

What Options are Available if the Seed Bottles in BOD Analyst Pro® Do Not Meet the Take 2 Leave 1 Rule



a xylem brand

YSI BOD Analyst Pro Take 2 Leave 1 Criteria Technical Note T620-01

While using the BOD Analyst Pro® desktop software for the calculations of BODs, you may encounter a situation where *none* of the seed samples meet the established criteria of Take 2 Leave 1.

Option 1

Scenario = No seed samples meet previously established Take 2 Leave 1 criteria and it is checked as "on". Samples are reported using default values with an indication that values are not "true" by using a less than sign "<" in the BOD result.

If the Take 2 Leave 1 rule is checked as "on" in the criteria set up as shown in Figure 1, and none of the seed samples meet the rule, the software will default to either a value of "2" for the depletion or "1" for the final value in order to complete the calculations. The 2 mg/L default depletion value (Figure 2) will be used in all BOD final calculations and display a value with a less than "<" sign to indicate the value is not a true value (Figure 2).

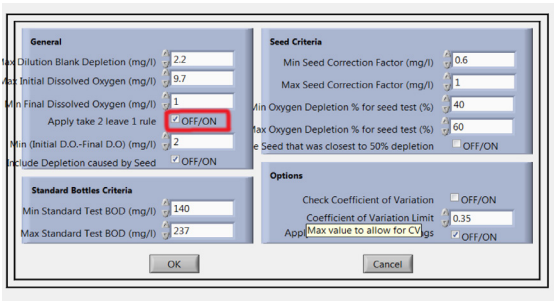


Figure 1. Example of Take 2 Leave 1 rule checked as "on" in the criteria.

Sample Name	Bottle #	Sample Volume (ml)	Seed Volume (ml)	Initial DO (mg/l)	Final DO (mg/l)	O ₂ Depl. (mg/l)	Seed Corr. (mg/l)	BOD (mg/l)	Final BOD (mg/l)	Note
DilBlank		300.00	0.00	8.64	8.60	0.040				
DilBlank		300.00	0.00	8.60	8.59	0.010				
Seed		9.00	0.00	8.60	6.73	1.870	0.000	<2.00	6.67	
Seed		12.00	0.00	8.55	6.69	1.860	0.000	<2.00	0.00	
Seed		15.00	0.00	8.58	7.01	1.570	0.000	<2.00	0.00	
Standard		6.00	2.00	8.59	4.30	4.290	0.348	157.10		
Standard		6.00	2.00	8.55	4.10	4.450	0.348	193.10		
YSI Test 1		3.00	1.00	8.57	6.20	2.370	0.174	219.60		

Figure 2. Example of Take 2 Leave 1 rule not meeting the Take 2 criteria. A default value of 2 is used for the oxygen depletion. Take note of the "<" in front of the BOD value indicating the number is not a true value.

Option 2

Scenario = No seed samples meet previously established Take 2 Leave 1 criteria and it is checked as "on". It is then unchecked after the batch is completed in order to highlight seed samples as not meeting criteria and to not use the default values of "2" or "1" to run the calculations.

In this scenario, the Take 2 Leave 1 rule is unchecked as "off" (Figure 3) in the criteria screen after realizing none of the seed samples meet the criteria. This would be done in order to highlight the seed samples to indicate they did not meet the criteria. Shown in Figure 4 as green horizontal highlights.

This would allow a lab to report the batch as an AE (analytical error). Correct seed depletion values would be visible on the seed samples but no seed corrections would be applied to any sample that the seed was added to.

In addition, a reason for the highlighted samples would appear (Figure 4) in the far right column listing "Depletion Out of Range", "Seed Depletion Percentage Out of Range", or a similar message.

Option 3

Scenario = No seed samples meet previously established Take 2 Leave 1 criteria and it is checked as "on". It is then unchecked after the batch is completed in order to highlight seed samples as not meeting criteria and to not use the default values of "2" or "1" to run the calculations. Those highlighted seed samples are then manually unmarked in order to get actual depletion values and those values are used as seed correction in all samples with the seed added.

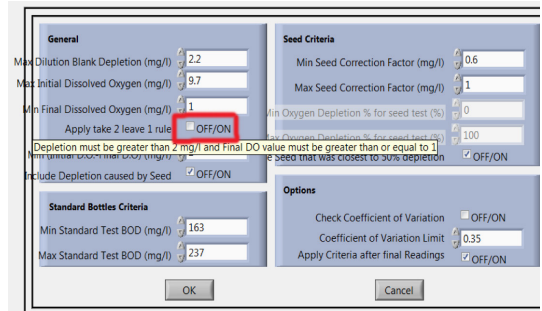


Figure 3. Example of Take 2 Leave 1 rule unchecked as "off" in the criteria.

