Excellence Award

Corporate Wide:

Vulcan Materials Company

February 22, 2013

SAFE·IN·SOUND
EXCELLENCE IN HEARING LOSS PREVENTION AWARD

Company Profile

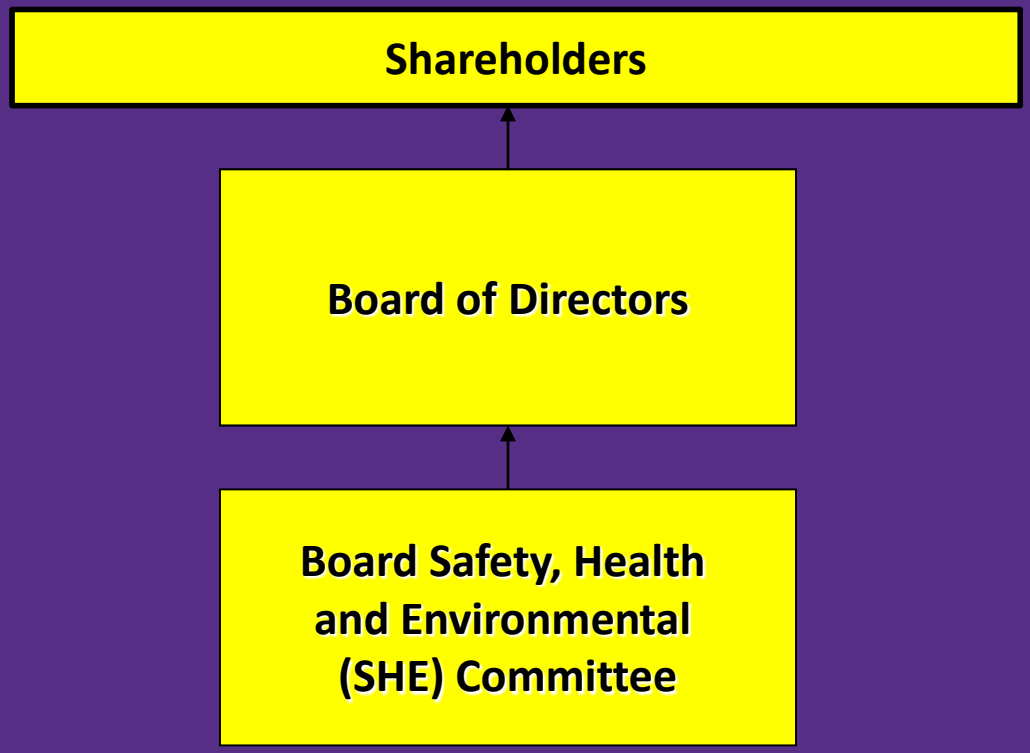
- Vulcan is the nation's largest producer of crushed stone, sand and gravel. We are also are among the top 5 hot/warm asphalt paving mix manufacturers and among the top 10 of ready mix concrete producers in the country.

- We operate 301 mines and 122 ready mix concrete plants, 39 asphalt plants, and 40 other associated construction materials sites in 18 states, Mexico and the Bahamas.

- We currently have 6,830 employees and have 38 full time safety and health professionals and an army of supporters that all have high expectations when it comes to hearing conservation.

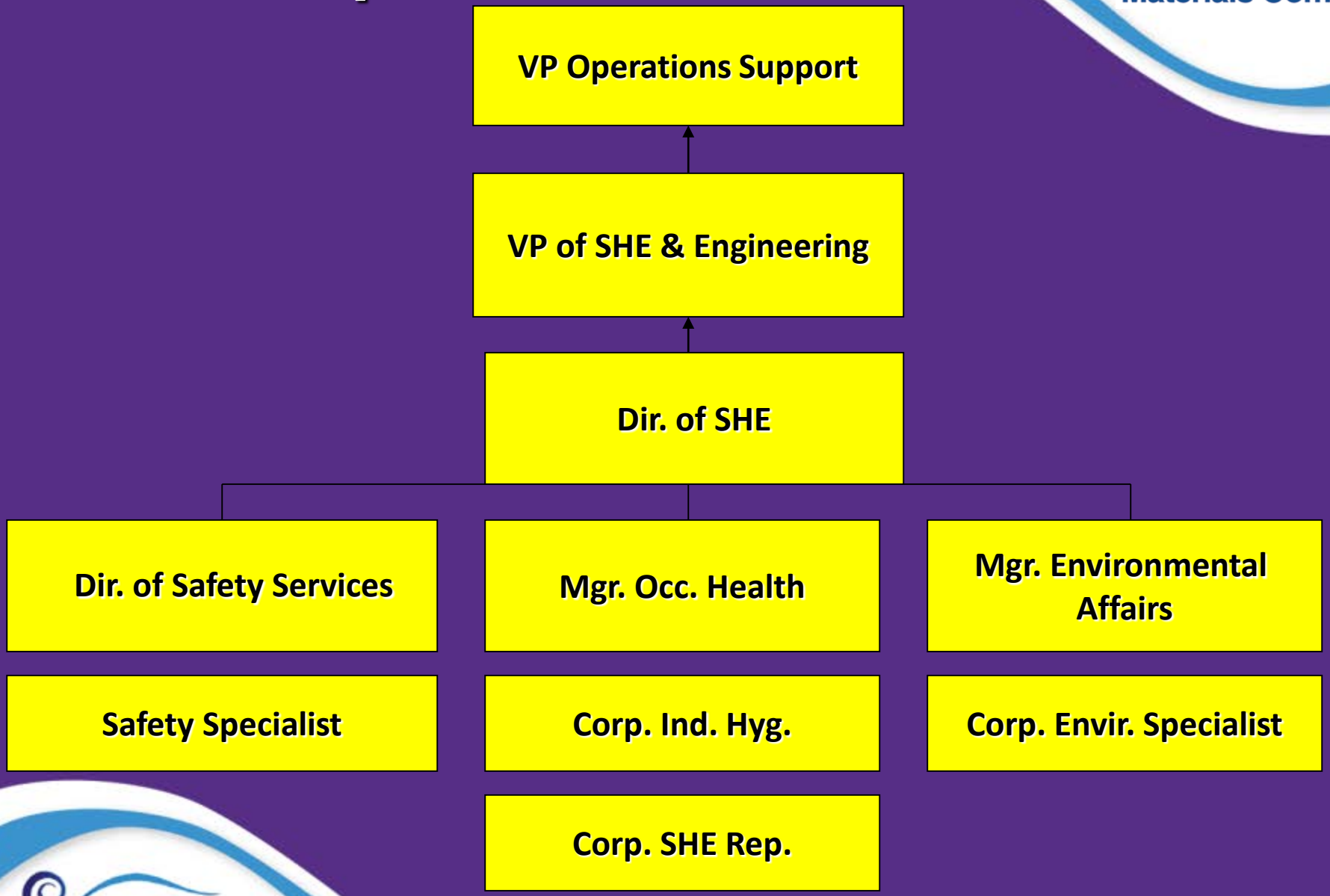
- Vulcan is a public company headquartered in Birmingham, Alabama and has been in business since 1958. Currently in the S&P 500.

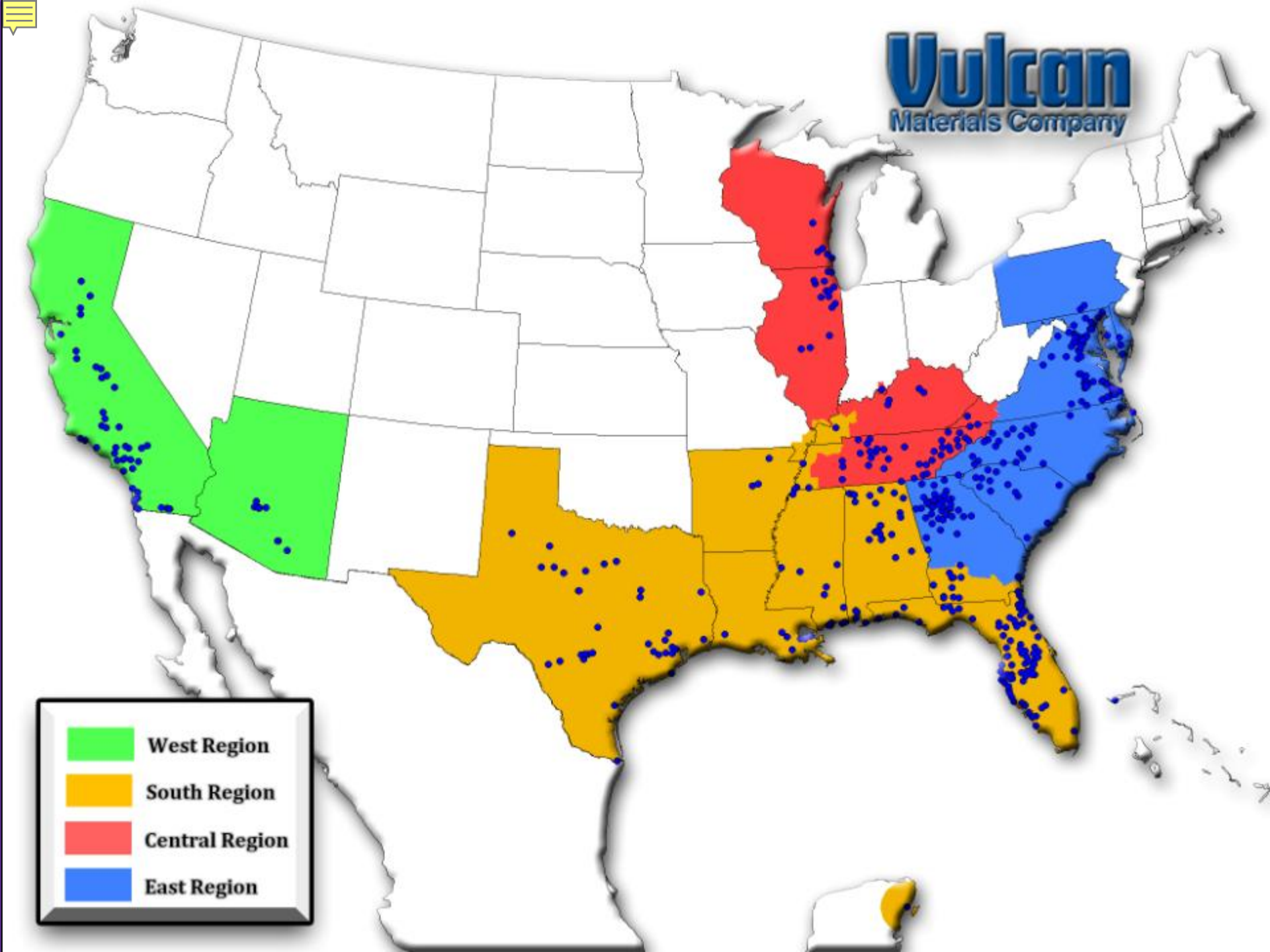
Board of Director Oversight



SHE Management Committee

Corporate SHE Staff




Vulcan
Materials Company
West Region
South Region
Central Region
East Region

Central Region S&H Staff

Terry Browning

Bill Huffman

Amanda Baugh

Mike Junkerman

Rex Lindsey

Steve Perkins

Nanci Saucier

Jason Schlee

East Region S&H Staff

Wayne Hemmerich

Ed Rider

Melanie Wood

Justin Burrage

Dusty Creed

Robert Hale

Gary Hinchy, Jr.

