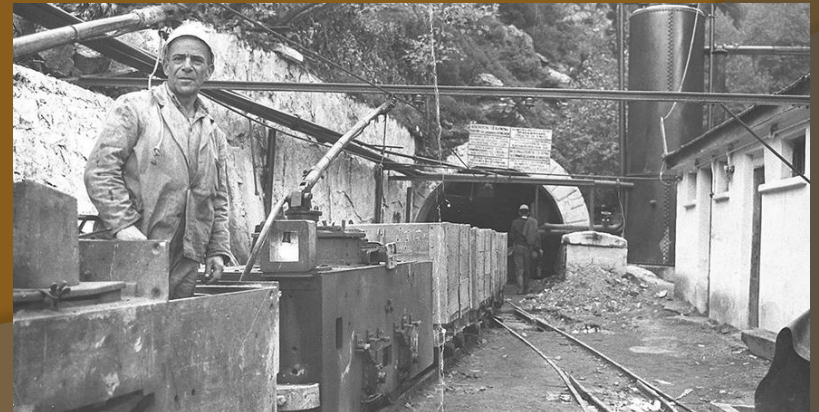


HEALTH MONITORING STANDARD (HMS)

IN HELLAS GOLD U/G &
SURFACE EXTRACTING SITES
AND
MINING INDUSTRY



Health monitoring HISTORY in Mines and Mining Industry In Halkidiki (Kasandra)



eggshell calcification, SILICOSIS



ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ ΚΑΙ ΚΟΙΝΩΝΙΚΗΣ ΑΛΛΗΛΕΓΓΥΗΣ
Απ.Υ.Π.Ε. ΜΑΚΕΔΟΝΙΑΣ - ΘΡΑΚΗΣ
ΓΕΝΙΚΟ ΝΟΣΟΚΟΜΕΙΟ ΧΑΛΚΙΔΙΚΗΣ ΠΟΛΥΓΥΡΟΣ

..... ΚΛΙΝΙΚΗ

Όνομα Ασθενούς:

Διεύθυνση: Γαργιλιώ Γυφτατζή

Ο [redacted] Ασπέρης του Μιχαήλ, γεννηθείς το 1981, ιστορικός κ. περιστατικό στην προέλευση σε την υλιονική ελκώση και τον έλεγχο του βελτιορίου υγείας τα είναι αρτηριακή και θεωρείται υψηλή και ικανή προς εργασία.

1

07-06-2016

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Thetraditional bad practice in Fitness evaluation from NHS comes from History andContinue

WHAT EXCACTLY IS HEALTH MONITORING STANDARD (HMS)

It's a code of Practice on Health monitoring in mining guide to achieving the best levels of Health , Safety , and welfare required from Mining Law and Government , European and International Work Health & Safety Regulations

HMS include Biological monitoring and Medical examination and constitutes a detailed monitoring of individuals for the propose of identifying changes in health status due to occupational exposure to a hazard

The **HMS** should screen and ensures the mining employees of the consequences of variable working environment in Surface and specially in Underground on the following issues

- **Fitness for work**
- **Physical hazards** (landslides or collapse, elevated roads and railways)
- **Hazardous substances** (**corrosive oxidizing or siliceous substances** , **chemical contamination** , **fumes** , **airborne particles and fibers**)
- **Electricity and Isolation**
- **Use of explosives**
- **Thermal stress**
- **Noise and Vibration**
- **Confine Spaces and Oxygen deficient atmospheres**
- **Ventilation**
- **Ionizing radiation**

Hellas Gold HMS

- A. Part of Medical examinations
- B. Part of Biological Effect monitoring
- C. Part of Biological Exposure monitoring
- D. Part of Unacceptable human habits monitoring

BROAD MEDICAL EVALUATION

Medical history by questioner

Clinical examination for each system

Mental functioning & Neurology evaluation



- **Fitness for work**
- **Physical hazards** (landslides or collapse ,elevated roads and railways)
- Hazardous substances (corrosive oxidizing or siliceous substances , chemical contamination , fumes , airborne particles and fibers)
- Electricity and Isolation
- **Use of explosives**
- Thermal stress
- Noise and Vibration
- Confine Spaces and Oxygen deficient atmospheres
- Ventilation – Fire and Explosion prevention
- **Ionizing radiation**

Hellas Gold HMS

Part A

SENSE ORGANS EVALUATION

Optometric check

Audiometric check



- **Fitness for work**
- **Physical hazards** (landslides or collapse ,elevated roads and railways)
- **Hazardous substances** (corrosive oxidizing or siliceous substances , chemical contamination , fumes , airborne particles and fibers)
- **Electricity and Isolation**
- Use of explosives
- Thermal stress
- **Noise and Vibration**
- Confine Spaces and Oxygen deficient atmospheres
- **Ventilation**
- Ionizing radiation

