

*If you are using a printed copy of this procedure, and not the on-screen version, then you **MUST** make sure the dates at the bottom of the printed copy and the on-screen version match. The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are available by contacting the **ESSHQ Procedures Coordinator, Bldg. 911A***

C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

8.31.g Checklist for Backflushing and Acid Flushing

C-A OPM Procedures in which this Attachment is used.		
8.31		

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Approved: \_\_\_\_\_ *Signature on File* \_\_\_\_\_  
 Collider-Accelerator Department Chairman Date

L. Vogt

## CHECKLIST FOR BACKFLUSHING AND ACID FLUSHING

Job WCS #: \_\_\_\_\_

(If the step does not apply, write NA in check column)

	<u>Check</u>
1. Refer to RWP#_____ for radiological conditions, controls and proper PPE for work.	_____
2. LOTO systems as required	_____
3. Ensure sanitary drains within 15 feet of component are plugged.	_____
4. Check component flows to determine backflushing requirements.	_____
5. Close component inlet and outlet valves to isolate component from main system.	_____
6. Relieve pressure on component.	_____
7. Use one of the following two methods or both prior to acid flushing.	
7.1 _____ Disconnect supply and return lines from component.	
7.2 _____ Direct supply line to bucket.	_____
7.3 _____ Connect return line to CO2 cartridge fitting and blow down component to bucket.	_____
7.4 _____ If main system is to be used for blowdown, connect component return line to system supply and with component supply line in bucket open system supply isolation valve slowly to backflush component.	_____
7.5 Close system supply line isolation valve.	_____
7.6 Reconnect component supply and return lines to system.	_____
7.7 Open system supply and return isolation valves.	_____
7.8 Verify component flow has returned to specification or continue with acid flushing.	_____

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## ACID FLUSHING

Job WCS #: \_\_\_\_\_

(If the step does not apply, write NA in check column)

	<u>Check</u>
1. Close component return and supply isolation valves. _____	
2. Relieve pressure in component.	_____
3. Disconnect backflush fittings.	_____
4. Connect return hose from component to flushing pump discharge.	_____
5. Connect a hose from flushing pump suction to bucket.	_____
6. Direct component supply line to bucket.	_____
7. Place pump assembly in a secondary containment.	_____
8. Mix AC-500 and water in pail.	_____
9. Run pump for flushing in 10 min. on and 10 min. off cycles as necessary.	_____
10. Remove pump suction hose and place in bucket of clean water.	_____
11. Remove component supply hose from bucket and place in the bucket of clean water.	_____
12. Turn pump on to run clean water through component, pump, and lines until effluent is clear.	_____
13. Remove backflush lines and drain excess water from lines to bucket.	_____
14. Tape ends of hoses used and verify labeling on hoses for storage.	_____
15. Reconnect component supply and return lines to system.	_____
16. Open isolation valves and verify no leakage.	_____
17. Remove LOTO as required.	_____
18. Ensure HP performs activation and contamination check on all equipment being removed.	_____

**Check**

- 19. Transfer waste water to approved plastic carboy( stock no. D-31505), or blue barrel with plastic liner (stock no. K60649). \_\_\_\_\_
- 20. Have drum or carboy RAM tagged by HP for transport to 919 Drum Storage Area for processing. \_\_\_\_\_
- 21. Liquid potassium hydroxide is used to adjust drum PH to 5-9 range. \_\_\_\_\_

**Notes**

- 1. Obtain 5 gallons of potassium hydroxide in 5-gallon carboys from water treatment group.
- 2. Ensure carboy is labeled with an NFPA diamond, and you check that barrel you get chemical from is potassium hydroxide.
- 3. Ensure you wear appropriate PPE to get chemical and use it in 919.

- 22. Mix contents of barrel to be adjusted for 10 minutes, and take a PH reading of contents. \_\_\_\_\_
- 23. If PH is<5, add ½ gallon of potassium hydroxide to barrel and after 10 minutes of mixing take a PH reading again. \_\_\_\_\_
- 24. Repeat step 23 until PH is in the 5-9 PH range. As you get closer to range add less chemical. \_\_\_\_\_
- 25. Ensure barrel is labeled with a pending analysis label and clearly write the final PH on label. \_\_\_\_\_
- 26. Contact Environmental Coordinator to draw a sample from barrel for waste characterization. \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_