Dan Hopkins

Bryan Moore

Danny Teel

Andrew Wren

South Region S&H Staff

Misty Hillis

Mark Klinepeter

Marty Tubbs

Lynnis Bennett

Dale Hanks

Jesse Hartsfield

Tina Padalino

Ken Stockton

Jeremy Thompson

West Region S&H Staff

Cynthia Kirby

Tommy Ayala

Elysia Claudio

Steve Hopkins

Deb Hutchison

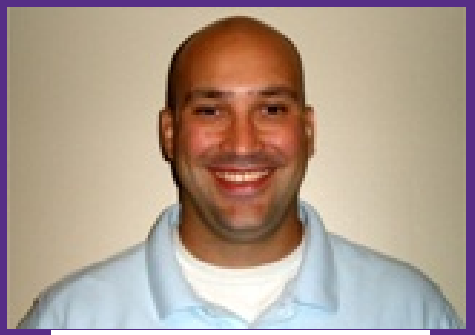
Sylvia Teran

Lee Travis

Biagio Ventura

Corporate S&H Staff

Kelly Bailey



Chad McDougal

John Peacock

Andrew Perkins

Typical Jobs at Vulcan Plants:

Vulcan Materials Company


Loader Operator


Water Truck Driver

Ready Mix Concrete Truck Driver


Quality Control Tech

Typical Jobs at Vulcan Plants

Vulcan Materials Company

Ready Mix Delivery Job

Ready Mix Delivery Job

Hot Mix Asphalt Plant

Typical Mining Sites

Vulcan Materials Company

SAFE·IN·SOUND
Excellence In Hearing Loss Prevention Award

Why is Hearing Conservation Challenging in Our Industry?

- When you are making big rocks into little rocks it is complicated to do so quietly.
- Our workforce for the most part is not in a static factory environment and in some cases our customers control the work environment.
- The industry has diverse activities that warrant the need to use multiple types of controls and mitigation.
- Employees and management must be onboard for hearing conservation initiatives to work.

Overview of Vulcan's Hearing Conservation Program

Roles and Responsibilities

- Corporate Occupational Health Office (COHO)
  - Select exposure monitoring equipment
  - Train and certify industrial hygiene samplers
  - Provide Regions with sampling reports and audiometric summary reports
  - Evaluate and select medical testing contractor
  - Analyze noise and hearing data for trends and develop Company-wide sampling plans
  - Provide technical assistance to operating Regions

Over View of Vulcan's Hearing Conservation Program

Roles and Responsibilities

- Region Safety and Health Staff
  - Pass the Vulcan Industrial Hygiene (IH) sampling course
  - Conduct exposure assessments and communicate results to plants for dissemination to sampled employees
  - Provide training tools to plants
  - Provide assistance to plants in resolving over standard conditions (noise cases)
  - Annually review noise cases closed with personal protective equipment (PPE)
  - Perform hearing protection fit testing
  - Schedule audiometric testing with mobile contractor
  - Review plant sound level meter (SLM) testing results
  - Audit plant hearing conservation program
  - Evaluate testing clinics used in the HCP following COHO guidelines
  - Transmit baseline audiometric testing results for new hires to the Company's medical contractor for periodic testing
  - Provide reviewing audiologist noise exposure information for possible recordable hearing loss cases

Over View of Vulcan's Hearing Conservation Program

Roles and Responsibilities

- Facility management
  - Establish a plant SLM program
  - Facilitate and promote employee participation in audiometric testing and use of hearing protection
  - Resolve over standard conditions in a timely manner
  - Serve as an example for hearing protection use and participation in the HCP
  - Enforce compliance with the Company HCP
  - Provide sampled employees with exposure results
  - Post administrative noise controls and provide to affected employees

- Employees
  - Use exposure controls provided
  - Protect hearing on and off the job
  - Report noise hazards to supervision
  - Reduce exposure to noise 14 hours prior to audiometric testing

Over View of Vulcan's Hearing Conservation Program

Roles and Responsibilities

- Audiometric Testing Provider
  - Conduct testing meeting all OSHA criteria for procedures and equipment
  - Provide CAOHC trained technicians
  - Provide a licensed audiologist to review audiograms
  - Provide the employee with documented test results
  - Provide COHO with audiometric testing results and summaries
  - When possible, audiologist will determine work-relatedness of recordable hearing losses.

Our Goal:

Protect hearing by keeping exposures to less than 85 dBA to the employee's ears by:

- Performing noise exposure assessments and employee notification of results
- Identifying areas and jobs for noise reduction
- Installation of feasible engineering and/or administrative controls. Where not feasible strict enforcement of personal hearing protection is implemented
- High quality audiometric testing and follow-up
- Employee education and motivation
- Assessing exposure and hearing trends of cohorts

Vulcan Materials Company

Industrial Hygiene Noise Sampling Strategies

1980 - 2013

Vulcan's Sampling Strategies In the Beginning….

- 1979 – Examination of available government exposure data
- 1980 – 81 – Industrial Health Project
  - Highest potentially exposed to dust and noise
  - Employee audiograms, chest x-rays and pulmonary function tests
- 1982 – 89 – Targeted Sampling
  - Highest potentially exposed to dust and noise
  - Acquisition sampling (initiated in 1985)
- 1990 – 92 – Case Closing Sampling
- 1993 – Random Sampling

Vulcan's Noise Sampling Strategies

- **1995 –** Formal statistical analysis of exposure data
  - Developed a computerized graphical statistical analysis of the dust and noise data.
  - Utilized Sigma Plot to prioritize which plants and jobs to sample based on randomized dust and noise sampling data collected 1993-1995.

Vulcan's Noise Sampling Strategies

- **1995 – 2005**
  - Prioritizing Sampling Using Sigma Plot Distributions
  - Using 3 Sampling Strategies Concurrently
    - Targeted
    - Case Closing
    - Random

- **2005 – The Question – Sampling Too Much or Too Little?**

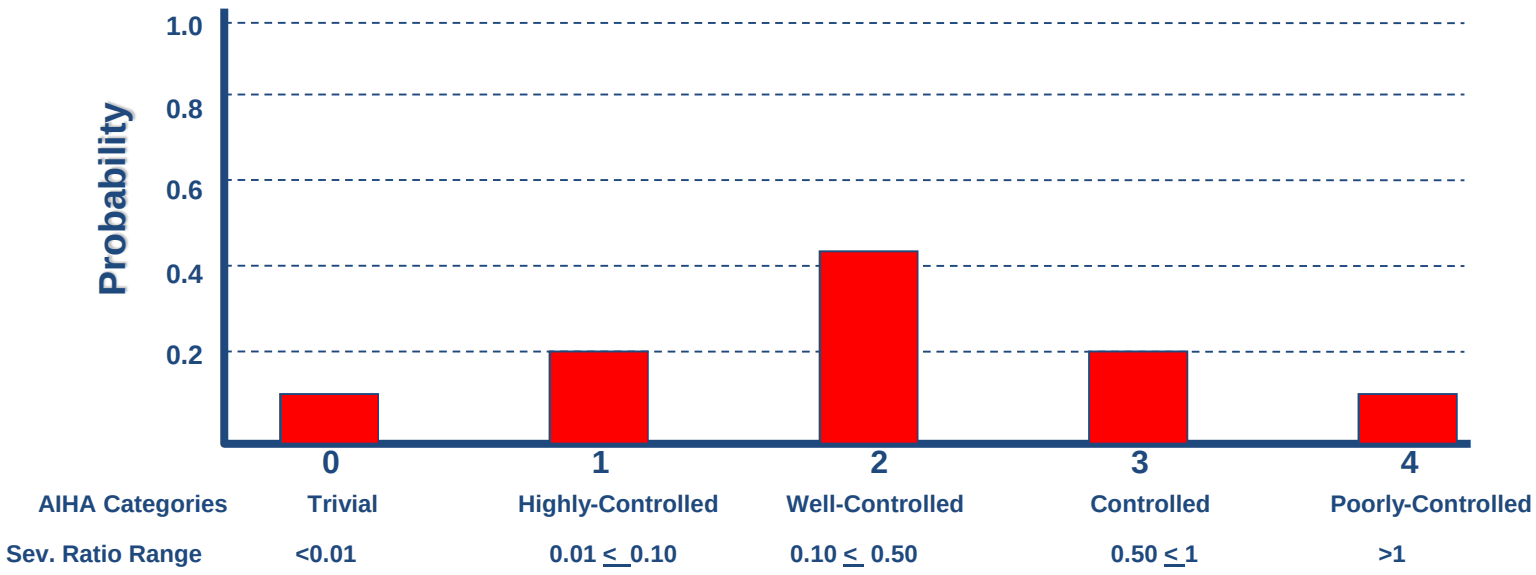
Vulcan's Noise Sampling Strategies

- **2006 – Third Party Review of IH Sampling Program**
  - Analyze and evaluate Vulcan's exposure monitoring program
  - Make recommendations to improve the validity of exposure assessments and optimize sampling efforts so exposure determinations will be made with a high level of confidence with the least number of samples

Vulcan's Implementation Plan 2007-2008

- Similar Exposure Groups (SEGs) were developed and noise and dust exposure data (2000-06) were analyzed.
- Classified the SEGs and plant-job combinations into the American Industrial Hygiene Association (AIHA) exposure categories.
- Developed 2008-2009 sampling plans based on the AIHA categorization of specific plant-job combinations and SEGs.
- Trained health and safety certified samplers on the basics of exposure assessments.
- Incorporated Bayesian Data Analysis for incoming data to assess control effectiveness and to classify plant-job AIHA categories in real time.

AIHA Exposure Categories



Vulcan's Similar Exposure Groups (SEG)

SEG is a group of workers having the same general range of exposure because of the similarity and frequency of the tasks they perform, the materials and processes with which they work and the degree of exposure control in place.

Vulcan's SEGs are based on rock type or product, job title and exposure potential within each Region:

Non-Booth	Drill
Booth	Rail Road
Primary Crusher	Underground
Mobile Equipment	Office
Shop	Baghouse
Lab	Miscellaneous

Industrial hygiene monitoring for noise

- All dosimeters integrate noise levels between 80 – 140 dBA with a 5 dB exchange rate
- Personal sample duration must span at least 2/3 of the work shift unless being collected on specific tasks
- Noise dose is extrapolated up to cover unsampled work shift time
- Exposure limits are adjusted downward for shifts longer than 8 hours
- All personal dosimeters require three dose checks during the sampling day to better understand contributions of noise.
- Hearing protection is required when noise levels reach 85 dBA or higher
- Noise cases are opened when the time-weighted average exposure dose is 76% or higher

Industrial hygiene monitoring for noise

- Mobile equipment cabs are annually tested with a SLM at high idle and those 85 dBA or higher require posting for hearing protection to operate.

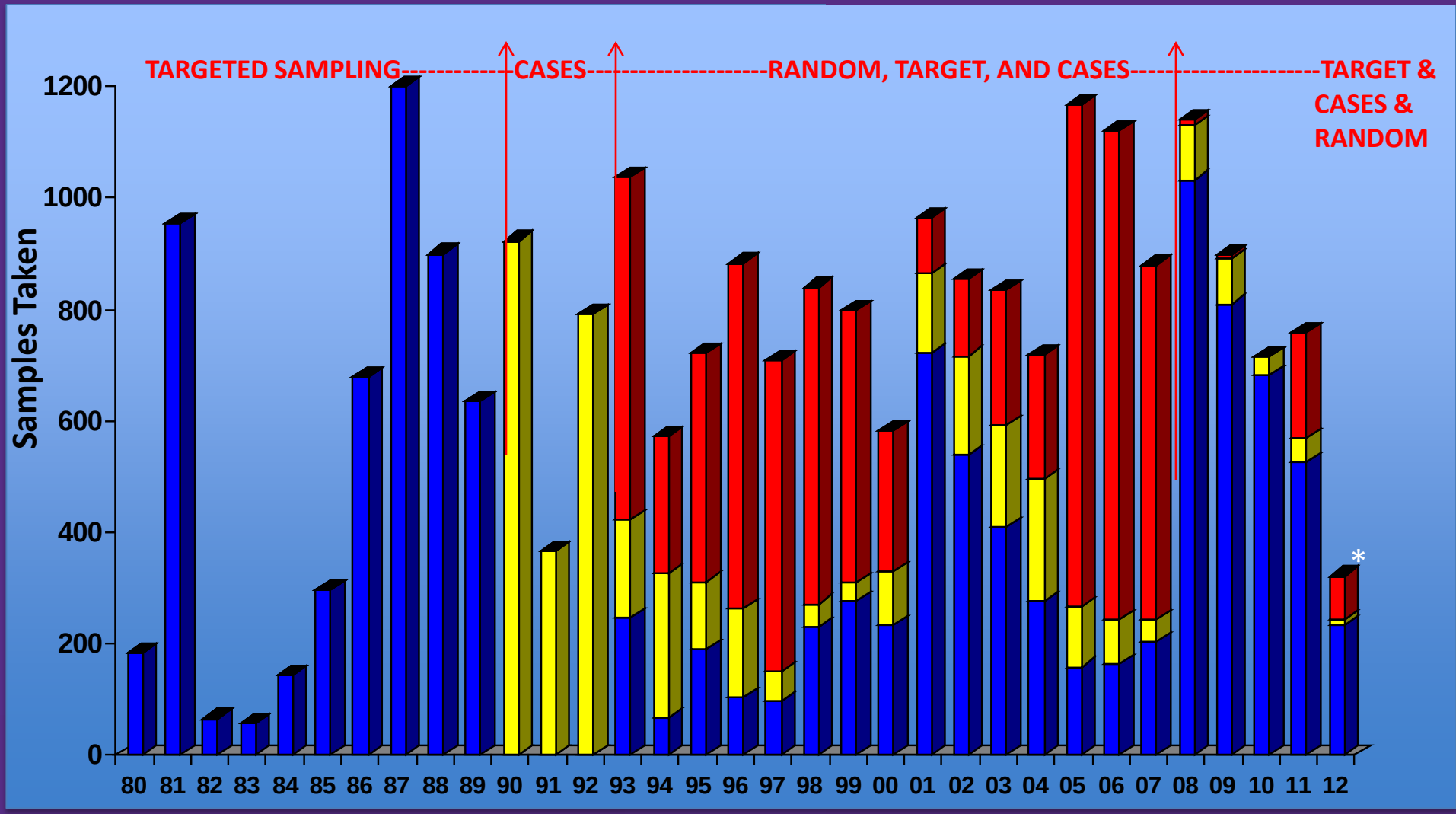
- Plants must be surveyed with the plant's SLM every other year to determine areas that are 85 or higher so that they can be posted for hearing protection required.

