FRASER VALLEY REGIONAL DISTRICT
DEVELOPMENT VARIANCE PERMIT

**Permit No.** Development Variance Permit 2019-13  **Folio No.** 775.02288.000

**Issued to:** Miracle Springs Inc. No. BC0066304

**Address:** 380-233 West 1st Street, North Vancouver

**Applicant:** Dan Sampson

**Site Address:** 12443 Stave Lake Road, Electoral Area F

The lands affected by and subject to this permit are shown on Schedule "A", Location Map, attached hereto, which forms an integral part of this permit, and are legally described as:

SOUTH HALF OF THE SOUTH HALF OF THE NORTH EAST QUARTER SECTION 23 TOWNSHIP 18 NEW WESTMINSTER DISTRICT

PID: 013-394-291

**LIST OF ATTACHMENTS**

Schedule “A”: Location Map
Schedule “B”: Site Plan

**AUTHORITY TO ISSUE**

1. This Development Variance Permit is issued under Part 14 – Division 9 of the *Local Government Act*.

**BYLAWS SUPPLEMENTED OR VARIED**

*Dewdney-Alouette regional District Land Use and Subdivision Regulation Bylaw No. 559-1992* is varied as follows:

Section 412 (8) is varied by reducing the setback from a building keeping livestock, to a sandpoint or well from 30.0 metres to 0.0 metres.

**SPECIAL TERMS AND CONDITIONS**

1. No variances other than those specifically set out in this permit are implied or to be construed.

2. If the holder of this permit does not commence the construction with respect to which the Permit was issued within two (2) years after the date of the permit, this permit shall lapse.
3. Development of the site shall be undertaken in accordance with the Site Plan attached hereto as Schedule “B”.

4. A building permit shall be issued by the Fraser Valley Regional District prior to any construction on the property.

5. Management of the on-site water supply must be in accordance with the recommendations of the Hydrogeological Report dated September 28, 2016 and the Standard Operating Procedure developed by Miracle Springs., including
   - Access control
   - Regular water sampling
   - Routine monitoring

6. The water supply wells must be operated and maintained in accordance with the Provincial Acts and Regulations, including the Health Hazards Regulation, and the Ground Water Protection Regulation.

GENERAL TERMS AND CONDITIONS

1. This Development Variance Permit is issued Pursuant to Part 14 – Division 9 of the Local Government Act.

2. This Development Variance Permit shall not vary the permitted uses or densities of land use in the applicable zoning bylaw nor a flood plain specification designated under Section 524 of the Local Government Act.

3. Nothing in this permit shall in any way relieve the developer’s obligation to ensure that the development proposal complies in every way with the statutes, regulations, requirements, covenants and licences applicable to the undertaking.

4. Nothing in this permit shall in any way relieve the developers obligation to comply with all setback regulations for construction of structures or provision of on-site services pursuant to the Public Health Act, the Fire Services Act, the Safety Standards Act, and any other provincial statutes.

SECURITY DEPOSIT

As a condition of the issuance of this Permit, and pursuant to Section 502 of the Local Government Act, the Regional Board is holding the security set out below to ensure that development is carried out in accordance with the terms and conditions of this Permit.

Should the holder of this permit:
   a. fail to complete the works required to satisfy the landscaping conditions contained herein,
   b. contravene a condition of the permit in such a way as to create an unsafe condition,
The Regional Board may undertake and complete the works required to satisfy the landscaping conditions, or carry out any construction required to correct an unsafe condition at the cost of the holder of the permit and may apply the security in payment of the costs of the works, with any excess to be returned to the holder of the permit.

Security Posted:

(a) an irrevocable letter of credit in the amount of: $ <N/A>.
(b) the deposit of the following specified security: $ <N/A>.

Note: The Regional District shall file a notice of this permit in the Land Title Office stating that the land described in the notice is subject to Development Variance Permit Number 2019-13. The notice shall take the form of Appendix I attached hereto.

