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<b>Distribution:</b> Microbiology Specimen Processing	
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**Document Name:**

Water Testing – Colilert -18

**Approved By:**

Jennifer G. Daley Bernier, A/ Manager, Laboratory Services

**PURPOSE:**

Colilert-18 detects the presence of coliforms as well as *E.coli*. The reagent powder contains the nutrient-indicators ONPG and MUG. When the ONPG is metabolized by coliforms, the sample will turn yellow. If *E.coli* is also present, MUG is metabolized and the sample fluoresces under a UV light.

**SAMPLE INFORMATION:**

<b>Type</b>	Water
<b>Volume</b>	100mL minimum
<b>Storage Requirements</b>	Refrigerated
<b>Criteria for rejection and follow up action</b>	Received >48 hours after collection

**REAGENTS and/or MEDIA:**

<b>Type</b>	Colilert-18 kit by IDEXX
<b>Storage Requirements</b>	<ul style="list-style-type: none"> <li>Store at 2-25°C away from light</li> </ul>

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<b>Document Name:</b> Water Testing – Colilert -18	<b>Document Number:</b> MIC10310	
	<b>Version No:</b> 4.0	Page: 2 of 5
	<b>Effective:</b> 06 November, 2017	

**SUPPLIES:**

- UV lamp
- Colilert Presence/Absence Comparator

**SPECIAL SAFETY PRECAUTIONS:**

Containment Level 2 facilities, equipment, and operational practices for work involving infectious or potential infectious materials or cultures.

- Lab gown must be worn when performing activities with potential pathogens.
- Gloves must be worn when direct skin contact with infected materials is unavoidable.
- Eye protection must be used when there is a known or potential risk of exposure of splashes.
- All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC).
- The use of needles, syringes and other sharp objects should be strictly limited.

All patient specimens are assumed to be potentially infectious. Universal precautions must be followed. Since viable micro-organisms are used, all cultures must be handled with appropriate precautions. All equipment in contact with cultures should be decontaminated by appropriate methods.

**QUALITY CONTROL:**

Performed per shipment or lot number:

- Refer to QC Procedure MIC60400 Water QC.
- A TQC order is automatically generated when new kit is entered into TQC to record the QC results.

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**PROCEDURE INSTRUCTIONS:**

Step	Action
<b>Performing Total Coliform and <i>E. coli</i> Water Testing</b>	
1	Accession waters and generate labels.
2	Label requisition and sample containers.
3	If HPC or Endotoxin Testing is also required – they must be performed prior to the addition of the Colilert-18 reagent.
4	Pour off excess water until the volume is ~100mLs.
5	Incubate at 35°C for 1 hour – write the time of day on one of the water vessels.
6	Add Colilert-18 reagent powder to each water vessel – look for a blue flash – if seen this indicates excessive chlorine and the test is invalid.
7	Shake to mix well.
8	Incubate for 18-22 hours at 35°C (included in the 18 hours is the 1 hour pre-incubation period).
9	Compare each water sample against the Colilert Presence/Absence Comparator.
10	<p>If the sample is equally or more yellow than the comparator – it is considered POSITIVE for coliforms:</p> <ul style="list-style-type: none"> <li>• It must then be viewed under the UV light for the presence of <i>E.coli</i>.</li> <li>• Add <b>WKLDC</b> using the keypad while on the PACOL media line to capture workload units.</li> </ul>
11	<p>Results are definitive at 18-22 hours:</p> <ul style="list-style-type: none"> <li>• <b>Positives</b> observed <b>BEFORE 18 hours</b> are valid.</li> <li>• <b>Negatives</b> observed <b>AFTER 22 hours</b> are valid.</li> </ul>
12	See below for interpretation and reporting.

**INTERPRETATION AND REPORTING:**

IF	THEN
Less yellow than comparator	Negative for Coliforms and <i>E.coli</i> (Colilert A/A) <b>Report:</b> “TOTAL COLIFORM: absent, E.COLI: absent”
Equally Yellow or Greater than comparator No UV fluorescence	Positive for Coliforms, Negative for <i>E.coli</i> (Colilert P/A) <b>Report:</b> “TOTAL COLIFORM: present, E.COLI: absent”  <ul style="list-style-type: none"> <li>* <b>For samples from the NWT: Positive TOTAL COLIFORM drinking water samples (with the exception of private residences) must have the result phoned to the EHO at 867-445-8761 during regular office hours. For results to be called after hours (after 5 pm and weekends) contact the Office of the Chief Public Health Officer of Health at 867-767-9066 X49256 to determine who the on-call communicable disease consultant is and then phone this person with the results. Refer to MIC35000 - Reportable and Communicable Diseases Notification. Log the call into the Call Box</b></li> <li>* <b>For samples from the Kitikmeot Region: Positive TOTAL COLIFORM drinking water samples (with the exception of private residences) must have the result phoned to the Kitikmeot Region EHO, Wilfred Ntiamoah, at 867-983-5241. Log the call into the Call box.</b></li> </ul>
Equally Yellow or Greater than comparator Positive UV fluorescence	Positive for Coliforms and <i>E.coli</i> (Colilert P/P) <b>Report:</b> “TOTAL COLIFORM: present, E.COLI: present”  <ul style="list-style-type: none"> <li>* <b>For samples from the NWT: Positive TOTAL COLIFORM and E.coli drinking water samples (with the exception of private residences) must have the result phoned to the EHO at 867-445-8761 during regular office hours. For results to be called after hours (after 5 pm and weekends) contact the Office of the Chief Public Health Officer of Health at 867-767-9066 X49256 to determine who the on-call communicable disease consultant is and then phone this person with the results. Refer to MIC35000 - Reportable and Communicable Diseases Notification. Log the call into the Call Box</b></li> <li>* <b>For samples from the Kitikmeot Region: Positive TOTAL COLIFORM and E.coli drinking water samples (with the exception of private residences) must have the result phoned to the Kitikmeot Region EHO, Wilfred Ntiamoah, at 867-983-5241. Log the call into the Call box.</b></li> </ul>

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**REFERENCES:**

- IDEXX. (2011). Colilert-18 Test Kit.

**REVISION HISTORY:**

<b>REVISION</b>	<b>DATE</b>	<b>Description of Change</b>	<b>REQUESTED BY</b>
1.0	31Dec2013	Initial Release	A.Darrach
1.1	31Mar2016	Reviewed – Minor Formatting Changes	C. Russell
2.0	12-May-2017	Reviewed and revised; Reagent storage requirements added; Formatted for new header; New document number assigned (old number MIC52630)	L. Steven
3.0	06-Nov-2017	Added call notification for water samples positive for Total Coliforms	L. Steven
4.0	10-Jul-2018	Added contact information for positive water samples from Kitikmeot Region	L. Steven

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