

DEBSWANA DIAMOND COMPANY

Occupational Hygiene Standard STD/SHE/SHE/019

Outcome Statement

In pursuit of Zero Harm Debswana is committed to implement an Occupational Hygiene programme to anticipate, recognize, evaluate and control health hazards in the working environment.

F. Jansen

Group Manager: Sustainability



23 November 2012

Signed

Date

Debswana

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OUTCOME STANDARD

All health hazards in the working environment will be anticipated, recognized, evaluated and controlled.

PERFORMANCE STANDARD

POLICY STATEMENT

The following Debswana Safety and Health Policy statement applies:

“Debswana will implement an Occupational Hygiene programme to anticipate, recognize, evaluate and control health hazards in the working environment”.

GUIDING PRINCIPLES

Health hazards in the working environment will be anticipated, recognised, evaluated and controlled with the objective of protecting worker health and well-being and safeguarding the community at large, and protecting the company’s reputation and license to operate. The Occupational Hygiene programme (in conjunction with the Medical Surveillance programme) must also provide assurance that the company can be protected from potential workers’ compensation claims.

Health hazards refer to the following categories of hazards:

- Physical (e.g. noise, illumination, radiation, vibration)
- Chemical (e.g. gases, vapours, fumes, mists, dusts)
- Biological (e.g. bacteria, fungi, viruses)
- Ergonomic (e.g. lifting, static postures, awkward positions)
- Psychosocial (e.g. stress, fatigue)

AFFECTED ENTITIES

The Occupational Hygiene requirements apply to:

- All Debswana mining operations
- Gaborone based offices
- Projects

SCOPE

Occupational Hygiene programmes must be developed for each operation and project. The extent of the programme depends upon the health risks that exist in the operation.

DEFINITIONS

Administrative control: Encompasses measures other than physical barriers and engineering controls aimed at reducing employee exposure to health hazards. These measures include additional relief workers, exercise breaks and rotation of workers. These types of controls are

normally used in conjunction with other controls that more directly prevent or control exposure to the hazard.

Engineering control: The application of engineering solutions to control, eliminate or reduce exposure to a chemical or physical hazard. Examples include self-capping syringe needles, ventilation systems such as a fume hood, sound-dampening materials to reduce noise levels, safety interlocks, and radiation shielding.

Exposure: The experience of coming into contact with a hazard in the workplace (physical, chemical, biological, ergonomic or psychological) that potentially has a harmful effect on health.

Health hazard: A source of potential harm to health. In the occupational health setting these are defined as physical, chemical, biological, ergonomic and psychological.

Monitoring: Means the routine and continued observation, measurement and evaluation of health and/or environmental or technical data, according to prearranged schedules, using nationally or internationally acceptable methodologies.

Occupational Exposure Limit (OEL): is a 'threshold limit' at which it is assumed the human body and its metabolism can cope with a health hazard, and that no adverse health effects will follow. While OELs are often used as legal limits by the authorities they are, in reality, guidelines to protect "nearly" all people. Different countries may use different terminology (e.g. Workplace Exposure Limits (WELs) in the UK)

Occupational hygiene (OH): The discipline of anticipating, recognising, evaluating and controlling health hazards in the working environment with the objective of protecting worker health and well-being and safeguarding the community at large. Occupational hygiene plus occupational medicine comprise the two pillars of occupational health.

Occupational Hygienist: Means a professional appropriately qualified by education (diploma or degree), training, and experience to practice the discipline of occupational hygiene (i.e. anticipate, recognise, evaluate and develop controls for occupational health hazards). The levels of Occupational Hygiene professionals are prescribed by the Southern African Institute for Occupational Hygiene (SAIOH):

- An Occupational Hygienist is expected to be involved in designing, implementing, evaluating, controlling and managing comprehensive Occupational Hygiene programmes.
- Typically an OH Technologist is expected to be involved in the planning of OH monitoring surveys, as well as their evaluation and interpretation, advising on basic control procedures and the writing of occupational hygiene monitoring/survey reports.
- Typically an OH Assistant would be expected to be engaged primarily in the measurement of health stressors (e.g. exposure monitoring, noise and illumination surveys). He/she would be working under the mentorship and supervision of a registered Occupational Hygienist and be engaged in the study of appropriate subjects.

