

## **1 Introduction**

A full inspection of all GeoSciences labs and workshops was made by Dick Kroon (Regius Professor of Geology) and Helen Pearson (School Health and Safety Manager) during mid August 2011. The primary purpose of the tour was to audit compliance with the terms of the School Health & Safety Policy, and to monitor and review the operation of that Policy in School laboratory facilities and if any improvements had been made since the previous year.

## **2 Findings applicable to most labs**

Labs and workshops are, in general satisfactorily managed and safety requirements are broadly observed in practice.

### **2.1 Housekeeping**

There has been significant improvement in housekeeping since last year. This is most noticeable in the Crew labs where a series of internal audits by the academic staff have been introduced.

### **2.2 Documentation**

It is disappointing to see that COSHH and risk assessments are still not up to date or complete in some areas, as was observed in the last and previous audit. Risk and COSHH assessments are an important step to protect staff and students, as well as complying with the law. Risk assessments need to be reviewed annually or earlier if a process changes. COSHH assessments should be reviewed every two years or earlier if new data is obtained from the manufacturer or the process in which it is being used changes. Old assessments should be removed from folders and archived to prevent any confusion when the folders are reviewed by students.

Risk and COSHH Assessment templates can be found at <https://www.geos.ed.ac.uk/internal/safety/Linksforms.html>

### **2.3 Gas Regulators**

There are some regulators which are visibly new, and others which appear to date back to 2006. The lifetime of a regulator is 5 years (2 years for regulators used with corrosive gases) (British Compressed Gases Association, Publication CP23). A regulator will age irrespective of the amount of use it is put to. Regulators that become damaged, contaminated or dysfunctional should be replaced as and when necessary.

When a new regulator is purchased, make a note of the date of manufacture / purchase. Some suppliers sell regulators that are already tagged with a code, date and 'do not use after' date. If not, it is a good idea to attach a tag to the regulator that contains this information. Some existing regulators can be dated by examining the code imprinted on the reverse side. If you possess regulators that are not coded and you are unable to date them, then it is advisable that they are replaced. All new regulators should be sourced from reputable suppliers and conform to appropriate standards (e.g. BS, EN, ISO etc.).

### **2.4 Storage**

There is still a severe shortage of storage space within, or associated with, labs and workshops. Working space is too congested in many cases and there are serious implications for fire and general workplace safety. This can be addressed in some part to better housekeeping standards.

There are still areas where there appears to be little or no pressure placed on students and research staff to remove samples and materials etc when projects are completed. Lab managers should become proactive in ensuring School facilities are maintained in good shape for the incoming cohort of workers.

The end of the John Murray Labs is still a dumping ground and better storage needs to be in place as this is a fire exit.

Specific details of these issues and recommendations for discussion have been included in the relevant sections of this report.

Rooms 219, 227,228, 236, 238, 239 and the cupboard next to 233 need to be reviewed in terms of upgrading as there is a lot of wasted space in these areas as the under bench cupboards do not fit the space properly.

### **3 Individual laboratory reports**

#### **3.1 Biochar Labs**

It is the first time the Biochar Labs have been involved in the Lab Audit as they were only completed last year. Clare Peters is the lab manager responsible for these labs but each of the labs are used by members of the biochar team.

##### **3.1.1 Lab 1**

- It was good to see that lab cards are being used for experiments. This practice should be adopted by other labs for experiments.
- COSHH & Risk Assessments are in place and up to date.
- Eyewash tests are completed and recorded on a weekly basis.
- Radio needs to be PAT tested.
- Lab Dancer (agitator) needs to be PAT tested.

##### **3.1.2 Lab 2**

- Nothing to report

##### **3.1.3 Lab 3**

- The fume cupboard is not working but has been reported. It should not be used until it has been repaired.
- Radio needs to be PAT tested.

##### **3.1.4 Lab 7**

- Bagged samples not properly stored in the lab.
- Foreign materials should be double bagged and stored in the dedicated area for foreign materials.

