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- communication with at least one sample environment and the interior of said collection means;
- b) selectively emptying the space between the collection means and the container;
- c) actuating said communication means so that said collection means is substantially filled with fluid to be samples;
- d) selectively pressurizing the space between the collection means and the container;
- e) actuating said communication means so that said selection means is substantially emptied of fluid to be sampled;
- f) repeating steps b), c), d) and e) respectively; and then
- g) sealing said filled collection means.

11. The method of claim 10 wherein the transition between steps c) and d) occurs manually by actuation of a crossover valve.

12. The method of claim 10 wherein the transition between steps c) and d) occurs by engaging a syringe.

13. The method of claim 10 wherein the space between said bag and said container is selectively evacuated and pressurized by engaging a pump, said pump being in communication with said space.

14. The method of claim 13 wherein said pump is engaged by actuating a control means comprising a switching means and a microprocessor, said microprocessor programmed to engage said switching means so that evacuation of said space occurs a predetermined number of times at a predetermined vacuum and said collection means fills a predetermined number of times upon actuation of said control means.

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15. The method of claim 10 wherein step f) comprises emptying cycles of substantially equal vacuum.

16. The method of claim 14 wherein a vacuum between 0.1 and 5 inches of Hg is induced during fill cycles.

17. A hand-carried portable fluid sample collecting apparatus comprising:

- a sealable rigid container having an opening and a cover for sealing and unsealing said opening;
- an inlet, said inlet including a means for communicating between the inside of said container and the environment outside said container;
- a removable sealable sample vessel within said container, said vessel having an orifice, said orifice being removably fixed to said inlet;
- a pump, said pump capable of inducing a negative or positive pressure in the space between said vessel and said container; and
- a control means actuating said pump and rapidly and repeatedly reversing the direction of said pump during the taking of a sample thereby inducing said vessel to be filled with fluid from the environment outside said container when the pressure inside the space between said vessel and said container is negative and emptied of its contents to said environment through said inlet when the pressure inside the space between said vessel and said container is positive.

18. The apparatus of claim 17 wherein said samples are contained in a liquid matrix.

19. The apparatus of claim 17 wherein said samples are contained in a gaseous matrix.

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