



April 16, 2014

File: 76600-20/Armstrong

H.S. Jansen and Sons Farm Ltd.
5063 Knob Hill Road
Armstrong, BC V0E 1B4

Attention: Dale Jansen, Director

Re: Authorization for Nutrient Application Under Section 112 Compliance Order – Issued to
H.S. Jansen and Sons Farm Ltd March 6, 2014

This letter is in response to the email request dated April 14, 2014 submitted by Doug Macfarlane, CCA, acting as the qualified professional on your behalf. Pursuant to Compliance Order (our file 76600-20/Armstrong) Section 1 issued on March 6, 2014, I hereby authorize the application of additional nutrients to the field in question **in accordance with the submitted nutrient management plan.**

The details of the nutrient management plan specify an initial application of 24-10-0-13S-1B fertilizer at the time of planting alfalfa seed tentatively scheduled for the week of April 21, 2014. Application of dairy effluent will **only** be applied after the first and second cuts at a rate of 15,000 US Gallons/acre. This quantity is based on the provided soil and manure analysis and intends to add 33 lbs/acre of Nitrogen after each cut.

A soil moisture monitoring system must be installed in the sandier loam section of the field (as per submitted Veris mapping) to enable monitoring of the areas prone to the fastest movement of water and nutrients into the ground.

All other terms and conditions of the Compliance Order 76600-20/Armstrong dated March 6, 2014 remain in effect. This one-time authorization does not constitute approval by any other agency with jurisdiction over this matter. This decision may also be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered 30 days from the date that the notice of this decision is given. For further information, please contact the Environmental Appeal Board at 250-387-3464.

If you have any question regarding this authorization, please contact Stephanie Little at 250-490-8258 or the undersigned at 250-371-6267.

Yours truly,

A handwritten signature in black ink, appearing to read "Jason Bourgeois". The signature is fluid and cursive, with a large initial "J" and a stylized "B".

Jason Bourgeois, LL.B., M.Sc.
for Director
Environmental Management Act



August 27, 2014

File: 76600-20/Armstrong

H.S. Jansen and Sons Farm Ltd.
5063 Knob Hill Road
Armstrong, BC V0E 1B4

Attention: Dale Jansen, Director

Re: Authorization for Nutrient Application Under Section 112 Compliance Order – Issued to
H.S. Jansen and Sons Farm Ltd August 27, 2014

This letter is in response to the email request dated August 26th, 2014 submitted by Doug Macfarlane, CCA, acting as the qualified professional on your behalf. Pursuant to Compliance Order (our file 76600-20/Armstrong) Section 1 issued on March 6, 2014, I hereby authorize the application of additional nutrients to the field in question in accordance with the submitted nutrient management plan and based on the most recent soil and manure analysis results. The rate of application being approved is 12,000 US Gallons/acre.

Soil moisture monitoring and additional soil samples at depths of 12", 24" and 36" are required to be taken from the same locations of earlier sampling and must be conducted within 24 hours of the nutrient application being completed. These results must be submitted as soon as available. If, at any time during the nutrient application process, moisture sensors detect an increase in moisture content at the three foot sensor ALL nutrient and irrigation applications must cease. ***This is the final diary effluent application that will be approved for 2014 to the field in question.***

All other terms and conditions of the Compliance Order 76600-20/Armstrong dated March 6, 2014 remain in effect. This one-time authorization does not constitute approval by any other agency with jurisdiction over this matter. This decision may also be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered 30 days from the date that the notice of this decision is given. For further information, please contact the Environmental Appeal Board at 250-387-3464.

If you have any question regarding this authorization, please contact Stephanie Little at 250-490-8258 or the undersigned at 250-371-6267.

Yours truly,

A handwritten signature in black ink, appearing to read 'Jason B.', with a stylized flourish at the end.

Jason Bourgeois, LL.B., M.Sc.
for Director
Environmental Management Act



July 15, 2015

File: 76600-20 Armstrong

VIA EMAIL

H.S. Jansen and Sons Farm Ltd.
5063 Knob Hill Road
Armstrong, BC V0E 1B4

s.22

Dear Mr. Jansen, Director:

Re: Request to apply manure on the field under Compliance Order dated March 6, 2014

This letter is in response to the email request made July 13, 2015 to apply manure to the field owned and operated by H.S. Jansen and Sons described as the “field of concern” in the Compliance Order dated March 6, 2014. On June 12, 2015 a request to apply 8,000 gallons per acre was denied on the basis of aquifer protection and satisfactory levels of available nitrogen in the soil. It was also expressed that future applications would be considered based on the most recent analysis after each cut.

A request to apply 8,400 gallons was made via email on July 13, 2015. This amount was reduced to 6,000 gallons on July 15, 2015 to adjust for the most recent manure analysis completed on July 7, 2015.

A review of the most recent soil analysis from the field of concern was reviewed with the Ministry of Agriculture and the following interpretations were made;

- According to the data provided it is anticipated that the alfalfa crop would extract 64 lb of nitrogen per ton, therefore, anticipating a yield of approximately 1.6 ton per acre, the crop would need approximately 100 lbs of nitrogen.
- The most recent soil analysis indicates the field currently has approximately 40 lbs of available nitrogen in the 0-12” soil profile, almost half of what was available in June of 2015.
- The email dated July 15, 2015 requested 6,000 gallons per acre which would add an additional 67 lbs of plant-available N per acre (a small buffer).

Based on the provided information a one time application of 6,000 gallons per acre is approved with the following provisions;

- Ensure soil and manure analysis are completed (no more than five days prior to cut) and submitted as soon as possible after the next cut.
- Include protein and yield results based on second cut tissue analysis.
- Continue judicious use of watering pre and post application, retain a record of the dates, time and duration of watering and supply moisture monitoring results upon request.
- Provide a detailed description on how the application rate approved was achieved and not exceeded.
- Provide an up to date version of the nutrient management plan within 30 days that includes; adjustments for the most recent soil and manure analysis, a volume estimate of the current level of manure effluent remaining in lagoon storage and applications made to the whole farm to date.
- Provide soil analysis (historical to current) data separated by field (Hullcar and Dougs) and reported in available pounds per acre (as opposed to parts per million).

