



Severn Sound Environmental Association

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Summary of Farlain Lake Area Well Survey (2016)

In 2016, the Severn Sound Environmental Association (SSEA) conducted a survey of private water wells in the Farlain Lake area, funded by the Township of Tiny. The project helps address a need identified in the *Lake to Sky Farlain Lake Community Management Plan* (section 2.5: Wellhead and Water Supply Protection), and provides a baseline of information on wells in the area.

The study area included shoreline properties and most of the second tier properties around Farlain Lake. In summer, information on the project was posted on the Township, SSEA and Farlain Lake Community Association (FLCA) websites, and also circulated to members of FLCA in a newsletter.

Well surveys were conducted by door-to-door canvassing by SSEA staff, on nine different days starting in July. Where possible, the owner was interviewed to obtain information about their well(s). A copy of the well survey form used by SSEA staff is in Appendix A. Vacant lands without a cottage/house and properties serviced by municipal water were not visited. Well owners that were interviewed on site were asked for permission to photograph the well, collect UTM coordinates of the location by using a GPS, and measure the height of the well casing.

The SSEA compiled a package of information for well owners (Appendix B). When the well owner was not at home during the visit, the package included a letter explaining the program and asking that the owner contact SSEA and provide information about the well. Water quality test kits, supplied by the Simcoe Muskoka District Health Unit, were provided to well owners that were at home during the SSEA's visit.

In some cases where the well owner was not home, the well was visible from the street or was seen when delivering the well information package to the door of the house or cottage. In these cases, SSEA staff documented basic information about the well, including the type of well, casing material and condition of cap, an estimate of the casing height above ground, and noted the approximate location of the well on a printed aerial photograph. In a few cases, neighbours provided basic information about wells for properties near them, including the well type and location. Where a concrete crock was seen, the well type was simply noted as 'crock', since in the SSEA's experience, a crock sometimes contains a dug or bored well, in others a sand point well; occasionally a crock is used for purpose unrelated to a well, such as an access hatch for a septic tank. For the purposes of this survey, the location of a crock was noted, but the well type,

casing material and cap condition were each noted as 'unknown' since details could not be confirmed.

A search of the Ministry of Environment and Climate Change (MOECC) well record database provided information on some wells. Generally, the SSEA used the information provided by the well owner to find the matching well record. However, for newer wells, the MOECC well database includes the address of the property the well is located on, thus facilitating a match. In a few cases, the SSEA found a well record for a property but did not actually see the well during door-to-door canvassing; in these cases, information such as the current condition of the well casing and cap was not available.

In November, FLCA circulated a follow-up email to their members, encouraging well owners that were not home during the door-to-door canvassing to contact the SSEA and provide information about their wells for the project.

Summary Results

SSEA staff visited 283 properties in the Farlain Lake area in 2016. Wells were documented on 116 of these properties (41.0%), with crocks on an additional 17 properties (6.0%); 40 properties (14.1%) were vacant land with no house or cottage, and 9 property owners (3.2%) indicated they do not have a well, but use surface water from Farlain Lake as their water supply.

For 101 properties (35.7%), wells were not seen during door-to-door canvassing by SSEA staff, no information was matched in the well record database, and the owner did not provide SSEA with well information by telephone or email.

Summarized survey results are provided in Table 1.

Table 1: Farlain Well Survey Aggregate Information

WELL TYPE	drilled	dug	sand point	crook [well type unconfirmed]	unknown	TOTAL
Number of wells documented	82	5	28	17	1	133
WELL CONDITION						
wells in 'best' category (i.e., minimum 40 cm above grade with a vermin-proof cap)	23	0	0	0	0	23
CASING HEIGHT						
>40 cm (16")	36	0	0	0	0	36
15-40 cm (6-16")	25	1	1	0	0	27
<15 cm (6")	6	2	2	0	0	10
well pit	0	0	4	0	0	4
buried casing	0	0	8	0	0	8
unknown	15	2	13	17	1	48
CONDITION OF CAP						
vermin-proof	35	0	0	0	0	35
sub-standard: one-piece	30	0	0	0	0	30
sub-standard: inset	0	3	0	0	0	3
sub-standard: damaged	1	0	0	0	0	1
unknown	16	2	28	17	1	64
MOEECC WELL RECORD						
yes	51	0	0	0	0	51
no record, or not found	31	5	28	17	1	82
IS HOUSEHOLD DRINKING THE WATER?						
yes (untreated)	8	0	12	0	0	20
yes (treated)	7	0	1	0	0	8
no	6	2	3	0	0	11
unknown	61	3	12	17	1	94

The majority of wells documented during the Farlain Lake Area Well Survey were drilled wells, followed by sand points. The SSEA matched 51 wells to their corresponding well record in the MOECC database - older dug wells and sand point wells generally do not have a well record on file with MOECC.