##### **3.1.5 Lab 8**

- Test the CO monitor when everything is running to make sure it can be heard
- Consider a CO monitor that can be viewed from outside the lab
- Radio needs to be PAT tested.

##### **3.1.6 Lab 9**

- Test the CO monitor when everything is running to make sure it can be heard
- Replace thermos flask of liquid nitrogen for something more appropriate.

##### **3.1.7 Pilot plant**

- Need to dispose of build up of pallets building up at side of building
- Slings need to be tested – add to Zurich list. They should have a tag on them to say when they have been tested.
- Monoethylene – No COSHH assessment seen in folder
- Need to move paint into flammable cupboard storage.

#### **3.2 Crew Labs**

##### **3.2.1 Room 1&2 – Andy McLeod**

- Need to get COSHH forms signed off as per last year
- John Moncrieff still shown as responsible for Rm 1 on the safety folder.

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- Rm 1 needs a tidy

**3.2.2 Room 4 – Andy Gray, John Mormon**

- Need better storage of COSHH Assessments, need plastic wallets
- Need test sheet for eyewash station
- Need to update risk and COSHH assessments – out of date
- Self closer on door should be reattached

**3.2.3 Room 5 – Andy Gray, John Mormon**

- Need test sheet for eyewash station

**3.2.4 Room 11 – Maurizio Mencuccini**

- This room needs a tidy – evidence of poor lab management and ineffective use of space.
- Gas cylinders should be removed and stored correctly.
- Chemicals in cupboard need COSHH Assessments
- Coloured granules in coffee jar do not comply with COSHH regulations, they need to be in properly labeled container.
- Spray paint on desk should be stored in flammable cupboard.
- Need to move over hanging box sitting on top of cupboard so it doesn't fall on anyone.
- Need to make sure students sign Risk and COSHH Assessments.

**3.2.5 Room 12 – John Grace. Matt Williams**

- Need to tidy away packing material that is loose under bench
- Ethanol in fume cupboard is flammable and should be stored in flammable cupboard.
- No COSHH or Risk Assessments for the lab available.
- Change name of folder from John Grace as he has now retired
- Need COSHH Assessments for Silicon and chemicals in cupboard
- Need to make sure students sign Risk and COSHH Assessments.
- Need better access for legs when sitting at workstation
- Need to dispose of old chemicals.

**3.2.6 Room 13 – Dave Reay / Kate Heal**

A major tidy has been undertaken of this lab since the last audit and the improvements can be still seen.

- Risk Assessments say they should be reviewed in 2012 after being completed in 2010. It is a legal requirement that risk assessments are reviewed at least annually. Please change date on review section of forms and review as required.
- Ensure that there are COSHH Assessments for the chemicals stored in cupboards

**3.2.7 Room 14 - John Moncrieff**

- No COSHH assessments visible for chemicals in cupboard
- Need Risk Assessments
- Need to tidy this room.
- Swarf on floor needs to be cleaned up – should be done after use of drill.
- Need eye protection sign for pedestal drill.

**3.2.8 Room 15 - John Moncrieff**

- COSHH & Risk Assessments needed

**3.2.9 Room 17 & 18 – John Moncrieff**

- Nothing to report

**3.2.10 Room 20 – GC Lab**

This room has also had a significant tidy since the last audit.

- New regulator needed for helium at the back of the room – noted at last audit.

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- Need COSHH & Risk Assessments.
- Sharps lying on top of bench, need to be disposed of in a sharps bin

**3.2.11 Room 23 – Andy Gray, John Mormon**

- Need to update COSH & Risk Assessments.
- Ensure samples are labeled.

**3.3 Grant Labs**

**3.3.1 Workshop – Bob Brown, Alex Hart**

- Need to label slings once they have been tested to show which have been done & which have not.
- Need to continue with COSHH and risk assessments for this area as they have lapsed.