Based on the expertise of the qualified professional and assessment by Ministry staff we believe that this approved application rate will remain protective of the aquifer based on all analysis provided. Any further applications will require a separate and additional approval and will only be considered if all of the above requirements are met.

A person who fails to comply with a provision of EMA may be found guilty of an offence and could be liable, on summary conviction, to a penalty, or to be assessed an Administrative Penalty as determined by the Director. For your reference, EMA and all related and pertinent British Columbia Laws can be found at <http://www.bclaws.ca/>.

If you have any questions please contact the undersigned at Stephanie.Little@gov.bc.ca or at (250) 490-8258.

Yours truly,



Stephanie Little
Environmental Protection Officer
Compliance Section

cc:

Jason Bourgeois, Section Head, Compliance Section

Cassandra Caunce, Director, Compliance Section

Greg Tegart, Regional Manager, Ministry of Agriculture

Doug MacFarlane, Emerald Bay Ag Services

Jason.Bourgeois@gov.bc.ca

Cassandra.Caunce@gov.bc.ca

Greg.Tegart@gov.bc.ca

s.22



August 31, 2015

File: 76600-20 Armstrong

VIA EMAIL

H.S. Jansen and Sons Farm Ltd.
5063 Knob Hill Road
Armstrong, BC V0E 1B4

s.22

Dear Mr. Jansen, Director:

Re: Request to apply manure on the field under Compliance Order dated March 6, 2014

This letter is in response to the email request made August 27, 2015 to authorize the application of 6,000 gallons per acre of manure effluent to the field owned and operated by H.S. Jansen and Sons described as the “field of concern” in the Compliance Order dated March 6, 2014.

This application rate request is based on soil analysis, manure analysis, moisture monitoring and protein analysis. A review of this analysis from the field of concern was reviewed with the Ministry of Agriculture and the following interpretations were made;

- According to the data provided, it is anticipated that the alfalfa crop would extract 65 lb of nitrogen per ton, therefore, anticipating a yield of approximately 1.6 ton per acre, the crop would need approximately 100 lbs of nitrogen.
- The most recent soil analysis indicates the field currently has approximately 60 lbs of available nitrogen in the 0-12” soil profile.
- The email dated August 27, 2015 requested 6,000 gallons per acre which would add an additional 47 lbs of plant-available N per acre bringing the total plant-available N per acre to 107 in the 0-12” zone.

Based on the provided information a one time application of **6,000** gallons per acre is approved with the following provisions;

- Notify the Ministry of Environment 24 hrs prior to commencing the spread (via email)
- Ensure the application duration is consistent with the calculated flow rates and no overlapping during spreading occurs.

- Ensure soil analysis is completed immediately after manure application and forward upon receipt.
- Include protein and yield results.
- Continue judicious use of watering pre and post application, retain a record of the dates, time and duration of watering and supply moisture monitoring results upon request.

Based on the expertise of the qualified professional and assessment by Ministry staff we believe that this approved application rate will remain protective of the aquifer based on all analysis provided. Any further applications will require a separate and additional approval and will only be considered if all of the above requirements are met.

A person who fails to comply with a provision of EMA may be found guilty of an offence and could be liable, on summary conviction, to a penalty, or to be assessed an Administrative Penalty as determined by the Director. For your reference, EMA and all related and pertinent British Columbia Laws can be found at <http://www.bclaws.ca/>.

If you have any questions please contact the undersigned at Stephanie.Little@gov.bc.ca or at (250) 490-8258.

Yours truly,



Stephanie Little
Environmental Protection Officer
Compliance Section

cc:

Jason Bourgeois, Section Head, Compliance Section
Cassandra Caunce, Director, Compliance Section
Greg Tegart, Regional Manager, Ministry of Agriculture
Doug MacFarlane, Emerald Bay Ag Services

Jason.Bourgeois@gov.bc.ca
Cassandra.Caunce@gov.bc.ca
Greg.Tegart@gov.bc.ca
s.22

FW 2 orders re Steele Springs.txt

COORS: 201401575

From: Beck, Tanner ENV:EX
Sent: Friday, March 21, 2014 11:56 AM
To: Beck, Tanner ENV:EX
Subject: FW: 2 orders re Steele Springs
Attachments: Informatin Order s.22 .pdf; 20140306145054.pdf; JANSEN Service.pdf; s.22 Service.pdf

Please create a COORS file and ECM for this and leave open for my update. 2 suspects outlined in 2 attached orders. EMA 6(2) x2 / MU:8-26 / Outcome: Administrative Document Served x2 / Officer time: 2.5hrs / Details: Manure runoff from fields. Environmental Protection Assist File. Source EP Officer LITTLE. Pollution Prevention Orders Served EP Files: 76600-20 and 107156

Thanks

From: Beck, Tanner ENV:EX
Sent: Tuesday, March 11, 2014 3:09 PM
To: Little, Stephanie ENV:EX
Cc: Reiner, Mike J ENV:EX; Lockwood, Josh ENV:EX
Subject: FW: 2 orders re Steele Springs

Stephanie,

I served I^{s.22} and Dale JANSEN these documents in person today. Attached are the Certificates of Service. I will send the originals to you in the mail.

Conservation Officer Tanner Beck
North Okanagan Zone | Conservation Officer Service | Ministry of Environment
4607B - 23rd Street, Vernon, BC, V1T 4K7
Phone: (250) 260-3037 Fax: (250) 260-3036
RAPP: (24 HRS) 1-877-952-7277

From: "Little, Stephanie ENV:EX" <Stephanie.Little@gov.bc.ca>
Date: March 7, 2014 at 16:18:04 PST
To: "Lockwood, Josh ENV:EX" <Josh.Lockwood@gov.bc.ca>
Subject: orders
Hi Josh,

s.22 so when you have the signed service affidavits can you send them to me and I will make sure they make it into AMS and the files.

