much of the surficial deposits is underlain by various shales, sandstones and evaporites of the Cretaceous and Jurassic periods.

4.0 SOIL CONDITIONS

4.1 SUBSURFACE CONDITIONS (SOIL PROFILE/GROUNDWATER)

The general soil profile encountered in testholes, TH4 to TH6 revealed a topsoil layer of 50 to 75mm in thickness underlain by a sand layer which become saturated at a depth of 1.1 to 1.2m below grade followed by a thick clayer which extended to the bottom of the testholes at 10.7m below grade. Medium seepage from the saturated sand layer in all of the testholes was observed. A detailed description of the soil profile is presented in the attached logs, Appendix B.

Based on the nearby well log (NE35-09-08W), upper unconfined sand aquifer has been noted in this section. However, the depth of the aquifer (bedrock) ranges from 73m to 77m below grade, well beyond the thin sand over a thick clay layer. The proposed site is included in the Groundwater Pollution Hazard Map as it is near a designated groundwater hazard area, Assiniboine River.

4.2 LABORATORY TESTING

In the laboratory, selected samples from the clay stratum in testholes, TH5 at 1.5m(5 ft),

3m (10 ft) and at 4.6m (15 ft)) were submitted for Atterberg limit, particle size analysis and estimated hydraulic conductivity analysis.

Laboratory test results are attached in Appendix C. The test results classified the 1.5 sample as sandy silt while the sample at 3m and 4.6m as CH material. Based on this test result and particle size analysis, the estimated hydraulic conductivity of the CH in-situ materials is expected to be $<1x10^{-7}$ cm/s. However, if a till pocket, silt seams or sand seams were to encounter during construction, this material should be removed and replaced with high plasticity clay.

5.0 LAGOON DESIGN CONSIDERATIONS

The proposed lagoon will be situated about 500m or more from the nearest residential house in the colony and well removed from any neighbouring buildings. The proposed facility will be approximately 200m long and 100m wide measured from the top of the dykes. The proposed cells will contain a liquid depth of about 5.0m and 1.0m freeboard. The inside and outside side slopes of the dykes will be 4:1. The tops of the dykes are designed to be 3.0m wide to permit vehicles to be driven on the dyke crest. There will be one primary cell and one secondary cell included in the proposed hog manure storage pond.

For lagoon construction, Manitoba Conservation's Environmental guidelines suggest that proposed dykes and bottom of the proposed ponds should be provided with a layer consisting of at least one metre of soil having a permeability of less than $1x10^{-7}$ cm/s. The soil at the proposed pond site consists mainly of CH material which will meet the specified hydraulic conductivity of $1x10^{-7}$ cm/s as shown by the laboratory test results. However, a layer of saturated sandy silt is present between the clay layer. Based on these subsurface conditions, construction of clay core within the dykes is recommended. This core which is composed of suitable clay material will minimise piping that may cause the instability of the slope and minimise construction difficulty from high water table. The depth of impervious clay around TH4 to TH6 is about 3m and beyond. The

clay core (trench) will be approximately two metres wide (minimum) inside the proposed dykes and connected or keyed into the underlying impervious high plastic clay a minimum of 1 metre. The approximate depth of the impervious clay (CH material) ranges from 3 to 3.9m below ground surface. The trench will be backfill with suitable soil, preferably the CH material, in 150mm lifts compacted to 95% Standard Proctor Density, equivalent to at least eight passes with a sheepsfoot roller.

During construction of the proposed ponds, the following steps should be conducted.

1. The entire area for the proposed pond should be stripped of vegetation, topsoil and organic material; the depth of stripped area ranged from 50 to 75mm for the site. The stripped materials should be stockpiled and reused later for the outer slopes and top of the dykes.

