

HENRY MORGENTHAU, JR.
COMMISSIONER

CARL E. LADD
DEPUTY COMMISSIONER

HERBERT E. GASTON
SECRETARY

STATE OF NEW YORK

DIVISION OF LANDS AND FORESTS
WILLIAM G. HOWARD, SUPERINTENDENT



CONSERVATION DEPARTMENT

ALBANY

IN REPLYING PLEASE REFER
TO FILE NO.

Mechanicville, N.Y.,
Mar. 2, 1932.

A. S. Hopkins, Asst. Supt.,
Conservation Dept.,
Albany, N.Y.

Dear Arthur:

Am planning to open up the Battlefield for the season. I would like to have the water tested in the following wells: Orchard Well, Neilson Well, the water for the new rest house, well on what was known as the Sarle farm, two wells at the Freeman house, two wells at the Gannon place and a spring at the Brayman Redoubt and a spring on the Mary Gilgallon farm. I have plans that will probably work out in the future on the two springs to which I refer.

As stated by phone, plans are under way for a large gathering of boy scouts and councils in a district ranging from Glens Falls down to Poughkeepsie, for three days, May 28-29-30. As the rest house facilities will not be sufficient for an estimated attendance of 2000 scouts, I am going to have latrines built out of sight, to the east of the field which is a little northeast of the Block House where they will encamp. I will work the water system out probably with tanks or milk cans which will be brought to the field by the different scout troops and council.

As stated to you the other day, I have had an offer for the old house on the Farrell place but have not yet received the letter with price bid. Is there an amount provided in the budget for the payment of the balance owed for the land?

I will have some figures shortly on the digging of the well at the picnic grounds but before going into that very far, I want to try out that experiment on the spring on the Brayman Redoubt.

Can you give me an idea of when it will be decided about the concession as you know some of the items that I have to purchase take quite a while to get through.

DEPARTMENT OF HEALTH
ALBANY

March 23, 1932.

Mr. William G. Howard,
Conservation Department,
Albany, N. Y.

Attention Mr. A. S. Hopkins.

Dear Sir:

I am enclosing a copy of the report of the Division of Laboratories and Research upon the examination of the samples of water collected by Mr. H. M. Riley, an engineer of this Department, on March 7, 1932 while making an inspection of the various wells and springs located on the Saratoga Battlefield state reservation. This inspection was made at the request of your department to determine the suitability of these supplies for use of the Boy Scouts of America at an encampment which will be held at the battlefield on May 28, 29 and 30, 1932. This inspection was made in company with Mr. James F. Gannon, caretaker of the battlefield.

The results of the examination of the sample of water collected from the well situated near the road at the Gannon farm show a very hard water which is colorless and practically clear. The organic content was low except for the free ammonia content, which is probably of mineral origin as is also the high figure for chlorides. The bacterial content was low, and no organisms of the B. coli group were present in any of the volumes tested, indicating the absence of unpurified pollution of animal or human origin. The sanitary survey showed that, in general, conditions surrounding the well were fairly satisfactory. It may be concluded, therefore, that at the time of the inspection, the water was of satisfactory sanitary quality for human consumption. I would recommend, however, that some means be provided for carrying away the waste water from the immediate vicinity of the well, either by means of a trough or similar device.

The results of the examination of the sample of water collected from the well below the barn at the Gannon farm showed a moderately hard, practically clear, colorless water. The high figures for nitrogen, in the form of nitrates and for chlorides indicate that the ground water flow tributary to this well supply is receiving pollution of animal or human origin. The total bacterial content was moderate but organisms of the B. coli group were present in all of the 10 c.c. and the majority of the 1 c.c. volumes tested. It must necessarily be concluded, therefore, that at the present time, due to the unfavorable location of this well in the line of drainage from the barnyard, and the indications of pollution as shown by the recent as well as the previous results of analyses, that this well could not be considered as a safe source of water supply for human consumption. I, therefore, recommend that the well be abandoned. A possible alternative whereby the supply of this well might be rendered safe for human consumption is to abandon the use of the Barn for stabling animals.