Thank you,

Stephanie Little

Environmental Protection Officer
Ministry of Environment
Environmental Protection Division
Southern Interior Region - Okanagan
102 Industrial Place
Penticton BC V2A 7C8
Phone: (250) 490-8200
Fax: (250) 490-2231

FW 2 orders re Steele Springs.txt

From: Lockwood, Josh ENV:EX
Sent: Friday, March 7, 2014 1:39 PM
To: Beck, Tanner ENV:EX
Subject: Fwd: 2 orders re Steele Springs

SGT. J. D. Lockwood
Sent from my iPhone

Begin forwarded message:
From: "Little, Stephanie ENV:EX" <Stephanie.Little@gov.bc.ca>
To: "Lockwood, Josh ENV:EX" <Josh.Lockwood@gov.bc.ca>
Subject: FW: 2 orders re Steele Springs

From: Reiner, Mike J ENV:EX
Sent: Thursday, March 6, 2014 3:01 PM
To: Lockwood, Josh ENV:EX
Cc: 'Kwan, Janelle'; Tegart, Greg AGRI:EX; Victoria EPD Permit Administration ENV:EX;
Little, Stephanie ENV:EX; Barlas, Sajid A ENV:EX
Subject: 2 orders re Steele Springs

Hi Josh

We've issued these documents and would appreciate if they could also be served in person.
s.22

Vic Admin - with respect to the Information Order note we're dealing with hand delivery etc.

Janelle and Greg cc's are to keep you in the loop

Mike Reiner
Environmental Protection
Ministry of Environment
Penticton BC

From: Reiner, Mike J ENV:EX
Sent: Thursday, March 6, 2014 2:18 PM
To: 's.22'
Cc: Barlas, Sajid A ENV:EX; 'Doug Macfarlane'
Subject: Information order

Hello Doug

Am attaching the final information order we discussed earlier this week.
Your attention to the concerns in this document are appreciated.



Case Summary

Details			
Case File #:	201401575	Opened Date:	2014-03-26 01:31 PM
Category:	CO SERVICE	Discovery Date:	2014-03-06
Type:	WASTE MANAGEMENT	Closed Date:	2014-08-22 05:21 PM
Status:	Closed	Admin Org Unit:	NORTH OKANAGAN ZONE
Opened By:	COOKE, LESLIE : 90419	Source:	WASTE STAFF
Lead Investigator:	BECK, TANNER	Source Ref #:	MIKE REINER
Lead Investigator's Phone:		Other Source Agency:	ENVIRONMENTAL PROTECTION PENTICTON
Major Case:	No	Transferred to Agency:	
Paper File Created:	No	Other Transferred Agency:	
Joint Investigation:	No		
Investigation Review Process:	No	Transferred Agency Contact:	
Investigation Review Date:		Lead Agency:	MINISTRY OF ENVIRONMENT
Investigation Start Date:	2014-03-06	Joint Agency:	MINISTRY OF ENVIRONMENT
Joint Agency Contact:		Joint Agency Phone:	
Other Joint Agency:		Joint Agency Case No:	
Case Description:	INTRODUCE BUSINESS WASTE X 2. MANURE RUN-OFF.		

Members:

Name	Phone Number	Start Date	End Date
BECK, TANNER		2014-03-26	2024-03-23
COOKE, LESLIE : 90419		2014-03-26	2024-03-23
SEITZ, EDWARD : 61226		2014-03-06	2024-03-23

Parties Involved:

Name	Role	Nature of Involvement	Phone Number	Address
JANSEN, DALE	SUSPECT	PROPERTY OWNER, DIRECTOR OF H.S. JANSEN & SONS FARM LTD.		s.22 5063 KNOB HILL ROAD ARMSTRONG BC V0E 1B4 CAN
s.22	SUSPECT	ALSO ASSOCIATED IN THE FOLLOWING COORS; 199319559 - CHARGED 199600726 19319560		s.22

Sites:

Site	Site Type	Description
1. 8-26; NORTH OKANAGAN ZONE		VERNON - INTERSECTION OF SCHUBERT ROAD AND KNOB HILL ROAD IN ARMSTRONG

Notes:

Date	Name	Comments
2014-03-27	BECK, TANNER	ENVIRONMENTAL PROTECTION ASSIST FILE. FILE CLOSED AND CAN BE OPENED IN THE FUTURE IF NEEDED.

Continuation Report:

Date	Time	Name	Report
2014-07-23	11:30	SEITZ, EDWARD : 61226	CO SEITZ ATTENDED AND TOOK PHOTOS OF 2 RECENTLY CUT ALFALPHA FIELDS. 13:55 TRACTOR OPERATOR WOULD NOT STOP AND TALK TO CO SEITZ-TOOK PHOTOS OF TRACTOR, SPRAYING AND WHAT WAS LEFT ON THE GROUND. 14:10 CO TZ AT 5063 KNOB HILL ROAD & SPEAKS TO DALE & s.22 JANSSEN WHO ADVISE THEY MONITOR THE MANURE FLOW BY GPS & LINE DIAMETER-650 - 700 GALLONS PER MINUTE. PHOTOS & INFOR SENT TO STEPHANIE LITTLE.
2014-03-11	15:09	BECK, TANNER	CO BECK sent EPO LITTLE, who had taken over the file from EPO REINER, scanned copies of both the Certificates of Service and sent the originals to LITTLE in house mail. File closed. File can be re-opened if further action is needed in the future.
2014-03-11	13:35	BECK, TANNER	CO BECK met with Dale JANSSEN ; s.22 JANSSEN produced a valid DL confirming his identity and was served with a copy of the Compliance Order for File: 76600-20.
2014-03-11	13:21	BECK, TANNER	CO BECK met with s.22 at the intersection of Schubert Rd. and Knob Hill Rd. s.22 produced a valid DL confirming his identity and was served a copy of Information Order for File: 107156.
2014-03-07	13:39	BECK, TANNER	CO BECK received a request from EPO Mike REINER for two Orders to be served in person to both Dale JANSSEN s.22 s.22 See attached orders for details.