2. In view of the high water table, it is expected that significant site access problems to the construction traffic and groundwater problems during the construction for the proposed pond will occur. To minimise construction problems relative to the high water table, it is strongly recommended that prior to construction, a system of temporary, perimeter trenches (say 3 to 3.5m deep minimum) be installed to drain the site and lower the groundwater table. These trenches should be provided with an adequate gradient to drain the water away from the site through a positive drainage outlet. These trenches should have side slopes of not steeper than 3H to 1V. After dewatering the proposed site, layout the proposed pond dimensions.

3. For the proposed pond bottom and insides, see the instruction above. The key should be compacted to 95% standard Proctor density at 3 to 6% over optimum moisture content with a sheepsfoot roller. Any unsuitable material such as sand or silt materials should be removed and replaced with the recommended liner and compacted to 95% standard Proctor density. A shrinkage factor of about 25% should be used in calculating volumes of material used.

4. Excavated material could be used as backfill on the outside face of the dykes.

The embankment material should be placed in 150mm lifts compacted with at least eight passes with a sheepsfoot roller having a foot pressure of no less than 700 kPa.

4. The excavated material can be used as backfill on the outside face of the dykes. The embankment material should be placed in 150mm lifts compacted with at least eight passes with a sheepsfoot roller having a foot pressure of no less than 700 kPa.

Further erosion control against wind and rain action should be provided by grass seeded on the dykes immediately after construction. A well-developed and maintained grass cover should add integrity to the dykes.

6.0 CLOSURE

The findings and recommendations provided in this report were prepared in accordance with generally accepted professional engineering principles and practices. This report deals only with the lagoon design and construction recommendations. The recommendations are based on the results of field and laboratory investigations. If conditions encountered during construction appear to be different than those shown by the test holes at this site, this office should be notified immediately in order that the recommendations can be reviewed.

Prepared by: S.S.Urbano, P.Eng.
Reviewed by: Alf Poetker, P.Eng.

APPENDIX A

Site Plan

FAIRHOLME COLONY
MANURE STORAGE LAGOON

TEST HOLE AND MONITORING WELL LOCATIONS

COCHRANE ENGINEERING

WE 05 079 00 WE

APPENDIX B

Testhole Logs

COCHRANE ENGINEERING

Project No: WE-05-078-00-WE

TH1

Project: Fairholme WWSP

Client: Fairholme Colony

Enclosure:

Location: Portage La Prairie, MB.

Engineer: SSU

SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Elevation	Field Vane (m-kg)	Blows/0.3m	Pocket Penetrometer Test kPa	Water Content %
0 / 0		Ground Surface	100				
1		***TOPSOIL*** 50mm, clayey, black, trace of rootlets	99.2				
3 / 1		***SAND*** grey, fine to medium grained, loose, dry to moist, very silty; brown below 0.2m				75	
7 / 2		***CLAY*** stiff to firm, grey-brown, fissured; stiff below 2.1m, high plasticity. WATER WAS MEASURED AT 0.8M AND TESTHOLE CAVED IN AT 2.3M BELOW GRADE AFTER DRILLING.				100	
10 / 3						100	
15 / 4			95.5			50	
16 / 5		End of Testhole					
33 / 10							
36 / 11							
39 / 12							

Pocket Penetrometer Test kPa: 50, 150, 250, 350

Water Content %: Wp 20 — 40 — 60 — Wl 80

Drill Method: S/S Auger

Drill Date: 07/22/05

Hole Size: 125mm

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, Mb.
R3L 2T4

Datum: Assumed 100.0 ft

Checked by: SSU

Sheet: 1 of 1

COCHRANE ENGINEERING

Project No: WE-05-078-00-WE

TH2

Project: Fairholme WWSP

Client: Fairholme Colony

Enclosure:

Location: Portage La Prairie, MB.