The results of the examination of the sample of water collected from the Freeman farm orchard well show a hard, slightly turbid, colorless water. The organic content was moderately low. The total bacterial count was somewhat high with organisms of the B. coli group present in volumes as small as 0.1 c.c., denoting the presence of considerable unpurified pollution of animal or human origin. This pollution is probably due to surface wash, superficial ground water and waste water finding its way back into the well. It must be concluded, therefore, that this well could not be considered as a satisfactory source of water for human consumption. It is probable, due to the lack of permanent sources of pollution in the vicinity, that this well could be developed as a source of a satisfactory water for human consumption if it were provided with a watertight lining extending at least six feet below the surface of the ground and means provided for the carrying away of waste water.

The results of the examination of the sample collected from the well located in the Neilson Orchard showed a soft, turbid water with a moderately high color. The organic matter was low except for the free ammonia content, which is high and probably of mineral origin. The total bacterial count was low and organisms of the B. coli group were absent from all the volumes tested. It would appear, therefore, that at the time of the inspection the well was delivering a water of safe sanitary quality for human consumption. It was learned from Mr. Gannon that during the summer season this well very seldom is used due to its high sulphur content. It was also learned that the picnic grounds near this well had been abandoned. Such being the case, steps should be taken to abandon the well. If, however, the well is to be used as a source of public water supply, I would recommend that the top of the pipe casing be sealed and the present wooden cover replaced by a suitable concrete cover, extending at least 4 inches above the surface of the ground, and means be provided for carrying away waste water from the immediate vicinity of the well.

The results of the examination of the sample of water collected from the Neilson house well show a moderately high total bacterial count with organisms of the B. coli group present in one of the three 10 c.c. volumes tested, indicating the presence of some unpurified pollution of human or animal origin. The nitrates and chlorides were high but may be in part due to the presence of mineral salts. The analysis showed some improvement over previous analyses and is no doubt due to the removal of the former serious nearby sources of pollution. It may be concluded, therefore, that at a time of the inspection the water from this well was of a reasonably safe sanitary quality for human consumption. I would recommend, therefore, that means be provided for carrying away waste water from the immediate vicinity of the well.

The results of the examination of the sample of water collected from the Gilgallon spring show a hard, low colored, slightly turbid water. The organic matter was moderately low, total bacterial count was moderate and organisms of the B. coli group were present in two of the three 10 c.c. volumes tested, showing the presence of unpurified pollution of human or animal source, probably due to surface wash or superficial ground water. The spring is situated at the base of a moderate slope, falling in an easterly direction toward the Gilgallon farm buildings, with no permanent sources of pollution within 1,000 feet. The spring is about 8 feet deep and the character of the soil shows

about 2 feet of loam and gravel and the remainder fine sand. The spring has been walled up with field stone, the top three inches of which is cemented. A wooden cover has been provided for the spring, which is laid loosely on top of the walls. At the present time, water is procured by removing the cover and dipping into the spring. It may be concluded that if this spring is to be utilized as a source of public water supply, a watertight enclosure should be provided to exclude surface water and superficial ground water, a watertight cover built and some method provided for procuring water by other means than dipping containers into the spring.

The results of the analyses of the sample of water collected from the spring at Brayman Redoubt showed a water of satisfactory quality. The sanitary survey showed no evidence of any sources of permanent pollution within 1,000 feet. The spring is at present entirely undeveloped but it was learned from Mr. Gannon that it is the intention of the Conservation Department to develop this spring by blasting out the bottom. If this were done and an analysis of the resulting water should be comparable to the present analysis, this spring could undoubtedly be used as a source of water supply, satisfactory for human consumption, if proper means were provided for excluding all superficial water. This may readily be accomplished by the same methods as recommended in the case of the Gilgallon spring.

It was learned from Mr. Gannon that the two wells located on the Searle farm have not been used for several years. The first of these, a shallow dug well, located near the state highway, was condemned by this Department in 1927. The second well, located in back of the Searle barn, some 1500 feet, has not been used due to the high content of hydrogen sulphide. I would recommend, therefore, that the shallow well near the highway be filled, and a pump removed from the second well.

No sample was collected from the new well at the rest house as this well could not be considered as a satisfactory source of water supply for human consumption due to the porosity of the upper side of the concrete storage tank, which allows large quantities of superficial water to enter the tank. However, from past analyses, it would seem that if this tank were properly protected against seepage, this well supply might be developed as a source of water satisfactory for human consumption.

An inspection of the Freeman farm house well in 1930 showed that the water from this well was grossly polluted. As a result, the top of this well has been cemented over and the pump removed.