- Noise cases closed with PPE are reviewed annually and have the affected employees fit tested for ear plug use and their Personal Attenuation Rating (PAR) determined.

Vulcan's Industrial Hygiene Exposure Results

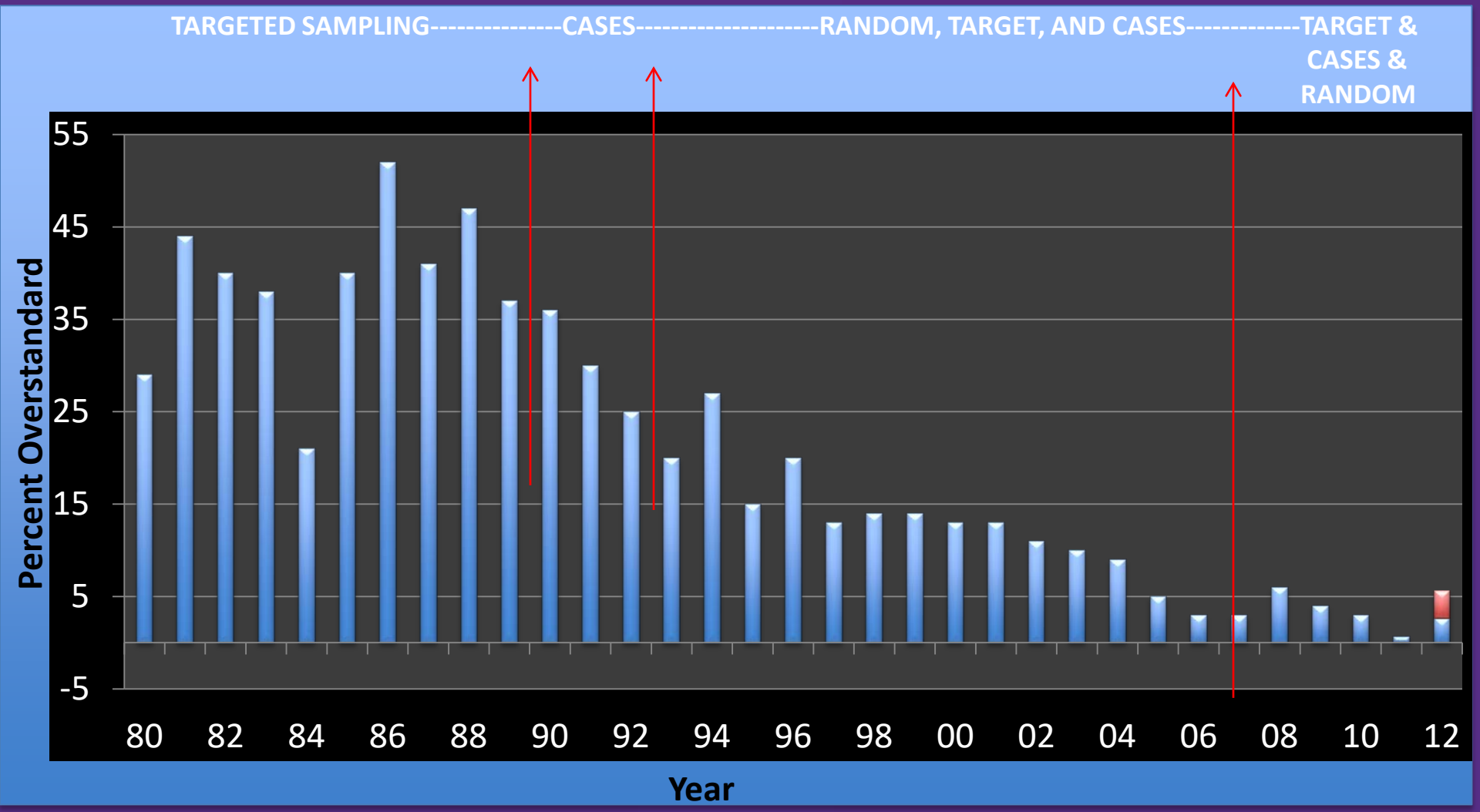
1980 - 2012

Company Noise Samples
1980 - 2012

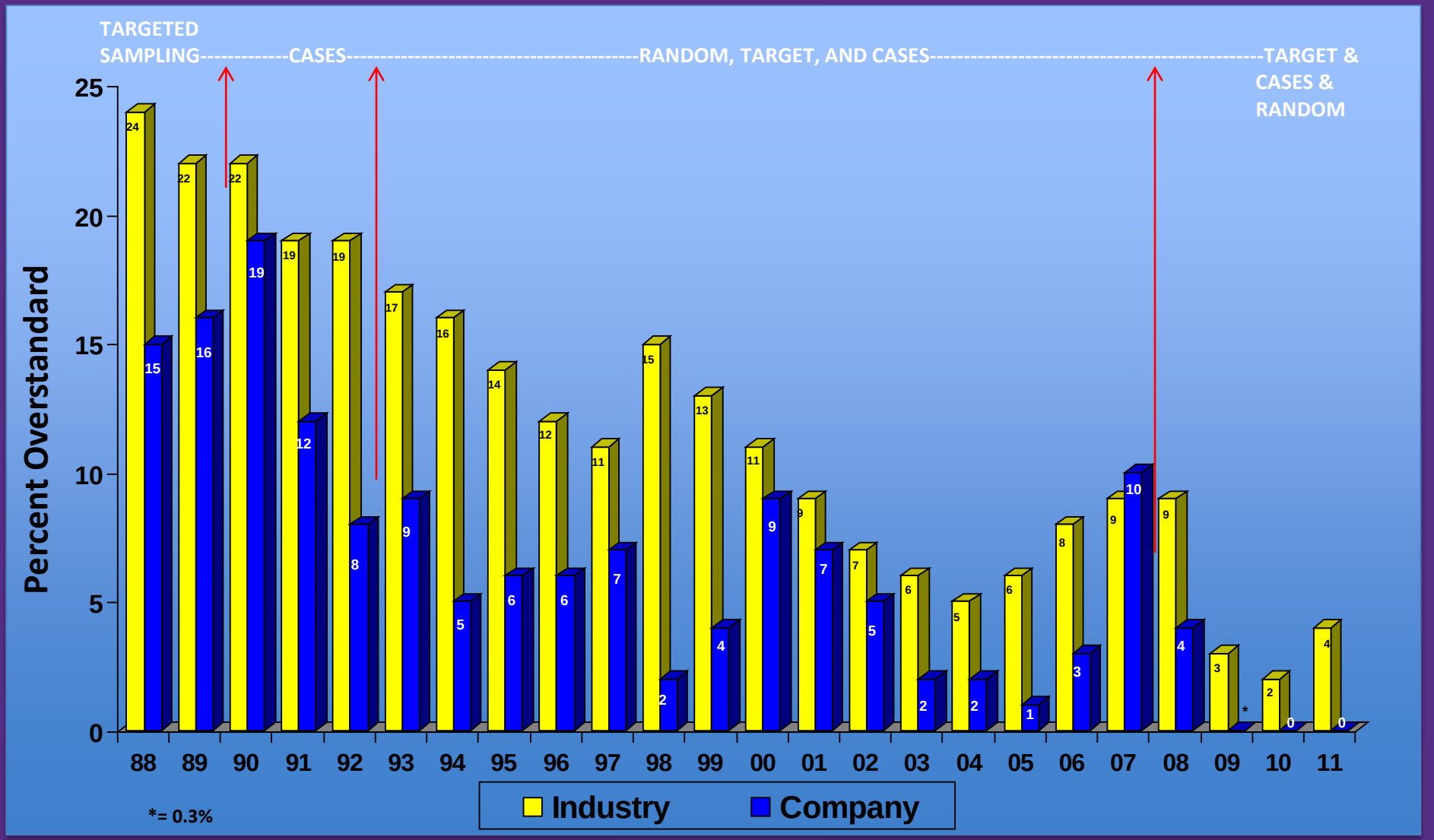


*2012 sampling level reduced due to economic down turn and company restructuring

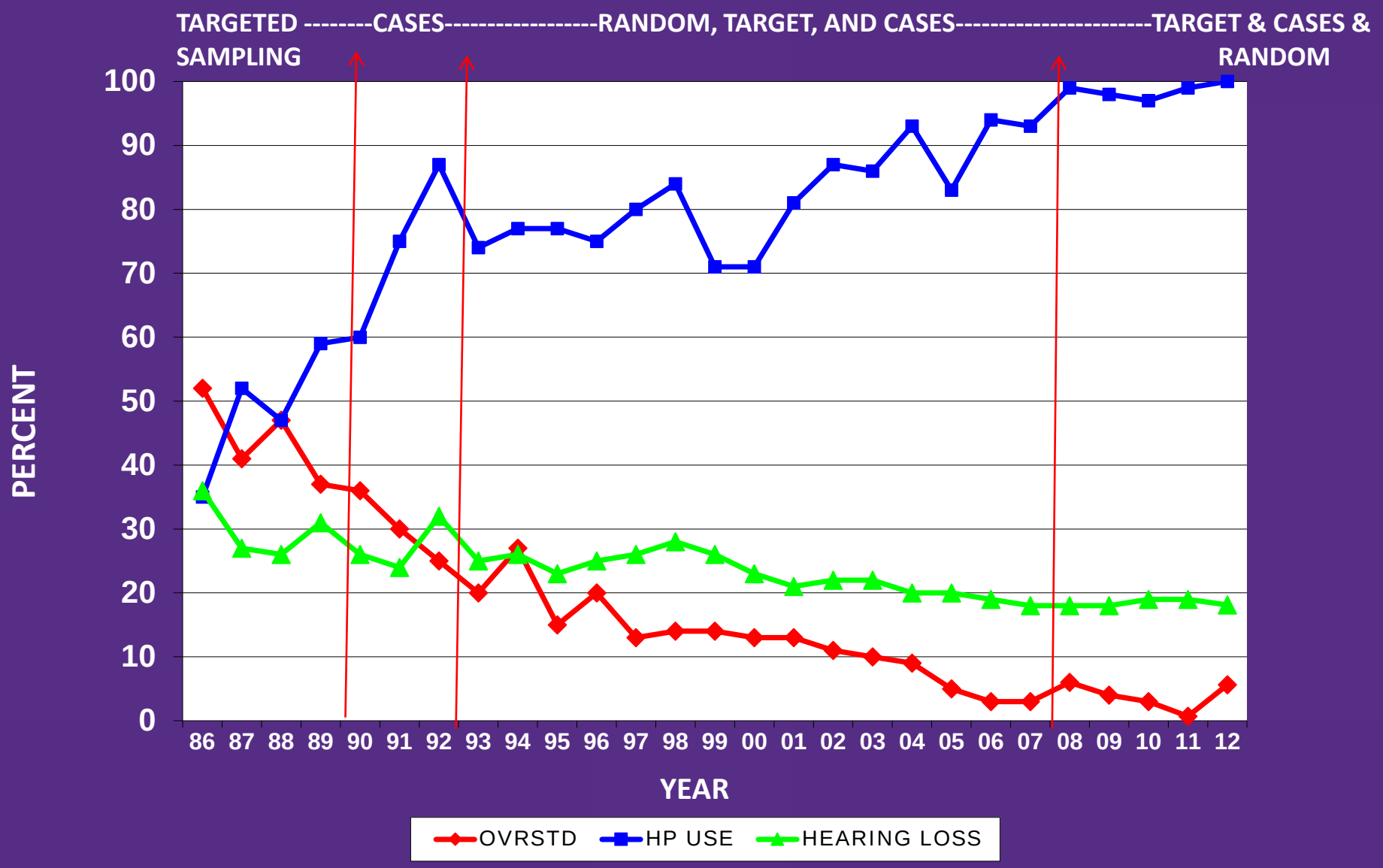
Company Noise Exposures
1980-2012



MSHA Noise Overstandard Samples Aggregates Industry vs. Company

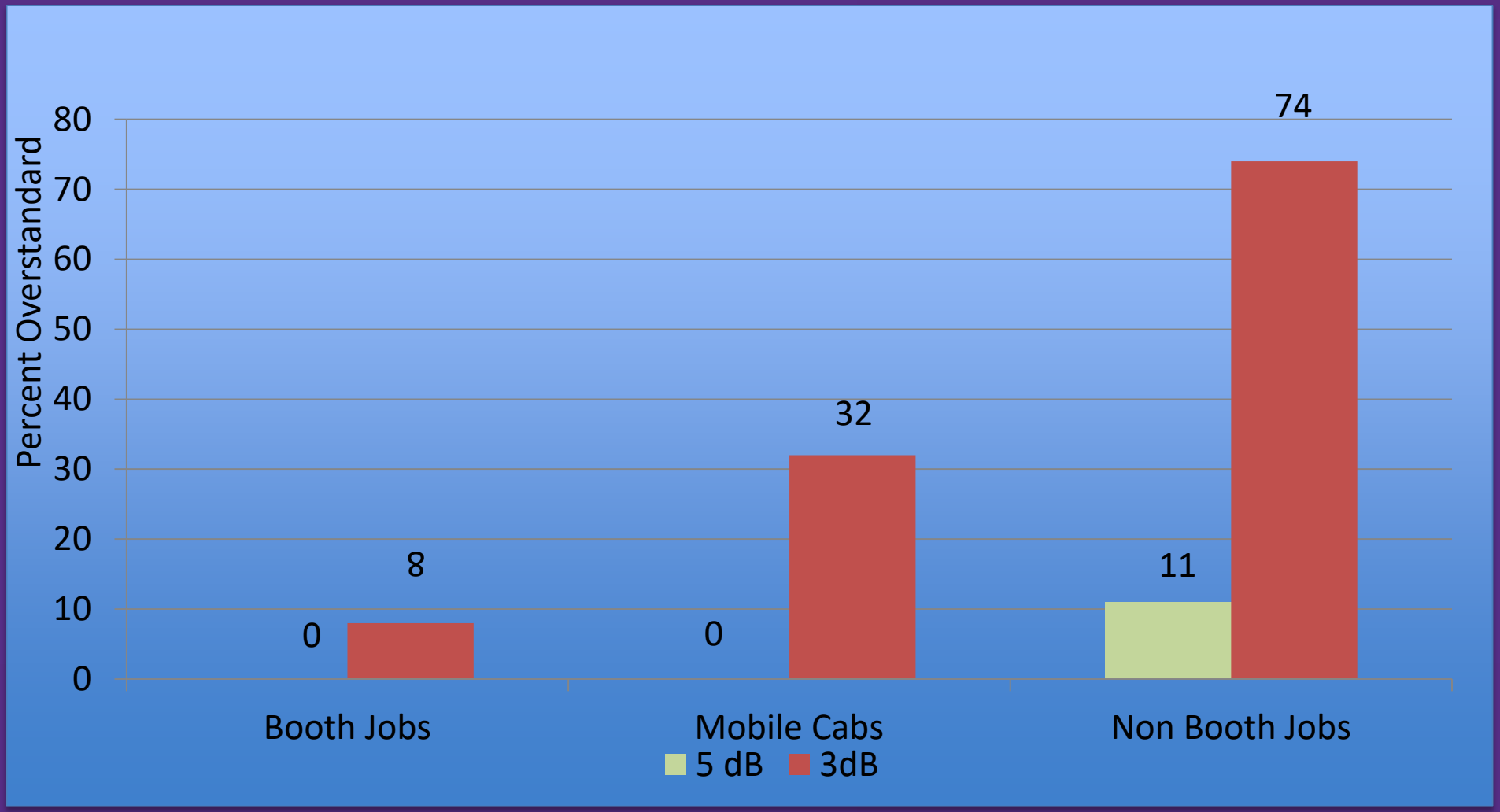


Overstandard: Noise Exposures, Hearing Protection Use, and Hearing Loss



Examining 85/3 Exposures

2010-2012 Data

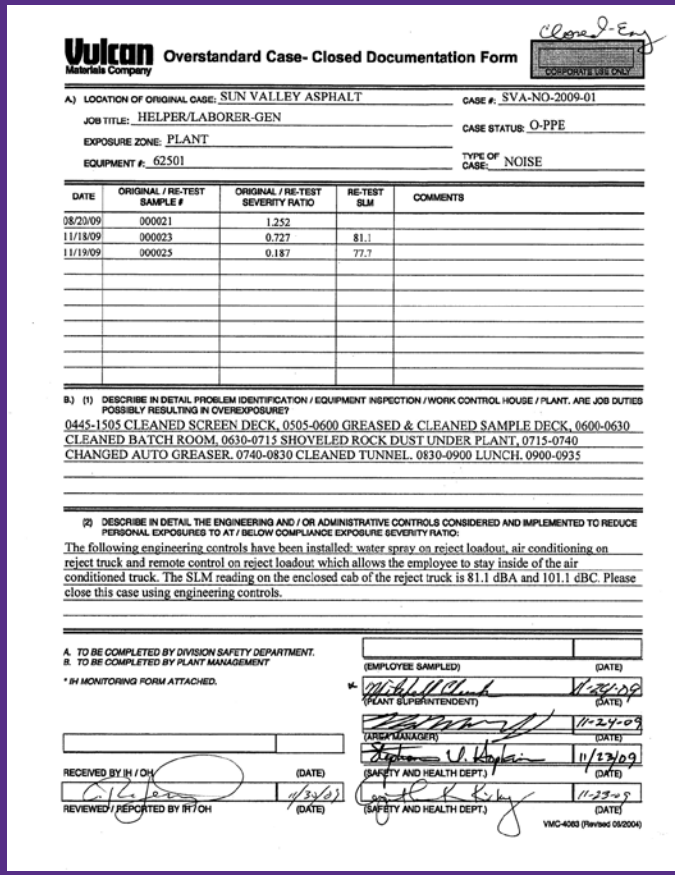


Case Opening and Closing Process

Noise Controls

Case Opening and Closing Process

- Case Opening
- Case Evaluation and Tracking
- Case Closing
- Closed-PPE Case Review



Vulcan Materials Company — Overstandard Case- Closed Documentation Form

Closed-Exp

CORPORATE USE ONLY

A) LOCATION OF ORIGINAL CASE: SUN VALLEY ASPHALT — CASE #: SVA-NO-2009-01

JOB TITLE: HELPER/LABORER-GEN — CASE STATUS: O-PPE

EXPOSURE ZONE: PLANT

EQUIPMENT #: 62501 — TYPE OF CASE: NOISE

DATE	ORIGINAL / RE-TEST SAMPLE #	ORIGINAL / RE-TEST SEVERITY RATIO	RE-TEST SLM	COMMENTS
08/20/09	000021	1.252		
11/18/09	000023	0.727	81.1	
11/19/09	000025	0.187	77.7	

B.) (1) DESCRIBE IN DETAIL PROBLEM IDENTIFICATION / EQUIPMENT INSPECTION / WORK CONTROL HOUSE / PLANT. ARE JOB DUTIES POSSIBLY RESULTING IN OVEREXPOSURE?

0445-1505 CLEANED SCREEN DECK, 0505-0600 GREASED & CLEANED SAMPLE DECK, 0600-0630 CLEANED BATCH ROOM, 0630-0715 SHOVELED ROCK DUST UNDER PLANT, 0715-0740 CHANGED AUTO GREASER. 0740-0830 CLEANED TUNNEL. 0830-0900 LUNCH. 0900-0935

(2) DESCRIBE IN DETAIL THE ENGINEERING AND / OR ADMINISTRATIVE CONTROLS CONSIDERED AND IMPLEMENTED TO REDUCE PERSONAL EXPOSURES TO AT / BELOW COMPLIANCE EXPOSURE SEVERITY RATIO:

The following engineering controls have been installed: water spray on reject loadout, air conditioning on reject truck and remote control on reject loadout which allows the employee to stay inside of the air conditioned truck. The SLM reading on the enclosed cab of the reject truck is 81.1 dBA and 101.1 dBC. Please close this case using engineering controls.

A. TO BE COMPLETED BY DIVISION SAFETY DEPARTMENT.
B. TO BE COMPLETED BY PLANT MANAGEMENT

* IH MONITORING FORM ATTACHED.

(EMPLOYEE SAMPLED) (DATE)

(PLANT SUPERINTENDENT) 11-24-09 (DATE)

(AREA MANAGER) 11-24-09 (DATE)

RECEIVED BY IH / OH (DATE) 11/24/09

(SAFETY AND HEALTH DEPT.) 11/23/09 (DATE)

REVIEWED / REPORTED BY IH / OH (DATE) 11/24/09

(SAFETY AND HEALTH DEPT.) 11-23-09 (DATE)

VMC-4083 (Revised 05/2004)

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Excellence Award |

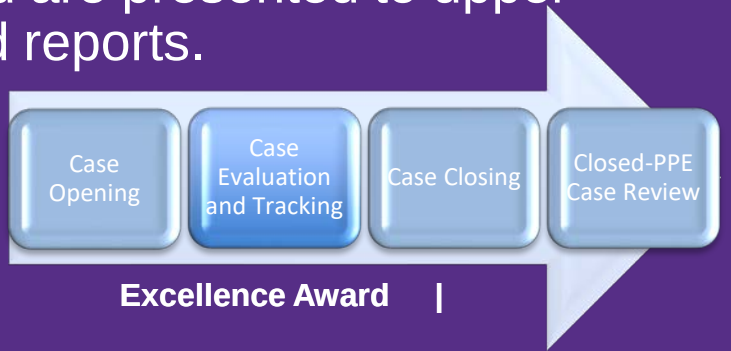
Case Opening

- Opening a Case
  - TWA exposure on a representative noise sample equals or exceeds 76% of the allowable exposure limit.
    - Employee(s) in the job/task are required to wear hearing protection to reduce the exposure to less than 85 dB while controls are being installed. (Open-PPE Case)
  - Exposure cases are identified by Corporate Occupational Health Office.
  - Case closing form is generated and transmitted to the appropriate sampler.

Case Evaluation and Tracking

- Case Evaluation
  - Likely conditions that created the elevated exposure are identified by the sampler and recorded on the Case Closing Form.
  - The facility personnel, with support from Safety and Health, determines the feasibility of engineering controls.
  - Feasible engineering and/or administrative controls are implemented.

- Case Tracking
  - Cases are tracked via internal IHIMS and a report can be generated showing all open cases and duration of each case.
  - Percentage of cases opened and closed are presented to upper management via quarterly and year-end reports.