Personal Protective Equipment (PPE): any item intended for wearing or carrying by the worker with the aim of protecting him from one or more risks likely to cause injury or jeopardize health while at work

Risk Assessment: A structured and systematic evaluation of the likelihood of harm resulting from exposure to hazards in the workplace. This is dependent upon the correct identification of the hazards and an appropriate estimation of the risks arising from them with a view to comparison with acceptable risk criteria or goals for the purposes of control or avoidance of the risk.

Similar Exposure Group (SEG): Often termed Homogeneous Exposure Group (HEG) but, strictly, a group of workers having the same general exposure profile for the agent(s) being studied because of similarities in tasks, materials and processes adopted.

REQUIREMENTS

1. PLANNING

a. HAZARD IDENTIFICATION, RISK ASSESSMENT AND DETERMINING CONTROLS

i. Occupational health hazard identification

1. Occupational health hazard identification refers to the process of identifying occupational health hazards, the sources of these health hazards, the tasks associated with the sources and the potentially exposed employees. Sites shall have a process to identify all health hazards.
2. The process shall take into consideration previous risk assessments, exposure monitoring results, medical surveillance results, health incidents and the findings of audits performed on the respective operations/sites.
3. To monitor the management of health risk, Line Managers shall use an operational health risk register, which can be incorporated in the Safety and Health risk register. Line Managers shall include the review of health risks in their management meetings. Health risk registers shall be reviewed and updated on the implementation of health risk treatment actions.

ii. Exposure assessment

1. The presence of a health hazard does not mean that an individual has been exposed since exposure is dependent on the emission, dispersal and ultimately type of contact with workers. Sites shall undertake exposure assessments to assess the exposure of workers to hazards in the workplace environment. Exposure shall be measured through personal and stationary monitoring and by a person trained and certified in the field of occupational hygiene.
2. Occupational hygiene sampling methodologies shall be formally developed, documented, implemented and maintained by a competent occupational hygienist.
 - a. The methodologies shall be consistent with the requirements of international recognised standards (e.g. NIOSH, HSE, SANS), and, where appropriate, the local standard relating to specific sampling and analytical techniques.
 - b. All sample analysis shall be carried out by accredited laboratories. For high-risk substances (e.g. asbestos, respirable crystalline silica) the laboratories must participate in either a local or international quality assurance scheme (Workplace Assurance System Proficiency Testing Scheme – e.g. UK WASP).
 - c. Where an external service provider is engaged for Occupational Hygiene monitoring, the provider must be an Approved Inspection Authority (AIA) by the South African Department of Labour or equivalent, with specific approval

for the particular stressor that is being monitored. This implies the following requirements:

- i. The AIA must be accredited by a national accreditation body (e.g. SANAS)
 - ii. The personnel employed by an AIA must include at least one SAIOH Registered Occupational Hygienist
 - iii. The AIA must have suitable monitoring and analytical equipment pertinent to the service/s rendered
 - iv. The AIA must have access to additional equipment that may be required for the additional service/s to be rendered and a formal agreement must be in place for such equipment
 - v. The AIA must have suitably documented and controlled systems, methods and procedures relating to the regulated services it wishes to render
 - vi. The AIA must use laboratories that meet the requirements mentioned above in 2.b.
3. Current controls shall be identified and their effectiveness taken into account when evaluating exposure.

iii. Determination of exposure level and controls

1. Results from monitoring of exposure shall be compared against the Occupational Exposure Limits (OELs). Controls shall be put in place to manage occupational health risks and reduce occupational exposure to below the OEL.
2. To ensure that exposures are below the OEL, an action limit shall be used. The action level is the point at which hazard controls shall be considered and is set at 50% of the applicable OEL.
3. Determining whether results from monitoring indicate an acceptable exposure level shall be based on accepted occupational hygiene practice, and professional judgement of the Occupational Hygienist.
4. When recommending controls for identified and assessed hazards, the hierarchy of controls shall be used and multiple levels of control may be necessary to achieve the desired outcome. Personal protective equipment should always be the last resort.