Attachments:

Attach#	Description	Photo	File	Attached By	Attached Date
1	CONTINUATION REPOT	No	FW 2 ORDERS RE STEELE SPRINGS.TXT	COOKE, LESLIE : 90419	2014-03-27
2	JANSSEN COMPLIANCE ORDER LETTER	No	JANSSEN LETTER.PDF	COOKE, LESLIE : 90419	2014-03-27
3	s.22 INFORMATION ORDER LETTER	No	INFORMATIN ORDER s.22 .PDF	COOKE, LESLIE : 90419	2014-03-27
4	SERVICE INFORMATION FOR JANSSEN	No	JANSSEN SERVICE.PDF	COOKE, LESLIE : 90419	2014-03-27
5	SERVICE INFORMATION FOR s.22	No	s.22 SERVICE.PDF	COOKE, LESLIE : 90419	2014-03-27
6	CO SEITZ FIELD NOTES	No	SEITZ-FIELD NOTES.PDF	NIELSEN, KAREN : 62798	2014-08-22
7	PHOTOS	No	PHOTOS TAKEN BY CO SEITZ.DOCX	NIELSEN, KAREN : 62798	2014-08-22

Contravention No.1

ENVIRONMENTAL MANAGEMENT ACT 6 (2) : INTRODUCE WASTE FROM A PRESCRIBED INDUSTRY, TRADE OR BUSINESS

Species:
Est. Incident Date 2014-03-06 14:18 Party: JANSEN, DALE
Site: 1. 8-26; NORTH OKANAGAN Zone; VERNON - Party Address: s.22
INTERSECTION OF SCHUBERT 5063 KNOB HILL ROAD
ROAD AND KNOB HILL ROAD IN ARMSTRONG BC V0E 1B4
ARMSTRONG CAN

Enforcement Actions

Enforcement Action No. 1

Type: ADMINISTRATIVE ACTION
Effective Date: 2014-03-06 End Date: 2014-03-11
Admin Action Type: COMPLIANCE ORDER
Comments: SEE ATTACHMENT OFFICER BECK ASSISTED AND SERVED POLLUTION
PREVENTION ORDER DOCUMENTS

Contravention No.2 ENVIRONMENTAL MANAGEMENT ACT 6 (2) : INTRODUCE WASTE FROM A PRESCRIBED INDUSTRY, TRADE OR BUSINESS

Species:
Est. Incident Date 2014-03-06 14:18 Party: s.22
Site: 1. 8-26; NORTH OKANAGAN Zone; VERNON - Party Address:
INTERSECTION OF SCHUBERT
ROAD AND KNOB HILL ROAD IN
ARMSTRONG

Enforcement Actions

Enforcement Action No. 2

Type: ADMINISTRATIVE ACTION
Effective Date: 2014-03-06 End Date: 2014-03-11
Admin Action Type: COMPLIANCE ORDER
Comments: SEE ATTACHMENT OFFICER BECK ASSISTED AND SERVED POLLUTION
PREVENTION ORDER DOCUMENTS

Vehicles:



March 6, 2014

File: 76600-20 Armstrong

HAND DELIVERED

H.S. Jansen and Sons Farm Ltd
5063 Knob Hill Road
Armstrong, BC V0E 1B4
Attention: Dale Jansen, Director

COMPLIANCE ORDER

Re: Manure application concern in the vicinity of Steele Springs on Schubert Road.

Background

On January 21, 2014, M. Reiner Sr. Environmental Protection Officer attended Steele Springs, a drinking water supply source for approximately 150 residents, and the Jansen Dairy Farm on Knob Hill Road in Armstrong, BC to follow up on a report of unusual trend in nitrate levels detected in Steele Springs.

The information available to M. Reiner prior to this visit and gathered on and after January 21, 2014 is as follows.

- 1) H.S. Jansen & Sons Farm Ltd (henceforth "the Farm") has an Environmental Farm Plan.
- 2) Steele Springs originates from shallow un-confined aquifer in the area as per information provided by a ground water hydrologist with FLNRO in Penticton and documented in this report.
http://a100.gov.bc.ca/appsdata/acat/documents/r16678/Hullcar_groundwater_potential_eval_1249498672243_f7ea0679b44b73003fe49801dfed50cd9361baff77bae58099224e4b1d15397e.pdf

A large portion of this un-confined aquifer is under the field of concern shown below.

Well logs also indicate the upper 50 to 100 ft of soils in and around the field are: Sand, Dry Sand and Gravel and Sandy till, all of which typically have high hydraulic conductivities i.e. groundwater in such soils can typically move horizontally at a rate of about 2 m/day.



- 3) The results of most recent water samples collected from Steele Springs during December 2013 and January 2014 and analyzed for nitrates show that nitrates have risen to significantly higher levels this fall and winter as compared to the levels detected in previous years. The previous winters saw nitrate levels peak at 5 to 6 mg/L in October and November and drop as the year progressed. This winter's results exceeded 6.5 mg/L in early January. Subsequent results from later samples collected in January show nitrate levels increased to 7.8 mg/L (Enclosure 1 encompasses the last 18 months or so of Steele Springs data). The undersigned also sampled Steel Springs on January 21, 2014 and that sample was analyzed by another accredited laboratory. That sample showed 8.8 mg/L for Nitrate as N (Enclosure 2). The Canada-Wide drinking water limit for Nitrate is 10 mg/L as N.
- 4) A director for Jansen Farms indicated to M. Reiner on January 21, 2014 and in subsequent communications that in the fall of 2013, 20,000 gallons/acre of liquid manure was applied by the Farm staff to a field located immediately up gradient of Steel Springs. The Farm director also stated that there was no cover crop on that field and the application was intended to supply 120 lb of Nitrogen/acre (equivalent to 120 kg of Nitrogen/hectare) for a corn crop that will be planted in spring of 2014.

