

# GLOBE II.5 Range Check Modifications

## [Range Checks](#)

<b>Date</b>	<b>Modification</b>
Nov 16, 2010	<b>Site Locations:</b> <ul style="list-style-type: none"><li>• Elevation Max set from 5000m to 6000m</li></ul>
Oct 4, 2005	<b>SW:</b> <ul style="list-style-type: none"><li>• Salinity Hydrometer method range changed form 1.00 to .998</li></ul>
Dec 30, 2004	<b>HZ:</b> <ul style="list-style-type: none"><li>• Dark Voltage changed to between -.005 to 0.0200 volts from 0 to .05</li></ul>
Jun 11, 2004	<b>AT:</b> <ul style="list-style-type: none"><li>• Must have at least 3.5 mm of liquid before one can measure pH. This should've been in effect since day 1.</li></ul>
May 7, 2004	<b>SW:</b> <ul style="list-style-type: none"><li>• nitrate-nitrogen max range changed from 10 to 50 ppm</li></ul>
April 29, 2004	<b>SW:</b> <ul style="list-style-type: none"><li>• multiple choice selections can now be made on the hydrology site definition page for channel/bank material and bedrock type</li></ul>
April 22, 2004	<b>SW:</b> <ul style="list-style-type: none"><li>• salinity max range changed from 50 to 60 ppm</li></ul>
Jun 27, 2003	<b>SW:</b>

- Standing Water Area precision changed to Number(9,4) and lower limit changed from 0.001 to 0.0001

Dec 17, 2002

**AT:**

- Ratio of liquid equiv changed from 1:2 to 1:100 to 1:1 to 1:100.

Sep 20, 2002

**SC:**

- Particle Density added.

May 10, 2002

**LC:**

- Minimum circumference for trees changed from 30 cm to a 1:33 ratio compared to height of tree.

Apr 15, 2002

**AT:**

- Must have at least 2 mm of liquid before one can measure pH. This should've been in effect since day 1.

Mar 12, 2002

**HB:**

- Hummingbird protocol added.

Feb 19, 2002

**SM:**

- Added 2 new Sensor/meter types and deprecated gypsum block.

Dec 04, 2001

**AT:**

- Max Ratio of liquid equiv changed from 1:50 to 1:100.

Oct, 2001

**SW:**

- Turbidity tube max now 250 cm from 150 cm.

May 02, 2001

**ST:**

- Minutes are now to the minute rather than rounding to every 10 minutes.

**HZ:**

- Max Sunlight voltage is the lesser of 5 or whatever the ET constant is.

April 23, 2001

**SC and SM:**

- Removed MUC protocol from Soil Characterization and Soil Moisture study site definition.

April 18, 2001

**SC:**

- Added upslope direction
- Added 'Other' descriptions for 'Soil Samples, Site Location, and Parent Material

March 12, 2001

**AT:**

- Daily Rain and Snow are NO Longer required

February 22, 2001

**GRN:**

- Phenology Green up and Green down pages went online.

**Site Definition:**

- Latitude and Longitude is now entered in decimal degrees instead of minutes.

September, 2000

**AT:**

- New Atmosphere (Clouds, Snow, Haze, and Ozone) pages went online

- December 15, 2000 **SC:**
- For Auger Method, Top Sample Depth Minimum = 3.0 only for Horizon 1.
- February 29, 2000 **SC:**
- Dry and Wet Sample Weight Minimum was decreased to 20g from 50g.
- January 29, 2000 **BB:**
- Nearest atmosphere site no longer required (put school location (SCH-01) if unspecified)
- January 10, 2000 **SC:**
- Bulk Density minimum decreased to 0.1 (was 0.4)
  - If soil structure is single grained, only loose soil consistence is valid
- December 1, 1999 **AT Temperature:**
- If no T current exists for yesterday, then no T max will be accepted for today.
  - If no T current exists for yesterday, then no T min will be accepted for today.
  - T max, T min, and T current should not all be the same as the previous four days' values for these parameters. If the four previous days of data are not in the archive, then the test is skipped.
- November 1, 1999 **LC:**
- Display the actual (specified by the PI) MUC name on the verification page for comparison with the MUC entered by user
- August 13, 1999 **MUC:**
- Documented MUC Source

August 4, 1999

**SC:**

- Bulk Density Average minimum lowered to .4 to match Bulk Density and number of digits increased to 2 decimal places
- Added Organic Soil Texture = 13

**SW:**

- Study Site Location Type added 6=Pier

**PS:**

- If Daily Solid = 0, then Daily Liquid Equivalent set to 0
- If Total Solid = 0, then Total Liquid Equivalent set to 0

June 15, 1999

**LC:**

- Minimum for sum of steps for Canopy Cover and Ground Cover increased to 50 (was 0)
- Range for Circumference (dominant, co-dominant, and average) is now 30.0 to 1500.0 cm (was 1.0 to 3000.0)

June 10, 1999

**PS and Snow Pack:**

- Moved Snow Pack range checks to PS section. All Daily Water Equivalent checks apply to Total Water Equivalent (snow pack), so many new checks added.
- Daily and Total Water Equivalent minimum decreased to 1:50 (was 1:40)

**SM:**

- Added protocol = 5 for Watermark (new type of gypsum instrument)
- Increased Weight of Empty Container maximum to 900.0 grams (was 300.0)

**SW:**

- Disappear Depth > Length of Turbidity Tube: 0=No, 1=Yes (no change made to code, just documentation correction)
- Added Disappear Depth > Depth of Water for Secchi Disk: 0=No, 1=Yes

