

# 2016 Farm Book – Canyon Road Farms Ltd.

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Prepared by: Ruth McDougall, M.Sc., PAg, Consulting Agrologist

V3. July 19, 2016

## Introduction

On May 12, 2016, Canyon Road Farms of Armstrong BC (Alfred Geisbrecht, Director) was served with a Pollution Abatement Order (PAO) under the Environmental Management Act (File: UA Hullcar Aquifer, AMS# 349898). The PAO referenced the lands identified by PID 003-706-745 as well as other lands associated with the operation. This report contains the information specified in the PAO to be provided to the Director (2016 'Farm Book').

Canyon Road Farms consists of 10 acres of land (4 hectares) located at the junction of Canyon, Hullcar and Lansdowne Roads in Spallumcheen BC. The operation consists of 3 barns used for the production of broiler chickens as well as a dwelling and outbuildings (see location map and site map). Each barn is sized to produce 15,000 birds per cycle. The barns and farmstead occupy approximately half of the land base, leaving approximately 5 acres or 2 hectares of potentially farmable land. Broiler birds were produced on this site from 1985 to January 2016. The farm's quota was sold in February 2016 and production of birds has ceased due to owner retirement.

## Disclaimer

This report is based on information obtained from Canyon Road Farms Ltd. which is believed to be accurate and on site conditions observed during site visits made on May 27, 2016 and June 27, 2016. Reasonable efforts were made to confirm the accuracy of information provided. No responsibility is taken for inaccurate information provided to the author in the preparation of this report. Due to the time of year of preparation of this report (June), site conditions may have been different than would be observed during the winter and spring months. Given these factors, this report has been prepared as accurately as possible.

## Background

Canyon Road Farms was in operation from 1985 until January 28, 2016 at which point the operation stopped producing chickens; the farm's quota was sold on February 10, 2016 (see Appendix 2. Proof of sale of quota). After that time, the barns were leased on a short-term basis to another operator who grew chickens in the barn for two cycles (approximately 3 months). Since May 29, 2016, the barns have been empty. No birds will be grown in the barns until the operation is sold. The owners are planning to sell the property. All manure has been removed from the property including a small pile of broiler manure compost that the owners were using to amend their vegetable garden (Photograph 1).

**Manure management:** The historic manure management strategy for the operation has been to have all manure hauled away by a local farmer for use on other land in the area. Manure was removed from the barns after each production cycle, stored temporarily on the concrete pads attached to the back of the barns and hauled away within 2-3 days by the contract hauler. Manure was never stored in other areas

of the property (aside from a small compost pile for use on the owner's home garden), and always stored on the concrete pads outside of the barns. This is an acceptable manure management strategy for this operation as it does not have sufficient land base to utilize the manure as a fertilizer for crop production.

**Land use:** The owners have never applied any of their broiler manure or any other manure on their own land base (aside from a small amount used to amend their home vegetable garden). They have not produced crops on their land. They have not applied chemical fertilizer to the land. The land was leased for a short period of time between approximately 2005 and 2010 to a neighbour to grow trees, but that project was abandoned in approximately 2010 and since then the land has been neither fertilized nor irrigated. A small number of trees remain in the approximately 0.25 ha area that was planted to trees, and the remainder of the farm's arable land is fallow or planted to agronomic grasses which are not fertilized or harvested but are mowed periodically (Photograph 2).

As of May 29, 2016, the farm is no longer generating manure, and as of June 1, 2016, all manure has been removed from the property.

### **Soils, Water and Climate**

**Soils:** The soil on the whole of the Canyon Road property is mapped as belonging to the Enderby soil series (Sprout and Kelley 1960/1963). This soil has developed on glacio-lacustrine sediments. It is mapped as being the 'silt loam phase' of the soil. It has a texture of silt-loam in the surface 0 to 30 cm, and silt at depth. These soils are moderately fine textured with a good cation exchange capacity and ability to retain nutrients and moisture.

**Climate:** The climate in the north Okanagan is characterized by hot summers with a seasonal moisture deficit where crop requirements exceed precipitation. Winters are cold with air temperatures below freezing for several months and frozen soils. Annual precipitation is 557 mm (22") which is fairly evenly distributed throughout the year. Seventy percent of the precipitation (380 mm, 15") falls as rain primarily during the March through November period, and 30% as snow during the December through February period (data from the Silver Creek climate station, the closest station to the subject property) (Environment Canada 2016).

