

**MONITORAGGIO QUALITA delle ACQUE**

**BISELLI - 2019 -**

- criterio **3.2.5** ASC Freshwater trout Standard (Appendix IIB) -

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
07/01/2019	pH	INLET	SINGLE GRAB	YES	YES	7,15
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	7,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,09
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,70
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,18
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	10,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	7,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,18
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	2,10	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
08/02/2019	pH	INLET	SINGLE GRAB	YES	YES	7,23
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	6,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,08
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	2,10
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,25
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	11,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	2,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	6,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,14
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	2,20	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
29/03/2019	pH	INLET	SINGLE GRAB	YES	YES	7,72
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	8,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,01
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	0,90
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,04
	pH	OUTLET	SINGLE GRAB	YES	YES	7,7
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	11,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,03
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,20	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
16/04/2019	pH	INLET	SINGLE GRAB	YES	YES	7,12
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	7,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,09
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,50
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,15
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	14,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	9,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,19
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	2,30	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
16/05/2019	pH	INLET	SINGLE GRAB	YES	YES	7,15
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,11
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,20
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,17
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	12,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	10,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,17
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,50	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
18/06/2019	pH	INLET	SINGLE GRAB	YES	YES	7,18
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	6,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,13
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,40
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,2
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	10,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	8,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,18
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,60	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
25/07/2019	pH	INLET	SINGLE GRAB	YES	YES	8,34
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	10,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,02
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,003
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,28
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,059
	pH	OUTLET	SINGLE GRAB	YES	YES	7,49
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	10,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,32
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,003
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,31	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,09	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
20/08/2019	pH	INLET	SINGLE GRAB	YES	YES	7,16
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,15
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,50
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,18
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	12,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	9,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,23
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,90	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
17/09/2019	pH	INLET	SINGLE GRAB	YES	YES	7,19
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	7,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,19
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,70
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,21
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	14,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	9,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,26
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,90	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
29/10/2019	pH	INLET	SINGLE GRAB	YES	YES	7,61
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,01
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	0,90
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,02
	pH	OUTLET	SINGLE GRAB	YES	YES	7,69
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	19,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,06
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,10	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,04	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
19/11/2019	pH	INLET	SINGLE GRAB	YES	YES	7,15
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	4,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,16
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,60
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,19
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	11,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	6,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,21
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,70	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
16/12/2019	pH	INLET	SINGLE GRAB	YES	YES	7,16
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	3,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,11
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,50
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,2
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	9,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,14
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,90	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10	

**SATURAZIONE MINIMA di OSSIGENO DISCIOLTO**

**BISELLI - anno 2019 -**

- criterio **3.2.2** ASC Freshwater trout Standard (Appendix IIB) -

**ACQUA IN USCITA VASCHE ALLEVAMENTO**

MESE	DATA RILEVAZIONE	OSSIGENO DISCIOLTO [mg/l]	TEMPERATURA [°C]	PRESSIONE [mmHg]	VALORE SATURAZIONE DI O <sub>2</sub> [mg/l]	SATURAZIONE PERCENTUALE [%]
GENNAIO	07/01/2019	10	8,6	715,28	11,04	90,58
FEBBRAIO	08/02/2019	10	8,8	715,28	10,99	90,99
MARZO	29/03/2019	9,9	11	715,28	10,44	94,83
APRILE	16/04/2019	10	10,6	715,28	10,54	94,88
MAGGIO	16/05/2019	9,9	11,2	715,28	10,39	95,28
GIUGNO	18/06/2019	9,8	11,8	715,28	10,25	95,60
LUGLIO	25/07/2019	10	13,2	715,28	9,93	100,69
AGOSTO	20/08/2019	9,6	12,9	715,28	10,00	96,03
SETTEMBRE	17/09/2019	9,4	12,9	715,28	10,00	94,03
OTTOBRE	29/10/2019	9,3	11,9	715,28	10,23	90,93
NOVEMBRE	19/11/2019	9,8	11,5	715,28	10,32	94,95
DICEMBRE	16/12/2019	9,9	9,9	715,28	10,70	92,48

La % di saturazione di OD (concentrazione di ossigeno disciolto; in inglese DO) è data dal rapporto, in % appunto, tra l'effettiva quantità di OD e il massimo valore possibile in funzione della temperatura e dell'altitudine.

Altitudine BISELLI= 490m.

Pressione in funzione dell'altitudine:  $p = 0,9877^q$ ; dove P=pressione in atm - q=altitudine in centinaia di metri (nel caso di Biselli q=4,9), da cui  $p = 0,9411 \text{ atm}$  (715,28mm di Hg)