iv. Change management

1. When processes change the health hazards must be evaluated at the design change to ensure that engineering controls are incorporated in the design where possible.
2. When planning a new project, a major modification, or prior to closure of an existing project, or prior to mine or operation closure, a Health Impact Assessment (HIA) must be conducted to assess the health impacts on the local community and the wider society.

b. LEGAL AND OTHER REQUIREMENTS

i. Exposure limits

1. Debswana will adhere to the OELs that are prescribed in the Botswana legislation. Where the Botswana legislation does not prescribe OELs Debswana will adhere to the Workplace Exposure Limits (WELs) prescribed by the UK's Health and Safety Executive (EH40), which are used by Anglo American in the absence of local exposure limits.

c. OBJECTIVES AND PROGRAMME TO MANAGE HEALTH RISKS

- i. Each operation shall develop an occupational health risk management (i.e. health improvement) plan that is aligned to its business processes.

2. IMPLEMENTATION AND OPERATION

a. RESOURCES, ROLES, RESPONSIBILITY, ACCOUNTABILITY AND AUTHORITY

- i. Senior Management shall be responsible for ensuring that this Standard is implemented and that the occupational hygiene programme is developed and executed in consultation with the Occupational Hygienist. Adequate financial, logistical and human resources shall be allocated to ensure that these activities are dealt with in a manner that reflects its high priority.
- ii. The occupational hygiene programme is owned by line management and shall be included in day-to-day activities and decision making. Line managers are responsible for the control of health hazards in their area of responsibility and must avail personnel for the purpose of occupational hygiene monitoring.
- iii. The Occupational Hygienist shall be responsible for designing, implementing, evaluating, controlling and managing a comprehensive occupational hygiene programme. The Occupational Hygienist may also be engaged in occupational hygiene management, training or research activities at operations level.
- iv. In consultation with the Occupational Hygienist, Senior Management shall appoint an appropriate number of Occupational Hygiene Technologists and Occupational Hygiene Assistants to deliver the occupational hygiene programme.
 1. The Occupational Hygienist manages the Occupational Hygiene programme
 2. Occupational Hygiene Technologists may calibrate monitoring equipment, carry out monitoring surveys, take measurements, analyse collected samples and prepare monitoring reports.
 3. Occupational Hygiene Assistants may carry out similar tasks provided they are under the direct supervision of an Occupational Hygienist.

b. COMPETENCY, TRAINING AND AWARENESS

i. Competency of Occupational Hygiene staff:

1. Occupational Hygienists must be registered with SAIOH (Southern African Institute for Occupational Hygiene) in the Occupational Hygienist category. A Certificate in Mine Environmental Control, issued by the South African Chamber of Mines, can be accepted in lieu of SAIOH registration.
2. Occupational Hygiene Technologists must be registered by SAIOH in the Occupational Hygiene Technologist category
3. Occupational Hygiene Assistants must be registered by SAIOH in the Occupational Hygiene Assistant category.
4. A programme must be in place for ongoing professional development of Occupational Hygiene staff.

ii. Training and awareness:

1. All employees and contractors who are potentially exposed to health hazards shall be informed of:
 - a. the nature of the health hazard
 - b. the effects of the hazard on health
 - c. the level at which they are potentially exposed
 - d. the control measures that are in place to prevent adverse health effects from exposure to health hazards in their job
 - e. how to report defects in plant or equipment that lead to excessive exposure to health hazards, and
 - f. practical instruction on when and how to use PPE, the proper care and maintenance of this and the limitations of the PPE provided.
2. This briefing shall be repeated for all employees who, during medical surveillance, are found to have deterioration in markers of exposure to health hazards.
3. Line managers must receive risk-based training on occupational health hazards and controls.

c. COMMUNICATION, PARTICIPATION AND CONSULTATION

- i. The outcomes of exposure assessments must be briefed to affected line managers and personnel
- ii. Occupational Hygiene monitoring results must be discussed in the SHE committee meetings in accordance with the Debswana Safety and Health Agreement. Occupational Hygienists may attend those meetings where necessary.
- iii. Personnel changes and movements must be communicated to the Occupational Hygienist to allow him/her to ensure that Similar Exposure Groups are kept up-to-date.