The results of the investigation of the various water supplies situated on the Saratoga Battlefield may be summarized as follows:

Supply No. 1 - located near road at Gannon farm: The water was found to be satisfactory, but means should be provided for carrying away waste water.

Supply No. 2 - located at Gannon farm in back of barn: Water found unsatisfactory for human consumption. Well should be abandoned.

Supply No. 3 - located in the orchard at the site of the Freeman farm: Water found unsatisfactory for human consumption; not subject to permanent pollution. Protection against surface water and seepage would

probably be considered as a satisfactory source of supply.

Supply No. 4 - Well located in the orchard at the Neilson farm: Water found of satisfactory quality. If well is not to be used, due to high sulphur content, pump should be removed.

Supply No. 5 - Well located at site of Neilson house: Water found of satisfactory quality. Means should be provided for carrying away waste water.

Supply No. 6 - Spring located on Gilgallon farm. Water found satisfactory but would not be considered desirable for human consumption without proper protection against superficial water and means provided for procuring water otherwise than dipping containers into the spring.

Supply No. 7 - Spring located near Brayman Redoubt: Could probably be utilized as a satisfactory source of water for human consumption if properly developed as in No. 6. Could not be considered safe at present time.

Supply No. 8 & New well at rest house at block house. Could probably be utilized as a safe source of supply if storage tank were protected against seepage.

Supply No. 9 - Well located in back of Searle farm. Has not been used for several years due to high sulphur content. Pump should be removed.

Supply No. 10 - Shallow well located near road at Searle farm. Well should be filled in.

Supply No. 11 - Well located near site of Freeman house. Well found grossly polluted in 1930. Pump has been removed and well covered.

Very truly yours,

C. A. HOLMQUIST

Director, Division of Sanitation.

Copies to - Dr. George A. Wilson, Health Officer, Tn. Stillwater, Stillwater;
Dr. James S. Walton, District State Health Officer.

NEW YORK STATE DEPARTMENT OF HEALTH

Report of water analyses for Tn. of Stillwater, collected by H. M. Riley.

Collected on March 7, 1932.

Source: Brayan Redoubt Gilgallon Spring,
Saratoga Spring, Saratoga Battlefield.

Neilson Well at house,
Saratoga Battlefield
Neilson farm orchard well
Saratoga Battlefield.

Color:	0	3	12
Odor, hot	1 veg.	1 aromatic	1 veg.
" cold	1 "	1 "	1 "
Turbidity	10	trace	18
Iron			
Nitrogen as Ammonia, Fr.	0.003	0.004	0.760
Ammonia, Alb.	0.032	0.064	0.004
Nitrites	0.001	0.001	0.001
Nitrates	0.06	0.30	5.0
O. consumed	0.7	1.1	2.1
Chlorides	0.3	1.6	107.0
Hardness, total	27.3	162.5	11.1
Alkalinity	16.0	108.0	293.0
Bacteria			
Per cc 20° C.	240	200	300
Per cc 37° C.	190	60	700
Test for B Coli group			
In 10 cc	0/3-	2/1-	1/2-
In 1 cc	0/3-	0/3-	0/3-
In 1/10 cc	0/3-	0/3-	0/3-

NEW YORK STATE DEPARTMENT OF HEALTH

Report of water analyses for TW. OF STILLWATER, collected by H. M. RILEY.

Collected on March 7, 1932.

Sources: Orchard Well Freeman Well, Saratoga Battlefield		Gannan Farm. lower well, Saratoga Battlefield	Gannon Farm, upper well, Saratoga Battlefield.
Color	0	0	0
Odor, hot	1 veg.	1 earthy	2 aromatic
" cold	1 "	1 "	2 "
Turbidity	5	trace	trace
Iron			
Nitrogen as Ammonia, Fr.	0.008	0.002	0.450
Ammonia, Alb.	0.020	0.046	0.020
Nitrites	0.001	0.001	0.002
Nitrates	0.30	6.00	0.02
O. consumed	1.0	0.7	1.1
Chlorides	4.8	10.0	18.6
Hardness, total	114.2	37.1	235.5
Alkalinity	67.0	58.0	223.0
Bacteria			
Per cc 20° C.	550	230	45
Per cc 37° C.	275	47	7
Test for B Coli group			
In 10 cc.	3/0-	3/0-	0/3-
In 1 cc.	3/0-	2/1-	0/3-
In 1/10 cc.	2/1-	0/3-	0/3-

THOMAS FARRAN, JR., M. D.
COMMISSIONER
PAUL B. BROOKS, M. D.
DEPUTY COMMISSIONER



DIVISION OF SANITATION
CHARLES A. HOLMQUIST
DIRECTOR
EARL DEVENDORF
ASSOCIATE DIRECTOR

DEPARTMENT OF HEALTH
ALBANY

WHEN REPLYING PLEASE REFER TO
THE DIRECTOR AND TO THE
DATE OF THIS COMMUNICATION

March 23, 1932.