**Lat/Lon/Elev:**

- Marked Elevation as required

**SC (made operational 6/15/99):**

- Decreased Top Depth maximum to 197.0 (was 200.0)
- Increased Bottom Depth minimum to 3.0 (was 2.0)
- Container Volume now 39 to 1010 mL (was 100 to 500)
- Bulk Density minimum decreased to 0.4 (was 0.5)
- Weight of Empty Container for Pit and Auger methods now 10.0 to 800.0 grams (was 1.0 to 300.0)
- Added equations used to calculate Min and Max Hydrometer readings:
  - Minimum Hydrometer Reading =  $(0 - (0.36 * (\text{Temperature} - 20))) * 0.00062 + 1.0024$
  - Maximum Hydrometer Reading =  $(50 - (0.36 * (\text{Temperature} - 20))) * 0.00062 + 1.0024$

May 7, 1999

**SW Study Site:**

- Added new Other field to Standing Water Type: 0=Unchecked, 1=Pond, 2=Lake, 3=Reservoir, 4=Other <4/99, 5=Bay, 6=Ditch, 7=Ocean, 8=Other >4/99

**SC Bulk Density:**

- Increased Sample Depth minimum (Auger Method) to 3.0 (was 2.0)
- Decreased Volume of Sample minimum (Auger Method) to 21.2 (was 39.0)
- Decreased Weight of Wet Soil and Container minimum to 50.0 (was 75.0)
- Increased Volume of Water with Rocks maximum to 900 (was 800)
- Increased Volume of Rocks maximum to 500 (was 400)

April 19, 1999

**SW Study Site:**

- Added fields to Standing Water Type: 0=Unchecked, 1=Pond, 2=Lake, 3=Reservoir, 4=Other, 5=Bay, 6=Ditch, 7=Ocean

March 26, 1999

**SS:**

- Combined Define and Edit a Study Site pages

March 25, 1999

**SF:**

- Increased Soil Water Content max to 99.9 (was 65.0)

March 1, 1999

**AT:**

- Liquid Equivalent ratio checks now 2:1 to 50:1 (was 40:1)
- Clarification of rules:
  - If Daily Solid=T, Total must be T or >0 or M, Liq Equiv must be T (filled in automatically if blank)
  - If Daily Solid=M, Total can be anything, Liq Equiv must be M (filled in automatically if blank) or can be a number (if the snow melted in the rain gauge).
  - If Daily Solid=0, Total can be anything, Liq Equiv must be 0 (filled in automatically if blank)
  - If Daily=number, Total must be >Daily, Liq Equiv:Daily ratio must be 1:2 to 1:50 (null if blank), neither can be "T".

November 17, 1998

**SM:**

- Soil Water Content increased to 99.9 for Iceland school

**SC Bulk Density:**

- Volume of Rocks minimum lowered to 0 mL (was 50)
- Weight of Rocks maximum increased to 800 g (was 500)
- Weight of Dry Soil and Container maximum increased to 800 g (was 400)
- Weight of Wet Soil and Container maximum increased to 800 g (was 500)
- Volume of Water with Rocks maximum increased to 800 mL (was 400) => Volume of Water without Rocks max + Volume of Rocks max

**SC Horizon Description:**

- If Second Color entered, Main Color must be entered

October 6,1998

**SC:**

- PSD: grams sand, silt, and clay are now stored to database

September 28,1998

**ST:**

- Added Measurement Type and associated checks

**SC:**

- Updated PSD formulas

**AT:**

- Daily Rain and Snow are required

May 5, 1998

**SW:**

- Minimum temperature lowered to -2.0 degrees Celsius (was 0.0) for Antarctica school

March 23, 1998

**PHENOLOGY:**

- Added [Budburst and Snow Pack protocols](#)

**SM:**

- Soil Water Content: maximum (Star, Transect, Depth, Gypsum) = 99.9 (was 65.0) for Iceland schools

**SI:**

- Saturated Soil Water Content: maximum = 99.9 (was 65.0)

**SC:**

- Bulk Density Pit Method: Empty Container Weight minimum = 10 g (was 25 g)
- SPSD Hydrometer: Temperature maximum = 45 degrees C (was 30)

January 16, 1998

**SC:**

- Bulk Density divided into two pages:
  1. Pit and Near Surface Method (container volume)
  2. Auger Method (sample depth top and bottom, hole diameter and volume)
- Auger Bulk Density: Hole diameter minimum = 3 cm (was 5 cm)
- Auger Bulk Density: Container weight minimum = 1 g (Pit method is still 25 g)
- Auger Bulk Density: Bulk Density sample depth must be within the Horizon sample depth
- SPSD Hydrometer: Distance between 500 mL line to the base of cylinder minimum = 10 cm (was 25 cm) and maximum = 40 cm (was 30 cm)
- SPSD Hydrometer: Temperature maximum = 30 degrees C (was 26)

December 31, 1997

- **AT:** Max  $\geq$  Cur  $\geq$  Min (Max can = Min)
- **SW and Calibration:** Average Alkalinity maximum = 500 mg/L as CaCO<sub>3</sub> (increased from 300)
- **SW Calibration:** Removed comments about calculating values because no values are calculated
- **SM:** Container ID should be unique for each depth entry

November 6, 1997

- Hydrology Nitrate inputs changed to Number (3,1). No change to ranges.
- Bulk Density minimum Container Weight requested to be 25g by Elissa Levine. No change to document, but Data Entry pages modified.

November 3, 1997

- Nitrate and Nitrite+Nitrate decimals confirmed by Martha Conklin: one decimal point
- Elevation decimals confirmed by Whit Smith: one decimal point, no change necessary