Well Age

The age (or approximate age) was known for 72 wells: six were constructed prior to the 1980s, twelve between 1980 and 1989, fourteen from 1990 to 1999, and forty were constructed in 2000 or later.

Well Depth

The well depth (or approximate depth) was known for 64 wells:

- Dug wells: 2 wells, depth range from 5.0 to 6.1 m
- Drilled wells: 52 wells, depth range from 10.4 to 44 m
 - 27 wells are 10-19.9 m deep
 - 14 wells are 20-29.9 m deep
 - 9 wells are 30-39.9 m deep
 - 2 wells are 40-44 m deep
- Sand point wells: 10 wells, depth range 4.6-16.2 m
 - 6 wells are 4.6-9.9 m deep
 - 4 wells are 10-16.2 m deep

Well and Cap Condition

Of the wells seen, 35 have newer, vermin-proof caps, but only 23 also have the casing at least 40 cm (16") above the surrounding grade [current well construction standards]. Many of the sand point wells have buried casings or are in a well pit below grade. No respondents reported unused wells on their properties.

Well Water Quality

Of the wells owners that answered the question about whether they drink their well water, approximately 28% do not drink it, 51% reported drinking it untreated, and 21% drink the water after it has been treated. Treatment systems are not widely used in the Farlain Lake area, but include: sediment filters, water softeners, iron filters, reverse osmosis, and ultraviolet light.

The Simcoe Muskoka District Health Unit recommends that private wells be tested at least three times per year for bacteria. A total of 42 respondents provided information on water sampling: only 8 (19.0%) are sampling three or more times per year, 9 (21.4%) report testing once per year, and the remainder (59.5%) are testing occasionally or infrequently for bacteria, or not at all. Of well owners testing for bacteria, some reported bacterial contamination of their wells, either intermittently or regularly. In addition to regular bacteria testing, the Health Unit recommends well water be tested for nitrates at least once a year: one well owner tests for nitrates every two years, no other respondents reported testing their well water for nitrates.

Recommendations

1. Additional work to match MOECC well records to well locations in the study area should be completed.
2. Further research on the groundwater resources surrounding Farlain Lake should be undertaken. This could potentially be accomplished as part of a graduate student research project with a university.
3. All residents should be encouraged to test their well water at least three times per year for bacteria, and once per year for nitrates, as recommended by the Simcoe Muskoka District Health Unit.

Appendix A – Well Survey Form

SSEA Private Well Survey 2016

Area/Capture Zone ID: _____

Purpose: To assess well condition and accurate location for groundwater management

Parcel Number: _____

Civic Address: _____

Source Number: ____ of ____

1 OWNER INFORMATION

Name: _____

Mailing Address: _____

3 WATER USE & SUPPLY

- Domestic (permanent)
 - Domestic (seasonal <6 mo/yr)
 - Commercial
 - Other (specify): _____
- ___ # people use the building (avg.)
___ # months/year occupied

Quantity Issues? (amount/supply)

- No Yes _____

Is well water used for drinking?

- No
- Yes – untreated
- Yes – treated (specify):
 - UV
 - reverse osmosis
 - chlorination
 - other: _____

Softener Used? No Yes

6 PUMP LOCATION

- In house
 - In well
- GPM setting: _____

7 WELL LOCATION

GPS accuracy (m): _____ Photo number: _____

UTM (NAD 83 Zone 17) E: _____ N: _____

8 UNUSED WELLS ON PROPERTY

ID _____ Type _____
ID _____ Type _____

2 WELL INFORMATION

Well Record/Tag #: _____

Well Type:

- Drilled
- Dug
- Bored
- Sandpoint
- Other
- Unknown

Driller: _____

Year Constructed: _____

Home Owner during construction: _____

Depth (specify units):

Well: _____
Intake: _____
Static Level: _____

Well Diameter: _____

Casing Height:

- >40 cm/16"
- 15-40cm/6-16"
- <15cm/6"
- well pit
- buried casing

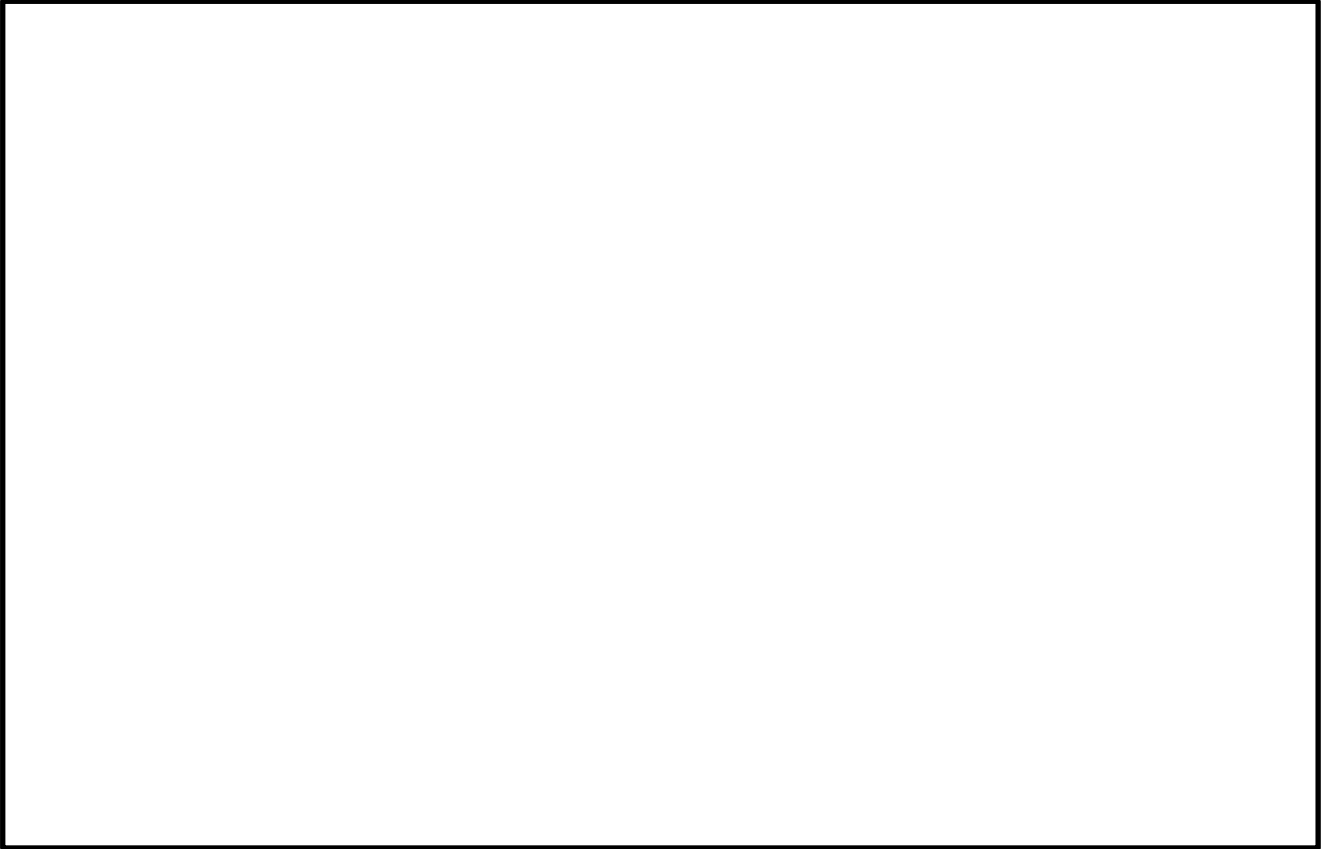
Casing Material:

- Steel
- Concrete
- Plastic
- Other (specify): _____

Condition of Cap:

- Vermin-proof
- One-piece or inset
- Damaged/missing
- Other (specify): _____

9 SITE DIAGRAM & WELL LOCATION



10 COMMENTS / OTHER INFORMATION

(e.g., condition of casing, well location [topographic, in relation to potential contaminants, proximity to surface water])

CONTACT INFORMATION:



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67 Fourth St, Midland ON L4R 3S9
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Dear Property Owner,

RE: SURVEY OF WATER WELLS IN THE TOWNSHIP OF TINY: FARLAIN LAKE AREA

Staff from Severn Sound Environmental Association (SSEA) were in your area conducting a survey of private drinking water wells. The project is being undertaken in cooperation with the Township of Tiny and the Farlain Lake Community Association, and aims to provide a current, comprehensive inventory of wells in the area.