AUTHORIZING RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF THE FRASER VALLEY REGIONAL DISTRICT ON THE <DAY> DAY OF <MONTH>, <YEAR>

________________________________________
Chief Administrative Officer / Deputy

THIS IS NOT A BUILDING PERMIT
DEVELOPMENT VARIANCE PERMIT 2019-13
SCHEDULE "A"
Location Map
DEVELOPMENT VARIANCE PERMIT 2019-13
SCHEDULE "C"
Hydrogeological Report
Prepared by: Gerry Papini, Hemmera Envirochem Inc, September 26, 2016

September 28, 2016
File: 2030-001.01

Fraser Valley Regional District
45950 Cheam Avenue
Chilliwack, BC V2P 1N9

Attn: Katelyn Hipwell

Dear Katelyn,

Re: Groundwater Protection: Miracle Springs, Mission, BC

Further to our conversation regarding use of groundwater supply wells to supply the expansion of the fish farm facilities at the Miracle Springs property (12443 & 12395 Stave Lake Road), Hemmera Envirochem Inc. (Hemmera) is pleased to provide an opinion on potential risks to the groundwater resource aquifer based on proximity to the proposed farming activities. The purpose of this letter is to provide assurance to the Fraser Valley Regional District (FVRD) and Fraser Health Authority that the use of two production wells for the proposed expansion at the Miracle Springs will not present a contamination risk for the groundwater resource.

Use of the groundwater resource must comply with the Groundwater Protection Regulation (B.C. Reg. 152/2016, June 10, 2016), the Health Hazards Regulation (B.C Reg. 41/2016, February 29, 2016), (HHR) and the FVRD Bylaw No. 559, Area “G” Part 400: 8b. Fish farming is considered agricultural land use. Section 8(1)a of the HHR requires that a groundwater well be located “30 m from any probable source of contamination”. For the purposes of this letter, we assume that agricultural activities are a potential source of contamination. The Groundwater Protection Regulation (GPR) provides requirements for well construction, operation, maintenance and decommissioning / deactivation.

1.0 EXISTING INFORMATION

Hemmera was provided with background information regarding the proposed fish farm expansion, the production well construction, and use of supply wells. We summarize the background information from the proponent and drilling contractor as follows:

- Two buildings are planned northeast of the existing fish pens and west of the Stave Lake Road. Phase 1 is a 34 m x 21.3 m slab-on-grade construction (Attachment 1 Drawing No. 2 Proposed Area of Alteration) with nearby 9.1 m x 6.1 m slab-on-grade mechanical building (Smolt Mech. Building – see Drawing No. 2).
• Water from two existing groundwater supply wells: Well #1 – Well ID 41521 and Well #2 – Well ID 41522 (see Drawing No. 2) will be used to provide the additional facilities with water (and Well #2 will continue to provide potable water to two dwellings).

• Well #1 is 12-inch (30 cm) diameter, 156-foot (48 m) deep with casing installed to 136 feet (42 m) and a 20 foot (6 m), (100 slot) screen installed to the bottom of the hole. The well screen is set in sand and gravel (the screened aquifer). Thin surficial sand is underlain by approximately 30 feet (9 m) of clay. The static water level is 7 feet (2 m) from surface. The drilling contractor rated the well production at >500 GPM (>32 L/s), but this rate has not been verified by pump testing (Attachment 2);

• Well #2 is an 8-inch diameter, 198-foot (60 m) deep well with casing installed to 171 feet (52 m) and 80-slot screen to the bottom of the borehole. The well screen is set in sand and gravel (the screened aquifer). Surficial sand, clay and gravel is underlain by approximately 60-foot (18 m) thick of clay. The water level was reportedly artesian at the time of drilling. The drilling contractor rated the well production at >200 GPM (>13 L/s) but this rate has not been verified by pump testing (Attachment 2).

• Both wells will be enclosed within the building limits (see Drawing No. 2). Access to Well #1 will be restricted by provision of a chain-link cage (2.5 m x 2.5 m x 6 m) and encapsulating concrete wall (see Attachment 3 – Standard Operating Procedure, Rev 1).

• We understand that the well casings are currently above ground and that there are no plans to construct a well pit in the future.

