



Report Date: January 09, 2018

File: 108432

Report Number: 074195

Kenneth Regehr
 4516 Hullcar Road
 Armstrong BC
 V0E1B4

Dear Kenneth Regehr

Re: Notice Letter, Pollution Prevention Order 108432, 4516 Hullcar Road Armstrong BC, Effluent

On November 28, 2017, Ministry of Environment and Climate Change Strategy, Environmental Protection Division staff conducted an inspection of your facility, Kenneth Regehr located at 4516 Hullcar Road Armstrong BC with Pollution Prevention Order number 108432 under the *Environmental Management Act*. Ministry staff were accompanied on site by Joe Klassen, Purple Springs Nursery; Rico Thorsen, RT Horticulture.

Inspection Details:

<p>Requirement Description:</p>	<p>5: Upon approval by the Director, implement the Action Plan referred to in section 4 in accordance with any amendments to the Action Plan required or approved by the Director, or any further directions of the Director.</p> <p>ACTION PLAN - GROUNDWATER</p> <p>1. Continue to monitor water quality in Project wells 7, 8, 13 and 17 (see Figure 3-1 for locations). Samples should be analyzed for nitrate-N, nitrite-N, ammonia, TKN, total nitrogen, chloride, pH (field), and temperature (field). To further assess spatial extent of nitrate-N in aquifer 103, before irrigation season, sample from Well 13 within the first 10 minutes of being turned on (and as soon as field parameters stabilize), and sample again after one hour of being turned on. When irrigation season commences, sample after the wellfield has been running more or less continuously for one week. (Three times per year for two years).</p> <p>2. Collect a grab sample from the constructed wetland (see Figure 3-2 for layout of facilities) and analyze for the same list of analytes. The sample should be obtained as a composite of about five sub-samples from locations around the "downstream" end of wetland, taken at least one metre from shore from mid-depth. Compare the wetland sample results to those from Project well 13 and to water quality guidelines. After the first year, consider installing a new monitoring well downgradient of the wetland, if concentrations in the wetland water sample exceed applicable guidelines. (Three times per year for two years (2017 and 2018)).</p>
<p>Details/Findings:</p>	<p>Action Item 1 - Groundwater samples were collected from monitoring wells 7, 8, 13 and 17 and analyzed for nitrate-N, nitrite-N, ammonia, TKN, total nitrogen, chloride, pH (field) and temperature (field) on March 30, 2017 and previously assessed for compliance in IR56938. Joe Klassen stated that the results from monitoring well 17 were mistakenly omitted from the 2017 Annual Summary. Joe Klassen stated that samples were collected in June and October 2017. The results will be presented in the 2018 Annual Summary.</p> <p>Action Item 2 - A grab sample of the constructed wetland was collected on May 1, 2017 and previously assessed for compliance in IR56938. Joe Klassen stated that no additional samples have been collected during 2017 because the wetland has been dry.</p>

Compliance:	In
Actions to be taken:	Continue to implement the Action Items and adhere to the schedule listed in the Action Plan.
Requirement Description:	<p>5: Upon approval by the Director, implement the Action Plan referred to in section 4 in accordance with any amendments to the Action Plan required or approved by the Director, or any further directions of the Director.</p> <p>ACTION PLAN - FARM INFRASTRUCTURE AND OPERATIONS</p> <p>3. Perform annual maintenance of the constructed wetland, preferably in the late summer, to remove excessive sediment (both mineral and organic). (Annually for two years (2017 and 2018)).</p> <p>4. Re-plant more of the wetted area of the wetland with native aquatic macrophytes such as cattail and bulrush. As a general concept, the cattail or bulrushes should be planted in zones that are less than about 0.8 m deep, leaving some areas of open water. (By end of 2017).</p> <p>5. Install a staff gauge on the wetland/pond system and record water levels weekly during March, April, May, October, and November and then monthly during remaining snow-free months. Gauge installation will be according to BC Hydrometric Standards (MOE 2009), Estimate changes in water volume and calculate the water balance to assess the potential for infiltration. (Installation by June 1, 2017. Regular readings for 2017 and 2018. Include records and water balance estimates in June 30, 2017 Summary Letter and 2017 and 2018 Annual Reports.).</p>
Details/Findings:	<p>Action Item 3 - Joe Klassen stated that excessive sediment was removed and berm maintenance was conducted on the constructed wetland.</p> <p>Action Item 4 - Photographic evidence and a description of the re-planting activities was provided by Joe Klassen.</p> <p>Action Item 5 - A staff gauge was installed in the wetland/pond system on May 31, 2017 (Ken Regehr Farm June 2017 Action Plan Summary, dated June 15, 2017). A record of the weekly and monthly readings on the staff gauge was reviewed.</p>
Compliance:	In
Actions to be taken:	Continue to implement the Action Items and adhere to the schedule listed in the Action Plan.

