Confined Space Procedures in the Land Science Greenhouses for Regular Maintenance, Fertilizer Refills, Acid Refills of the Flood Floor Basement (FFB) Tanks.

(In these procedures, the Attendant does NOT enter the FFB at any time, but remains in place at the entrance to the FFB at all times. *The FFB is a Confined Space. Entry into the FFB without an Attendant and air monitor is prohibited.)

Refer to the attached written procedures for preparing stock solutions of fertilizer and acid.

Confined Space Pre-Plan and Permit Prepreparation.

1. The **Attendant** prepares the **Confined Space Entry Permit**. (Supplied on a clipboard with samples just to the right of the entrance.)

2. Have the permit reviewed and authorized by a trained qualified **Entry Supervisor** (**Denis Patry**). List all the names of **Entrants** AND time(s) of proposed entry. ***No person may enter or attend an entry unless they have been trained in the procedure and the potential hazards of the confined space, and training has been documented.***

3. Post approved Confined Space Entry Permit above entrance.

4. Pick up the **air monitor** from Campus Facilities. Contact Bill/Gloria (8218) at Campus Facilities and advise them that a confined space entry is commencing in the greenhouse and proposed duration. Ask them to inform Campus Security. (Between 8:00 am and 4:30 pm, there is no Campus Security manning the phones, so the fastest way to contact them is via radio from Campus Facility)

5. Pick up the **radio** from the front desk in Land Science. It can be used in case of an accident or to call for Electricians or Plumbers. The phone in the equipment bay can be used if the radio is not available.

6. The **Attendant** takes air samples from confined space at 2 foot intervals from floor of the Confined Space to top. Confirm air sampling readings to all **Entrants.**

7. The first **Entrant** that enters the confined space must check and confirm that sump pump is operational. **Entrant** must call up an "ok" before additional **Entrants** enter the confined space or maintenance tasks are carried out.

8. Only one **Entrant** is allowed on the ladder at any time to enter or exit the confined space. **Entrants** must call an "ok" when they are clear of the ladder.

9. The **Attendant** monitors the air and records the samples every 15 minutes.

10. The **Attendant** keeps in regular contact with the **Entrant(s)** as tasks are carried out in the Confined Space.

11. When all **Entrants** have exited, note on the Permit and contact the **Entry Supervisor(Denis Patry)** to terminate the entry.

12. Give completed Permit to the **Entry Supervisor** who will debrief with **Entrants** and **Attendant**, and file. All Permits to be retained for a minimum of 7 years.

Fertilizer Bin Refill

13. **Eye protection** must be worn by the **Entrants** in the FFB whenever fertilizer is being lowered into the Confined Space.

14. After calculating and mixing the required fertilizer solution (See **Procedures for Mixing Fertilizer**), pour the fertilizer solution into one of the two available Blue drums and top up with water as needed.

15. Transport the Blue drum(s) to the entrance of the Confined Space and use the carabiner to clip the Blue drum onto the pulley setup. **Ensure Steps 1 to 8 are done first before entering the Confined Space.**

16. The **Entrant** can remain at the top of the entrance to the Confined Space and lower the drum down into the confined space. Once the Blue drum touches the floor, the entrant can enter the Confined Space and unhook the Blue drum.

17. The **Entrant** can then pour the stock solution from the Blue drum(s) into the large plastic bins and replace the lids on the bins.

18. The **Entrant** can use the pulley system to remove the Blue drum(s) from the Confined Space.

19. Repeat these procedures to fill the large plastic bins with stock solution for use in the tanks. Follow Steps 9 to 12 while an **Entrant** is working in the Confined Space and when they have completed the required tasks.

Acid Refill Procedures

20. **Eye protection** must be worn by the **Entrants** in the FFB whenever **Acid** solutions are being lowered into the Confined Space.

21. After calculating and mixing the required acid solution (See **Procedures for Mixing Acid**), put the glassware into the Red Coleman Jug and tightly seal the lid.

22. Transport the Red Coleman Jug to the entrance of the Confined Space and use the carabiner to clip the Red Coleman Jug onto the pulley setup. **Ensure Steps 1 to 8 are done first before entering the Confined Space.**

23. The **Entrant** can remain at the top of the entrance to the Confined Space and lower the Red Coleman Jug down into the confined space. Once the Red Coleman Jug touches the floor, the **Entrant** can enter the Confined Space and unhook the Red Coleman Jug.

24. The **Entrant** can then pour the **Acid** into the large plastic bins filled with water and replace the lids on the bins. The **Entrant** must wear protective equipment while handling the **Acid**. (Gloves, Face Shield, Apron)

25. The **Entrant** can use the pulley system to remove the Red Coleman Jug from the Confined Space.

26. Repeat these procedures to fill the large plastic bins with Acid for use in the tanks. **Follow Steps 9 to 12** while an **Entrant** is working in the Confined Space and when they have completed the required tasks.

If any untoward incident or situation occurs during the entry, terminate the entry, reassess the situation, and if safe to do so, prepare new Hazard Permit before proceeding with another entry.

It is contrary to the Occupational Health and Safety Policy of Olds College and to Provincial Legislation to place oneself or others in danger.