The purpose of the visit was to collect some information about well(s) on your property, including:

- location of well(s) on the property
- age and type of well(s) – e.g., drilled, dug, bored or sandpoint
- depth of well(s) and intake
- use of well(s) – e.g., home/cottage, commercial, not in use
- water testing frequency and results
- water treatment devices (if applicable)

You were not at home when SSEA staff stopped by, however, many of the details for the survey can be provided by telephone or email. We would appreciate your cooperation in allowing us to complete the survey; please contact Michelle Hudolin (705-527-5166 ext. 202 or mhudolin@midland.ca) to provide the information. If you have a copy of your well record (completed when the well was constructed), please have it available or provide the well record number, since it contains much of the information being collected.

Please note that although the survey will identify the location of wells in the study area, public reporting of the data will be in aggregate/summary form only - the project partners will keep your personal information (such as name and contact information) confidential.

We are providing you with information on well water sampling, and care and maintenance of wells.

For more information on the well survey project, contact:

Michelle Hudolin
Wetlands & Habitat Biologist
Severn Sound Environmental Association
67 Fourth St
Midland ON L4R 3S9
705-527-5166 ext. 202
mhudolin@midland.ca

WATER TESTING INFORMATION FOR PRIVATE WELL OWNERS

Did you know? Regular testing is needed to stay informed about the safety of your well water and the condition of your well.

- Test your water at least three times each year for harmful bacteria
- Well water should also be tested occasionally for other parameters (e.g., nitrate, minerals, metals).
- The best time to sample well water is during a period of wet conditions, when rainwater or melting snow can carry contaminants into wells.

Bacteria

Test for bacteria (*E. coli* and total coliform) three times per year, after a heavy rainfall or snowmelt.

This testing is done **FREE** for well owners, through the Health Unit. The Simcoe Muskoka District Health Unit has an office in Midland:

Simcoe Muskoka District Health Unit
Unit B, 865 Hugel Avenue
Midland ON L4R 1X8
(Midland Secondary School - Separate entrance off Gervais Street)
Telephone: 705-526-9324

-Water sample drop-off times:

Monday to Thursday, 8:30 a.m. to 2:30 p.m.

-The sample must be collected in a sterile water sample bottle obtained from the Health Unit, kept refrigerated, and delivered to the Health Unit during water sample drop-off times and within 24 hours of collection.

Nitrates

The Simcoe Muskoka District Health Unit recommends testing well water for nitrates at least once a year.

Contact Your Health Connection at 705-721-7520 (1-877-721-7520) for more information about nitrate testing.

Other Parameters

The Ontario Ground Water Association offers several water testing packages for well owners – see reverse for more information, or visit:

www.ogwa.ca/Well-Wise-Testing.

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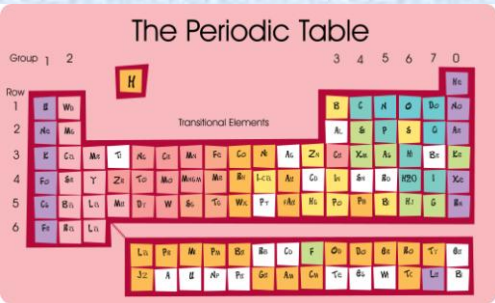
July 2016



Rural Water Testing Packages

Brought to you by Well Wise and the Ontario Ground Water Association (OGWA).

Contractors or Well Owners – Call to Order – OGWA / Ph: 519-245-7194



Metals, Minerals and Salts \$132 **

“Detailed general chemistry package; all wells should be screened for these impurities.”

This package tests more than 40 parameters. It is a good general chemistry water testing package providing well owners with a detailed understanding of impurities that may be in their water because of rock or surrounding land uses. It includes hardness, iron, and heavy metals.

