

## William Trubridge Breaks Record for Deepest Dive Into Ocean, Then Does It Again



**INTRODUCTION:** Pressure = (weight density) x (depth) =  $D h = P$ ,  $D$  for water  $62.4 \text{ lb./ft.}^3$ .

**QUESTIONS:** (a) Find  $P$  due to water in  $\text{lb./ft.}^2$   
(b) Find  $P$  in  $\text{lb./inch}^2$  ?(c) Normal atmospheric pressure is  $14.7 \text{ lb./in.}^2$ . How many times larger is  $P$  at 407 feet compared to normal atmospheric pressure?

**HINTS:**  $\text{ft.}^2 = 144 \text{ in.}^2$

**ANSWERS:** (a)  $25,397 \text{ lb./ft.}^2$   
(b)  $176.4 \text{ lb./in.}^2$ , (c) 12 times more than 14.7

William Trubridge during the Vertical Blue competition Monday. On Saturday, he dived 122 meters to set a free-diving world record. He broke it on Monday. Credit Daan Verhoeven When a free diver from New Zealand broke one of the sport's most-prized world records on Saturday, plunging 122 meters beneath the ocean's surface, fans were awe-struck by the display of human endurance. But the mark was to be short-lived. On Monday, the same

diver, William Trubridge, broke it again. This time, he added two more meters, **(((descending a whopping 124 meters (about 407 feet) while holding a single breath for 4 minutes 34 seconds.)))**

"He is the king of free diving," said Dana Beck, a New York instructor who has trained with Trubridge. "The guy completely lives, eats, sleeps free diving. It's complete devotion."

Trubridge's records in the "free immersion" category came during the annual Vertical Blue competition at Dean's Blue Hole in the Bahamas, considered the sport's premier event. In free immersion, divers descend without fins, pulling themselves along a weighted rope to depth and back to the surface.

[In a video of Trubridge's descent on Saturday](#) — in which he extended by one meter the record he himself set in 2011, 121 meters — he pulls himself slowly along the rope, conserving energy, traveling a distance well beyond the height of the [Statue of Liberty](#). He then breaks through the surface, filling his lungs with deep, purposeful breaths.