Hellas Gold HMS

Part A + B

CARDIO-RESPIRATORY EVALUATION

Upper respiratory : Endoscopical
Rhino – Laryngo – Tracheal check

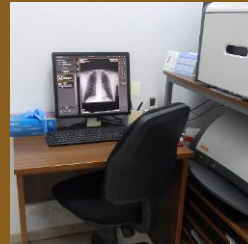
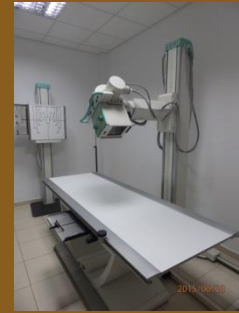
Lower respiratory : Chest X-ray
Clinical Respiratory estimation

Respiratory physiology : Spirometry
oximetry capnography check

Advanced Cardiac Function

evaluation : ECG – Cardiac ECHO

ECG STRESS TEST



- **Fitness for work**
- Physical hazards (landslides or collapse ,elevated roads and railways)
- **Hazardous substances** (corrosive oxidizing or siliceous substances , chemical contamination , fumes , airborne particles and fibers)
- Electricity and Isolation
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- Noise and Vibration
- **Confine Spaces and Oxygen deficient atmospheres**
- Ventilation
- Ionizing radiation

LABORATORY EVALUATION

Hematological:

Wbc, neut, lym, mono, eo, baso, rbc, hgb, hct, mcv, mch, mchc, rdw, plt, mpv, pdw, pct, snt rate

Biochemistry :

Glu, ure, cre, urichol, trigl, hdl, ldl, sgot, sgpt, γ -gt, ldh, alk phosp, t.

Prot, alb, ferrit, Fe, Na, K, Ca

Urine analysis : Col, clar, pH, Sp. Gr , pro, glu, ket, blood, bil, uroch, nitr, leuk, eryth

Infectious diseases detection :

HbsAg, HCV



Hellas Gold HMS

Part A + B



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BIOMARKERS DETERMINATIONS

Measurements of chemicals or its metabolites in human tissues or biological fluids or inhaled breath as markers to quantify actual exposure



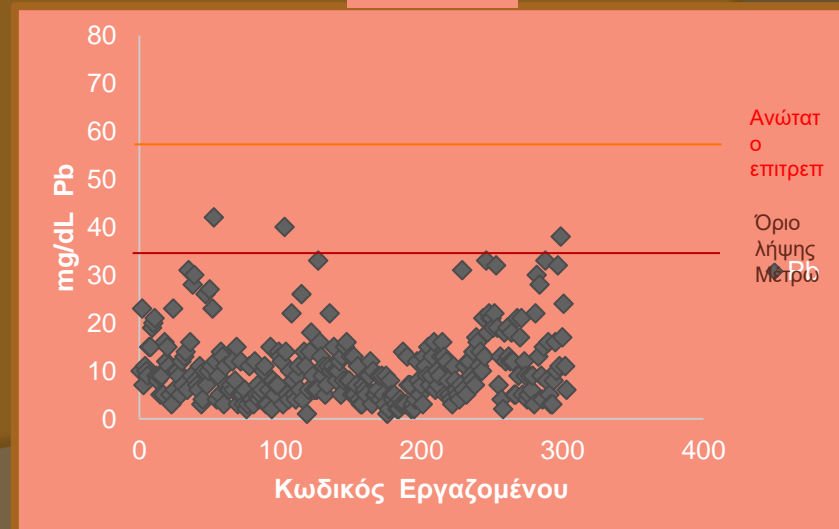
Pb : **PBDB** – PBH – PBN - **PBU** - **PBCRU**
ALAD – PEE – **NZPEE**

Zn : ZNS – ZNU – **ZNCRU**

As : **ASB** – **ASU** - **ASCRU**

CN : **CYAN**

PBDB



Alcohol & Psychotropic substances detection

❖ Alcohol

- ❖ Canabinoids
- ❖ Opiates, (Morphine, Heroin , Methadone, Codeine)
- ❖ Aphetamine Methamphetamine
- ❖ Cocaine
- ❖ Benzodiazepines
- ❖ MDMA, Synthetic drugs etc.



What are the objectives and the purpose of HMS application in mining



ΕΛΛΗΝΙΚΟΣ ΧΡΥΣΟΣ Α.Ε.

