Symbols used in the formula No. 1

F_1 – Scope - number of variables, whose objectives are not met:

$$F_1 = \left(\frac{Number\ of\ failed\ variables}{Total\ number\ of\ variables}\right) \cdot 100 \quad (1)$$

F_2 – Frequency - number of times by which the objectives are not met:

$$F_2 = \left(\frac{Number\ of\ failed\ tests}{Total\ number\ of\ tests}\right) \cdot 100 \quad (2)$$

F_3 – Amplitude - amount by which the objectives are not met:

$$F_3 = \left(\frac{nse}{0.01 \cdot nse + 0.01}\right) \quad (3)$$

where:

nse - normalized sum of excursions - is calculated through the formula of:

$$nse = \frac{\sum_{i=1}^{n} excursion_i}{Total\ number\ of\ tests} \quad (4)$$

where:

- when the test value must not exceed the objective:

$$Excursion_i = \left(\frac{Failed\ test\ value_i}{Objective_j}\right) - 1 \quad (5)$$

- for the cases in which the test value must not fall below the objective:

$$Excursion_i = \left(\frac{Objective_j}{Failed\ test\ value_i}\right) - 1 \quad (6)$$

The values of CCME-WQI quality indicators for the analyzed waters and the classification of water quality.

Fish farm		Sampling point	F1	F2	nse	F3	CCME-WQI	Water quality
Flow system	Farm	inflow into the fish farm	50.0	23.21	0.46	31.51	63.34	Marginal
		outflow from ponds	50.0	25.00	0.64	39.02	60.64	Marginal
	Farm 2	inflow into the fish farm	37.5	20.83	0.26	20.63	72.52	Fair
		outflow from ponds	25.0	29.17	0.80	44.44	66.08	Fair
Cascade system	Farm 3	inflow into the fish farm	37.5	17.50	0.07	6.54	75.81	Fair
		outflow from ponds	37.5	21.25	0.17	14.53	73.84	Fair
	Farm 4	inflow into the fish farm	37.5	25.00	0.19	15.97	72.39	Fair
		outflow from ponds	50.0	29.17	0.58	36.71	60.42	Marginal
Recirculation system	Farm 5	inflow into the fish farm	50.0	25.00	1.21	54.75	54.82	Marginal
		outflow from ponds	62.5	40.00	1.70	62.96	43.81	Marginal
	Farm 6	inflow into the fish farm	50.0	37.50	0.91	47.64	54.63	Marginal
		outflow from ponds	87.5	55.00	1.98	66.44	29.06	Poor