**Surface and groundwater:** There are no surface water sources within 30 m of the property. Groundwater is at least 3 m below the soil surface. There are two domestic wells on the property, one drawing from the shallow unconfined aquifer 103 and one drawing from the deeper confined aquifer below it. Both are located at least 30 m from barns and temporary manure storage pads. Neither were located on the BC well log data base (Gov't of BC 2016).

#### **1. Farm Book – 2016**

- i. Fields to be farmed in 2016: The farm's lands will not be farmed in 2016.
- ii. Storage capacity required for manure: No manure is being produced by the operation so no storage is currently required. The farm has sufficient temporary storage capacity to store manure until it is hauled away as was the manure management strategy on the farm.

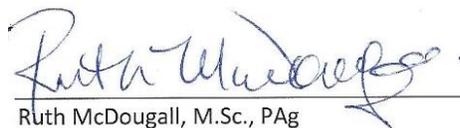
- iii. Types and amounts of manure and organic N fertilizer to be used in 2016: No manure or organic fertilizer will be used on the farm's lands during 2016.
- iv. Manure management – 2016: The operation is not generating manure as the owners have retired and sold their quota. The barns will not be used for bird production during 2016 until such time and if the property is sold.
- v. Dates and rates of manure application in 2016: No manure will be applied to the farm's lands during 2016.
- vi. Crops planted in 2016: The farm's lands are currently planted to agronomic grasses which are mowed periodically but not fertilized or harvested.
- vii. Drainage management measures – 2016: No drainage management measures are required for 2016 as there are no watercourses, either permanent or ephemeral, running through the property or within 30 m of the property, and there is no manure generated on the farm at this time.
- viii. Site map (attached)

2. **Drainage management measures:** The farm requires no clean runoff management measures. There are no permanent or seasonal watercourses running through or within 30 m of the property. The farm's owner indicated that approximately once every 5 years during extreme spring melt events, a small volume of runoff water moves from the property to the south onto the subject property, flows in a south-north direction in the area between the two westerly barns and the easterly barn, and dissipates into the ground on the north edge of the property (Photograph 3). This occurs during February or March and when it occurs the flow lasts for 2 to 5 days depending on day and night temperatures, snow load and presence of frost in the ground. There is also occasionally pooling of snow melt water in areas of the property. The runoff/snowmelt water is not present in sufficient volume to contact manure should it occur when there is manure stored on the concrete pads, and therefore poses no risk of creating contaminated runoff or leachate.
3. **Permanent and temporary manure storage facilities:** The farm currently has sufficient short term manure storage to hold manure from one cycle from each barn. The storage is in the form of 12 m by 12 m concrete pads extending off the back of each barn (Photograph 4). This provides approximately 120 m<sup>2</sup> of storage area assuming a 1 m setback from pad edges when manure is stored. Each barn holds 15,000 birds, and at 0.096 L of manure plus bedding per day per broiler (BCMAF 2010) over a 42 day cycle, approximately 60 m<sup>3</sup> of litter (manure+bedding) is produced each cycle in each barn. This would require an area approximately 8 m by 8 m, or 64 m<sup>2</sup> to store safely. Based on these calculated manure volumes, the existing concrete pads attached to each barn are of sufficient size provided that manure is hauled away after each cycle which has been the normal practice at the farm. These storages have been used for temporary

manure storage after each cycle, typically no more than 2-3 days.

4. **Agronomic application rates of manure and fertilizer:** This farm is not generating manure at this time and does not intend to apply manure or fertilizer to the farm's 2 hectares of arable land in 2016.
5. **Farm Book 2017:** The farm is currently non-operational. It is not known whether the farm will be sold, and if it is sold, whether the barns will be used for production of broiler birds in 2017.
6. **Current water quality in farm's wells:** There are two wells on the property, one that draws from Hullcar aquifer 103 that has not been in use for 15 years (identified as OA on lab data), and a second deeper well that currently supplies all the farm's water requirements that draws from the confined aquifer below aquifer 103 (identified as CA on lab data). Both wells are located >30 m from barns and temporary manure storage pads. Neither well was found on the BC well log data base. Both wells were recently tested by a third party tester (June 2016) and found to contain nitrate levels below detection limit (Appendix 3. Current water quality).
7. **Recommendations for future manure management on site:** If the operation is sold, and/or if production recommences in the existing barns, it is recommended that the operators implement the same manure management strategy as has been used historically on the site because the farm does not have sufficient land base to utilize the manure produced by the operation. It is recommended that manure is stored temporarily on the concrete pads outside each barn, and hauled away to be utilized elsewhere. Manure should be covered immediately after being removed from the barn.

Prepared by:

A handwritten signature in cursive script, appearing to read "Ruth McDougall", is written over a horizontal line.