- 5) M. Reiner assessed the Farm Director's statements against the Reference Guide for Environmental Farm Plans. That assessment has determined that liquid manure slurries from Dairy cattle likely contain 1.6 Kg of nitrogen per cubic meter (m^3) of slurry as per Table 6.7 of the Reference Guide.

Table 6.7 Assumed Annual Manure Nitrogen Excretion Values and Manure Nitrogen Concentrations in Storage for Various Animal Types *			
Type of Animal		Use with Worksheet #4, Box 3	Use with Worksheet #5, Box 3
		Assumed Annual Manure N Excretion (kg N/animal)	Average Manure N Concentration (kg N/ m^3)
Beef Cattle	Cows and Bred Heifers	73	3.4
	Feeder 340 to 500 kg	52	3.4
	Yearling 230 to 340 kg	35	3.4
	Calves 50 to 230 kg	17	3.4
Dairy Cattle	Milking cow including associated replacements	200	1.6 (watery)
			2.8 (medium slurry)
			4.0 (thick slurry)

Even when one uses 1 kg of N/ m^3 of liquid manure, the amount of manure applied appears to be in excess of 120 lb of N/acre or 120 kg of N/hectare application. i.e.

20,000 Gallons/acre approximately equals 190 m^3 /hectare of manure

Using 1 kg of Nitrogen/ m^3 of manure indicates the application rate may have been as high as 190 kg of N/ hectare.

Table 6.10 of the Reference Guide (attached) further suggests that no manure, at all, should be applied to any fields in the interior of BC from September thru to the end of March unless a cover crop is in place.

Table 6.10 Percentage Manure to Apply at Various Times of the Year in Interior Regions

Crop	Typical Annual Nitrogen Uptake ^a (kg N/ha)	Suggested Manure Application as a Percentage of Annual Crop Uptake ^b				
		Feb & March	April & May	June to Aug	Sept & Oct	Nov to Jan
Perennial Grass ^c	200 to 400	up to 5 %	up to 100 %	up to 75 %	up to 50 %	0 %
Silage Corn	150 to 200	0 %	up to 100 %	20 %	0 %	0 %
Cereals (Spring Planted)	50 to 150	0 %	up to 100 %	0 %	0 %	0 %
Cereals (Fall Planted)	50 to 150	up to 5 % ^d	up to 100 %	up to 100 %	0 %	0 %
Berries, Tree Fruits and Grapes	50 to 100 ^e	0 %	up to 100 %	0 % ^f	0 %	0 %
Vegetables	80 to 185 ^e	0 %	up to 100 %	up to 100 %	0 %	0 %
Cover Crop ^g						
Emerged before Aug 15	100 to 140	0 %	0 %	up to 60 %	up to 100 %	0 %
Emerged before Sept 1	40 to 60	0 %	0 %	0 %	up to 100 %	0 %

^a For high yielding crop – better estimates of actual uptake can be obtained by completing a Nutrient Management Plan
^b Maximum total nitrogen (from manure and chemical fertilizer) applied to the soil not to exceed the crop's annual uptake (i.e., the sum of percent applied for each time period through the year not to exceed 100%).
^c For grass legume mixes reduce the application of nitrogen in proportion to legume content
^d Feb & March application in the year following planting
^e Maximum nitrogen application depends on crop type (i.e. raspberries vs. blueberries or potatoes vs. broccoli)
^f For new plantings up to 100% of that year's nutrient need
^g Includes relay crops – post-harvest nitrate test should be below 20 µg/g (0-30 cm) if fertilizing a fall-planted cover crop

6) the Agricultural Waste Control Regulation states:

13 Agricultural waste must not be applied to the land if, due to meteorological, topographical or soil conditions or the rate of application, runoff or the escape of agricultural waste causes pollution of a watercourse or groundwater.

14 Agricultural wastes must not be applied

(a) on frozen land,

(b) in diverting winds,

(c) on areas having standing water,

(d) on saturated soils, or

(e) at rates of application that exceed the amount required for crop growth,

if runoff or escape of agricultural waste causes pollution of a watercourse or groundwater, or goes beyond the farm boundary.

Compliance Order:

Based on the above information, relative to sections 13 and 14 of the Agricultural Waste Control Regulation, I have reasonable grounds to believe that the Farm has contravened of the sections 13 and 14 of the Agricultural Waste Control Regulation.

Under section 112 of *Environmental Management Act*, when an inspector has reasonable grounds to believe a contravention has occurred, the inspector may order a person to do anything the officer considers necessary to stop the contravention or prevent another contravention.

Therefore, pursuant to *section 112 of the Environmental Management Act*, I hereby order, H.S. Jansen & Sons Farm Ltd to comply with the followings:

- 1) Cease any further nutrient (manure or fertilizer) applications to the field of concern identified above in the 2014 calendar year. Additional applications of nutrients may only be considered if deemed necessary based on sampling conducted by and recommendations provided by a Qualified Professional. The application of additional nutrients also requires the approval of the director in writing prior to the application of additional nutrients. The recommended application rate must also consider nitrate levels in Steele Springs. Based on data available to us at this time, applications exceeding 200 to 220 kg/ hectare /year would be considered excessive by a number of other jurisdictions as well as the Environmental Farm Plan Reference Guide Recommendations
- 2) Retain a Qualified Professional to compile and fully assess the Farm's recent nutrient application rates for the field of concern and their potential linkages to nitrate levels in Steel Springs for the past three years. This assessment would include review of available manure, soil and groundwater sampling results, crop rotation patterns, and manure application rates for the last three years. In addition, the Qualified Professional should conduct additional soil and groundwater sampling as necessary to determine present soil nitrogen levels in the in the 0-6, 6-12 and 12 to 24 inch soil horizons prior to March 10, 2014 and again in mid to late April. A report of the QP's findings, recommendations and conclusions relative to mitigating nitrate levels to less than 6 mg/L in Steel Springs must be submitted to the Director by no later than **July 15, 2014.**
- 3) Develop and submit a comprehensive nutrient management plan for the approval of the director using a Qualified Professional for the entire farm in keeping with the recommendations in the Environmental Farm Plan Reference Guide and specifically including:
 - a) a detailed contingency plan to deal with unforeseen incidents which result in the farm entering or finishing any given growing season with 20% more nutrients than normally expected.
 - b) a monitoring plan for soils, surface waters and groundwater on and around the farm and the lands it farms.