- iv. There must be a system to handle employee complaints.
- v. The exposure levels (as per SEGs) must be communicated to the Occupational Health Practitioners to enable them to perform risk-based medical surveillance.
- vi. Occupational Hygienists must be involved in the development of person-job specifications.
- vii. Occupational Health Practitioners must inform Occupational Hygienists of suspected occupational health incidents so that the Occupational Hygienist can perform an investigation to determine if a potential work relationship exists.

d. DOCUMENTATION

Depending upon the risks in the operation the following documents may have to be developed:

- Occupational Hygiene programme
- Documented procedure for selection/fit/disposal of PPE, including respiratory protection
- Documented procedure for management of hazardous chemicals (HazCom - including MSDS)
- Documented procedure for confined space entry
- Code of Practice for Noise (hearing protection)
- Code of Practice for Airborne Pollutants (including dust, chemical vapours, asbestos, welding fumes, diesel particulate matter)
- Code of Practice for Thermal Stress
- Guidelines for the management of other health hazards such as ergonomics, hand-arm vibration, whole-body vibration, illumination, food handling, potable water, Legionella pneumophila, ionizing and non-ionizing radiation
- Documented procedure for the management of monitoring equipment (selection, calibration, maintenance, operation)
- Guideline for the protection of vulnerable groups (e.g. pregnant and breast-feeding women)

e. CONTROL OF DOCUMENTS

Documents shall be managed as per the operation's document control procedure.

f. OPERATIONAL CONTROL

- i. It is the responsibility of the line manager to implement and maintain controls and ensure their effectiveness. Compliance with and effectiveness of personal protective equipment requirements shall be assessed regularly.
- ii. Competent Occupational Hygiene personnel will perform specific programme functions such as:

1. assist line management with health risk assessments and identification of controls to mitigate the risks
 2. identify and maintain Similar Exposure Groups and implement relevant on-going occupational exposure monitoring,
 3. implement ad hoc occupational exposure monitoring (e.g. for confined space entry, emergency response, following employee complaints)
 4. inspect workplaces to identify potential changes in exposure and gauge control effectiveness
 5. prepare reports, communicate to stakeholders (line management, employees and Occupational Health practitioners)
 6. keep records and identify trends
 7. provide training on Occupational Health hazards and controls (e.g. PPE and fit testing)
 8. investigate health incidents to determine work-relatedness
 9. maintain and calibrate monitoring equipment
 10. evaluate health risks before changes are implemented (e.g. projects, purchase of new equipment, chemicals and PPE)
 11. participate in relevant audits (e.g. OHSAS 18001, De Beers FoC audits)
- iii. Senior Management shall implement quality assurance measures to the site's occupational hygiene programme. These shall include, as a minimum-
1. Upholding the standards of conduct and code of ethics and maintaining certification for occupational hygiene personnel
 2. Ensuring that demonstrably qualified individuals are performing programme functions and that occupational hygiene reports are signed off by the Occupational Hygienist
 3. Ensuring that Occupational Hygiene monitoring service providers are Approved Inspection Authorities for the stressors that they will monitor, and providing assurance that the service from the AIA meets the requirements of this standard through adequate Service Level Agreements or Contracts.
 4. Ensuring that equipment is calibrated for the accurate quantitative measurement of health hazards
 5. Using accredited laboratories which, for high-risk substances, participate in local or quality assurance schemes for sample analysis
 6. Verifying the accuracy and completeness of data prior to their inclusion in the site's occupational hygiene database
 7. Reviewing plans and designs to monitor the adequacy of engineering controls, evaluating new equipment, PPE, assessing new chemicals (projects)

8. Conducting self-assessments and participating in relevant audits to assess the effectiveness of the site's occupational hygiene programme.

g. EMERGENCY PREPAREDNESS AND RESPONSE

- i. Emergency preparedness plans must consider health hazards that may arise during the emergency for personnel and response teams.
- ii. Where health hazards may occur the Occupational Hygienist should be consulted to assess the hazards and assist with identifying the required controls.