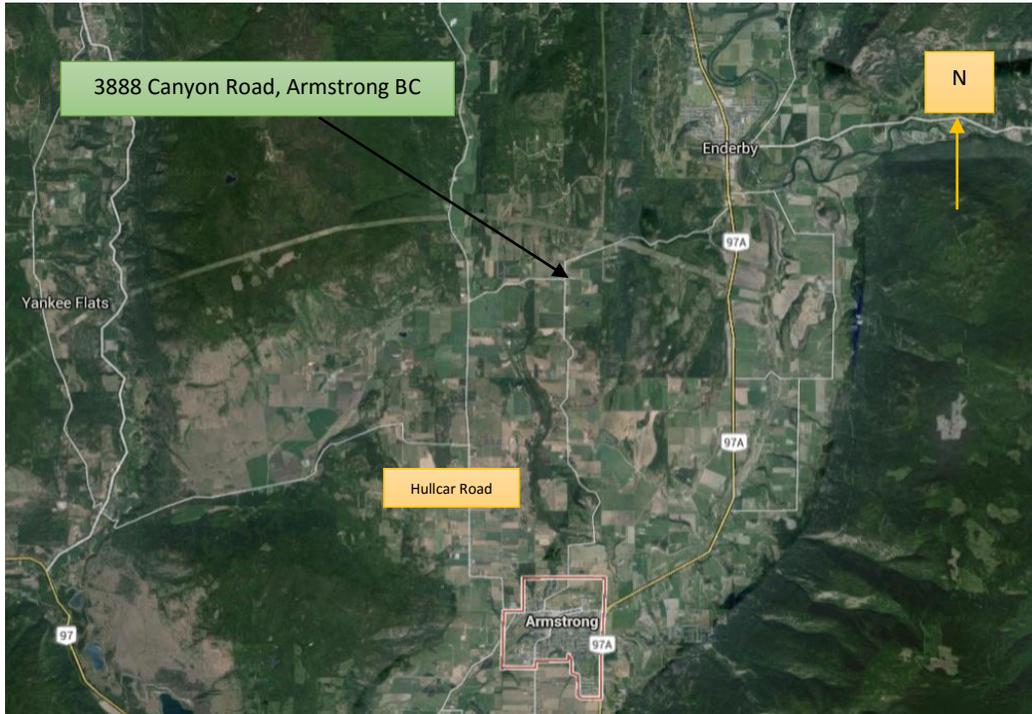
Ruth McDougall, M.Sc., PAg

July 19, 2016

## References

- BCMAF. 2010. BC Environmental Farm Plan Reference Guide. 5<sup>th</sup> Ed., 2010.  
[www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/environmental-farm-planning/efp-reference-guide/full\\_efp\\_reference\\_guide.pdf](http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/environmental-farm-planning/efp-reference-guide/full_efp_reference_guide.pdf) (Accessed June 29, 2016).
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[www.climate.weatheroffice.ec.gc.ca/climate\\_normals](http://www.climate.weatheroffice.ec.gc.ca/climate_normals) (Accessed June 29, 2016).
- Sprout, P.N and C.C. Kelley. 1960. Soil Survey of the North Okanagan Valley, BC Department of Agriculture, 1960. [www.sis.agr.gc.ca/cansis/publications/surveys/bc/bc101/index.html](http://www.sis.agr.gc.ca/cansis/publications/surveys/bc/bc101/index.html) (Accessed June 29, 2016).
- Sprout, P.N and C.C. Kelley. 1963. Soil Map of the Armstrong Area. BC Department of Agriculture.  
[www.sis.agr.gc.ca/cansis/publications/surveys/bc/bc101/index.html](http://www.sis.agr.gc.ca/cansis/publications/surveys/bc/bc101/index.html) (Accessed June 29, 2016).

**Location Map: Canyon Road Farms Ltd., 3888 Canyon Road, Armstrong BC**



**Site Map: Canyon Road Farms Ltd., 3888 Canyon Road, Armstrong BC**



## Appendix 1. Photos



Photograph 1. Site of compost pile which was removed on June 1, 2016. Photo taken June 27, 2016.



Photograph 2. Trees, fallow land and area of agronomic grasses to north of barns, June 27, 2016.



Photograph 3. Area where periodic runoff dissipates into ground (grassed area to north of barns) on June 27, 2016.



Photograph 4. Concrete pad for temporary manure storage as of June 27, 2016.