2.0 GROUNDWATER PROTECTION

The intent of the HHR is to protect the groundwater resource from potential contamination. At Miracle Springs, the groundwater resource is protected from potential contamination by the following barriers or conditions:

1. The buildings are slab-on-grade design such that any spillage of chemicals or other hazardous material would be contained within the facility and unlikely to infiltrate the ground;

2. The wells will be enclosed within a dedicated building or locked enclosure safe-guarding them from accidental damage or tampering;

3. The wells are constructed according to the GPR with grouted-in steel casing extending above ground surface and to a depth below a clay layer (aquitard);

4. The screened aquifer is confined at depth with artesian (flowing) conditions reported, implying that groundwater is discharging to surface in the area. Contamination of the screened aquifer is implausible in this setting.

3.0 CONCLUSIONS

The well’s construction, the depth of the screened aquifer, and the presence of a substantial clay layer overlying the screened aquifer indicate that contamination of the screened aquifer from potential contamination sources at ground surface is improbable. The 30 m setback of a well from an agricultural
activity (Fraser Valley Regional District Bylaw No. 559, Area "G" Part 400: 8b) is not considered to provide any incremental protection to the groundwater resource respecting the construction and proposed use of Well #1 and Well #2.

Miracle Springs has developed a Standard Operating Procedure (SOP) for well management incorporating access control, water sampling and routine monitoring to facilitate protection of the groundwater resource. In addition to the SOP, the supply wells will need to be operated and maintained in accordance with the GPR.

It is Hemmera’s opinion that the 30 m setback be waived for the proposed use of Well #1 and Well #2, and that enclosure and use of the wells according to the proposed design does not present a hazard to the groundwater resource at this property.

Prepared by: Hemmera Envirochem Inc.

Reviewed by: Hemmera Envirochem Inc.

Gerry Papini, P.Geo.
Senior Hydrogeologist
604.669.0424 (176)
gpapini@hemmera.com

Gabriel Viehweger, P.Geo.
Senior Hydrogeologist
604.669.0424 (232)
gviehweger@hemmera.com

CC: Dan Sampson
Upcountry Properties Group
380 – 233 W 1ST Street, North Vancouver, BC V7M 1B3
ATTACHMENT 1

Drawing No. 2 Proposed Area of Alteration
ATTACHMENT 2
Water Well Records
# Development Variance Permit

**FIELD DRILLING CONTRACTORS LTD**

P. O. Box 841  
25320 Fraser Highway  
Aldergrove, BC V4W 2V1

Phone: (604)857-2266  
Toll free: 1-866-857-2266  
Fax: (604)857-2267

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**WATER WELL RECORD**

<table>
<thead>
<tr>
<th>OWNER: MIRACLE SPRINGS</th>
<th>DATE: OCTOBER 15, 2015</th>
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<tbody>
<tr>
<td>ADDRESS: BOX 500 – 233 WEST 1ST</td>
<td>SITE ADDRESS: STAVE LAKE ROAD</td>
</tr>
<tr>
<td>NORTH VANCOUVER, BC V7M 1B3</td>
<td>MISSION, BC</td>
</tr>
<tr>
<td>PHONE: 604-209-2373</td>
<td></td>
</tr>
</tbody>
</table>

**Measurements**

- **Diameter**: 20"  
- **Depth**: 136'6"  
- **Bottom Depth**: 156 Feet  
- **Ground Level**: 4 Feet

**Ground Level**

<table>
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<tr>
<th>FROM</th>
<th>TO</th>
<th>WELL LOG DESCRIPTION</th>
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<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>GRAVEL</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>LIGHT BROWN SILTY SANDS</td>
</tr>
<tr>
<td>8</td>
<td>30</td>
<td>HARDER GRAY CLAYS</td>
</tr>
<tr>
<td>30</td>
<td>39</td>
<td>GRAY CLAYS &amp; SAND LAYERS</td>
</tr>
<tr>
<td>39</td>
<td>68</td>
<td>GRAY CLAYS &amp; SANDS</td>
</tr>
<tr>
<td>68</td>
<td>80</td>
<td>GRAY W.B. SANDS &amp; GRAVEL</td>
</tr>
<tr>
<td>80</td>
<td>90</td>
<td>GRAY SANDS, W.B.</td>
</tr>
<tr>
<td>90</td>
<td>150</td>
<td>BROWN SANDS &amp; GRAVELS, W.B.</td>
</tr>
<tr>
<td>150</td>
<td>156</td>
<td>GRAY BROWN SANDS &amp; GRAVEL, W.B. BLACK WATER</td>
</tr>
</tbody>
</table>