The submission of these plans is required on or before **September 1, 2014** and the plan should consider the findings and recommendations from the assessment in requirement #2 above.

- 4) Submit an annual summary on and before February 28, of 2015, 2016 and 2017 calendar years, fully documenting the nutrient content of the manure applied the previous year, the nutrients applied to each specific field and when, as well the results of soil, surface water and groundwater sampling as per the comprehensive nutrient management plan.

Right to Appeal:

This decision and the specific conditions it contains may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

This compliance order and the associated requirements are without prejudice to whatever enforcement action the Conservation Officer Service may be considering in response to this incident at the present time or in the event that nitrate levels exceed the 10 mg/L as N drinking water limit.

Should H.S. Jansen and Sons require further information or clarification, please contact M. Reiner or S. Barlas at 250-490-8200.

Yours truly,



Mike Reiner, P.Ag.
Sr. Environmental Protection Officer

MR/ch

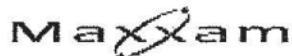
Cc: Janelle Kwan Interior Health, Vernon BC.
J Lockwood – COS Supervisor N. Okanagan
G Tegart – Agriculture, Vernon

Enclosure 1 (emailed separately on Feb 24, 2014)



nitrates.pdf

Enclosure 2



Maxxam Job #: B405523
Report Date: 2014/01/29

MINISTRY OF ENVIRONMENT

Site Location: E296210 STEEL SPRING OFF SCHUBERT R
Sampler Initials: MR

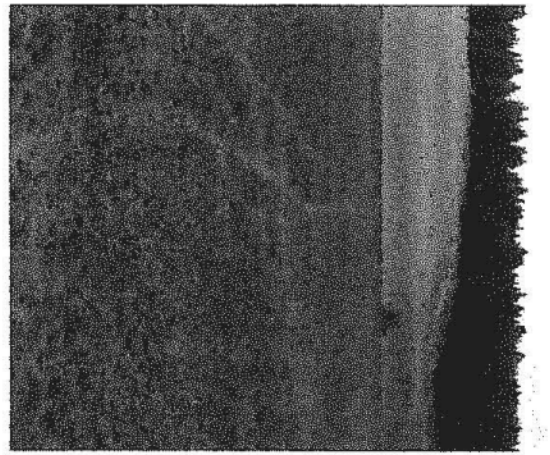
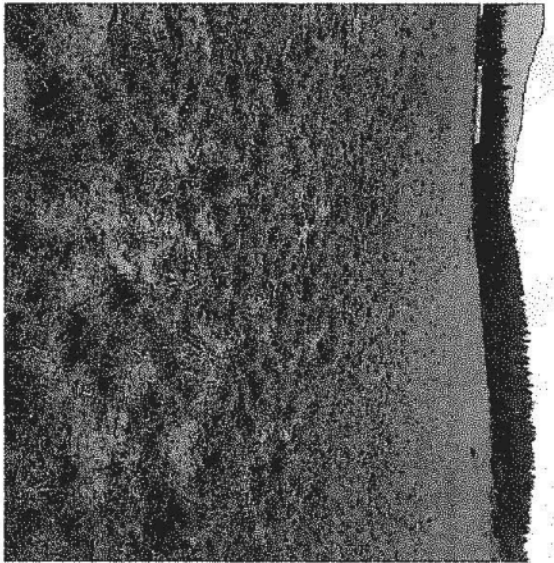
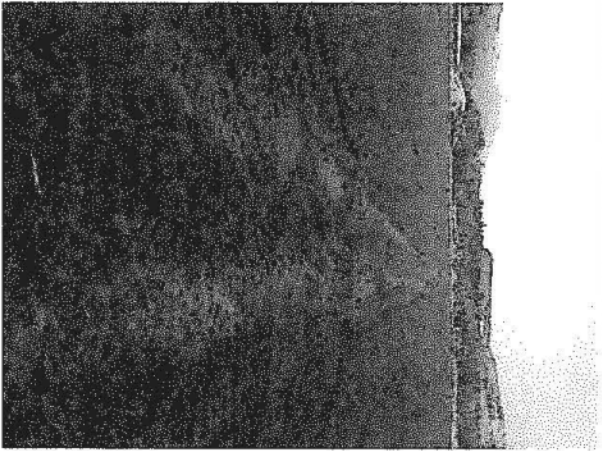
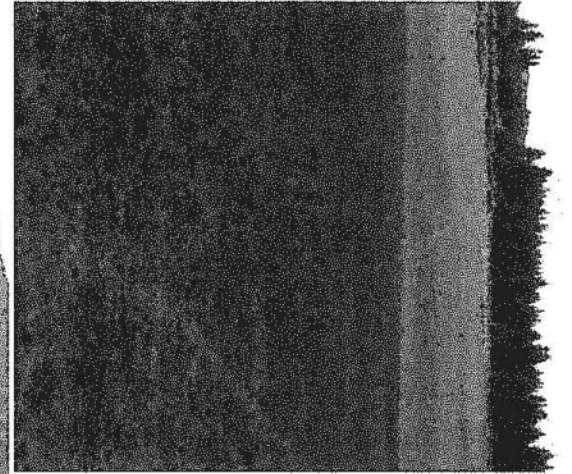
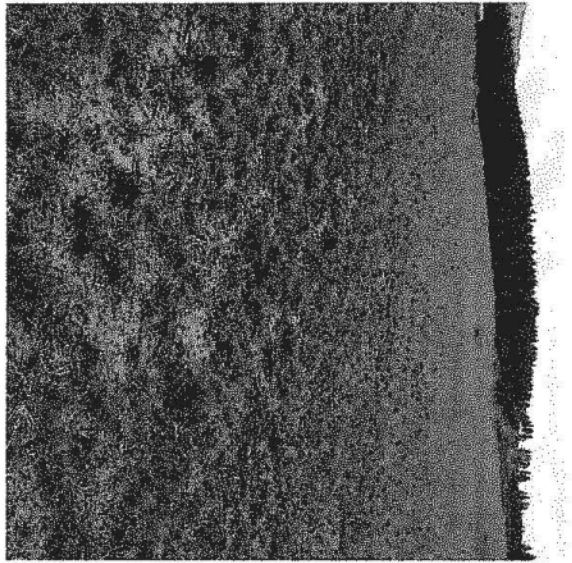
RESULTS OF CHEMICAL ANALYSES OF WATER