We Always try to Engineer The Problem out First

- Examples of engineering controls
  - Insulation
  - Rubber lined chutes
  - Door and window seals
  - Floor mats
  - Video cameras to allow remote operation
  - Air conditioners
  - Sound proof booths
  - Double pane windows
  - Noise barriers
  - Distance (example-sharpening drill bits using a long air hose)

Examples of engineering controls

Examples of engineering controls

Examples of engineering controls

Examples of engineering controls

- Enclosed cabs/booths
- Climate control in cabs/booths
- Equipment manufactured with noise controls

Examples of Engineering Controls

Examples of Engineering Controls

Case Closing

- After feasible engineering and /or administrative controls are implemented and two (2) consecutive samples (collected on different days or shifts) show the exposure to be below 76% of the allowable limit, the Open-PPE case can be “Closed” with proper control documentation and approval by the Corporate Occupational Health Office.

Case Closing (continued)

- Cases relying on administrative procedures/work practices or personal protective equipment require the signatures of the affected employee(s), plant and area operations management, regional safety and health personnel, and corporate IH approval.
- Administrative controls for noise exposures require that the controls be posted on the employee bulletin board and be provided in writing to affected employees.
- Where engineering and administrative controls are found to be infeasible, the case can be closed by PPE (Closed-PPE Case).

Closed-PPE Case Review

- We are in the process of quantitatively fit testing (Integrafit) all jobs/tasks that are Closed-PPE.
- All Closed-PPE cases are reviewed annually for engineering controls that may have become feasible and to verify employees are wearing appropriate PPE.
- A status report of Closed-PPE cases is sent by the Regional Safety and Health Department to the Corporate Occupational Health Office at the end of each year.

Case Closing Example – RMC Truck

- The Ready-mix trucks are rear dispensing units which are designed with concrete flow controls on the rear platform of the truck and inside the cab.

- Operators would operate flow controls on rear of truck to prevent over-pouring of material into concrete forms on the job-site and to ensure quality of material.

Case Closing Example – RMC Truck

- The cab flow control could not be used due to the need for the operator to watch the concrete pour.

- Operating the controls from the rear of the truck caused the operator to be over 76% of the allowable limit.

Case Closing Example – RMC Truck

- To reduce the noise exposure to the operator, the following controls were implemented:
  - A removable camera was installed on the concrete chute; and
  - A video display was mounted inside the cab of the truck

- The system allow the operator to utilize the in-cab controls and see the pouring of material from the chute, thus increasing distance from exposure and reducing the operator's exposure to noise.

Vulcan
Materials Company

Case Closing Example – RMC Truck

Results of control implementation

Ready-Mix Concrete Truck #	Original Sample Severity Ratio	Re-Test Severity Ratio	Reduction in Severity Ratio
54059	0.979	0.464	53%
54962	1.007	0.472	53%
54755	0.912	0.591	35%
54954	0.998	0.747	25%

Also decreased chance of injury at customer jobsites

Audiometric Monitoring Background

- All production employees are required to be tested
- Primarily utilize mobile van testing
- Same provider for over 27 years
- Very high voluntary participation
- Written policies for
  - Legal requirements
  - Guidance for implementation
  - Audit
- Audiograms since 1976
- Supervised by Audiologist

Audiometric Testing Requirements

OSHA criteria are followed for audiometric tests

Audiometers and procedures must meet:

- ANSI S3.6 Specifications for Audiometers
- OSHA requirements
  - Audiometric testing booths to control ambient noise
  - Equipment calibration

Audiometric technicians must:

- be certified by the Council for Accreditation in Occupational Hearing Conservation (CAOHC)

Mobile Van Testing

- Regions schedule van trip
- Plants are notified before visit
- Employees notified of audiogram date
- Paperwork is completed before van arrives
- Audiograms are taken
- Results provided in writing at the time of test
- Regulatory compliant re-testing

Post Annual Testing
Abnormal Test Results Follow Up

- Company guidance document
- Mobile van provider audiologist evaluation
- Occupational Audiologist/ENT
- Reporting procedures specified

Our Keys to High Employee Participation

- No charge to employees
- Voluntary but well supported
- Promote the program as a benefit
- Qualified & experienced medical testing contractor
- Promoted as a non-invasive test
- We make it easy to participate

Company: **VUMAME - VULCAN MATERIALS CO MIDEA** Plant: [redacted]

Employee Information

Name: [redacted] ID #: [redacted] Empl No.: [redacted] Shift:
Area: - Birth Date: [redacted] Hire Date: **08/10/1999** Sex: **M**
Dept.: - Job: **MECHANIC - MECHANIC** TWA: **UNK dBA**

Audio Testing Results

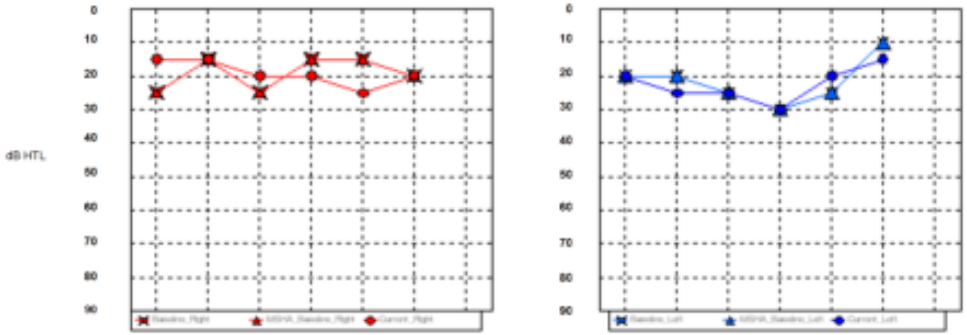
Test Date: **04/29/2010** Time: **07:09** Type: **Annual**

Right Ear	.5k	1k	2k	3k	4k	6k	8k
STS Ref. Baseline: 04/06/01	25	15	25	15	15	20	UK
Current Test: 04/29/10	15	15	20	20	25	20	UK
Change:	10	0	5	-5	-10	0	
Age Adj:	7		STS Adj Change: -1.0				

Left Ear	.5k	1k	2k	3k	4k	6k	8k
04/06/01	20	20	25	30	25	10	UK
04/29/10	20	25	25	30	20	15	UK
Change:	0	-5	0	0	5	-5	
Age Adj:	7		STS Adj Change: 4.0				

	.5k	1k	2k	3k	4k	6k	8k
MSHA Ref. Baseline: 04/06/01							UK
Current Test: 04/29/10	15	15	20	20	25	20	UK
Change:	10	0	5	-5	-10	0	0
Age Adj:	7		MSHA Adj Change: -1.0				

	.5k	1k	2k	3k	4k	6k	8k
04/06/01							UK
04/29/10	20	25	25	30	20	15	UK
Change:	0	-5	0	0	5	-5	0
Age Adj:	7		MSHA Adj Change: 4.0				



Audiometer: **TREMETRICS - RA650** Serial No.: **1105** Exhaustive Calibration: **11/05/2009** Tester: **DONNA OGLE**

Current History / Comments

1. Hearing protection used?
2. Exposed to noise in the last 14 hours?
3. Recent cold or sinus? **Y**
4. Seen a physician recently for ears or hearing? **N**

Audiological Summary

			Right Ear	Left Ear
Standard Threshold Shift for	**NC**	**10 dB avg change at 2k, 3k, 4k Hz** **plus aging**	**No**	**No**
MSHA Possible Recordable Shift - 25 dB avg change at 2k, 3k, 4k Hz plus aging			**No**	**No**
Early Warning Shift (STS without aging)			**No**	**No**
Speech Range Hearing Loss - (500, 1k, 2k, 3k Hz) : voices			**Normal**	**Normal**
High Pitch Hearing Loss - (3k, 4k, 6k Hz): birds, violins			**Normal**	**Normal**

Employee Verification

I have been trained in the effects of noise on hearing. I have been trained on the purpose and value of wearing hearing protectors. I know the advantages and disadvantages of the hearing protectors to be offered. I know the various types of hearing protectors offered by the mine operator and the care, fitting, and use of each type. I understand the general requirements of the Occupational Noise Exposure rules for the facility where I work. I understand the mine operator's and miner's respective tasks in maintaining mine noise controls. I know the purpose and value of audiometric testing and a summary of the procedures.

The information provided by me on this form is true and complete to be best of my knowledge and may be reviewed by responsible persons appointed by the company for purposes deemed necessary to protect my health.

Industrial hearing tests are designed solely for screening and not intended to diagnose specific disease processes.
If you are or have experienced the presence of ear pain, drainage, dizziness, head noises as ringing, roaring or heart beat, sudden or fluctuating hearing loss and/or ear fullness or discomfort within the past 12 months you will need to see a physician for diagnosis and/or treatment.

DONNA OGLE

Date | Employee Signature | Tester or Witness

Vulcan Materials Company

Individual Audiogram Report:

- Shows baseline and current audiogram
- Graphic depiction of hearing
- Results of hearing test
- This report is given to the employee at the time of the audiogram

Individual Audiogram Summary Report:

- Shows all audiograms
- Answers to screening questions and notes from audiologist if any exist

Audio Listing of Tests

Company: **VUMAME - VULCAN MATERIALS CO MID** Plant: [redacted]

Employee Information

Name: [redacted] ID #: [redacted] Empl No.: [redacted] Shift:
Area: Birth Date: **01/21/1980** Hire Date: [redacted] Sex: **M**
Dept.: - TWA: **UNK** **dBA**
Job: **MECHANIC - MECHANIC**

Audio Testing Results

			Right Ear									Left Ear							Quest	
Test Date	Type	Change	1KR	5K	1K	2K	3K	4K	6K	8K	Change	.5K	1K	2K	3K	4K	6K	8K	1 2 3 4	TWA
04/29/2010	A		20	15	15	20	20	25	20	UK		20	25	25	30	20	15	UK	Y N	0
04/14/2009	A		10	10	10	15	20	25	40	UK		15	20	25	30	25	10	UK	Y N N N	0
04/30/2008	A		15	15	10	15	20	30	10	UK		25	20	20	30	25	10	UK	N N N N	0
04/26/2007	A		10	15	10	15	20	20	10	UK		15	20	25	25	20	5	UK		0
07/20/2006	A		15	20	15	15	30	30	10	UK		15	20	25	30	30	5	UK		0
05/12/2005	A		15	15	15	25	25	25	10	UK		15	25	25	30	25	5	UK		0
05/14/2004	A		15	20	15	15	25	25	10	UK		20	20	25	30	30	5	UK		0
05/01/2003	A		15	20	15	15	20	25	20	UK		15	20	25	25	25	0	UK		0
04/29/2002	A		15	15	15	15	20	20	20	UK		20	20	30	30	25	20	UK		0
04/06/2001	A		**15**	**25**	**15**	**25**	**15**	**15**	**20**	UK		**20**	**20**	**25**	**30**	**25**	**10**	UK		0
03/20/2000	B		**15**	**20**	**15**	**20**	**15**	**20**	**20**	UK		**15**	**20**	**25**	**25**	**25**	**10**	UK		0

Audiological History

HAVE YOU WORKED IN NOISY JOBS PREVIOUSLY	NO
HAVE YOU HAD ANY MILITARY NOISE EXPOSURE	NO
DO YOU WEAR HEARING PROTECTION ON YOUR CURRENT JOB	YES
WHAT TYPE OF NOISE PROTECTIONS DO YOU USE	PLUGS AND MUFFS
HAVE YOU HAD ANY NOISE EXPOSURE TO: FIRE ARMS, LOUD MUSIC,MOTORCYCLES, POWER	YES
JOB SHIFT	MECHANIC/DAYS
AVERAGE NOISE EXPOSURE	< 85
HOW DO YOU RATE YOUR HEARING	GOOD
HAVE YOU HAD YOUR HEARING TESTED BEFORE	YES
DO YOU HAVE A BLOOD RELATIVE UNDER 50 WITH A HEARING LOSS	NO
DO YOU HAVE DIFFICULTY HEARING CONVERSATIONS	NO
DO YOU HEAR BETTER IN ONE EAR THAN THE OTHER	NO
HAVE YOU EVER HAD PROBLEMS WITH YOUR BALANCE	NO
HAVE YOU EXPERIENCED UNUSUAL OR SEVERE DIZZINESS	NO
HAVE YOU EVER HAHAD A SEVERE HEAD INJURY	NO
HAVE YOU EVER HAD EAR SURGERY PERFORMED OR RECOMMDENDED	NO
HAVE YOU EVER BEEN TO AN EAR SPECIALIST	NO
HAVE YOU EVER HAD RINGING IN YOUR EARS	YES
HAVE YOU EVER HAD DRAINAGE FROM THE EARS OR EAR INFECTIONS	NO
DO YOU HAVE FREQUENT HEADACHES	NO
HAVE YOU EVER HAD A PERFORATED EAR DRUM	NO
DO HAVE EXCESSIVE WAX BUILD UP IN YOUR EARS	NO
HAVE YOU HAD A RECENT COLD	YES
DO YOU TAKE ASPIRIN FREQUENTLY	NO
WHAT MEDICATION DO YOU TAKE REGULARLY	VITAMINS
TIME SINCE MOST RECENT NOISE EXPOSURE: OVER OR LESS THAN 14 HOURS	MORE THAN 14 HRS
DURATION OF MOST RECENT EXPOSURE TO NOISE	
DID YOU WEAR HEARING PROTECTION PRIOR TO BEING TESTED: YES NO	NO