Bacteria \$50 **



“Test if your free bacterial test is frequently above standard”

This bacterial package offers the assessment of Total Coliforms, *E. coli*, which are done in a Ministry of Health test. Fecal Streptococci and *Pseudomonas aeruginosa* were added to our test package to help determine a potential source to help you take action.

Fuels \$ 185 **

Solvents \$ 110 **







These packages are useful if you live near a gas station, if you have underground fuel storage or industrial uses nearby or if you have any reason to suspect an issue with petroleum products in your water supply. Combining both test packages will assess 40 different compounds and includes: Benzene, vinyl chloride, acetone, chloroform, and methylbromide.



Bacterial	\$ 50.00	\$
Fuels	\$ 185.00	\$
Solvents	\$ 110.00	\$
Metals, Minerals, and Salts	\$ 132.00	\$
Fluoride	\$ 15.00	\$
Additional Fees (Required)		
Sample Disposal Fee (per each test group)	\$ 1.75 ea	
Shipping	\$ 25.00	\$ 25.00
Administration	\$ 50.00	\$ 50.00
	SUB-TOTAL:	\$
Harmonized Sales Tax -	HST add 13%	\$
	TOTAL:	\$

Test kits are couriered to your business or home, then picked up and delivered to the lab.

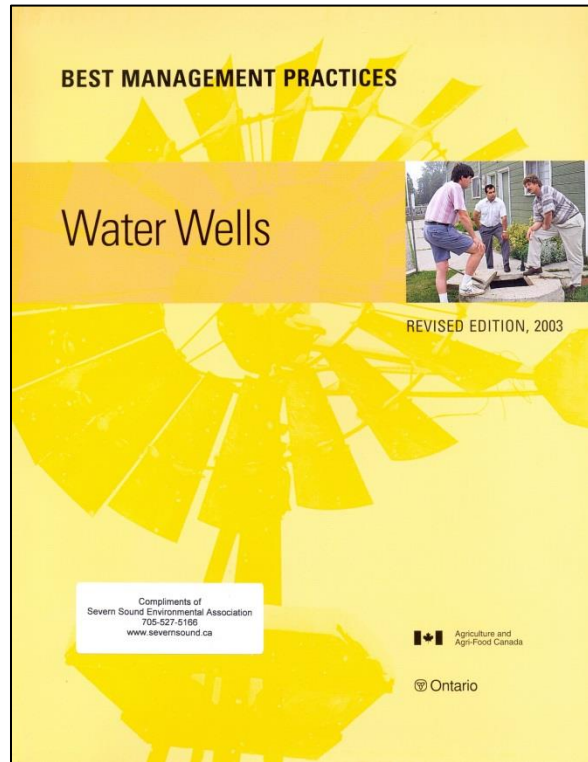
**Sample disposal fee, shipping cost, taxes, and administration are additional to the prices listed.

Common problems with wells	Recommendations
Well hidden by shrubs, decorative items/wishing well, OR well located in garden (blocks view of well, and can provide a home for mice and insects) 	Remove plants/decorative items - wells should always be visible and accessible, to help ensure that no improper activities are occurring nearby, and to permit regular visual inspections
No sealant/grout used on outside of casing OR faulty seal around well casing (allows surface water and bacteria/contaminants to enter well)	Upgrade well*: seal annular space
Drilled well is below ground in a pit (used prior to the mid-1980s, pits often fill with water and debris, which can enter the well through the cap)	Upgrade well*: extend casing to at least 40 cm/16 inches above grade, seal annular space, and install vermin-proof well cap
Dug well has damaged or deteriorating concrete tiles and/or cap (allows debris, insects & bacteria to enter well) 	Upgrade well*: replace tiles and/or upgrade to vermin-proof cap, seal joints between tiles, seal annular space
Dug well has no sealant used between joints in tiles (note: parging on inside of well is not adequate)	Upgrade well*: seal joints between tiles, seal annular space
Well casing extends less than 40 cm/16 inches above surrounding ground level (potential for surface water and bacteria/contaminants to enter well during snow melt or rain storms)	Upgrade well*: extend casing at least 40 cm/16 inches above grade 
One-piece cap OR inset concrete cap (does not seal completely, allowing debris, insects & bacteria to enter well) 	Upgrade to vermin-proof cap* 
Watering hydrant is attached to the well (if there is no check valve, water, bacteria or other contaminants can flow back into the well) 	There should be no direct plumbing connection between the well and the hydrant (e.g., hydrant should be plumbed from pressure tank rather than from well)
Unused or unmaintained well (can be a direct link between surface pollutants and groundwater, and can be a safety hazard for animals and humans)	Decommission well*

* Always use a licensed well contractor (see www.waterwellontario.ca) for any work done on wells or well-related equipment. Licensed well contractors and well technicians carry insurance, and have the necessary training, experience and specialized equipment to do the job properly. The Class of license indicates the type of work they are allowed to perform and/or the type of well they are licensed to work on (e.g., dug well versus drilled well, pump installation, etc.).