3. CHECKING

a. PERFORMANCE MEASUREMENT AND MONITORING

i. On-going occupational exposure monitoring

1. Where an occupational health risk assessment indicates the presence of a risk that cannot be eliminated, the operation shall establish and maintain a system of on-going occupational hygiene monitoring. Monitoring schedules shall be developed which will specify the hazard(s) or agent(s) to be monitored, the frequency of monitoring, and how the monitoring is to be conducted. On-going occupational hygiene monitoring shall be undertaken for:
 - a. the continuous assessment of compliance against OELs;
 - b. the continuous assessment of health risk;
 - c. epidemiology studies (where appropriate and clearly scoped);
 - d. the selection of control requirements; and
 - e. the assessment of control performance
2. The system of on-going occupational hygiene monitoring shall consist of an appropriate combination of area/stationary sampling, source sampling, personal exposure sampling and short-term task specific sampling. Sampling protocol(s) must be clearly stipulated prior to commencement of ANY sampling exercise and must be fit-for-purpose for collected data to be interpretable. It is important for collected data to be representative of the conditions being monitored; for them to be reproducible within statistical limits; and to be capable of interpretation. Ideally real-time measurements linked to observations of the activities being monitored help to profile the activities under investigation.
3. Monitoring frequency strategy must depend upon exposure levels:
 - Above OEL: monitoring must be repeated only to gauge effect of any implemented controls. Absence of any control intervention ensures that the unacceptable risk status remains unchanged.

- 50-100% of OEL: monitor routinely for identification of upward trends
- <50% of OEL: keep watching brief especially if any process, etc. changes

Risk Level	None	Acceptable	Significant	Unacceptable
		0.1 x OEL	0.5 x OEL : Action level	OFl Remedial ACTION Required!
Monitoring : is it				
* Real-Time? * Representative? * Reproducible? * Readily Interpretable?	* Keep watching brief especially if any process, etc. changes		* Monitor routinely for identification of upward trends * Reduce levels where practicable	* Repeat only if gauging effect of hierarchy of controls * No action maintains unacceptable risk status
			POTENTIAL AT RISK GROUP	AT RISK GROUP
			MEDICAL SURVEILLANCE AT DISCRETION OF OMP AS OEL NOT PROTECTIVE OF ALL PERSONS	MEDICAL SURVEILLANCE MANDATORY

ii. Performance Measurement

Operations must identify performance indicators to measure the effectiveness of the Occupational Hygiene programme, for example:

- Number of people in “at-risk group” (potentially above OEL) per stressor
- Observable upward trends in physical and chemical monitoring results (generally indicative of a deterioration in workplace controls)
- Number of occupational health incidents (taking into consideration the lag period between exposure and effect)
- Major non-conformances from OHSAS 18001 audits

b. EVALUATION OF COMPLIANCE

Legal audits must cover Occupational Hygiene “legal and other requirements”

c. INCIDENT INVESTIGATION, NON-CONFORMITY, CORRECTIVE AND PREVENTATIVE ACTION

- i. All medical incidents of a suspected occupational origin must be investigated by the Occupational Hygienist. Appendices A and B give some guidance on the Occupational Hygiene aspect of the investigation.
- ii. Where it is found that serious incidents (level 3 and above as per the medical incident reporting standard) may be work-related an investigation will take place as per the incident investigation standard (ICAM) to determine effective corrective actions.