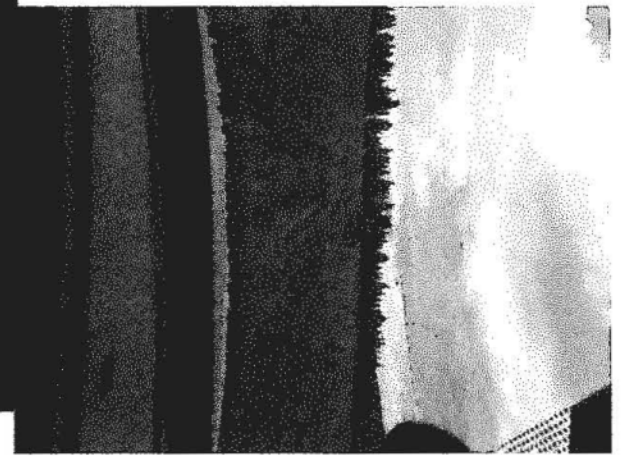
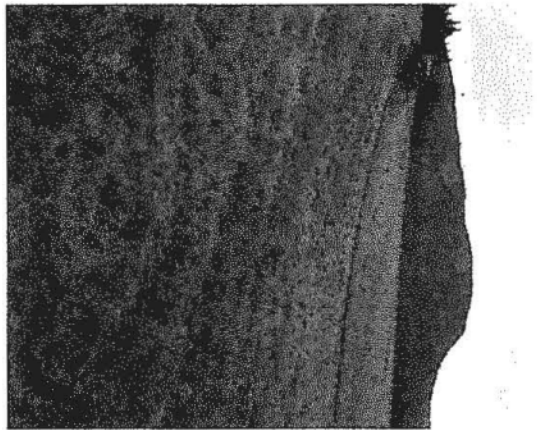
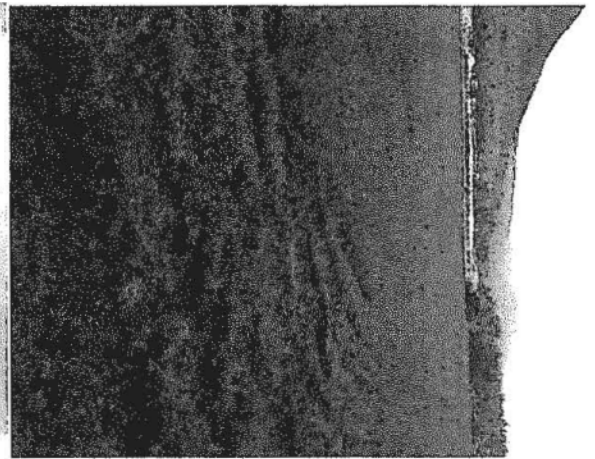
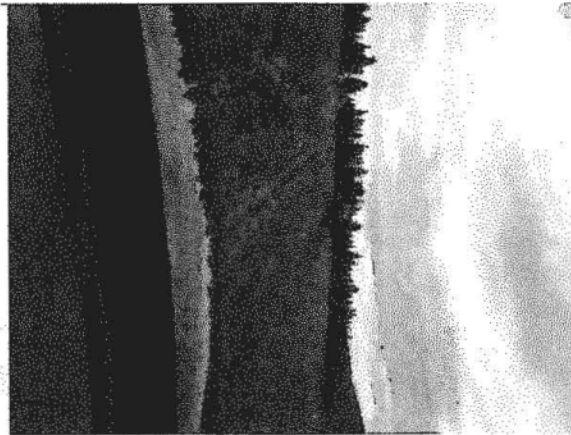
Maxxam ID		IM8758		
Sampling Date		2014/01/21 16:00		
COG#		50206387		
	UNITS	REG#	RDL	GC Batch
Field Parameters				
Sample End Date	N/A	20140121	0	7358854
Sample End Time	N/A	16:00	0	7358854
Sample Start Date	N/A	20140121	0	7358854
Sample Start Time	N/A	16:00	0	7358854
Temperature at Arrival	C	1		7358850
Calculated Parameters				
Filter and HNO3 Preservation	N/A	LAB	N/A	7358597
Nitrate (N)	mg/L	6.80	0.020	7358852
Misc. Inorganics				
Dissolved Hardness (CaCO3)	mg/L	358	0.50	7358400
Ammonia				
Dissolved Chloride (Cl)	mg/L	16	0.50	7362000
Nutrients				
Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	0.20	7358855
Nitrate plus Nitrite (N)	mg/L	8.80	0.020	7358914
Nitrite (N)	mg/L	<0.0020	0.0020	7359201
Total Nitrogen (N)	mg/L	6.48	0.20	7359231
Physical Properties				
Conductivity	uS/cm	716	1.0	7369214