Engineer: SSU

SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Elevation
0 / 0		Ground Surface	100
		TOPSOIL 80mm, sandy, black, trace of rootlets	
3 / 1		***SAND*** tan-brown, fine to medium grained, loose, moist, very silty; WET AT 1.2M, brown	98.3
7 / 2		***CLAY*** stiff to firm, grey-brown, fissured; stiff below 2.1m, high plasticity. WATER WAS MEASURED AT 1.2M AND TESTHOLE CAVED IN AT 2.3M BELOW GRADE AFTER DRILLING.	
10 / 3			
13 / 4			
15 / 5			95.5
16 / 5		End of Testhole	
20 / 6			
23 / 7			
26 / 8			
29 / 9			
33 / 10			
36 / 11			
39 / 12			
40			

Field Vane(m-kg)

Blows/0.3m

Pocket Penetrometer Test kPa

50 150 250 350

50

100

100

Water Content %

Wp |-----0-----| Wl

20 40 60 80

Drill Method: S/S Auger

Drill Date: 07/22/05

Hole Size: 125mm

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, Mb.
R3L 2T4

Datum: Assumed 100.0 ft

Checked by: SSU

Sheet: 1 of 1

COCHRANE ENGINEERING

Project No: WE-05-078-00-WE

TH3

Project: Fairholme WWSP

Client: Fairholme Colony

Enclosure:

Location: Portage La Prairie, MB.

Engineer: SSU

SUBSURFACE PROFILE

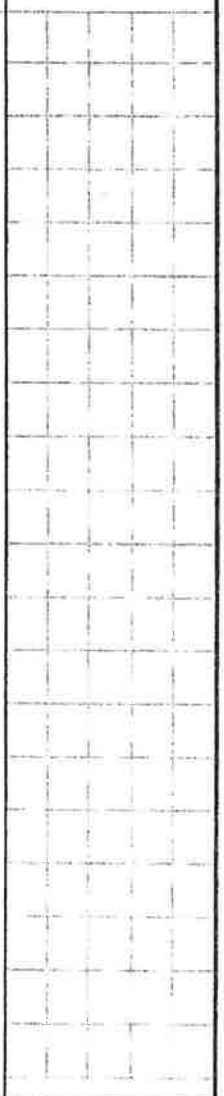
Depth (ft / m)	Symbol	Description	Elevation
0 / 0		Ground Surface	100
		TOPSOIL 75mm. clayey, black, trace of rootlets	
1 / 0		*SAND* black-brown, fine to medium grained, loose, dry to moist, very silty; brown below 1m; WET AT 1.2M	98
2 / 1		*CLAY* stiff to firm, grey-brown, fissured; stiff below 3m, high plasticity. WATER WAS MEASURED AT 1.2M AND TESTHOLE CAVED IN AT 1.2M BELOW GRADE AFTER DRILLING.	
3 / 2			
4 / 3			
5 / 4			95.5
6 / 5		End of Testhole	
7 / 6			
8 / 7			
9 / 8			
10 / 9			
11 / 10			
12 / 11			
40 / 12			

Field Vane(m-kg)

Blows/0.3m

Pocket Penetrometer Test kPa

Water Content %



Drill Method: S/S Auger

Drill Date: 07/22/05

Hole Size: 125mm

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, Mb.
R3L 2T4

Datum: Assumed 100.0 ft

Checked by: SSU

Sheet: 1 of 1

COCHRANE ENGINEERING

Project No: WE-05-079-00-WE

TH4

Project: Fairholm Manure Storage Pond

Client: Fairholm Colony

Enclosure:

Location: Portage La Prairie, MB.