**3.3.2 Room 112 – John Craven**

- Need to update risk assessments
- Need to complete COSHH assessments for missing items.

**3.3.3 Room 113 – John Craven**

- Risk assessments need updating.

**3.3.4 Room 114 – Nicola Cayzer**

- Risk Assessments need updating.

**3.3.5 Room 119 – John Craven / Nicola Cayzer**

- Risk Assessments need updating.

**3.3.6 Room 120 – Chris Hayward**

- Risk assessment needs to be reviewed and updated

**3.3.7 Room 123 – Ian Butler**

- Risk assessments needs to be reviewed and updated
- Equipment needs to be tested for radiation when it is operational again.

**3.3.8 Room 126 – Ian Butler**

- Nothing to report

**3.3.9 High pressure lab – 2kb**

- Need new gas regulators for welding gases
- Remove warning labels from cupboard (flammable & chemicals) as these no longer apply.

**3.3.10 High Pressure lab – 10kb**

- Need new gas regulators
- Update risk assessments
- Need COSHH assessments for hydraulic oil and other substances used in lab.

**3.3.11 X-ray Development lab**

- Need to update risk assessments
- Need to complete COSHH assessments.

**3.3.12 Room 133/134 – Ian Butler**

- COSHH assessments need to be signed off as per last year
- Need to be more COSHH forms as there do not seem enough for the substances in the room.

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- Need to repair guard for drill, it is not currently attached. The drill should not be used without it being reattached.
- Need eye protection sign for drill.
- Risk Assessments need to be updated.

**3.3.13 Rm 135 – Ian Butler**

Nothing to report

**3.3.14 Room 136 – Thor Thordarson**

- Need to remove coffee & cups as no drinking allowed in labs.
- Need to have a safety folder
- Need to do Risk and COSHH assessments for the lab.

**3.3.15 Room 207 – Mary Elliot**

- Need to replace eye pads in eye wash station
- Lab is very warm for working in
- Need to have a safety folder installed for risk assessments
- Need to complete risk assessments for tasks that happen in the lab.

**3.3.16 Room 214 – Ian Butler**

- Risk Assessments need to be updated.
- COSHH assessments needed.
- Review gas regulators.

**3.3.17 Room 219 / 220 – Ann Mennim**

- Risk and COSHH assessments need to be updated
- Can't access drawer with first aid kit in it.
- Gas Regulator shows 3/2006 – review & replace regulators.
- Dispose of old gas regulators in box.

**3.3.18 Room 222 – Chemical Store – Ann Mennim**

- Review the chemical store and throw out old chemicals
- Risk Assessments need updating.

**3.3.19 Room 223 – Walter Geibert**

- Fume cupboard very full – needs to be clearer to be effective.
- Highly flammable methanol is not in flammable cupboard – in ordinary cupboard.
- Risk assessments need to be updated.

**3.3.20 Room 224 – Colin Chilcott**

- Some gas canisters not secured
- Need to update risk assessments, COSHH assessments and ensure lab users sign sheet.
- Need more ventilation to reduce smell of oil mist.
- Poison cupboard was not locked.
- Need a COSHH assessment for liquid nitrogen.

**3.3.21 Room 225 – Walter Geibert**

- No access

**3.3.22 Room 227 – Ann Mennim**

- Nothing to report

**3.3.23 Room 230/231 - Nick Odling**

- Need to replace gas regulator.

**3.3.24 Room 233 - Nick Odling**

- Risk assessments are up to date
- Ceiling needs to be repaired as dust falling in
- Need to update COSHH assessments as per last year
- Need to get students to sign off on risk and COSHH assessments
- Need to install a fire alarm sounder

**3.3.25 Cupboard Room next to 233 – Walter Geibert**

- Need test sheet for eyewash station & shower
- Empty boxes need to be removed
- Housekeeping needs to be improved significantly in this area

**3.3.26 Room 235 – Walter Geibert**

- Replace eyewash
- Update risk assessments.