Sample Name	Bottle #	Sample Volume (ml)	Seed Volume (ml)	Initial DO (mg/l)	Final DO (mg/l)	O ₂ Depl. (mg/l)	Seed Corr. (mg/l)	BOD (mg/l)	Final BOD (mg/l)	Note
DilBlank		168	300.00	8.64	8.60	0.040				
DilBlank		168	300.00	8.60	8.59	0.010				
Seed		168	9.00	8.60	6.73	1.870	0.000	<2.00	6.67	
Seed		168	12.00	8.55	6.69	1.860	0.000	<2.00	0.00	
Seed		168	15.00	8.58	7.01	1.570	0.000	<2.00	0.00	
Standard		6.00	2.00	8.59	4.30	4.290	0.348	157.10		
Standard		6.00	2.00	8.55	4.10	4.450	0.348	193.10		
YSI Test 1		3.00	1.00	8.57	6.20	2.370	0.174	219.60		

Figure 4. Example of Take 2 Leave 1 rule unchecked as "off" in the criteria which then highlights the seed samples, shown as Seed (8) on the bench sheet, and does not apply seed depletion criteria. This would allow the batch to be reported as an analytical error.

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In this scenario, the same initial steps occur as in Option 2 but one more step is undertaken in order to get true values regardless of the Take 2 Leave 1 rule.

Once the samples are highlighted, they can be manually unmarked using the functional icon showing the pencil eraser to allow the program to continue calculating values from the oxygen depletion that is less than 2 as shown in Figure 5.

On the printed Bench Sheet, it will show that these samples have been manually unmarked with a "UM" in the notes column. This option allows values to be reported based on true values regardless of previously established Take 2 Leave 1 criteria.

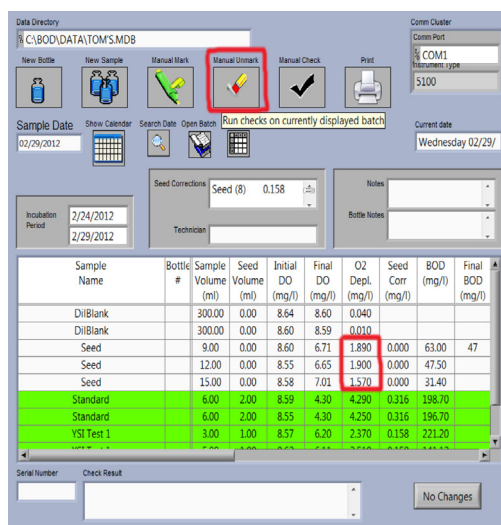


Figure 5. Example of Take 2 Leave 1 rule unchecked as "off" in the criteria and with the marked seed samples then manually unmarked in order to report true values.

Important Note

BOD Analyst Pro software is a database-based program. Therefore, by checking and unchecking the Take 2 Leave 1 rule it will in turn affect any old batches you open to view. In essence, if the rule is checked as "on" when you run your batches and you uncheck it as "off" at any point and you open an older completed batch, it will look at the criteria at the time it is opened. Essentially, it will open that older batch with the Take 2 Leave 1 as unchecked or "off" when it was originally checked as "on" when the batch was run.

We recommend you always print your bench sheets to keep a hard copy of your batches.

In addition, it is recommended that you print screen shots of your established criteria in case there are multiple users. This way, you can always use your printed documentation to review your criteria settings.

For information including YSI instrument specifications, visit: www.ysi.com

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T620-01 0912

Sample Date 02/29/2012
Incubation Period: 2/24/2012 to 2/29/2012
Notes:

Seed Correction (mg/l DO per ml seed): Seed (B) 0.158 Seed Added to: Bottle

Sample Name	Bottle #	Pre DO	Sample Volume (ml)	Dil %	Seed Volume (ml)	Seed DO (mg/l)	Initial DO (mg/l)	Init Temp (C)	Final DO (mg/l)	Final Temp (C)	O2 Depl. (mg/l)	Seed Corr. (mg/l)	BOD (mg/l)	Final BOD (mg/l)	Notes
DilBlank (B)	1.00	300.00	---	0.00	8.64	0	8.60	0	8.60	0	0.000	---	---	---	
DilBlank (B)	1.00	300.00	---	0.00	8.60	0	8.60	0	8.60	0	0.000	---	---	---	
Seed (B)	1.00	9.00	3.00	0.00	8.60	0	6.71	0	1.890	0	0.000	---	63.00	47	UM
Seed (B)	1.00	12.00	4.00	0.00	8.60	0	6.65	0	1.900	0	0.000	---	47.50	---	
Seed (B)	1.00	15.00	5.00	0.00	8.58	0	7.01	0	1.570	0	0.000	---	31.40	---	
Standard (B)	1.00	2.00	2.00	0.00	8.59	4.30	4.290	0.316	198.70	---	---	---	---	---	
Standard (B)	1.00	2.00	2.00	0.00	8.55	4.30	4.250	0.316	196.70	---	---	---	---	---	
YSI Test 1 (B)	1.00	1.00	1.00	0.00	8.57	6.20	2.370	0.158	221.20	---	---	---	---	---	

Number in () next to Sample Name identifies the Seed Control

Technician:

Shaded tests do not meet criteria for acceptability
Marking Explanations (Note: Highlighted rows not used for calculations)
UM Test has been manually unmarked
S Seed Correction Factor out of range
Z Standard Test outside acceptable range

Figure 6. Example of Take 2 Leave 1 rule unchecked as "off" in the criteria with the marked seed samples then manually unmarked. This is how those samples would appear on the printed bench sheet showing "UM" = unmarked.