Requirement Description:	<p>5: Upon approval by the Director, implement the Action Plan referred to in section 4 in accordance with any amendments to the Action Plan required or approved by the Director, or any further directions of the Director.</p> <p>ACTION PLAN - NUTRIENT MANAGEMENT - GENERAL</p> <p>6. Collect 7 soil samples for bulk density and texture analyses, and calculate descriptive statistics. Estimate hydraulic conductivity using the bulk density and texture data. (June 1, 2017).</p> <p>7. Continue to use a qualified person (CCA or P.Ag.) to prepare an annual Nutrient Management Plan or Farm Book that is based on soil sampling results. (Annually for two years (2017 and 2018)).</p> <p>8. Conduct annual post-harvest soil testing on all fields over Hullcar Aquifer 103 with samples being collected at 0-15,15-30, 30-60, and 60-90 cm depth. (Fall 2017 and 2018 (within 2 weeks of final crop harvest)).</p> <p>9. Participate in the BC Ministry of Agriculture benchmark soil study if it continues beyond 2016. (Annually for two years (2017 and 2018)).</p>
Details/Findings:	<p>Action Item 6 was previously assessed for compliance in IR56938.</p> <p>Action Item 7 - Ken Regehr Farm continues to use qualified professionals Ruth McDougall, MSc, PAg and Doug McFarlane, CCA. A 2017 Farm Book was prepared (2017 Crop Plan Ken Regehr Feedyard, no date given). Ken Regehr Farm is keeping records of application rates of agricultural waste and irrigation rates as well as application dates.</p> <p>Action Item 8 - Joe Klassen stated that annual post-harvest soil testing on all fields was conducted in September 2017.</p> <p>Action Item 9 - Ken Regehr Farm participated in the 2017 AGRI soil study.</p>
Compliance:	In
Actions to be taken:	Continue to implement the Action Items and adhere to the schedule listed in the Action Plan.
Requirement Description:	<p>5: Upon approval by the Director, implement the Action Plan referred to in section 4 in accordance with any amendments to the Action Plan required or approved by the Director, or any further directions of the Director.</p> <p>ACTION PLAN - NUTRIENT MANAGEMENT - MANURE MANAGEMENT</p> <p>10. Reduce manure application rate on Field 210 in 2017 based on post-harvest soil nitrate-N results. Note: Since the EIA was prepared, Regehr Farms has canceled the lease on Field 210 so Regehr Farms will not be applying any manure to Field 210. Therefore, the field will not be included in the 2017 NMP. (Not applicable).</p> <p>11. Apply manure based on the field- and crop-specific recommendations prepared by the CCA or P.Ag. from the annual Nutrient Management Plan or Farm Book. (Annually for two years (2017 and 2018)).</p> <p>12. Test feedlot manure for nutrient content in spring prior to manure application and use a running average of all annual analyses to determine manure application rates. (Spring 2017 and annually in spring).</p>

Details/Findings:	<p>Action Item 10 was previously assessed for compliance in IR56938.</p> <p>Action Item 11 - Ken Regehr Farm applied manure in 2017 based on the recommendations in their 2017 Farm Book prepared by Doug McFarlane, CCA. Ken Regehr Farm has applied for ARDCORP funding to have a GPS for each of their manure spreaders for increased monitoring.</p> <p>Action Item 12 - The feedlot manure was tested for nutrient content in Spring 2017 prior to manure application.</p>
Compliance:	In
Actions to be taken:	Continue to implement the Action Items and adhere to the schedule listed in the Action Plan.
Requirement Description:	<p>5: Upon approval by the Director, implement the Action Plan referred to in section 4 in accordance with any amendments to the Action Plan required or approved by the Director, or any further directions of the Director.</p> <p>ACTION PLAN - NUTRIENT MANAGEMENT - FERTILIZER USE</p> <p>13. Avoid the use of inorganic fertilizer nitrogen on fields overlying the Hullcar Aquifer unless insufficient manure is available to meet crop demands or if manure cannot practically be applied to a field. If inorganic fertilizer nitrogen is applied, it must be done based on a field sampling program and recommendations from a qualified person. (Annually for two years (2017 and 2018)).</p>
Details/Findings:	Action Item 13 - Ken Regehr Farm did not use any inorganic fertilizers in 2017 and has not since 2012.
Compliance:	In
Actions to be taken:	Continue to implement the Action Items and adhere to the schedule listed in the Action Plan.
Requirement Description:	<p>7: Must publicly post the Action Plan required by this order by January 6, 2017 and publicly post the annual summary required by this order by June 30, 2017, including physically posting the Action Plan and Annual Summary at the Hullcar Community Hall. Any updates to the Action Plan and future Annual Summaries must be posted at Hullcar Community Hall annually for the next two years, by June 30 of each year.</p>

Details/Findings:	Photographic evidence was submitted that showed that the 2017 Annual Summary was physically posted at the Hullcar Community Hall.
Compliance:	In
Actions to be taken:	

The final version of the Action Plan was submitted on April 7, 2017 (Ken and Brenda Regehr Action Plan: Ministry of Environment File #108432, dated April 2017). The Action Plan listed 13 Action Items.

Compliance History:

2017-06-23 IR56938 - Advisory

2017-02-08 IR47817 - Investigation Referral

Please submit all annual/quarterly/monthly reports and data submissions to the Ministry's Routine Environmental Reporting Submission Mailbox at EnvAuthorizationsReporting@gov.bc.ca. More information about the reporting requirements may be found at <http://www2.gov.bc.ca/gov/content/environment/waste-management/wastedischargeauthorization/data-and-report-submissions/routine-environmental-reporting-submission-mailbox>.

Please be advised that this inspection report may be published on the provincial government website in 7 days.

If you have any questions about this letter, please contact the undersigned.

Yours truly,

Colin Meldrum

Environmental Protection Officer

cc:

Attachments:

Deliver via:			
Email:	<input checked="" type="checkbox"/>	Fax:	<input type="checkbox"/>
Registered Mail:	<input type="checkbox"/>	Hand Delivery:	<input type="checkbox"/>

**Ministry of Environment
and Climate Change
Strategy**

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To see the most up to date version of the regulations and codes of practices please visit
<http://www.bclaws.ca>

If you require a copy of the original permit, please contact the inspector noted on this inspection record.

It is also important to note that this inspection record does not necessarily reflect each requirement or condition of the authorization therefore compliance is noted only for the requirements or conditions listed in the inspection record.