Mr. William G. Howard,
Superintendent, Division of Lands & Forests,
Conservation Department,
Albany, New York.

Attention of Mr. A. S. Hopkins, Asst. Supt. Lands & Forests.

Dear Sir:-

I am enclosing a copy of the report of the Division of Laboratories and Research upon the examination of the samples of water collected by Mr. H. M. Riley, an engineer of this Department, on March 7, 1932 while making an inspection of the various wells and springs located on the Saratoga Battlefield state reservation. This inspection was made at the request of your department to determine the suitability of these supplies for use of the Boy Scouts of America at an encampment which will be held at the battlefield on May 28, 29 and 30, 1932. This inspection was made in company with Mr. James F. Gannon, caretaker of the battlefield.

The results of the examination of the sample of water collected from the well situated near the road at the Gannon farm show a very hard water which is colorless and practically clear. The organic content was low except for the free ammonia content, which is probably of mineral origin, as is also the high figure for chlorides. The bacterial content was low, and no organisms of the B. coli group were present in any of the volumes tested, indicating the absence of unpurified pollution of animal or human origin. The sanitary survey showed that, in general, conditions surrounding the well were fairly satisfactory. It may be concluded, therefore, that at the time of the inspection, the water was of satisfactory sanitary quality for human consumption. I would recommend, however, that some means be provided for carrying away the waste water from the immediate vicinity of the well, either by means of a trough or similar device.

The results of the examination of the sample of water collected from the well below the barn at the Gannon farm showed a moderately hard, practically clear, colorless water. The high figures for nitrogen, in the form of nitrates,

3/23/32.

and for chlorides indicate that the ground water flow tributary to this well supply is receiving pollution of animal or human origin. The total bacterial content was moderate, but organisms of the B. coli group were present in all of the 10 c.c. and the majority of the 1 c.c. volumes tested. It must necessarily be concluded, therefore, that at the present time, due to the unfavorable location of this well in the line of drainage from the barnyard, and the indications of pollution as shown by the recent as well as the previous results of analyses, that this well could not be considered as a safe source of water supply for human consumption. I, therefore, recommend that the well be abandoned. A possible alternative whereby the supply of this well might be rendered safe for human consumption is to abandon the use of the barn for stabling animals.

The results of the examination of the sample of water collected from the Freeman farm orchard well show a hard, slightly turbid, colorless water. The organic content was moderately low. The total bacterial count was somewhat high with organisms of the B. coli group present in volumes as small as 0.1 c.c., denoting the presence of considerable unpurified pollution of animal or human origin. This pollution is probably due to surface wash, superficial ground water and waste water finding its way back into the well. It must be concluded, therefore, that this well could not be considered as a satisfactory source of water for human consumption. It is probably, due to the lack of permanent sources of pollution in the vicinity, that this well could be developed as a source of a satisfactory water for human consumption if it were provided with a watertight lining extending at least six feet below the surface of the ground and means provided for the carrying away of waste water.

The results of the examination of the sample collected from the well located in the Neilson Orchard showed a soft, turbid water with a moderately high color. The organic matter was low except for the free ammonia content, which is high and probably of mineral origin. The total bacterial count was low and organisms of the B. coli group were absent from all the volumes tested. It would appear, therefore, that at the time of the inspection the well was delivering a water of safe sanitary quality for human consumption. It was learned from Mr. Gannon that during the summer season, this well very seldom is used due to its high sulphur content. It was also learned that the picnic grounds near this well had been abandoned. Such being the case, steps should be taken to abandon the well. If, however, the well is to be used as a source of public water supply, I would recommend that the top of the pipe casing be sealed and the present wooden cover replaced

3/23/32.

by a suitable concrete cover, extending at least 4 inches above the surface of the ground, and means be provided for carrying away waste water from the immediate vicinity of the well.