The following government publications were provided with the SSEA's well owner information package. The complete version of these publications is available at <http://www.publications.serviceontario.ca/>



Get Acquainted with Your Well

If you live in a rural area, chances are your family's daily water supply comes from a well on your property. If you haven't already, get acquainted with your well. It's the first step in doing everything you can to protect the quality of your well water and the groundwater we all share.

In this Information Sheet, we'll explore types of wells, their maintenance and well water supplies, and how each can affect the quality of your well water.

What have you done for your well, lately?

As a well owner, and someone who wants to ensure the water your family is drinking is safe, you need to:

- properly maintain your well to prevent it from being damaged, cracked or contaminated
- understand where your water comes from, and be aware of risks
- have your water tested regularly
- be "well" informed – let this Information Sheet series be the first step.

Your well and your well's water are your responsibility

You have a legal responsibility for the condition of all wells on your property, under the authority of Ontario Water Well Regulation. A copy of the regulation is available on the Ontario Ministry of the Environment Web site. Please see the back page of this Information Sheet for the Web site address.

A watertight well keeps contaminants out of your well water... and out of the groundwater your well draws from. Your well taps directly into a groundwater source. Groundwater is a shared resource we all rely on. Contamination from one well can put people at risk far beyond your property. A properly maintained well and water testing help protect the groundwater that supplies your well water. Shortcuts risk future costly repairs and health hazards to family and neighbours.

What type of well do you have?

There are different types of wells. Like most homeowners, you probably didn't or won't become directly involved in the construction of your well. But you should know what type of well you have because its design, construction and maintenance have a direct effect on the quality and quantity of water you draw from it.

Here's the take-home message, regardless of well type: water, and nothing but water, should enter your well, and it should only enter your well from the bottom.

The sides and top of your well should be watertight – free of leaks and seepage. No contaminant or foreign material should ever have access to your well, anywhere! Otherwise, these could harm the water your family draws from it and the groundwater it draws from.

When it comes to wells, think watertight!

Water Well Record

A Water Well Record provides very important information about your particular well. As a well owner, you should get a copy of the Water Well Record that was filed after your well was built. Contact the Ministry of the Environment at 1-888-386-9355.

Putting Your Well Water to the Test

Get in the habit of water testing

Water quality can change. Testing your well water three times every year will keep you up-to-date on the quality of your family's drinking water. Next to properly maintaining your well, testing is your best strategy for playing it safe.

This Information Sheet explains which agency or professional provides what kind of testing service, and how to take a sample of your water.

Who does what?

Service	Contact If...	How to Locate
Public Health Unit	<ul style="list-style-type: none"> you suspect that surface water, or human or animal waste, has entered your well you require a water sample bottle for indicator bacteria testing you require help in interpreting your water quality sample results 	<ul style="list-style-type: none"> see the public health unit listing in your local Blue Pages look on the Ministry of Health and Long-Term Care Web site or call their INPHLine – both are listed at the end of this Information Sheet
Public Health Lab	<ul style="list-style-type: none"> you require a water sample bottle for indicator bacteria testing public health labs perform bacteriological water testing only 	<ul style="list-style-type: none"> call the Ministry of Health and Long-Term Care INPHLine listed at the end of this Information Sheet
Private Accredited Lab	<ul style="list-style-type: none"> you have concerns about chemicals in your well 	<ul style="list-style-type: none"> for information about accredited laboratories, contact MOE at 1-800-565-4823
Licensed Well Contractor	<ul style="list-style-type: none"> you have concerns that your well is improperly constructed, or requires upgrading or maintenance 	<ul style="list-style-type: none"> see the listings under the "Water Well Drilling & Services" heading in your local Yellow Pages ensure they are licensed to provide this service