Τομέας Υγιεινής & Ασφάλειας
Τμήμα Ιατρικής Εργασίας

Επιδημιολογική μελέτη Θνησιμότητας & Νοσηρότητας γενικού πληθυσμού και σύγκριση των αντίστοιχων στοιχείων του Νομού Χαλκιδικής με όμορους νομούς

Μελετητής: Βασιλειάδης Βασίλειος
Ιατρός Εργασίας

- Assesses the health status of all mining personnel on a regular basis
- Evaluates the relation of the changes in health status with the data collected from work risk factors monitoring
- Analyses collected data to detect adverse health effects at the earliest opportunity
- Evaluates the control measures employed to control work related exposures
- Enabling appropriate and timely corrective actions when necessary
- Provide data for future epidemiological studies

Linkages between findings from Risk Factors Monitoring & HMS

The DUST and its components

Silica

Asbestos Fibers

Particle size
distribution

Black Carbon

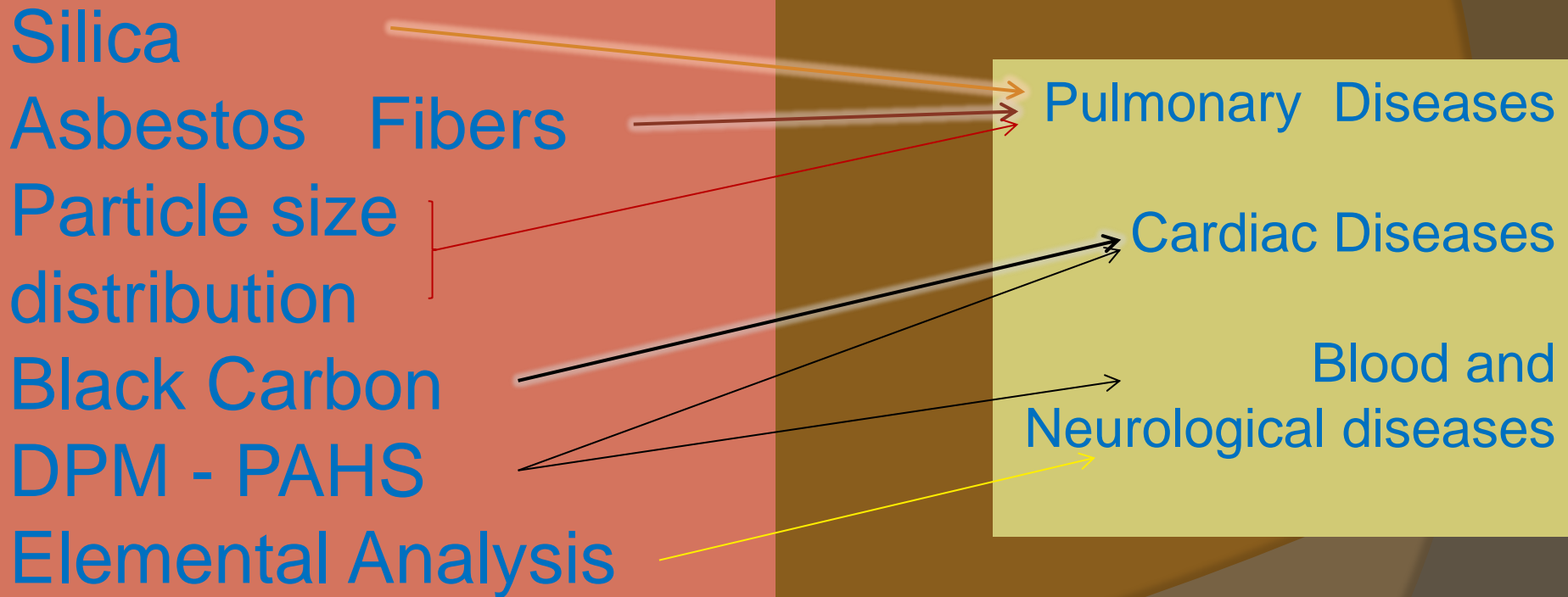
DPM - PAHS

Elemental Analysis

Pulmonary Diseases

Cardiac Diseases

Blood and
Neurological diseases



Linkages between findings from Risk Factors Monitoring & HMS

Ventilation

Oxygen
deficiency

Lighting

Noise

Vibrations

Toxic gas

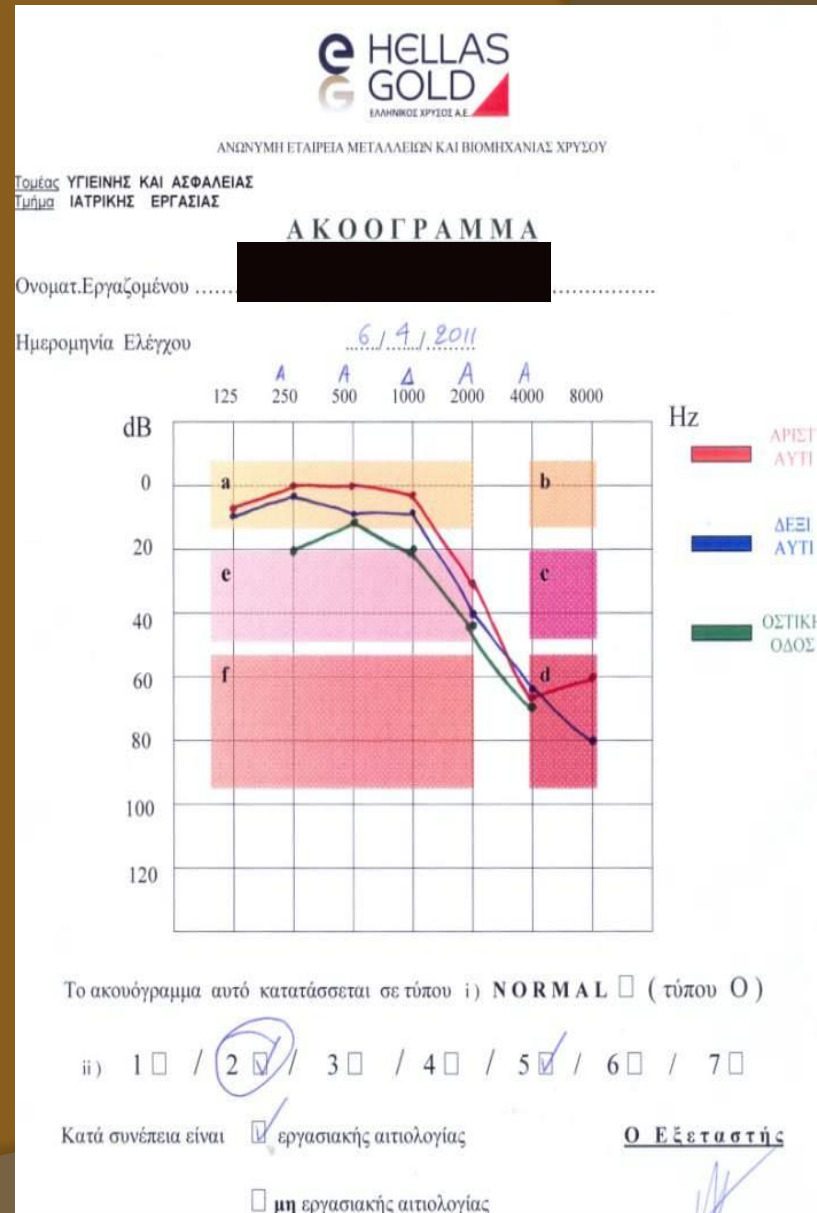
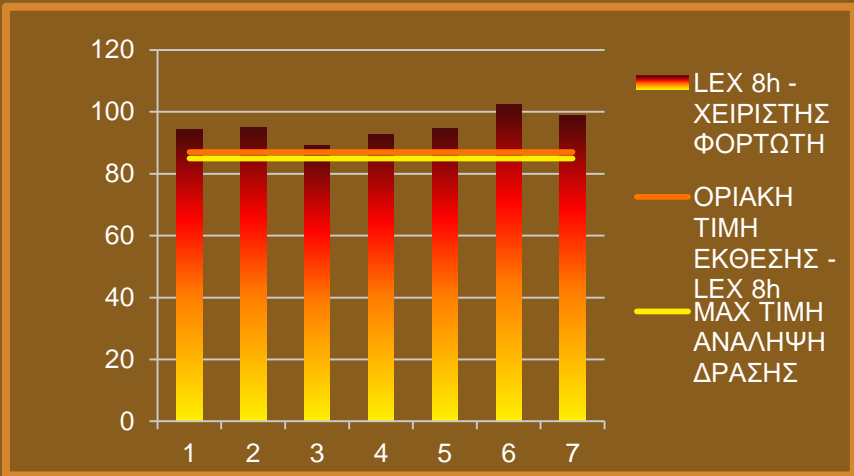
Cardiac Diseases

Sense Organs

musculoskeletal
diseases

Blood and
Neurological diseases

Noise monitoring with LEX 8h in U/G Loader operator





Impact of an unhealthy workplace on employees

Adapted from Health Canada/Dr. Martin Shain

A HEALTHY
WORKPLACE
works for everyone!



A new Occupational issue

Stress at work by protesters





Hippocampus hippocampus
γνωστός σαν αλόγακι της θάλασσας

The best proof
of our
environmental
sensitivity



Thank you