SAFE·IN·SOUND
Excellence In Hearing Loss Prevention Award

Statistical Summary of Hearing Test Results

Company: [redacted]

Test Date From: *04/06/2010* To: *05/03/2010*

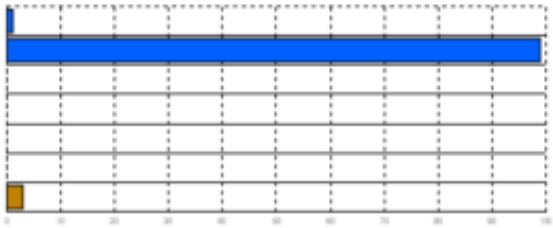
Plant: *All Plants*

Dept.: *All Departments*

Hearing Test Type:

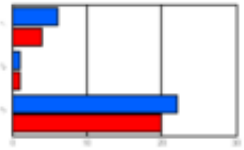
Test Type	Tests Qty.	Employees by last test Qty.	%
Baseline	6	6	0.71
Annual	845	821	96.47
New Hire	0	0	0.00
Rehire	0	0	0.00
Termination	0	0	0.00
Other	0	0	0.00
Retest	24	24	2.82
Totals:	875	851	

Test Type Percent By Employee



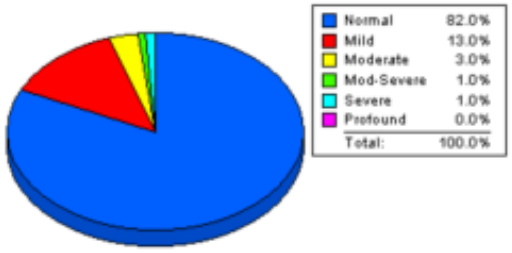
Hearing Changes - By Tests:

		Initial Qty.	Initial %	After Retest Qty.	After Retest %
Standard Threshold Shift For VA					
10 dB avg change at 2k,3k, 4k	*plus aging*	51	6.04	31	3.67
Possible Recordable Shift:		11	1.30	9	1.07
Early Warning Shift:					
10 dB avg change at 2k,3k, 4k Hz no aging		186	22.01	170	20.12

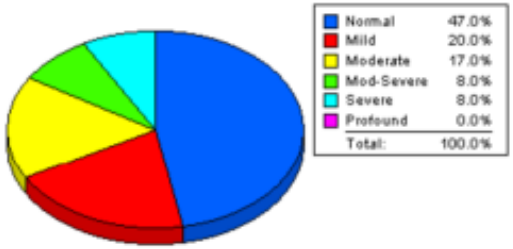


Hearing Status - Poorer Ear By Employee:

Speech Range (500, 1k 2k, 3k)



High Pitch Sounds (3k, 4k 6k)



Statistical Summary Graphic Report:

- Shows number of tests, type of tests, number of employees
- STS, Recordable/Reportable, Early Warning Shift
- Hearing type pie chart
- ISO 1964 Audiometer Standard Classifications
- High Frequency Loss Criteria: average in 3k, 4k, & 6k: Normal <27, Mild >27 & <41, Moderate >41 & <71, Severe >71 & <90, Profound >90 dBHL
- Speech Range Loss Criteria: average in 500, 1k, 2k, & 3K: Normal <27, Mild >27 & <36, Moderate >36 & <71, Severe >71 & <90, Profound >90 dBHL

Training


New Employee Training
Workplace Signage
Audiometric Testing
Toolbox Talks
Monitoring
Feedback
Annual Refresher Training
Hearing Conservation Interventions

New Employee Orientation

- All new employees receive classroom and on the job training.
- Hearing conservation is one element within the training plan for new employees.

Workplace Signage

- Signage is posted in all areas, including mobile equipment, where noise levels are at or above 85 dBA.

- Signage is routinely audited through the sound level meter program.

Audiometric testing/training

- Annual audiometric testing is conducted at Vulcan facilities.
- Employees view the audiometric testing process as an employee benefit.
- Employees are trained to avoid noise exposure for 14 hours before audiogram
- Each Region handles audiometric testing differently, but a majority do the following:
  - On the day of audiometric testing, a safety meeting is held to discuss Vulcan's hearing conservation program.
  - During the meeting, employees are refreshed on how to interpret their audiograms.

Toolbox Talks

Occupational Health Toolbox Talks
One Page Summary

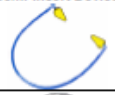
Hearing Protection

Hearing Protectors

- Hearing protectors can be very effective **but only if they fit properly and are worn correctly.**
- The more carefully you select and wear hearing protectors, the higher your protection will be.

NOTE: Although labeled Noise Reduction Ratings (NRRs) typically range from 20-35 decibels, in practice the protection that normally can be achieved is about 10-20 decibels.

Types of Hearing Protectors

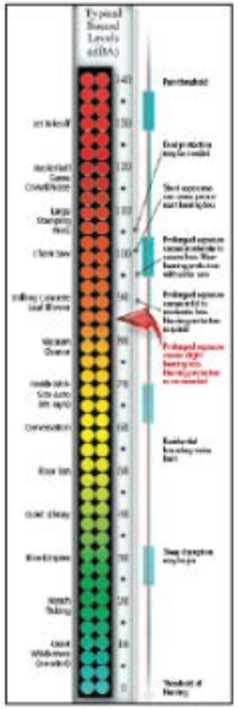
 **Formable Plugs**	• Slowly roll and compress foam plugs into a very thin cylinder. • Reach around the head to pull the ear outward and upward during insertion. • While compressed, insert plug well into the ear canal.
 **Premolded Plugs**	• Reach around the back of your head and pull outward and upward on the ear • Insert the plug until you feel it sealing.
Ear Plug Fitting Tip	• **Press firmly cupped hands over your ears while listening to a stead noise.** • **With properly fitted plugs the noise levels should be about the same whether or not the ears are covered.**
Semi-Insert Device 	• Hold the large ends of the pods and swivel to direct the tips into the ear canal openings. • Firmly push and wiggle the pods into the canals until a snug seal is obtained. • Pulling on the outer ear while pushing on the pods will be helpful to most wearers.
 **Muffs**	• Muffs must fully enclose the ears to seal against the head. • Adjust the headband so cushions exert even pressure around the ears to get the best noise reduction. • Pull hair back and out from beneath the cushions. • Don't store pencils, wear caps or safety glasses under the cushions.

Information and pictures taken from:
An Earful of Sound Advice About Hearing Protection (3M, EAR)
Berger, E; Royster, J; Royster, L
http://www.e-a-r.com/pdf/hearingcons/emp_trg_pamphlet.pdf

Do Yourself a Favor – Save your Hearing

Noise is All Around

- Noise doesn't stop after leaving the workplace, and neither does the need for hearing protection.
- Be aware of noise situations so you can protect yourself and enjoy a lifetime of good hearing.



Information and pictures taken from:
Life Can Be Loud (3M, EAR)
Berger, Elliott
http://www.e-a-r.com/pdf/hearingcons/Life-Can-B-Loud-2010-READER.pdf

Training While Noise Monitoring

- Personal dosimetry monitoring
  - Employees are engaged in the process and understand the importance of monitoring.
  - Dose is checked 3 times during the shift to share exposure information with the sampled employee.
  - If there is a Vulcan overstandard, the employee is engaged in the evaluation and implementation of controls.
  - At the end of each monitoring shift, employees are given written results of their exposure.
- Sound Level Meter (SLM) Surveys
  - Facility personnel conduct noise surveys and determine, if controls need to be implemented and they track to conclusion.
- Ear plug quantitative fit testing

Employee Feedback

- Employees are held accountable for wearing hearing protection.

- One-on-one reinforcement of expectations through contact with their supervisor and peers is an invaluable coaching aspect of training.

Annual Refresher Training

- Employees are required to have annual SHE refresher training.
- Hearing conservation is one element of the training plan.

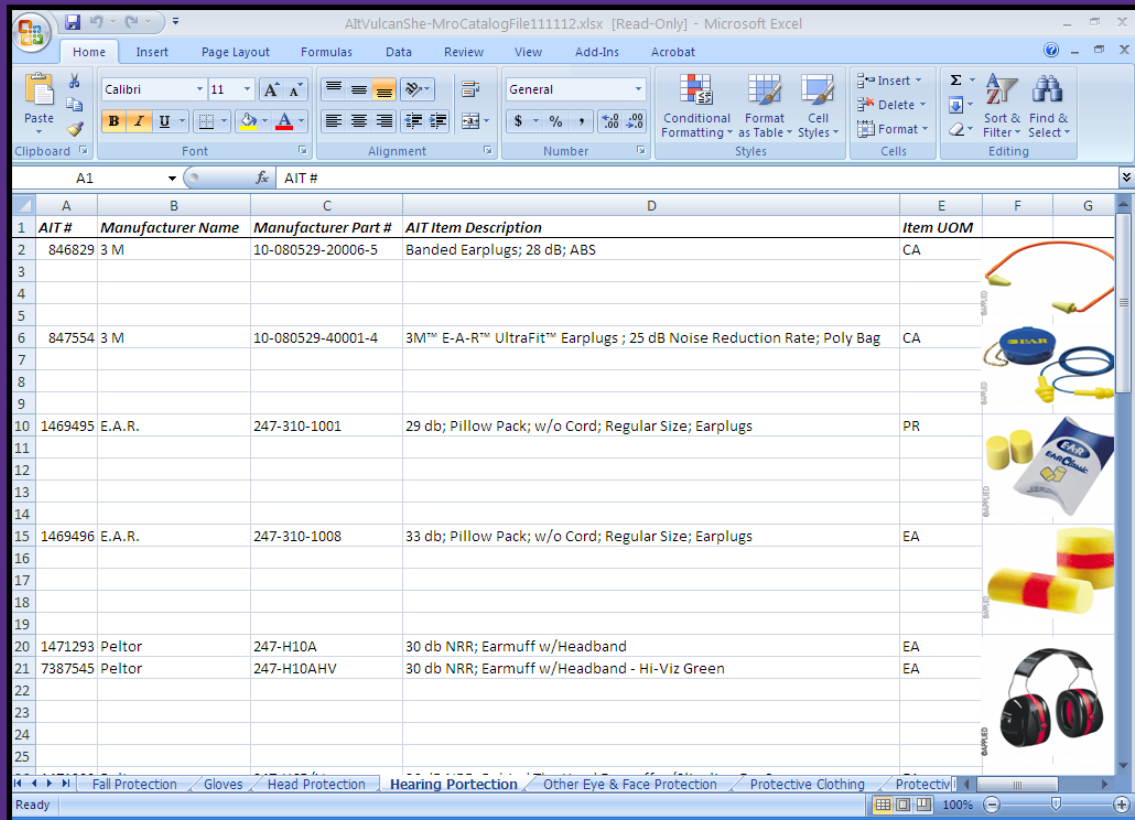
Training

- Interventions are successful because they are:
  - One-on-one
  - Informative
  - Benefits vs. compliance driven
  - Sustained
  - Reinforced
  - Measured

Selecting Hearing Protection

- Diverse Tasks
- Personal Preference
- Fit
- Vender Availability
- Cost
- Adequate Protection
- MSHA/OSHA Regulations
- Required at 85 dBA

SHE Catalog Hearing Protection



Why Fit Test Hearing Protection?