Engineer: SSU

SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Elevation
0 / 0		Ground Surface	100
		TOPSOIL 50mm, clayey, black, trace of rootlets	
1 / 1		*SAND* black-brown, dry, fine to medium grained, loose, moist, silty; WET AT 1.2M AND CAVING	98.1
2 / 2			
3 / 3		*CLAY* stiff to firm, grey-brown, fissured; grey below 3m, high plasticity. TESTHOLE CAVED IN AT 1M BELOW GRADE AFTER DRILLING.	
4 / 4			
5 / 5			
6 / 6			
7 / 7			
8 / 8			
9 / 9			
10 / 10			89.4
11 / 11		End of Testhole	
12 / 12			

Field Vane(m-kg)

Blows/0.3m

Pocket Penetrometer Test kPa

50 150 250 350

50

50

100

100

100

100

125

Water Content %

Wp 20 | 40 0 60 | Wl 80

Drill Method: S/S Auger

Drill Date: 07/22/05

Hole Size: 125mm

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, Mb.
R3L 2T4

Datum: Assumed 100.0 ft

Checked by: SSU

Sheet: 1 of 1

COCHRANE ENGINEERING

Project No: WE-05-079-00-WE

TH5

Project: Fairholm Manure Storage Pond

Client: Fairholm Colony

Enclosure:

Location: Portage La Prairie, MB.

Engineer: SSU

SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Elevation	Field Vane(m-kg)	Blows/0.3m	Pocket Penetrometer Test kPa	Water Content %
0 / 0		Ground Surface	100				
0–3 / 0–1		***TOPSOIL*** 50mm, clayey, black, trace of rootlets	99.2			50	Wp 20 – 0 – WI 40 60 80
3–10 / 1–3		***SAND*** black-brown, dry, fine to medium grained, loose, moist, silty; WET AT 1.2M AND CAVING				50, 100, 100	
10–34 / 3–10		***CLAY*** firm to soft, grey-brown, fissured; stiff at 2m; grey below 3m, high plasticity. TESTHOLE CAVED IN AT 1.5M BELOW GRADE AFTER DRILLING. WATER WAS MEASURED AT 0.8M B.G				100, 100, 100, 100, 100	
34 / 10		End of Testhole	89.4			125	

Drill Method: S/S Auger

Drill Date: 07/22/05

Hole Size: 125mm

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, Mb.
R3L 2T4

Datum: Assumed 100.0 ft

Checked by: SSU

Sheet: 1 of 1

COCHRANE ENGINEERING

Project No: WE-05-079-00-WE

TH6

Project: Fairholm Manure Storage Pond

Client: Fairholm Colony

Enclosure:

Location: Portage La Prairie, MB.

Engineer: SSU

SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Elevation
0 / 0		Ground Surface	100
		TOPSOIL 75mm, clayey, black, trace of rootlets	
1 / 1		*SAND* black-brown, dry, fine to medium grained, loose, moist, silty; WET AT 1.1M AND CAVING, tan-brown	98.1
2 / 2			
3 / 3			
4 / 4			
5 / 5			
6 / 6		*CLAY* firm to soft, grey-brown, fissured; stiff at 2.3m; grey below 3m, high plasticity. TESTHOLE CAVED IN AT 1.2m BELOW GRADE AFTER DRILLING. WATER WAS MEASURED AT 1.1M B.G	
7 / 7			
8 / 8			
9 / 9			
10 / 10			89.4
11 / 11		End of Testhole	
12 / 12			

Field Vane(m-kg) | Blows/0.3m

Pocket Penetrometer Test kPa: 50 | 150 | 250 | 350

Pocket Penetrometer readings: 100, 100, 150, 100, 100, 100, 100

Water Content %: Wp 20 | 40 | 60 | 80 Wl

Drill Method: S/S Auger

Drill Date: 07/22/05

Hole Size: 125mm

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, Mb.
R3L 2T4

Datum: Assumed 100.0 ft

Checked by: SSU

Sheet: 1 of 1

Pumping level at end of test: ft. below ground
Test duration :??? hours, ?? minutes Water temperature: ?? degrees F

REMARKS

GROUND LEVEL ELEV EST 935 FT

LOCATION - 34-09-08W

Owner - NORFOLK COMMUNITY Driller - PADDOCK DRILLING LTD.
Well ID - Well Use - Production
Date Completed - May/09/89 Water Use - Domestic