## Appendix 2. Canyon Road Farms Ltd. Confirmation of Sale of Quota



2801 - 28th Street, Vernon, BC V1T 4Z5

Dirk J. Sigalet, QC  
Shelly Anderson, Paralegal  
T: 250 • 549 • 5006  
dirk@sigaletco.com  
www.sigaletco.com

June 22, 2016

Our file: 03956-002

via e-mail only [mcdougallr@outlook.com](mailto:mcdougallr@outlook.com)

Ms. Ruth McDougall, P. AG.  
Armstrong, B.C.

Dear Ms. McDougall

Re: Canyon Road Farms Ltd. ("Canyon") Quota Sale to Golden Cedar Farms  
Ltd. (Golden") (Principal: Don Hanson)

Since January, 1985 Canyon has operated a farming business of raising broiler chickens authorized by a Quota allotted by the BC Chicken Marketing Board (the "Board"). I have been Canyon's solicitor since 1985. This farming business was operated on Canyon lands legally described as: PID 003-706-745. (the "Canyon Lands")

On February 10, 2016 Canyon sold its entire Quota to Golden. Golden conducts its business of raising broiler chickens authorized by the Quota it purchased from Canyon and duly approved by the Board. This farming business is operated on Golden lands legally described as: PID 013-522-230. (the "Golden Lands").

Since February 10, 2016 and subject to the below mentioned transition period, Canyon has not conducted a farming business of raising broiler chickens because it has no Quota and is thereby no longer authorized by the Board. Canyon is not conducting any other farming business on Canyon's lands. There was a transition period and Golden did raise broiler chickens on the Canyon Lands for the period February 10, 2016 to May 29, 2016. The manure was removed from the Canyon Lands on June 1, 2016.

Yours faithfully,  
SIGALET & Co.  
per:

Dirk J. Sigalet, Q.C.

DJS: 2016-06-21 Sig-sale confirm-Ruth ltr  
c.c. client

## Appendix 3. Current Water Quality Data – Canyon Road Farms Ltd., June 2016

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### Report Transmission Cover Page

Bill To: Sure Crop Feeds	Project:	Lot ID: <b>1145327</b>
Report To: Sure Crop Feeds	ID:	Control Number:
PO Box 250	Name:	Date Received: Jun 23, 2016
HWY 97 North	Location: Canyon Road OA	Date Reported: Jun 24, 2016
Grindrod, BC, Canada	LSD:	Report Number: 2113056
V0E 1Y0	P.O.:	
Attn: Randy Kurulak	Acct code:	
Sampled By:		
Company:		

Contact & Affiliation	Address	Delivery Commitments
Accounts Payable Sure Crop Feeds	, Box 250 Grindrod, British Columbia V0E 1Y0 Phone: (250) 838-6855 Fax: (250) 838-6990 Email: <a href="mailto:cynthia@surecropfeeds.com">cynthia@surecropfeeds.com</a>	On [Lot Approval and Final Test Report Approval] send (Invoice) by Email - Single Report
Randy Kurulak Sure Crop Feeds	HWY 97 North, PO Box 250 Grindrod, British Columbia V0E 1Y0 Phone: (250) 838-6855 Fax: (250) 838-6990 Email: <a href="mailto:rkurulak@telus.net">rkurulak@telus.net</a>	On [Lot Verification] send (COA) by Email - Single Report On [Report Approval] send (COC, Test Report) by Email - Merge Reports On [Lot Creation] send (COR) by Email - Single Report

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Page 1 of 2



## Analytical Report

Bill To: Sure Crop Feeds	Project:	Lot ID: <b>1145327</b>
Report To: Sure Crop Feeds	ID:	Control Number:
PO Box 250	Name:	Date Received: Jun 23, 2016
HWY 97 North	Location: Canyon Road OA	Date Reported: Jun 24, 2016
Grindrod, BC, Canada	LSD:	Report Number: 2113056
V0E 1Y0	P.O.:	
Attn: Randy Kurulak	Acct code:	
Sampled By:		
Company:		

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
<b>Reference Number</b> 1145327-1					
<b>Sample Date</b> June 22, 2016					
<b>Sample Time</b> 08:30					
<b>Sample Location</b>					
<b>Sample Description</b> Canyon Road OA / 3.0°C					
<b>Sample Matrix</b> Drinking Water					
<b>Microbiological Analysis</b>					
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	11.1	1.0	0 per 100 mL Above MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL Below MAC
<b>Routine Water</b>					
Nitrate and Nitrite - N	Dissolved	mg/L	<0.02	0.01	

Approved by:

Carol Nam, Dipl. T.  
 Quality Officer

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).  
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**Analytical Report**