**Screens**

- **Number of Screens**: 1  
- **Top at**: 135 Feet  
- **Bottom At**: 156 Feet  
- **Screen Length**: 20 Feet  
- **Riser**: NO  
- **K. Packer**: YES  
- **B. Bottom**: YES  
- **Well Completion**: 500+ GPM  
- **Pump Setting**: 130 Feet  
- **Static Water Level**: 7 Feet  
- **Develop**: 11 1/2 Hours  

**Site Legal Description**

**Rig No**: 11  
**Rotary**: YES  
**Cable**:  
**Driller**: GEORGE PATERSON  
**Helper**: CHAD ROBERTSON  
**Matt Davis**

**Well I.D.**

- **Name**: MIRACLE SPRINGS  
- **Number**: 5269-11  
- **Should be Pump Tested For Exact GPM**
## FIELD DRILLING CONTRACTORS LTD

**P. O. Box 841**  
25320 Fraser Highway  
Aldergrove, BC V4W 2V1  

Phone: (604)857-2266  
Toll free: 1-866-857-2266  
Fax: (604)857-2267

### WATER WELL RECORD

<table>
<thead>
<tr>
<th>OWNER: UPCOUNTRY LEASEHOLDS LTD</th>
<th>DATE: NOVEMBER 4, 2015</th>
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<tr>
<td>ADDRESS: BOX 500 - 233 WEST 1ST</td>
<td>SITE ADDRESS: 12395 STAVE LAKE ROAD</td>
</tr>
<tr>
<td>NORTH VANCOUVER, BC</td>
<td>MISSION, BC</td>
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<tr>
<td>PHONE: 604-987-1230 EXT 222</td>
<td></td>
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</tbody>
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| Date Began:      | OCTOBER 23, 2015       |
| Date Completed:  | NOVEMBER 3, 2015       |
| Hole Diameter:   | 8 Inch                 |
| Surface casing:  |                        |
| Dia: 12" x 10"   | 19' 41" Feet           |
| Drive shoe:      | YES                    |
| MEASUREMENTS     | FROM                   |
| GROUND LEVEL:    |                        |
| Stick-Up:        | 2 Feet                 |
| Bottom of Casing:| 171'11" Feet           |
| Hole Depth:      | 182'11" Feet           |
| Open Hole: From: | To:                    |
| Top at:          | 170 Feet               |
| Bottom At:       | 182 Feet               |
| SCREENS:         |                        |
| Number of Screens:| 2                      |
| Slot Size:       |                        |
| Slot 80          | Slot 80                |
| Screen Length:   | 12 Feet                |
| Top at: 170 Feet | 11 Inch                |
| Bottom At: 182   | 11 Inch                |
| K. Packer:       | YES                    |
| B. Bottom:       | 2FT                    |

**WELL LOG DESCRIPTION**

<table>
<thead>
<tr>
<th>FROM</th>
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<th>WELL LOG DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>GRAVEL</td>
</tr>
<tr>
<td>1</td>
<td>15</td>
<td>BROWN STICKY SILT CLAY &amp; SANDS, ODD STONE</td>
</tr>
<tr>
<td>15</td>
<td>33</td>
<td>GRAY SILTY GRAVELS</td>
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<td>62</td>
<td>88</td>
<td>SOFTER GRAY CLAY</td>
</tr>
<tr>
<td>88</td>
<td>95</td>
<td>SOFT GRAY CLAY, ODD STONE</td>
</tr>
<tr>
<td>95</td>
<td>118</td>
<td>FINE SILTY SAND, SOME GRAVEL</td>
</tr>
<tr>
<td>118</td>
<td>185</td>
<td>W.B. SANDS &amp; GRAVEL</td>
</tr>
<tr>
<td>185</td>
<td>198</td>
<td>FINER GRAY SANDS</td>
</tr>
</tbody>
</table>