WELL LOG (Imperial Units)

From	To (ft.)	Log	From	To (ft.)	Log
0	6	SILT BROWN	10	20	SILTY GREY CLAY
6	10	SILTY BROWN CLAY	20	30	FINE GREY SAND

WELL CONSTRUCTION

From	To (ft.)	Inside Dia.(in)	Outside Dia.(in)	Screen Slot Size (in)	Type	Material
0	9 casing	30			CORRUGATED	FIBERGLASS
9	29 perforations	30		.040	SAW CUT	FIBERGLASS
0	30 gravel pack					WASHED S.

Top of Casing - 1.0 ft. above ground

PUMPING TEST

Date : May 09 89 Pumping @ 12 Imp. gallons/minute
Water level before pumping: 11 ft.below ground
Pumping level at end of test: 24 ft. below ground
Test duration : 1 hours, 30 minutes Water temperature: ?? degrees F

REMARKS

ROSSENDALE
PUMP TEST IS RECOVERY

LOCATION - NE35-09-08W

Owner - WRB Driller - INTERNATIONAL WATER SUPPLY LTD
Well ID - T.H. #B-2 Well Use - Test Well
Date Completed - May/10/74 Water Use -

WELL LOG (Imperial Units)

From	To (ft.)	Log
0	9	SAND- LIGHT BROWN

9	17	CLAY- GREY, SILTY, SOFT
17	127	CLAY- GREENISH GREY, SOFT
127	132	TILL- GREY, SANDY, GRAVELLY
132	142	TILL- LIGHT GREY, CLAYEY
142	165	SHALE- DARK GREY
165	166	SAND- FINE
166	175	SHALE- DARK GREY, HARD
175	183	SHALE- LIGHT GREENISH GREY, SOME BENTONITE
183	205	SHALE- BLUISH GREEN, WITH LAYERS OF PALE GREEN SHALE
205	212	SHALE- BLUISH GREEN, SOFT CREAM BROWN LIMESTONE LAYERS
212	216	LIMESTONE-LIGHT BROWN, SOFT, SANDY
216	226	SANDSTONE-LIGHT BROWN, POORLY CEMENTED, WITH FEW BLUE GREY SHALE LAYER
226	253	SANDSTONE- DIRTY BROWN POORLY CEMENTED, SOME HARD LAYERS AND FEW GREY SHALE LAYER
253	261	SHALE- GREY WITH THIN SANDSTONE LAYERS
261	282	SHALE- BROWN SOFT
282	284	SANDSTONE- BROWNISH GREY, VERY HARD
284	300	SHALE-DARK GREY, CLAYEY WITH THIN HARD SS AFTER 291 FEET
300	307	SHALE-LIGHT TO MEDIUM GREY, CLAYEY, FIRM
307	355	SHALE BROWN, GRADING TO REDDISH BROWN AT 210' WITH LAYERS OF MED. GREY SHALE
355	370	SHALE LIGHT GREY, WHITE SANDY
370	373	SHALE RED, LIGHT GREY AND WHITE, LAYERED SANDY
373	375	SHALE- WHITE SANDY
375	388	SHALE MEDIUM GREY, LIGHT GREY AND WHITE, SILTY& CLAYEY LAYER
388	392	LIMESTONE& SANDSTONE- FAIRLY WELL CEMENTED
392	401	SHALE WHITE, LIGHT GREY, RED& MED. GREY, SILTY& CLAYEY LAYERS

WELL CONSTRUCTION

From	To (ft.)	Inside Dia.(in)	Outside Dia.(in)	Screen Slot Size (in)	Type	Material
0	239 casing	2			STANDARD	BLACK IRON
239	253 perforations	2			STANDARD	BLACK IRON

Top of Casing - 0.0 ft. below ground

PUMPING TEST

Date - Rate = 20 Imp. gallons/minute
Water level before pumping: ft.below ground
Pumping level at end of test: 60.7 ft. below ground
Test duration : 1 hours, 35 minutes Water temperature: ?? degrees F

