

**MONITORAGGIO QUALITA delle ACQUE**

**SEFRO - anno 2019 -**

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

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
29/01/2019	pH	INLET	SINGLE GRAB	YES	YES	7,28
	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	0,04
	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	7,25
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	8,00
	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	0,08
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
11/02/2019	pH	INLET	SINGLE GRAB	YES	YES	7,24
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	9,00
	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	0,03
	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	7,26
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	13,00
	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	0,06
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
08/03/2019	pH	INLET	SINGLE GRAB	YES	YES	7,35
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	3,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	3,00
	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	0,90
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,03
	pH	OUTLET	SINGLE GRAB	YES	YES	7,36
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	8,00
	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	0,40
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,12
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,20	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,09	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
30/04/2019	pH	INLET	SINGLE GRAB	YES	YES	7,25
	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	0,03
	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	7,31
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	16,00
	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	0,09
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
31/05/2019	pH	INLET	SINGLE GRAB	YES	YES	7,90
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	4,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	20,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,40
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	-
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	-
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,05
	pH	OUTLET	SINGLE GRAB	YES	YES	7,6
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	4,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	20,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,40
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,03
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,43	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,05	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
28/06/2019	pH	INLET	SINGLE GRAB	YES	YES	7,29
	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	0,07
	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	7,3
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	18,00
	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	0,09
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
30/07/2019	pH	INLET	SINGLE GRAB	YES	YES	7,42
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	4,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,06
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,20
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,02
	pH	OUTLET	SINGLE GRAB	YES	YES	7,55
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	12,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	3,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	9,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,50
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,16
N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,40	
P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,12	

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
20/08/2019	pH	INLET	SINGLE GRAB	YES	YES	7,35
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	11,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	8,00
	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	1,50
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,38
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	13,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	12,00
	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
13/09/2019	pH	INLET	SINGLE GRAB	YES	YES	7,38
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	10,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	INLET	SINGLE GRAB	YES	YES	9,00
	N amm (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	INLET	SINGLE GRAB	YES	YES	0,17
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	1,30
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,42
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	21,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	14,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,27
	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
15/10/2019	pH	INLET	SINGLE GRAB	YES	YES	7,25
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	8,00
	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	0,80
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,29
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	15,00
	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	0,09
	N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,10
	P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
28/11/2019	pH	INLET	SINGLE GRAB	YES	YES	7,38
	SOS (mg/l)	INLET	SINGLE GRAB	YES	YES	2,00
	BOD (mg/l)	INLET	SINGLE GRAB	YES	YES	1,00
	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	0,90
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,03
	pH	OUTLET	SINGLE GRAB	YES	YES	7,42
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	7,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	4,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	8,00
	N amm (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,20
	N nitroso (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,19
	N nitrico (mg/l)	OUTLET	SINGLE GRAB	YES	YES	1,20
	P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,09

DATE	ANALYSIS	LOCATION	METHOD	SAMPLING BY THIRD PARTY?	ANALYSIS BY THIRD PARTY	RESULT
16/12/2019	pH	INLET	SINGLE GRAB	YES	YES	7,30
	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	0,06
	N nitrico (mg/l)	INLET	SINGLE GRAB	YES	YES	2,00
	P tot (mg/l)	INLET	SINGLE GRAB	YES	YES	0,10
	pH	OUTLET	SINGLE GRAB	YES	YES	7,33
	SOS (mg/l)	OUTLET	SINGLE GRAB	YES	YES	21,00
	BOD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	5,00
	COD (mg/l)	OUTLET	SINGLE GRAB	YES	YES	11,00
	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	2,30
	P tot (mg/l)	OUTLET	SINGLE GRAB	YES	YES	0,10

**SATURAZIONE MINIMA di OSSIGENO DISCIOLTO**

**SEFRO - anno 2019 -**

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

**ACQUA IN USCITA VASCHE ALLEVAMENTO - SEFRO**

MESE	DATA RILEVAZIONE	OSSIGENO DISCIOLTO [mg/l]	TEMPERATURA [°C]	PRESSIONE [mmHg]	VALORE SATURAZIONE DI O <sub>2</sub> [mg/l]	SATURAZIONE PERCENTUALE [%]
GENNAIO	29/01/2019	10,4	9,8	714,39	10,6	98,11
FEBBRAIO	11/02/2019	10,2	9,2	714,39	10,4	98,08
MARZO	08/03/2019	10	9,4	714,39	10,2	98,04
APRILE	30/04/2019	9,5	13,5	714,39	9,7	97,94
MAGGIO	31/05/2019	10	12,5	714,39	10,1	99,01
GIUGNO	28/06/2019	10,1	13,2	714,39	10,3	98,06
LUGLIO	30/07/2019	10	13,6	714,39	10,4	96,15
AGOSTO	20/08/2019	9,7	13	714,39	9,9	97,98
SETTEMBRE	13/09/2019	9,9	13,1	714,39	10,5	94,29
OTTOBRE	15/10/2019	10,1	13,5	714,39	11	91,82
NOVEMBRE	28/11/2019	9,9	12,5	714,39	10,5	94,29
DICEMBRE	16/12/2019	10	10,2	714,39	11	90,91

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 SEFRO= 500m.

Pressione in funzione dell'altitudine:  $p = 0,9877^q$ ; dove P=pressione in atm - q=altitudine in centinaia di metri (nel caso di SEFRO q=5), da cui  $p = 0,939999 \text{ atm}$  (714,39mm di Hg)

Dalla Tabella allegata si ottengono i valori di saturazione di O<sub>2</sub>