**3.3.27 Room 236 – Ann Mennim**

- Last student signed off in 2007, make sure current lab users sign the sheet – as per last year.
- Need test sheet for eyewash station

**3.3.28 Room 237 – Alan Pike, Jim Smith**

- Noise levels should be measured for cryogenic magnetometer
- Risk assessment not signed off by author
- Last user signed risk assessment in 2006
- Rubbish accumulating and should be disposed of.

**3.3.29 Room 238 – Jenny Tait, Alan Pike, Jim Smith**

- Needs a tidy
- Need to update risk assessments
- Canoe and bike should be stored more securely

**3.3.30 Room 241 - Jenny Tait, Thor Thordarson**

- Evidence of tea in lab
- Need risk and COSHH assessments – Thor & Jenny to do their own and put in folder.
- Need to implement safety folder
- Check & replace gas regulators
- Slings under bench don't show a test date – make sure they have been tested and are suitable for use.
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**3.3.31 Room 242 – Colin Kay**

- Need a “wear eye protection” sign for drill

**3.3.32 Room 243 – NERC**

- Need to review risk assessments
- Need COSHH assessment for chemicals for which there are Material Safety Data Sheets.

**3.3.33 Room 244 – NERC**

- Needs a tidy

**3.3.34 Room 247 – NERC**

- Flammable foam cleaner should be stored in flammable storage cupboard.

**3.3.35 Room 304 – Kate Darling**

- Nothing to report.

**3.4 John Murray Labs**

**3.4.1 Room 5 – Steve Mowbray / Greg Cowie**

- COSHH forms need to be updated & completed
- Risk Assessments are needed
- Needles left out on bench – sharps hazard and should be disposed of when finished with.
- New gas regulators needed
- Flammable cupboard not locked.

**3.4.2 Room 7 – Kevin Dodds**

- Corrosive cupboard not locked
- Lab coat left on seat – should be hung up when not in use.

**3.4.3 Room 8 – Kevin Dodds**

- White cupboard under bench not labeled.
- Check regulators are in date.

**3.4.4 Room 10 – Mike Hall**

- Need to continue removing old equipment

**3.4.5 Room 12/13 – Mike Hall**

- Flammable materials should be stored away when not in use.

**3.4.6 Room 14 – Mike Hall**

- Need to have better storage for goggles and ear protection to keep them clean.
- Power unit in corner of room requires testing (due Oct 2010)

**3.4.7 Room 18- Kevin Dodds**

- Nothing to report

**3.5 Rock Crushing / Grinding Rooms – Nic Odling**

- Need to be tidied
- Need risk assessments updating
- Need students to sign off risk assessments
- Consider removing old crusher to make more space.

**3.6 Geography Labs**

**3.6.1 Room 3.01 – Elaine MacDougall / Andy Hein**

- Room tidy and well organised
- Documentation and eyewash and shower checks in place

**3.6.2 Room 3.02 – Anthony Newton**

- Replace out of date HF cream
- Clear up old boxes / rubbish in corner
- Make sure students / staff put things away when they are finished with them

**3.6.3 Room 3.03 – Elaine MacDougall / / Andy Hein**

- Consider rubber mat for sieving to reduce noise on bench of banging

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**3.6.4 Clean Lab - Elaine MacDougall / / Andy Hein**

- Throw out old chemical bottles
- First Aid sign not completed

**3.6.5 Room 3.05A – Elaine MacDougall / Andy Hein**

- Boxes are clearly labelled and organised

**3.6.6 Room 3.06 – Anthony Newton**

- Nothing to report.

**3.6.7 Room 3.07 – Anthony Newton**

- Throw out old bottles
- Make key to chemical store more secure

**3.6.8 Basement Lab – Eva Panagiotakopulu**

- Remove food labels from samples
- Need to have risk assessment / COSHH folder in lab.