



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

Schedule "C": Hydrogeological Report, prepared by Gerry Papini of Hemmera Envirochem Inc., and dated September 28, 2016

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> .

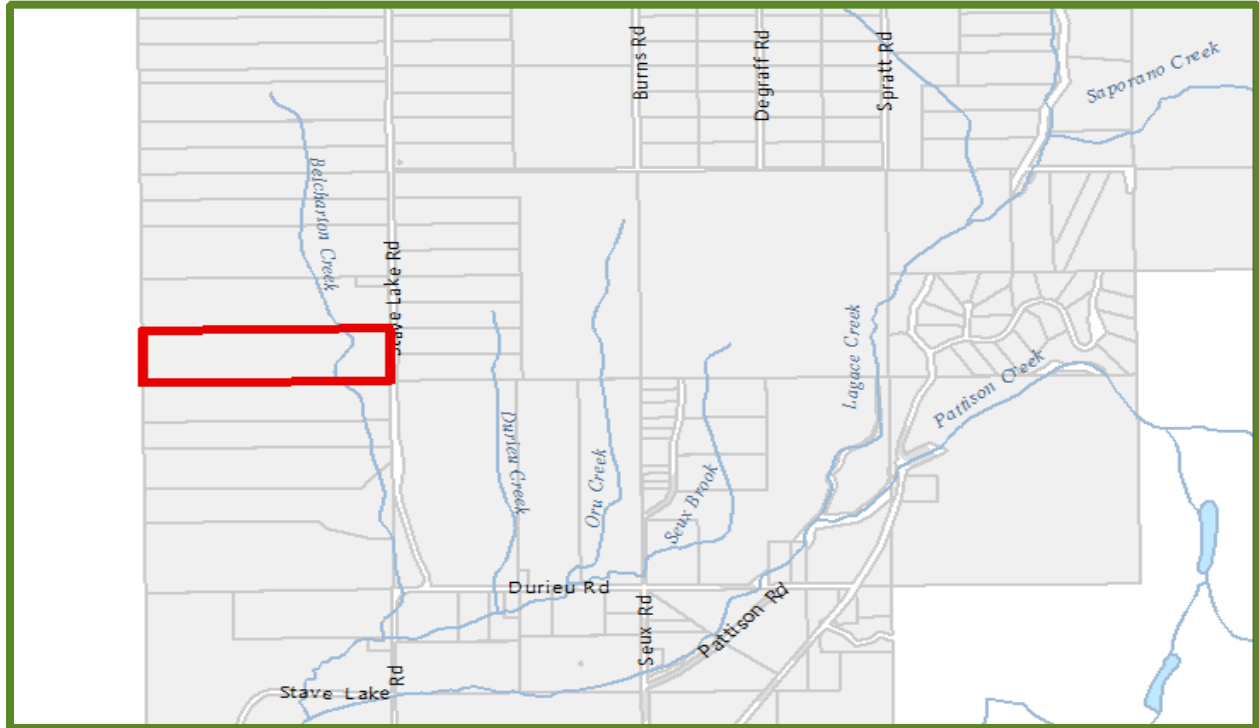
Note: The Regional District shall file a notice of this permit in the Land Title Office stating that the land described in the notice is subject to Development Variance Permit Number 2019-13. The notice shall take the form of Appendix I attached hereto.

