

<b>Brookhaven National Laboratory National Synchrotron Light Source</b>		<b>Number:</b> LS-OPS-0034	<b>Revision: B</b>
		<b>Effective:</b> August 2001	<b>Page 1 of 2</b>
<b>Subject: VACUUM PROCEDURES FOR BEAMLINE X12A</b>			
<b>Prepared By:</b> W. Caliebe	<b>Reviewed By:</b> J. Klug	<b>Approved By:</b> S. Ehrlich	<b>Approved By:</b> C. Foerster

\*Document must contain approved signatures for validity.

The following procedures must be followed when bleeding up different beam line sections and when returning these sections to operation (refer to X12A Beam Line Layout Drawing SLS-96.68-001-5):

**I. FRONT END (PROCEDURE TO BE PERFORMED BY NSLS VACUUM GROUP ONLY)**

**A. Bleed-Up**

1. Notify the Coordinator (Beeper 5824).
2. Refer to Front End Vacuum Procedures (SLS-07.19-13-1).

**B. Return to Operation**

1. Notify the Coordinator (Beeper 5824).
2. Refer to Front End Vacuum Procedures (SLS-07.19-13-1).

**II. Section between Valve 1A and Be-window 1A**

**A. Bleed-up**

1. Notify the Coordinator (beeper 3456 – 5824)
2. Close Valve 1A and Front End GP valve.
3. Hook up turbo pump to this section
4. Coordinator places yellow tag on Valve 1A
5. Slowly bleed up with dry nitrogen while Coordinator monitors front end pressure

**B. Return to Operation**

1. Pump to less than  $2 \times 10^{-9}$  Torr
2. Notify the Coordinator (beeper 3456 – 5824)
3. Prepare for RGA scan.\*
4. Open Valve 1A if pressure is  $< 2 \times 10^{-9}$  Torr
5. Perform RGA scan
6. If RGA scan or pressure reading (if no RGA is required) is satisfactory, coordinator removes yellow tag from Valve 1A.

**II. Section between Be-window 1A and Valve 2A (slit tank)**

**A. Bleed-up**

1. Notify the Coordinator (beeper 3456 – 5824)
2. Close Valve 2A and Valve 1A
3. Coordinator places yellow tag on Valve 1A
4. Slowly bleed up with dry nitrogen while Coordinator monitors pressure between Be-window and Valve 1A

**B. Return to Operation**

1. Pump to less than  $5 \times 10^{-6}$  Torr
2. Notify the Coordinator (beeper 3456 – 5824)
3. Coordinator removes yellow tag from Valve 1A if pressure is  $< 5 \times 10^{-6}$  Torr downstream of Be window 1A

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### **III. Section between Valve 1A and Be-window 2A**

#### **A. Bleed-up**

1. Notify the Coordinator (beeper 3456 – 5824)
2. Close Valve 2A and Valve 1A
3. Coordinator places yellow tag on Valve 1A
4. Slowly bleed up with dry nitrogen while Coordinator monitors pressure between Be-window and Valve 1A

#### **B. Return to Operation**

1. Pump to less than  $5 \times 10^{-6}$  Torr
2. Notify the Coordinator (beeper 3456 – 5824)
3. Coordinator removes yellow tag from Valve 1A if pressure is  $< 5 \times 10^{-6}$  Torr downstream of Be window 1A

#### **\* NSLS POLICY FOR RGA SCANS (24 HOUR NOTICE REQUIRED)**

An RGA scan is required before returning to operation if there is a major change of hardware in the vacuum system, i.e. changing of samples, mirrors, windows, monochromator crystals or gratings, manipulators, detectors, etc., **with the following two exceptions:**

1. After UHV sample chambers have been bled up for replacing components, an RGA scan will not be required if the chamber pressure is returned to  $< 2 \times 10^{-9}$  Torr and the Front End pressure remains  $< 2 \times 10^{-9}$  Torr when vacuum sections upstream of the chamber are opened into the Front End.
2. If any vacuum section upstream of the bled-up section remains at a pressure of  $< 9 \times 10^{-10}$  Torr as read using a hot-filament ion gauge, when the entire beamline is opened into the Front End, and the Front End pressure does not increase, no RGA is required.

#### **\*\* NSLS TURBO PUMP POLICY**

An unprotected turbo pump is one not separated from the Front End by a beamline valve which automatically closes in the event of a power loss or a pressure increase at the turbo pump. **No unprotected turbo pump can share a contiguous vacuum with the Front End.**

**NSLS REVISION/REVIEW LOG**

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> See NSLS Quality Control Coordinator for original revision and review signatures <

**REVISION TABLE**

<b>Rev</b>	<b>Description</b>	<b>Date</b>
B	Significant changes to beamline configuration	August 2001