Bill To: Sure Crop Feeds	Project:	Lot ID: <b>1145335</b>
Report To: Sure Crop Feeds	ID:	Control Number:
PO Box 250	Name:	Date Received: Jun 23, 2016
HWY 97 North	Location: Canyon Road CA	Date Reported: Jun 24, 2016
Grindrod, BC, Canada	LSD:	Report Number: 2113061
V0E 1Y0	P.O.:	
Attn: Randy Kurulak	Acct code:	
Sampled By:		
Company:		

<b>Reference Number</b>	1145335-1
<b>Sample Date</b>	June 22, 2016
<b>Sample Time</b>	08:30
<b>Sample Location</b>	Canyon Road CA / 3.1°C
<b>Sample Description</b>	Canyon Road CA / 3.1°C
<b>Sample Matrix</b>	Drinking Water

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments
<b>Microbiological Analysis</b>					
Total Coliforms	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL Below MAC
Escherichia coli	Enzyme Substrate Test	MPN/100 mL	<1.0	1.0	0 per 100 mL Below MAC
<b>Routine Water</b>					
Nitrate and Nitrite - N	Dissolved	mg/L	<0.02	0.01	

Approved by:   
 Carol Nam, Dipl. T.  
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### Methodology and Notes

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Report To: Sure Crop Feeds	ID:	Control Number:
PO Box 250	Name:	Date Received: Jun 23, 2016
HWY 97 North	Location: Canyon Road CA	Date Reported: Jun 24, 2016
Grindrod, BC, Canada	LSD:	Report Number: 2113061
V0E 1Y0	P.O.:	
Attn: Randy Kurulak	Acct code:	
Sampled By:		
Company:		

### Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Anions by IEC in water (Surrey)	APHA	* Single-Column Ion Chromatography with Electronic Suppression, 4110 C	23-Jun-16	Exova Surrey
Total and E-Coli - Collert - DW (Surrey)	APHA	Enzyme Substrate Test, APHA 9223 B	23-Jun-16	Exova Surrey

\* Reference Method Modified

### References

APHA Standard Methods for the Examination of Water and Wastewater

### Guidelines

Guideline Description Health Canada GCDWQ  
 Guideline Source Guidelines for Canadian Drinking Water Quality, Health Canada, October 2014  
 Guideline Comments MAC = Maximum Acceptable Concentration  
 AO = Aesthetic Objective  
 OG = Operational Guideline for Water Treatment Plants  
 Refer to Health Canada GCDWQ for complete guidelines and additional drinking water information at [www.hc-sc.gc.ca](http://www.hc-sc.gc.ca)

### Comments:

The comparison of test results to guideline limits is provided for information purposes only. This is not to be taken as a statement of conformance / nonconformance to any guideline, regulation or limit. The data user is responsible for all conclusions drawn with respect to the data and is advised to consult official regulatory references when evaluating compliance.

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3  
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Randy Kurulak, BSA, MSc.  
Poultry Nutritionist

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surecropfeeds.com

DRINKING WATER TESTING

Name: Sure Crop Feeds Inc. Phone: cell 250 833-7579  
 Address: 6863 HWY 97 North Email: rkurulak@telus.net  
Grindrod, BC office 250-838-6855  
 Postal code: V0E 1Y0 Payment method: (choose one) Account

Note: Payment required before analysis is started.

cheque enclosed: Yes  No   
 call for credit card #: Yes  No

Do you want a copy of your water results to go to anyone else? Yes  No

If so, please provide details below:

Are you testing for Drinking Water? Yes  No

If yes, are you reporting to BC Public Health Authority? Yes  No

If so, please provide details below:

The *Canadian Drinking Water Guidelines* are included on the test report to help you determine the safety of your drinking water.

Water Chemistry (W99)

Includes: pH, EC, alkalinity, hardness, calculated total dissolved solids (TDS), colour, turbidity, chloride, fluoride, nitrate, nitrite, sulfate, aluminum, antimony, arsenic, barium, boron, cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, phosphorus, potassium, selenium, silicon, sodium, uranium, zinc.

Bacteriology (DW20)

Includes: total coliforms and Escherichia coli (*E. coli*).

301 23-06-2016 12:49 pm

500 + micro

Repeat Bacteria Test (M99R)

Total coliforms and *E. coli*

Sample Description	Date Sampled	Time Sampled	Check off which tests you need:		
Sample #1: <u>Canyon Road CA</u>	<u>06/22/16</u>	<u>8:30</u>	W99 <input type="checkbox"/>	DW20 <input checked="" type="checkbox"/>	M99R <input type="checkbox"/>
Sample #2:			W99 <input type="checkbox"/>	DW20 <input type="checkbox"/>	M99R <input type="checkbox"/>

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