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

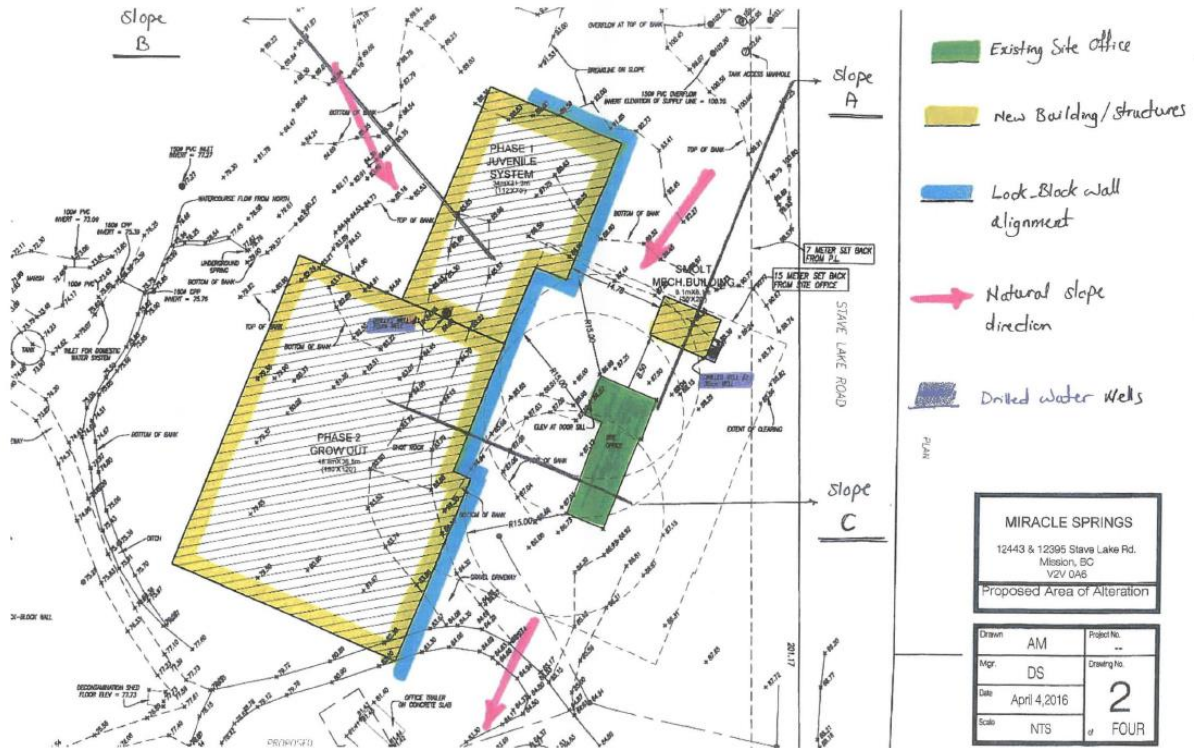
Chief Administrative Officer / Deputy

THIS IS NOT A BUILDING PERMIT

DEVELOPMENT VARIANCE PERMIT 2019-13
SCHEDULE "A"
Location Map



DEVELOPMENT VARIANCE PERMIT 2019-13 SCHEDULE "B" Site Plan



DEVELOPMENT VARIANCE PERMIT 2019-13 SCHEDULE "C"

Hydrogeological Report

Prepared by: Gerry Papini, Hemmera Envirochem Inc, September 26, 2016

FVRD
CCT 04 2016
Permit No. 2030-001.01



Hemmera Envirochem Inc.
18th Floor, 4730 Kingsway
Burnaby, BC V5H 0C6
T: 604.669.0424
F: 604.669.0430
hemmera.com

September 28, 2016
File: 2030-001.01

Fraser Valley Regional District
45950 Cheam Avenue
Chilliwack, BC V2P 1N6

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 deactivation / decommissioning.

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

Upcountry Properties Group.
Miracle Springs – Groundwater Protection Assessment

- 3 -

Hemmera
September 2016

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.



Handwritten signature of Gerry Papini.

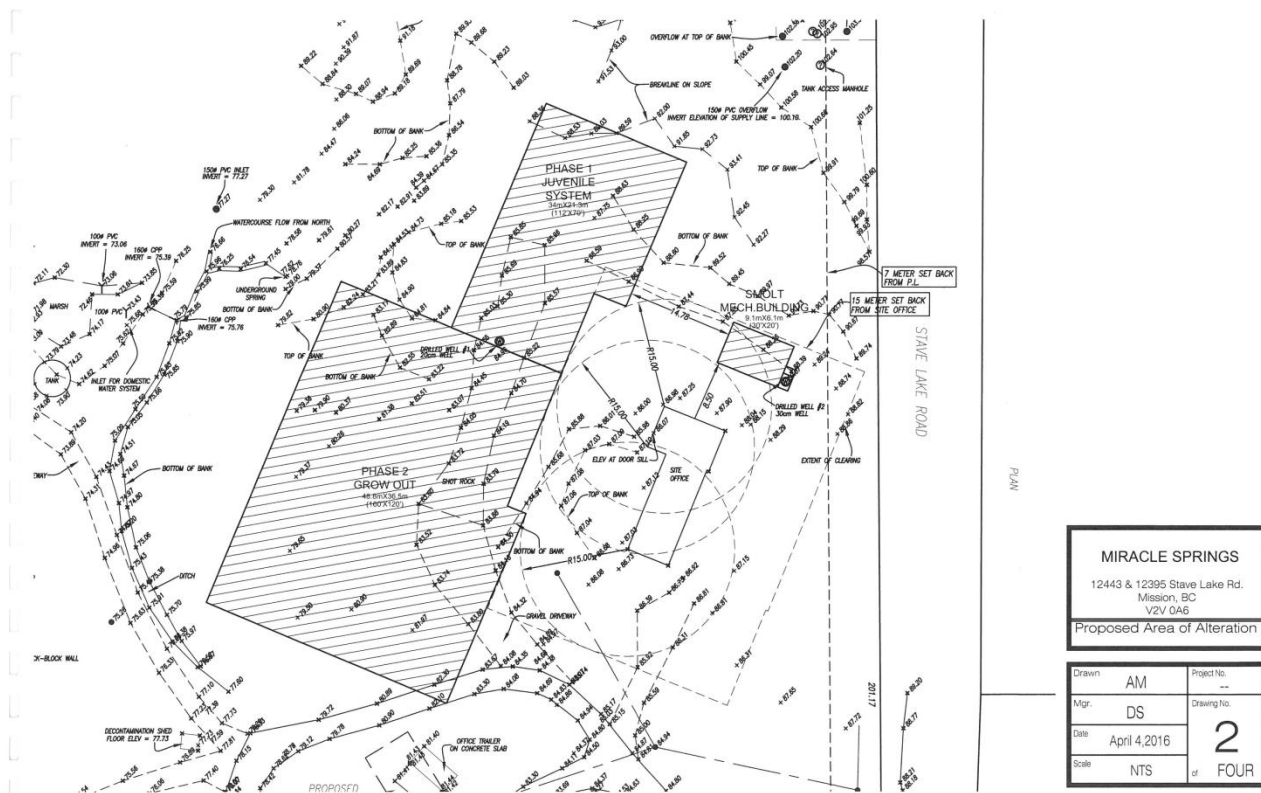
Gerry Papini, P.Geo.
Senior Hydrogeologist
604.669.0424 (176)
gpapini@hemmera.com