d. CONTROL OF RECORDS

- i. Records include, but are not limited to, the following:
 - Records of monitoring
 - Records of calibration of equipment
 - Records of qualifications of Hygienists
 - Training records
 - Audit records
 - Investigation of health incidents
- ii. Records must be legible, dated and duly signed (in ink) by the competent person.
- iii. Occupational hygiene programme records (risk assessment reports, monitoring data, etc.) shall be recorded, stored for 40 years and be capable of linkage on an individual basis to occupational medicine and human resources records.
- iv. Records must be stored in a fire-proof cabinet. The filing system must be fit-for-purpose.
- v. Entering records in an electronic system does not exempt the operation from the requirement to keep signed records.

e. INTERNAL AUDIT

- i. An internal audit will be conducted at least annually on the prescribed template.
- ii. Occupational Hygiene will be part of OHSAS 18001 audits.

4. REVIEW

The Occupational Hygiene Programme shall be reviewed annually by Senior Management and the Occupational Hygienist.

REFERENCES

EH 40/2005 Workplace Exposure Limits (Health and Safety Executive, UK)

Good Practice Guidance on Occupational Health Risk Assessment (ICMM)

Guideline for the Compilation of a Mandatory Code of Practice for an Occupational Health Programme for Noise (Department of Minerals and Energy*, South Africa)

Guideline for the Compilation of a Mandatory Code of Practice for an Occupational Health Programme on Personal Exposure to Airborne Pollutants (Department of Minerals and Energy, South Africa)

Guideline for the Compilation of a Mandatory Code of Practice for an Occupational Health Programme on Thermal Stress (Department of Minerals and Energy, South Africa)

Information Brochure on Approved Inspection Authorities: Occupational Health and Hygiene (Department of Labour, South Africa, 2004)

Mines, Quarries, Works and Machinery Act (Botswana, Chapter 44:02)

NIOSH Occupational Exposure Strategy Sampling Manual

Occupational Medical Incident Reporting Standard (De Beers FoC)

Occupational Hygiene Management Standard (De Beers FoC)

Occupational Hygiene Programme Standard (draft) (Anglo American)

Procedure for Professional Registration Application (Southern African Institute for Occupational Hygiene - SAIOH)

South African Mines Occupational Hygiene Programme (SAMOHP) Codebook (Department of Minerals and Energy, South Africa)

- **Note** : The Department of Minerals and Energy is now the Department of Mineral Resources

DOCUMENT CONTROL FORM

NAME: Occupational Hygiene Standard
DOCUMENT No: STD/SHE/SHE/019

This Standard shall be reviewed and revised as needed to ensure that it is current and applicable and reissued at least every three years.

VERSION	DATE	APPROVED BY:
1	23 November 2012	Group Manager Sustainability

CHANGES IN THIS REVISION:

New document.

Appendix A: Occupational Hygiene Investigations

An occupational hygiene investigation appropriate to the local legislation, severity rating and effects should be conducted within 30 days of the medical incident being reported. Results of the investigation and corrective actions implemented should be recorded in the site incident register. Suggested, but not exclusive, issues to be considered during any occupational hygiene investigation are (also see Appendix B):

Level 1:

Assess the working environment and implement local corrective action (e.g. person not wearing PPE – find out why not, correct any problems and ensure usage). An occupational hygienist may assess non-work related exposures in investigating a suspected case of occupational disease. This assessment is similar to safety incident investigations. For engineering control failure, the reason for the failure needs to be investigated and appropriate action taken. All engineering control related machinery (e.g. fans, vehicle engines and exhausts, noise suppressors) should be on planned maintenance programmes and adherence to these should be checked. The time allowed for corrective action should not be excessive and should be related to the risk.

Level 2:

Confirm exposure at work, assess controls in place and adjust or correct where necessary, review the medical test result at an appropriate interval. The workplace investigation of workplace exposure and review of controls will be conducted by the occupational hygienist and the follow-up testing conducted by the medical professionals.