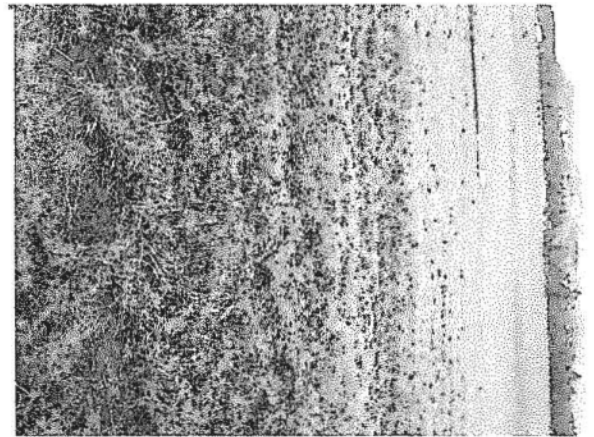
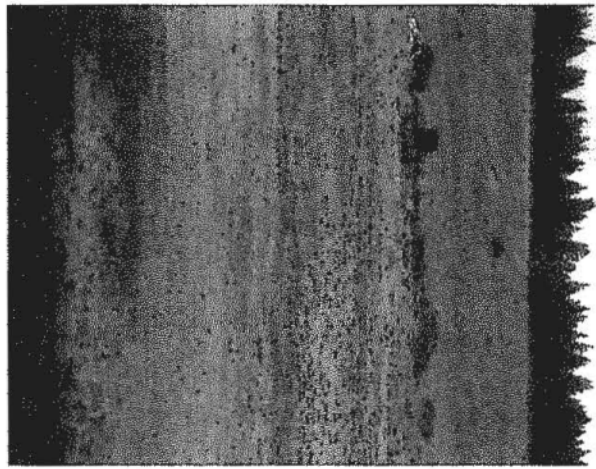
ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		IM8758		
Sampling Date		2014/01/21 16:00		
COG#		50206387		
	UNITS	REG#	RDL	GC Batch
Dissolved Metals by ICPMS				
Dissolved Sodium (Na)	mg/L	11.0	0.050	7358401

N/A = Not Applicable
RDL = Reportable Detection Limit







CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

Fill in:
your name;
the name of the party or
other person served;
the date service took
place;
the street address
or location, city and
province where service
took place.

Name the documents
that you served.

Tell how service took
place by checking
appropriate box(es) for:

ordinary mail and fill in
the date mailed;

an individual;

a company as defined
in the *Business
Corporations Act*;

an extraprovincial company
as defined in the *Business
Corporations Act*;

a partnership;

a municipal corporation,
regional district or other
local government body;

a young person;

a society as defined in the
Society Act;

an extraprovincial society
as defined in the *Society
Act* (if no attorney has been
appointed, check one of
the 2 preceding boxes for a
society);

an unincorporated
association or trade union;

a corporation incorporated
outside British Columbia if
it is not an extraprovincial
company;

alternate service method
ordered by the Court.

I certify that

I Tanner Beck a Conservation Officer

served Dale Jansen

on 2014-03-11

at 5.22 at 1335 hrs.

with Compliance Order Re: Manure application
concern in the vicinity of Steele Springs
on Schubert Road. File: 76600-20 Armstrong.

- by ☐ mailing a copy by ordinary mail to that person's address on _____ Date _____
- ☒ leaving a copy of it with him or her.
- ☐ mailing a copy of it by registered mail to him or her.
- ☐ mailing a copy of it by registered mail to the registered office of the company.
- ☐ leaving a copy of it ☐ at the registered office of the company.
- ☐ at the place of business of the company, with a receptionist or a person who appears to manage or control the company's business there.
- ☐ with a director, officer, liquidator, trustee in bankruptcy or receiver manager of the company.
- ☐ mailing a copy of it by registered mail to the attorney shown in the corporate registry.
- ☐ leaving a copy of it with the attorney shown in the corporate registry.
- ☐ leaving a copy of it at the head office shown in the corporate registry if that head office is in British Columbia.
- ☐ mailing a copy of it by registered mail to the head office shown in the corporate registry if that head office is in British Columbia.
- ☐ mailing a copy of it by registered mail to a partner.
- ☐ leaving a copy of it ☐ with a partner.
- ☐ at the place of business of the partnership, with a person who appears to manage or control the partnership business there.
- ☐ with a receptionist who works at a place of business of the partnership.
- ☐ giving a copy to the clerk, deputy clerk or a similar official.
- ☐ leaving a copy of the notice with the defendant's mother, father or guardian.
- ☐ mailing a copy of it by registered mail to the address for service on file with the Registrar of Companies.
- ☐ leaving a copy of it ☐ at the address for service on file with the Registrar of Companies.
- ☐ with a director, officer, receiver manager or liquidator of the society.
- ☐ mailing a copy of it by registered mail to the attorney of the society appointed under section 77 of the *Society Act*.
- ☐ leaving a copy of it with an attorney appointed under section 77 of the *Society Act*.
- ☐ mailing a copy of it by registered mail to the registered office of the association.
- ☐ leaving a copy of it with an officer of the association or, in the case of a trade union, with a business agent.
- ☐ mailing a copy of it by registered mail to a place of business or registered office of the corporation outside British Columbia.
- ☐ leaving a copy of it ☐ at a place of business or registered office of the corporation outside British Columbia with a receptionist or a person who appears to manage or control the corporation's business, or
- ☐ with a director, officer, liquidator, trustee in bankruptcy or receiver manager of the corporation.
- ☐ (fill in any instructions given by a judge or registrar for service)

NOTE: You must give proof of service by **REGISTERED MAIL** by attaching one of the following:

- a copy, produced by fax or otherwise, of the signature obtained by Canada Post at the time the document was delivered.
- a print-out of the delivery confirmation made available on the Internet by Canada Post (<http://www.canadapost.ca>).

2014-03-11
Date

[Signature]
Signature of person who served the document