The results of the examination of the sample of water collected from the Neilson house well show a moderately high total bacterial count with organisms of the B. coli group present in one of the three 10 c.c. volumes tested, indicating the presence of some unpurified pollution of human or animal origin. The nitrates and chlorides were high, but may in part be due to the presence of mineral salts. The analysis showed some improvement over previous analyses and is no doubt due to the removal of the former serious nearby sources of pollution. It may be concluded, therefore, that at the time of the inspection the water from this well was of a reasonably safe sanitary quality for human consumption. I would recommend, however, that means be provided for carrying away waste water from the immediate vicinity of the well.

The results of the examination of the sample of water collected from the Gilgallon spring show a hard, low colored, slightly turbid water. The organic matter was moderately low, total bacterial count was moderate and organisms of the B. coli group were present in two of the three 10 c.c. volumes tested, showing the presence of unpurified pollution of human or animal source, probably due to surface wash or superficial ground water. The spring is situated at the base of a moderate slope, falling in an easterly direction toward the Gilgallon farm buildings, with no permanent sources of pollution within 1,000 feet. The spring is about 8 feet deep, and normally contains about 6 feet of water. The character of the soil shows about 2 feet of loam and gravel and the remainder fine sand. The spring has been walled up with field stone, the top three inches of which is cemented. A wooden cover has been provided for the spring, which is laid loosely on top of the walls. At the present time, water is procured by removing the cover and dipping into the spring. It may be concluded that if this spring is to be utilized as a source of public water supply, a watertight enclosure should be provided to exclude surface water and superficial ground water, a watertight cover built and some method provided for procuring water by other means than dipping containers into the spring.

The results of the analyses of the sample of water collected from the spring at Brayman Redoubt showed a water of satisfactory quality. The sanitary survey showed no evidence of any sources of permanent pollution within 1,000 feet. The spring is at present entirely undeveloped but it was learned from Mr. Gannon that it is the intention of the Conservation Department to develop this spring by blasting out

3/23/32.

the bottom. If this were done and an analysis of the resulting water should be comparable to the present analysis, this spring could undoubtedly be used as a source of water supply, satisfactory for human consumption, if proper means were provided for excluding all superficial water. This may readily be accomplished by the same methods as recommended in the case of the Gilgallon spring.

It was learned from Mr. Gannon that the two wells located on the Searle farm have not been used for several years. The first of these, a shallow dug well, located near the state highway, was condemned by this Department in 1927. The second well, located in back of the Searle barn, some 1500 feet, has not been used due to the high content of hydrogen sulphide. I would recommend, therefore, that the shallow well near the highway be filled, and the pump removed from the second well.

No sample was collected from the new well at the rest house as this well could not be considered as a satisfactory source of water supply for human consumption due to the porosity of the upper side of the concrete storage tank, which allows large quantities of superficial water to enter the tank. However, from past analyses, it would seem that if this tank were properly protected against seepage, this well supply might be developed as a source of water satisfactory for human consumption.

An inspection of the Freeman farm house well in 1930 showed that the water from this well was grossly polluted. As a result, the top of this well has been cemented over and the pump removed.

The results of the investigation of the various water supplies situated on the Saratoga Battlefield may be summarized as follows:

Supply No. 1 - Located near road at Gannon Farm: The water was found to be satisfactory, but means should be provided for carrying away waste water.

Supply No. 2 - Located at Gannon Farm in back of barn: Water found unsatisfactory for human consumption. Well should be abandoned.

Supply No. 3 - Located in the orchard at the site of the Freeman farm: Water found unsatisfactory for human consumption; not subject to permanent pollution and by proper protection against surface water and seepage would probably be considered as a satisfactory source of supply.

3/23/32.

Supply No. 4 - Well located in the orchard at the Neilson farm: Water found of satisfactory quality. If well is not to be used, due to high sulphur content, pump should be removed.

Supply No. 5 - Well located at site of Neilson house: Water found of satisfactory quality. Means should be provided for carrying away waste water.

Supply No. 6 - Spring located on Gilgallon farm - Water found satisfactory but would not be considered desirable for human consumption without proper protection against superficial water and means provided for procuring water otherwise than dipping containers into the spring.

Supply No. 7 - Spring located near Brayman Redoubt: Could probably be utilized as a satisfactory source of water for human consumption if properly developed as in No. 6. Could not be considered safe at present time.

