RECORD OF DESIGNATED SUBSTANCE ASSESSMENT

SUBSTANCE: LEAD (plates and Gamma Source holder)
DATE: August 29, 2005

COMPANY: McMaster University
DEPARTMENT OPERATIONS: Mechanical Engineering
LOCATIONS: John Hodgins Engineering Building Room 206
ASSESSMENT PREPARED BY: Joaquin Moran TITLE: Graduate Student DATE PREPARED: August 29, 2005

APPLICATION - WORKSHEET 1: IS THE DESIGNATED SUBSTANCE PRESENT?

1. Do any material safety data sheets from your suppliers indicate the presence of the substance?

YES [X] NO [ ]

2. If substance is present, indicate the department where it is used, nature of the use (i.e. Direct or indirect) and the quantity used per month or year:

Product Name	**Department**	**How Used? Direct / Indirect**	**Quantity Per Month / Year**
Lead	Mechanical Engineering	Indirect	No change

CONCLUSIONS

Read statements and check applicable box:

[ ] Substance not present anywhere in workplace; regulation does not apply
No Assessment needed

[X] Processes / activities have been identified where substance present.
Proceed to worksheet 2.

APPLICATION - WORKSHEET 2: IS WORKER EXPOSURE LIKELY

1. In what form does the substance enter the plant?
   Product Title: Lead Type of Container: none
   Size of Container: not applicable

2. Is this form altered during use or in the operation: YES [ ] NO [X]

   If YES, indicate altered form:

3. Is there a possibility of the substance being releases into the workplace environment during normal use? YES [X] NO [ ]

   If YES, indicate the stage of the operation or areas where this can occur.

4. If YES, to Question 3, specify the job functions and approximate number of employees who might be exposed:

   Job Function **Number of Employees**

5. If YES, to Question 3, Indicate how workers could be exposed:

   Inhalation [ ] Ingestion [ ] Skin Absorption [ ]

   Skin Contact [X]

6. If NO, to Question 3, is there a likelihood of escape due to leaks, accidents, etc.?

   YES [ ] NO [X]

7. Are workers likely to be exposed? YES [ ] NO [X]

CONCLUSIONS

Are there any activities / situations where exposure by any route is likely

YES [X] NO [ ]

If NO, no further action is necessary. Date Completed _____
If YES, an assessment is necessary – **proceed to Section III**

Note: If protection against exposure has been left up to some engineering control measure which can fail, or deteriorate for any reason, or to a work hygiene practice, an assessment is necessary -**Proceed to Section III**

ASSESSMENT – WORKSHEET 3: PROCESS DESCRIPTION

NAME OF PROCESS: Lead Shielding Installation

Process Flow	Description	Likely Exposure Yes / No
1. Lead Shielding 2. 3. 4. 5.	The gamma densitometer is used to make fluid density measurements in the R-11 flow loop. The lead plates serve to collimate the beam of the gamma rays and to shield the workers from stray gamma radiation. A special collimator frame is used to hold the lead plates and the gamma source together. The collimator frame is mounted on brackets attached to the R-11 flow loop near the test section. In addition, the gamma source has a shielding plate that must be removed in order to attach the source to the mounting frame.	No

ASSESSMENT – WORKSHEET 4: EXISTING CONTROLS

Process Flow Stage	Control Description	Problems / Recommendations
Lead Shielding	**Engineering Controls:** Lead plates are mounted on collimator frame during an experiment. **Work Practices** Disposable Gloves Safety Glasses	

ASSESSMENT – WORKSHEET 4: - EXISTING CONTROLS (cont'd)

Process Flow Stage	Control Description	Problems / Recommendations
Lead Shielding	**Hygiene Facilities and Practices:** No Food or DRINK permitted in the Laboratory. **Training / Information:** Refer to MSDS Sheets **Emergency Procedures / Equipment** Wash hands after contact with the lead plates. **Personal Protective Equipment** None required	

ASSESSMENT – WORKSHEET 5: JOB EXPOSURE ANALYSE

Process Flow Stage	Job Title	Total Number of Employees	Tasks Where Exposure Likely	Duration Hrs per Week	PPE Req'd To Be Used
1.	1.				

CONCLUSIONS

Jobs/ tasks to be noted during walk through survey:

ASSESSMENT – WORKSHEET 6: HEALTH EFFECTS

1. Any reported health effects? If so, describe.

No

2. Any current Medical Program? If so, describe.

No

3. Previous exposure monitoring results? If so, describe.

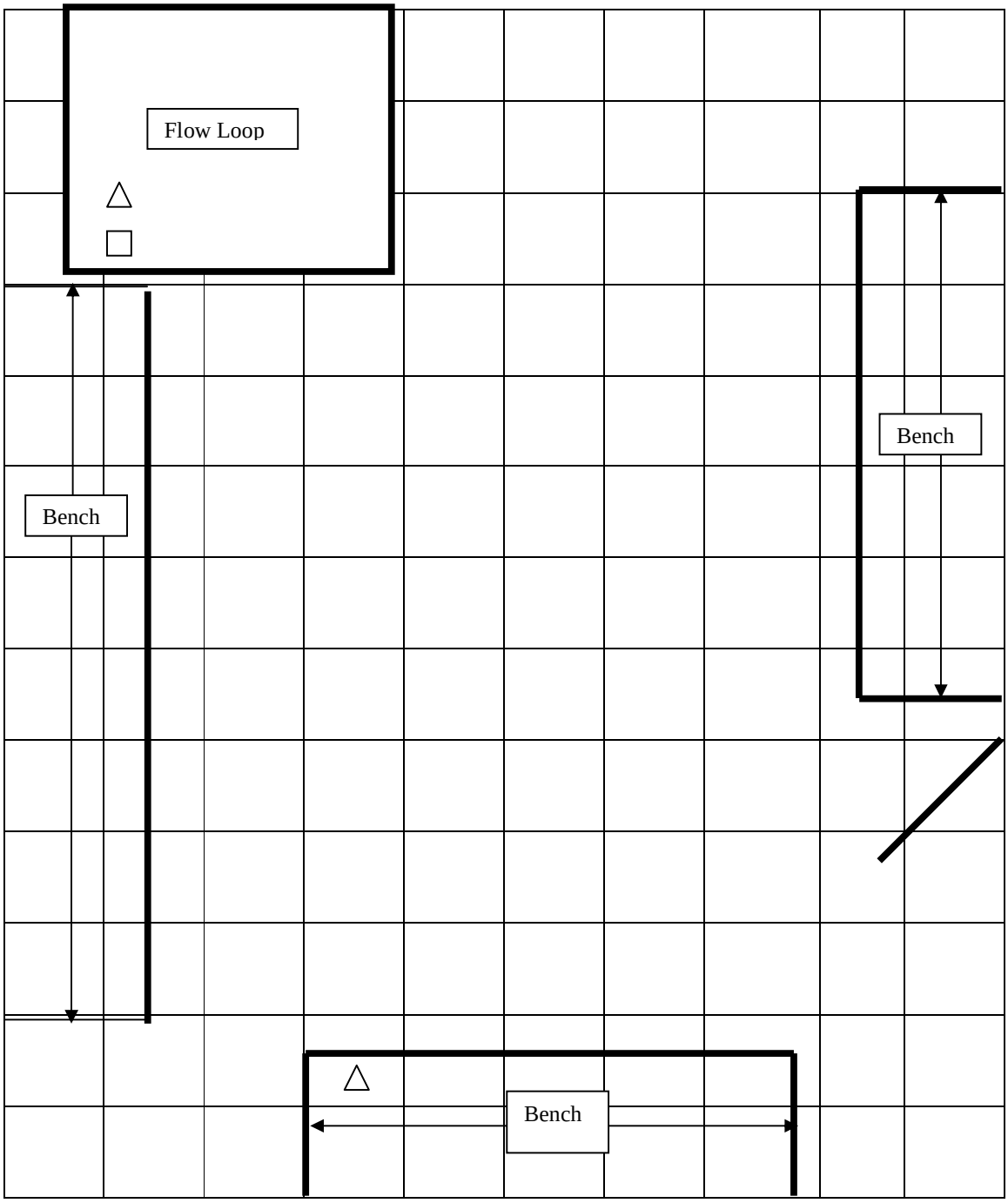
No

CONCLUSIONS

Health effects known at this stage:	YES		NO	X
Further information required:	YES		NO	X

ASSESSMENT – WORKSHEET 7: FLOOR PLAN

LOCATION: JHE-206 **DATE:** August 29, 2005



DIMENSIONS: L___ W____ H_____

◯ WORK STATION – enter number form job title – Worksheet 5

△ EXPOSURE SOURCE – enter number from Process Flow – Worksheet 3

☐ VENTILATION – enter L for local exhaust & G for general ventilation

ASSESSMENT – WORKSHEET 8: WALK THROUGH

Evidence of Contamination:

None

Hygiene Facilities and Work Practices:

No FOOD or DRINK permitted in the laboratory

Ventilation Systems:

A/C

Storage Facilities:

Laboratory is kept locked when not in use

ASSESSMENT – WORKSHEET 8: WALK THROUGH (cont'd)

Dispensing Procedures:

N/A

Housekeeping:

Room is clean (no obstacles)

Personal Protective Equipment:

Disposable Gloves, Safety Glasses

Emergency Facilities / Procedures:

Standard Operating Procedures

ASSESSMENT – WORKSHEET 9: WALK THROUGH CONCLUSIONS

1(a). Were any areas found where controls are required or where existing controls may require improvement?

YES ☐ NO ☒

1(b). If YES, indicate the areas where the controls may be required or where existing controls may require improvement.

AREA	SUGGESTED IMPROVEMENTS

2(a). Personal exposure monitoring is required. YES ☐ NO ☒

2(b). If YES, Indicate where:

3. Indicate any workers for whom medical testing and / or examinations may be required.

CONCLUSION: WORKSHEET 10: IS A CONTROL PROGRAM NECESSARY?

[X] CONCLUSION 1: NO WORKER'S HEALTH MAY BE AFFECTED.

[ ] CONCLUSION B: A WORKER'S HEALTH MAY BE AFFECTED.

OVERALLL CONCLUSION

A control program is necessary. YES [ ] NO [X]

Improvements needed in existing program:

DATE:_____ **SIGNED**_____