Handwritten signature of Gabriel Viehweger.

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

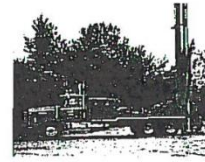


ATTACHMENT 2
Water Well Records

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

OWNER: UPCOUNTRY LEASEHOLDS LTD	DATE: NOVEMBER 4, 2015
ADDRESS: BOX 500 – 233 WEST 1ST	SITE ADDRESS: 12395 STAVE LAKE ROAD
NORTH VANCOUVER, BC	MISSION, BC
PHONE: 604-987-1230 EXT 222	

Date Begun:	OCTOBER 28, 2015		FROM	TO	WELL LOG DESCRIPTION
Date Completed:	NOVEMBER 3, 2015		0	1	GRAVEL
Hole Diameter:	8	Inch	1	15	BROWN STICKY SILT CLAY & SANDS, ODD STONE
Surface casing:			15	33	GRAY SILTY GRAVELS
Dia: 12" + 10"	19' + 41'	Feet	33	41	HARD GRAY CLAY
Drive shoe:	YES		41	62	HARDER GRAY CLAY
MEASUREMENTS	FROM		62	88	SOFTER GRAY CLAY
GROUND LEVEL:			88	95	SOFT GRAY CLAY, ODD STONE
Stick-Up:	2	Feet	95	118	FINE SILTY SAND, SOME GRAVEL
Bottom of Casing:	171'11"	Feet	118	185	W.B. SANDS & GRAVEL
Hole Depth:	182'11"	Feet	185	198	FINER GRAY SANDS
Open Hole: From:		Feet			
To:		Feet			
SCREENS:					
Number of Screens:	2				
Slot Size:					
Slot 80	Slot 80				
Slot	Slot				
Screen Length:	12	Feet			
	11	Inch			
Top at: 170 Feet		Inch			
Bottom At: 182 Feet	11	Inch			
K. Packer: YES	Riser:	2FT			
B. Bottom: YES					
WELL					
COMPLETION:					
Rate:	200+	GPM			
Pump Setting:	165	Feet			
Static Water Level:	0+-	Feet			
Develop:	4	Hours			

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

SITE LEGAL DESCRIPTION:

WELL I.D.
41522

NAME: MIRACLE SPRINGS
NUMBER: 5300-11
SHOULD BE PUMP TESTED FOR EXACT GPM

ATTACHMENT 3
Standard Operating Procedure – Well Management

	MIRACLE SPRINGS INC. <i>Standard Operating Procedure</i>	Page: 1 of 3 Revision: 1
TITLE: Well Management		
ISSUE DATE: May 12, 2016		
APPROVED BY: Miracle Springs 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 Cuning, 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.

	MIRACLE SPRINGS INC. <i>Standard Operating Procedure</i>	Page: 2 of 3 Revision: 1
TITLE: Well Management		
ISSUE DATE: May 12, 2016		
APPROVED BY: Miracle Springs Management		

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 will 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.

	MIRACLE SPRINGS INC. <i>Standard Operating Procedure</i>	Page: 3 of 3 Revision: 1
TITLE: Well Management		
ISSUE DATE: May 12, 2016		
APPROVED BY: Miracle Springs Management		

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 Husbandry 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

REVISION LOG

Revision Date	Authority	Reviser	Revision Details