Supply No. 8 - New well at rest house at block house: Could probably be utilized as a safe source of supply if storage tank were protected against seepage.

Supply No. 9 - Well located in back of Searle farm: Has not been used for several years due to high fulphur content. Pump should be removed.

Supply No. 10 - Shallow well located near road at Searle farm: Well should be filled in.

Supply No. 11 - Well located near site of Freeman house: Well found grossly polluted in 1930. Pump has been removed and well covered.

Very truly yours,



Director, Division of Sanitation.

HMR:O:D.
Enclosure.

Copies to - Dr. George A. Wilson, Health Officer, Tn. Stillwater, Stillwater, N. Y.
Dr. James S. Walton, District State Health Officer.

NEW YORK STATE DEPARTMENT OF HEALTH

Report of Water Analyses for TN. OF STILLWATER Collected by H. M. RILEY

Collected on : March 7, 1932. : : : :

Source	Brayman Redoubt	Gilgallon	Neilson Well	Neilson Farm
	Spring, Saratoga	Spring, Sara-	at House,	Orchard Well
	Battlefield.	toga Battlefield	Saratoga	Saratoga
			Battlefield	Battlefield

Color	0	3		12
Odor, hot	1 veg.	1 aromatic		1 veg.
Odor, cold	1 veg.	1 aromatic		1 veg.
Turbidity	10	trace		18
Iron				
Nitrogen as				
Ammonia, Fr.	0.006	0.004		0.760
Ammonia, Alb.	0.032	0.064		0.004
Nitrites	0.001	0.001		0.001
Nitrates	0.06	0.30	5.0	0.02
O. consumed	0.7	1.1		2.1
Chlorides	0.8	1.6	107.0	0.8
Hardness, total	27.3	162.5		11.1
Alkalinity	16.0	108.0		298.0
Bacteria				
Per cc. 20° C.	240-	200	800	40
Per cc. 37° C.	190	60	700	23
Test for B. Coli group				
In 10 cc.	0/3-	2/1-	1/2-	0/3-
In 1 cc.	0/3-	0/3-	0/3-	0/3-
In 1/10 cc.	0/3-	0/3-	0/3-	0/3-

Chemical results are expressed in parts per million.

Abbreviations used to describe odors of water: o none, 1 very faint, 2 faint, 3 distinct, 4 decided, 5 strong, 6 very strong, a aromatic, d disagreeable, e earthy, f fishy, g grassy, m musty, v vegetable.

+ B. coli present.

- B. coli absent.

2+1- B. coli present in 2 and absent in 1 of 3 volumes tested.

NEW YORK STATE DEPARTMENT OF HEALTH

Report of Water Analyses for TN. OF STILLWATER Collected by H. M. RILEYCollected on : March 7, 1932. : : : :

Source	Orchard Well Freeman Well, Saratoga Battle- field.	Gannon Farm, Low- er well- Saratoga Battlefield.	Gannon Farm, Upper Well-Saratoga Battle- field.
--------	---	--	---

Color	0	0	0
Odor, hot	1 veg.	1 earthy	2 aromatic
Odor, cold	1 veg.	1 earthy	2 aromatic
Turbidity	5	trace	trace
Iron			
Nitrogen as Ammonia, Fr.	0.008	0.002	0.450
Ammonia, Alb.	0.020	0.046	0.020
Nitrites	0.001	0.001	0.002
Nitrates	0.30	6.00	0.02
O. consumed	1.0	0.7	1.1
Chlorides	4.8	10.0	18.6
Hardness, total	114.2	97.1	235.5
Alkalinity	67.0	58.0	223.0
Bacteria			
Per cc. 20° C.	550	230	45
Per cc. 37° C.	375	47	7
Test for B. Coli group			
In 10 cc.	3/0-	3/0-	0/3-
In 1 cc.	3/0-	2/1-	0/3-
In 1/10 cc.	2/2-	0/3-	0/3-

Chemical results are expressed in parts per million.

Abbreviations used to describe odors of water: o none, 1 very faint, 2 faint, 3 distinct, 4 decided, 5 strong, 6 very strong, a aromatic, d disagreeable, e earthy, f fishy, g grassy, m musty, v vegetable.

+ B. coli present.

- B. coli absent.

2+1- B. coli present in 2 and absent in 1 of 3 volumes tested.