Level 3:

Confirm diagnosis and work-related exposure, investigate any additional sources of exposure (e.g. smoking history, non work-related noise exposure such as hunting, I-pods), review controls, check training and investigate additional controls or other interventions. Root cause analysis may be appropriate for occupational diseases identified at this level as there may be high level management factors that underlie a lack or failure of controls.

Review controls and maintenance system for controls. Confirm appropriateness of controls and investigate need for additional controls or more effective controls. Corrective action may require capital expenditure for engineering controls (e.g. scrubber to reduce dust exposure)

Levels 4 and 5:

See level 3 comments with regard to compensatable disease, permanent job change, retirement or death from occupational disease. Root cause analysis or similar action may be used as appropriate for occupational hygiene exposure where there is a serious threat to health

Appendix B: Occupational Hygiene Investigation for Occupational Medical Incident

The following approach is suggested but may need to be modified depending on circumstances. However, at all stages, clear and copious notes must be compiled to inform the investigation process and to lead (ultimately) to a conclusion. A log (e.g. of dates, times etc) must be created to provide a comprehensive timeline in the investigation sequence of events.

1. Medical event of suspected occupational origin identified by the occupational health practitioner.
2. Occupational hygienist to be contacted and given an overview of the issue:
 - I. Is the concerned individual routinely screened for any occupational hygiene exposures? If so, which?
 - II. What stressor(s) is(are) suspected as causing the medical event?
 - III. Any other relevant non-confidential medical background e.g. whether anything suspicious was identified at pre-employment or pre-placement medicals?
 - IV. Is there any record of current and past work histories?
3. Occupational hygienist to review records :
 - I. Relevant monitoring data for individual/risk group?
 - II. Monitoring trends over representative period?
 - III. Any specific issues e.g. abnormal incidents, complaints?
 - IV. If the specific area/risk group is not part of any occupational hygiene monitoring programme is this an omission or based on a specific risk assessment (documented)? This situation is to be re-assessed subsequent to the medical event investigation
4. Occupational hygienist to investigate thoroughly by :
 - I. Visiting the workplace and reviewing current (and where relevant past) processes, practices, standard operating procedures etc. Several visits may be necessary to see what actually happens in practice!
 - II. Discussing the issue under investigation in an OBJECTIVE manner with the individual concerned and local supervision/line management
 - III. Identifying potential relevant contributing factors such as but not limited to :
 - Training/lack of awareness
 - Unsafe/Unacceptable work practices
 - Ventilation
 - PPE and other preventive measures
 - Hazard identification/Risk Assessment
 - Protection/Warning/Detection Systems or Procedures
 - Not following procedures
 - Equipment-related
 - Known work exposures to stressors
 - Previous complaints
 - General acceptability of workplace environment/layout/ ergonomics
 - Quality/frequency of supervision
 - Other e.g. past and current hobbies, previous disciplinary measures for not wearing PPE etc.

Based on this information (records review, physical inspection of the workplace, interviews) the occupational hygienist should be in a position to inform the occupational health practitioner (and subsequently management) as to whether the suspicion of occupational origin for the medical event is well-founded. However, it is important to note that any records indicating that an occupational exposure limit may have been exceeded in the past may not be used as PROOF or DISPROOF of an

existing disease or physical condition. The occupational hygienist conducting the investigation must have sufficient knowledge and experience to interpret available data/information and must seek advice from professional colleagues particularly in the case of more complex events. It is particularly important to recognize that, in the event of any legal action arising from the medical event, records (and their interpretation) may be “dissected” in a court of law. Sampling reports are of particular concern as there are many potential pitfalls affecting their credibility.

Once a conclusion regarding the medical event has been reached it is incumbent on the occupational hygienist to document the matter fully (sign-off required) and , with line management and other relevant disciplines such as engineering and safety (not forgetting unions and associations via the health and safety representatives), to address any specific findings arising from the investigation and to effect whatever remedial measures are necessary (from micro-environmental and operational perspectives). Recurrence of medical events of occupational origin when the root causes have been identified is unacceptable.