- A shoe store that only carried one size of shoe won't be in business long. Like your feet, ear canals come in different sizes.

- We fit test hearing protection to find hearing protection that works best for you!

HPD FIT TESTING:
PERSONAL ATTENUATION RATINGS (PAR)

INTEGRAfit is an integrated hardware/software system designed to accurately measure how much real-world hearing protection a worker receives and tell you if it is enough. Based upon Real Ear Attenuation at Threshold method. Hughson-Westlake procedure.

PAR and Effective Protection Level (EPL)

Calculation of Personal Attenuation Rating:

PAR = dB HL Earplugs Out minus dB HL Earplugs In

Calculation of Effective Protection Level:

EPL = TWA – PAR

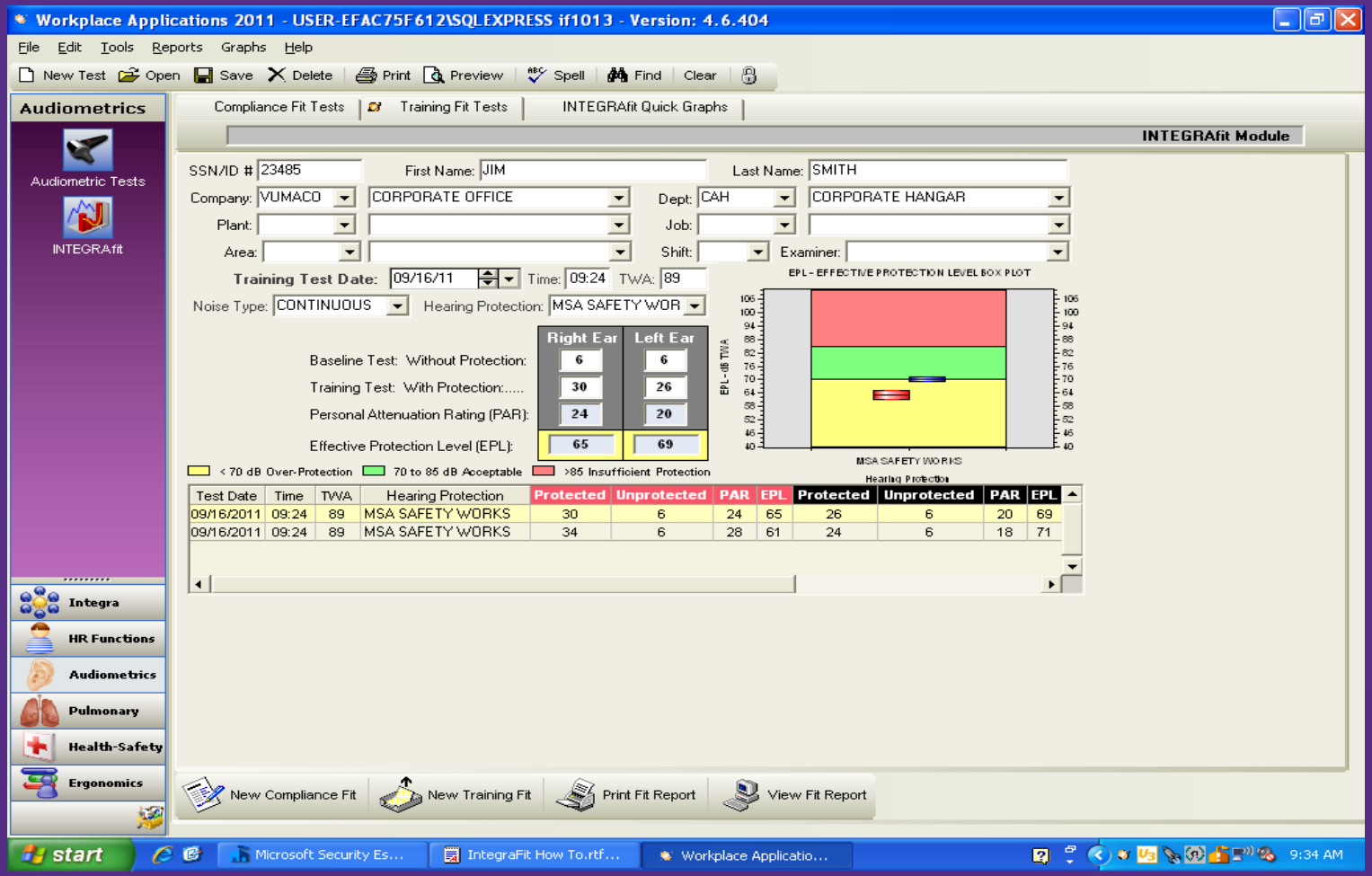
EN458 Criteria:

If EPL > 85, then **Under-protection**

If EPL < 70, then **Over-protection**

HPD Fit-Test Process

- Employee is given a Personal Attenuation Rating (PAR). Which shows how well the hearing protection is working for them.



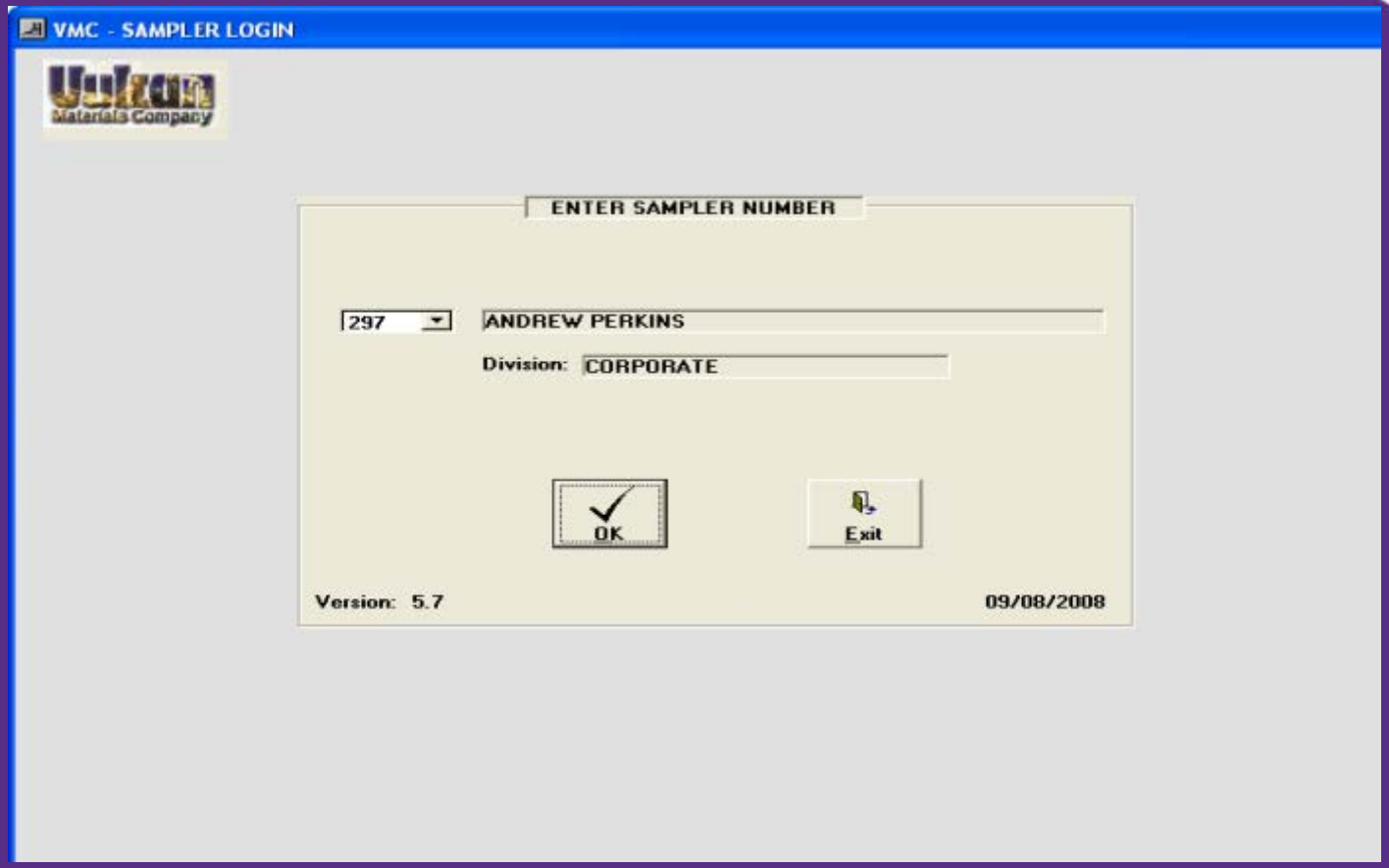
Uses for HPD Fit-Testing

- Training
- Standard Threshold Shifts
- Reportable/Recordable Hearing Losses
- Designated Future Standard Threshold Shifts
- Closed PPE Cases

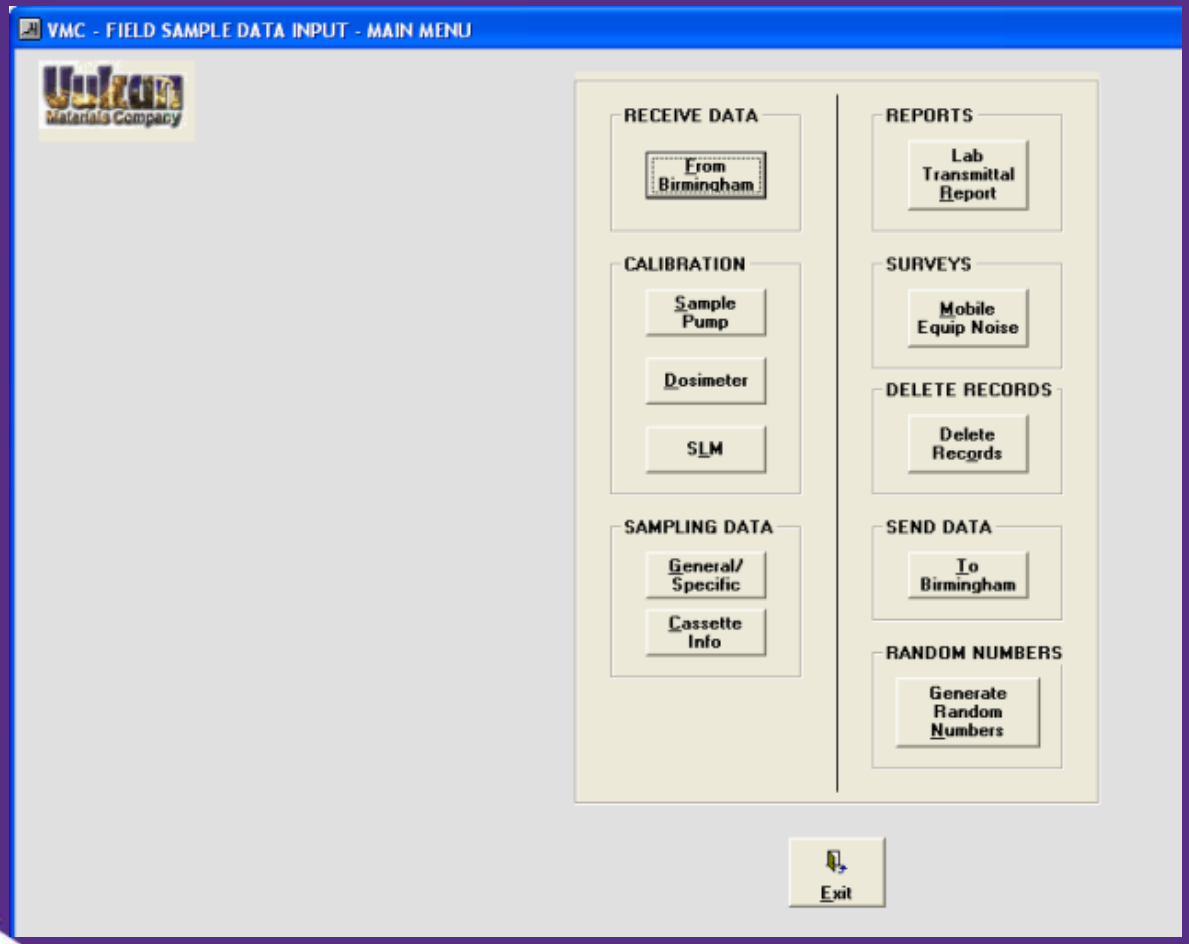
DEALING WITH DATA
HOW IT IS PROCESSED AND MANAGED