REMARKS

□BRANDON MAP SHEET AREA,300FT.W.OF PTH.305 & 10FT.S.OF E-W.RD.ALLOW, SWL=47.98FT./12HRS.,E-LOGGED,CHEMICAL ANALYSIS.
H=1260 PPM, FE=1.3 PM, EC=17,500, 2 INCHES OF PIPE REMOVED AFTER PUMP TEST

APPENDIX C

Laboratory Test Results

05079

THE NATIONAL TESTING LABORATORIES LIMITED
Established in 1923

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August 31, 2005

Cochrane Engineering
600-5 Donald Street
Winnipeg, Manitoba
R3L 2T4

Project: 05-079 (Fairholm Colony Domestic Lagoon & Hog Manure Lagoon)
Attention: Silvestre Urbano
(COC-514)

Soil samples were submitted to our laboratory on July 26, 2005. The following tests were conducted on selected soil samples as requested by the client:

- water content (ASTM D2216)
- liquid limit, plastic limit, and plasticity index (ASTM D4318)
- particle size analysis (ASTM D422)

The test results are provided in the attached tables.

Please call if you have any questions regarding this report.

Prepared By: Lesley Roberts
Lesley Roberts,
Environmental and Geotechnical
Engineering Services

Reviewed By:
Rob Hochkievich, C. Tech.
Environmental and Geotechnical
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TABLE 1
PROJECT: 05-072 FAIRHOLM COLONY
DOMESTIC LAGOON & HOG MANURE LAGOON
WATER CONTENT TEST DATA

Sample Identification	Water Content, %
TH2 - 5'	18.9
TH2 - 7.5'	27.3
TH2 - 10'	31.5
TH2 - 15'	34.1
TH5 - 2.5'	26.5
TH5 - 5'	34.6
TH5 - 7.5'	38.3
TH5 - 10'	36.8
TH5 - 12.5'	34.7
TH5 - 15'	36.1
TH5 - 20'	36.6
TH5 - 25'	34.4
TH5 - 30'	34.1
TH5 - 35'	35.6

TABLE 2
PROJECT: 05-072 FAIRHOLM COLONY
DOMESTIC LAGOON & HOG MANURE LAGOON
PLASTICITY INDEX TEST DATA

Sample Identification	Liquid Limit	Plastic Limit	Plasticity Index	% Retained on 0.425 mm Sieve
TH2 - 5'	NON PLASTIC			45.6
TH2 - 7.5'	39	18	21	1.4
TH5 - 10'	57	22	35	0.1

Notes:
1. Test conducted in accordance with ASTM D4318 Method A (multipoint liquid limit).
2. Sample was air-dried during sample preparation.

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TABLE 3
PROJECT: 05-072 FAIRHOLM COLONY
DOMESTIC LAGOON & HOG MANURE LAGOON
PARTICLE SIZE ANALYSIS TEST DATA

Sample Identification	Gravel, % 75 to 4.75 mm	Sand, %			Silt, % <0.075 to 0.005 mm	Clay, % < 0.005 mm	Colloids, % < 0.001 mm
		Coarse <4.75 to 2.0 mm	Medium <2.0 to 0.425 mm	Fine <0.425 to 0.075 mm			
TH2 - 7.5'	0.0	0.0	1.4	9.6	52.7	36.3	24.0
TH5 - 5'	0.0	0.2	1.6	3.0	69.3	35.9	21.9
TH5 - 10'	0.0	0.0	0.1	0.1	35.2	64.6	37.4
TH5 - 15'	0.0	0.0	1.3	1.2	39.2	58.3	38.6

Notes:
1. Test conducted in accordance with ASTM D422.
2. A high speed stirring device was used for 1 minute to disperse the test sample.
3. The percentage of colloids is also included in the clay size fraction.