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Luray High School Water Testing
Water Source: Hawskbill Creek
Location: Ruffner Plaza, Luray VA

Summary w/ Averages

Class Earth Science Honors
School Luray High School
Date 12/22/2016

Testing Equipment: Low-Cost Water Monitoring Kit LaMotte (tab tests)

I. Data

Dissolved Oxygen (ppm)	Nitrate (ppm)	Phosphate (ppm)	pH	Coliform (positive or negative)
3.5ppm or 39% saturation	5ppm	1.3ppm	7.6	+ >20 col/100 mL

Water Temperature 14 DEG C

II. Rate The Following Parameter Concentrations Below.

DO (Dissolved Oxygen)

1 (poor) 2 (fair) 3 (good) 4 (excellent)

Nitrate

1 (poor) 2 (fair) 3 (good) 4 (excellent)

Phosphorus

1 (poor) 2 (fair) 3 (good) 4 (excellent)

pH

1 (poor) 2 (fair) 3 (good) 4 (excellent)

Fecal Coliform *(check which one applies)*

✓ positive _____ negative

The Water Is Safe (check all that apply):
_____ for drinking
✓ for swimming

Merica- Luray High School Water Testing Fall 2016
Earth Science Honors Students

III. Using the data collected above, assess the overall stream health of the Hawksbill Creek at Ruffner Plaza, Luray; va.

The information provided is a summary of all our classes average concentrations of each parameter.

DO - very low; indicated poor stream health. Our % saturation was 39 where 71% - 110% saturation would be good - excellent.

Coliform - poor; we tested positive which indicate this water may be contaminated with sewage or fecal matter, therefore, it is not safe to drink. It is safe to swim, boat, or fish in.

pH - Our pH was slight basic but anywhere between a 6-8 is considered good.

Nitrate - We had an average of 5ppm. This is fair.

phosphate - We had an average of 1.3ppm which is good - excellent.

Note: too much nitrate or phosphate can cause eutrophication where oxygen in the water is depleted, affecting aquatic life. too much nitrate in water can also have adverse health affects on young livestock or babies. Human babies who drink water with too much nitrate can become "blue" (blue baby syndrome). This is because they lack an enzyme to help convert this nutrient which causes their oxyhemoglobin to turn into methaemoglobin. Oxyhemoglobin carries oxygen through blood where methaemoglobin does not.

ranking test results

Rank the results of each water quality test on a 1-4 scale:

test factor:	result:	rank:
dissolved oxygen	91-110% Sat	4 (excellent)
	71-90 % Sat	3 (good)
	51-70 % Sat	2 (fair)
	<50 % Sat	1 (poor)
BOD	0 ppm	4 (excellent)
	4 ppm	3 (good)
	8 ppm	2 (fair)
coliform bacteria	negative	3 (good)
	positive	1 (poor)
pH	4	1 (poor)
	5	1 (poor)
	6	3 (good)
	7	4 (excellent)
	8	3 (good)
	9	1 (poor)
	10	1 (poor)
temperature change	0 - 2°C	4 (excellent)
	3 - 5°C	3 (good)
	6 - 10°C	2 (fair)
	>10°C	1 (poor)

ranking test results

test factor:	result:	ran
nitrate	5 ppm	2 (f
	20 ppm	1 (p
	40 ppm	1 (p
phosphate	1 ppm	4(e
	2 ppm	3 (g
	4 ppm	2 (f
turbidity	0 JTU	4 (e
	>0 to 40 JTU	3 (g
	>40 to 100 JTU	2 (f
	>100 JTU	1 (p

Now that you have used your monitoring kit to make a
health of your water it is time to check with other sourc
Your local health department, environmental agency or
to tell you more about your watershed. You can also visi
(www.earthforce.org) to learn more about your specific t
the issues or problems surrounding your watershed, you l
taking action and improving water quality in your comm

reference

Kit: Earth force low-cost water kit by LaMotte

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