**Rig No: 11**  
**Rotary: YES**  
**Cable:**  
**Driller:** GEORGE PATERSON  
**Helper:** CHRIS PATON

**SITE LEGAL DESCRIPTION:**  
**WELL I.D.: 41522**

**NAME: MIRACLE SPRINGS**  
**NUMBER: 8300-11**  
**SHOULD BE PUMP TESTED FOR EXACT GPM**
ATTACHMENT 3
Standard Operating Procedure – Well Management
WELL MANAGEMENT

1. Rationale

Biosecurity procedures must be maintained around all wells to ensure that the water sources are not contaminated. This is to ensure the safety and health of the water for domestic and agricultural purposes. This Standard Operating Procedure ensures that Miracle Springs Inc. adheres to guidelines specified by the Canadian Food Inspection Agency Animal Health Compartmentalization Program for the introduction and release of water of a known health status.

2. Scope

This procedure applies to all employees, visitors, suppliers and contractors accessing the Miracle Springs Inc. site. It is intended for all well water sources on site.

3. Definitions

4. Responsibilities

*Miracle Springs Inc. General Manager is responsible for:*
- Review and approval of Miracle Springs Standard Operating Procedures (Wendy Vandersteen, Mike Cunning, Dan Sampson);
- Ensuring that personnel are aware of and understand the procedure;
- Taking action if procedures are not followed.

*Miracle Springs Inc. Operations Manager is responsible for:*
- Ensuring that the procedure is being followed on a daily basis.

*All Miracle Springs Inc. Personnel that work with fish are responsible for:*
- Familiarizing themselves with this procedure;
- Obtaining training for this procedure prior to conducting it unsupervised.

5. Equipment and Supplies

- Water sampling bottles

6. Safety Concerns

No safety concerns.
7. Approved Procedure

- There are three wells on site (Well #1 - 41880, Well #2 - 41521, and Well #3 - 41522), all drilled by the same contractor (Field Drilling Contractors Ltd.), a driller licensed by the British Columbia Ground Water Association (the well reports are kept on file).

- Well #1 will be located within the new aquaculture system building, Well #2 is between the staff house and road, and Well #3 is on the adjacent property.

7.1 Routine water sampling

- Water is sampled from each well at least quarterly, and sent to Exova for analysis (complete drinking water analysis). Refer to Water Quality Monitoring SOP in Miracle Springs Inc. Biosecurity Manual.

7.2 Restricted Access

- Each well is securely sealed to prevent any access.

- There will be a cage built around Well #1 within the building. This cage will be 2.5m x 2.5m x 6m high and constructed from chain link.

- A 0.6m concrete wall will surround the well to restrict ingress of any water around the well casing from the surrounding aquaculture system.

- The cage will remain locked at all times. Only the Operations Manager and the General Manager will have key access to this enclosure.

- Any service contractors will be supervised by the Operations Manager or the General Manager while working on or near the wells.

7.3 Routine Monitoring

- Each well will be inspected weekly to check the integrity of the seals around the well head. Inspections will check for signs of cracks, water leaks, or other indications of compromised biosecurity. Visual inspections will be recorded on the Well Inspection Record Sheet.

- Well #1 in the enclosed cage will be visually inspected two times per day to ensure that the enclosure remains securely locked. This will be noted on the relevant Daily Husbandry Sheet for the recirculating aquaculture system.
8. Contingency Plan

If compromised biosecurity is detected, a water sample will be collected immediately and sent for complete drinking water analysis.

9. Non-conformances

Any staff determined to be improperly following this procedure will be reported to the General Manager. Staff will first receive a warning and subsequently may require retraining or dismissal.

10. Forms and Record Keeping

Records to be completed or filed include:

- Well Inspection Records
- Well Maintenance Records
- Daily Husbandsy Records

When records have been updated, please file them appropriately. At the end of each day, the records are stored in the Staff Room at the Record Station in the Daily Record Collection file. The manager will collect the records on a weekly basis and they will be digitally entered into a spreadsheet for further analysis. The original records will be stored for a minimum of two years.

11. References

<table>
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<tr>
<th>REVISION LOG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revision Date</strong></td>
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