IN-HOUSE CUSTOM SOFTWARE

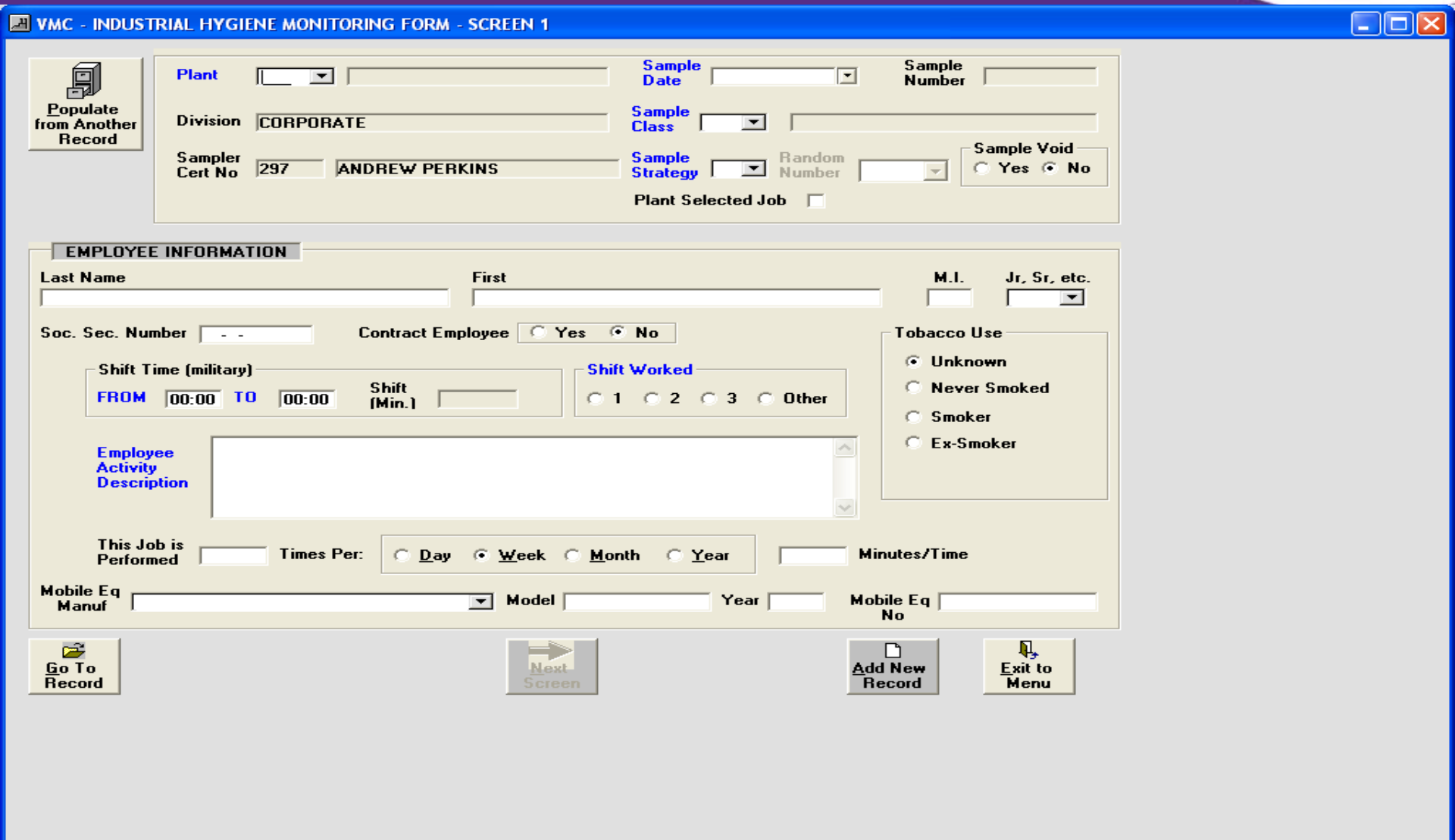
Field Sampler Login



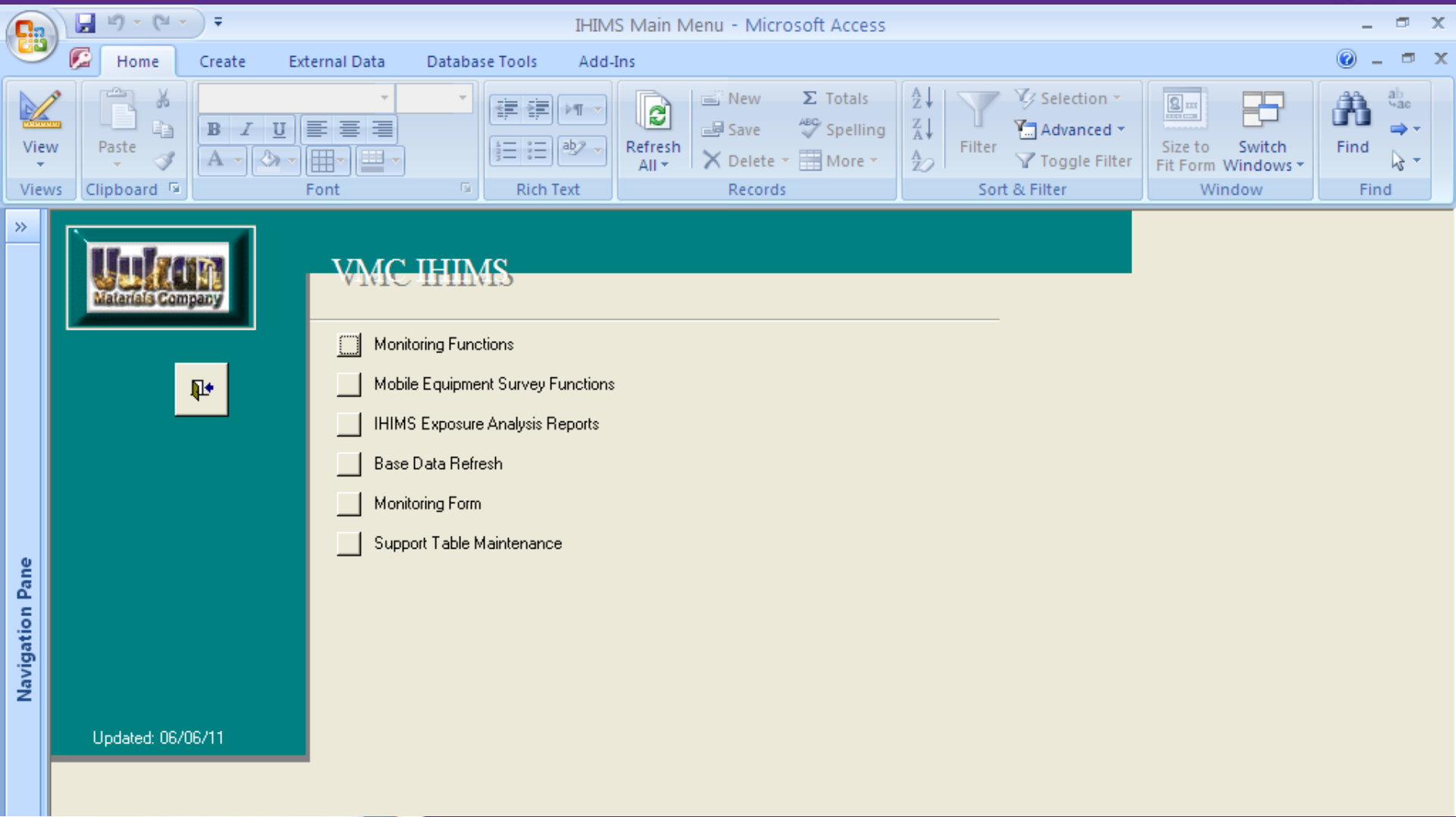
Field Sampler Main Menu



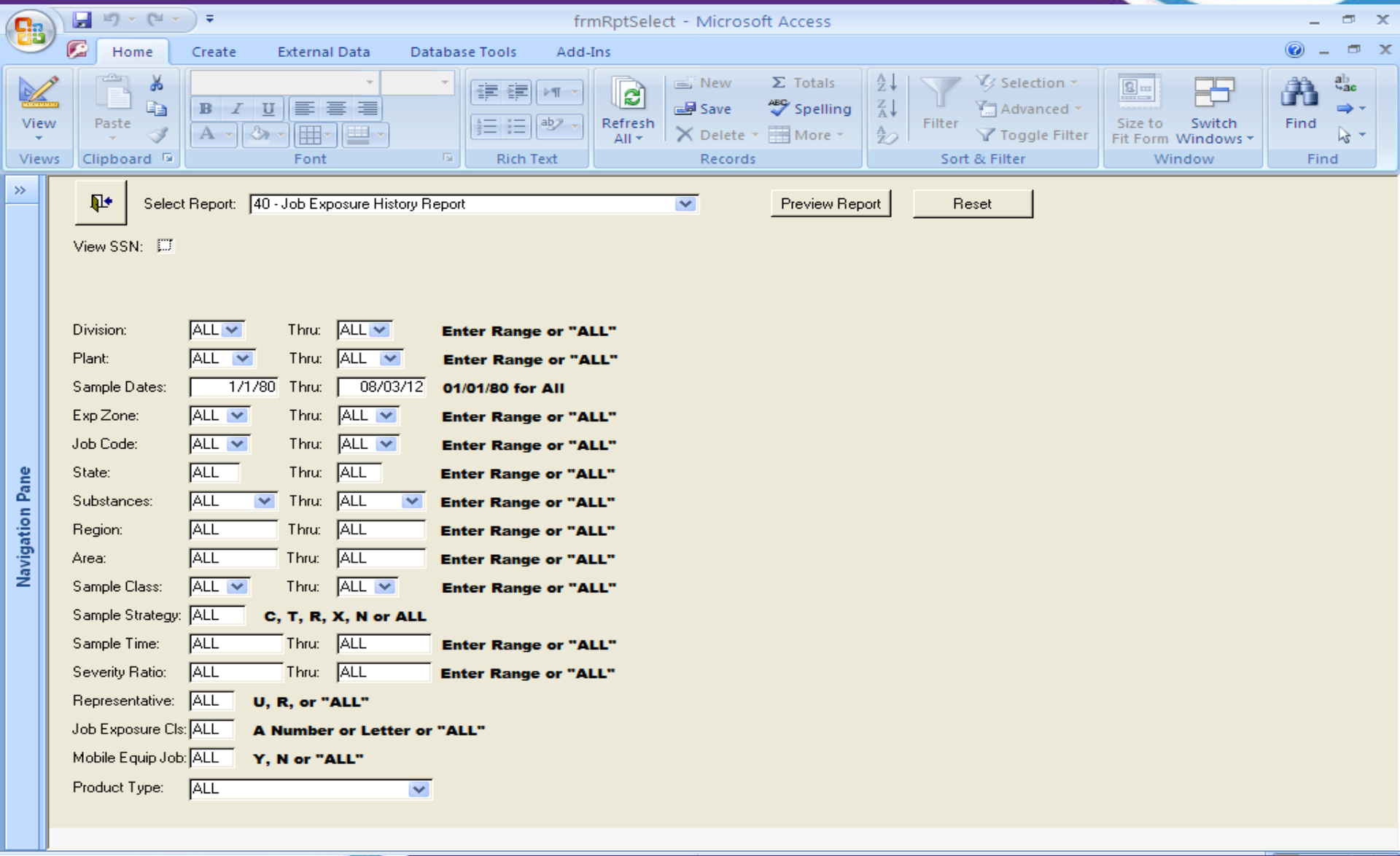
Field Sampler Input Screen



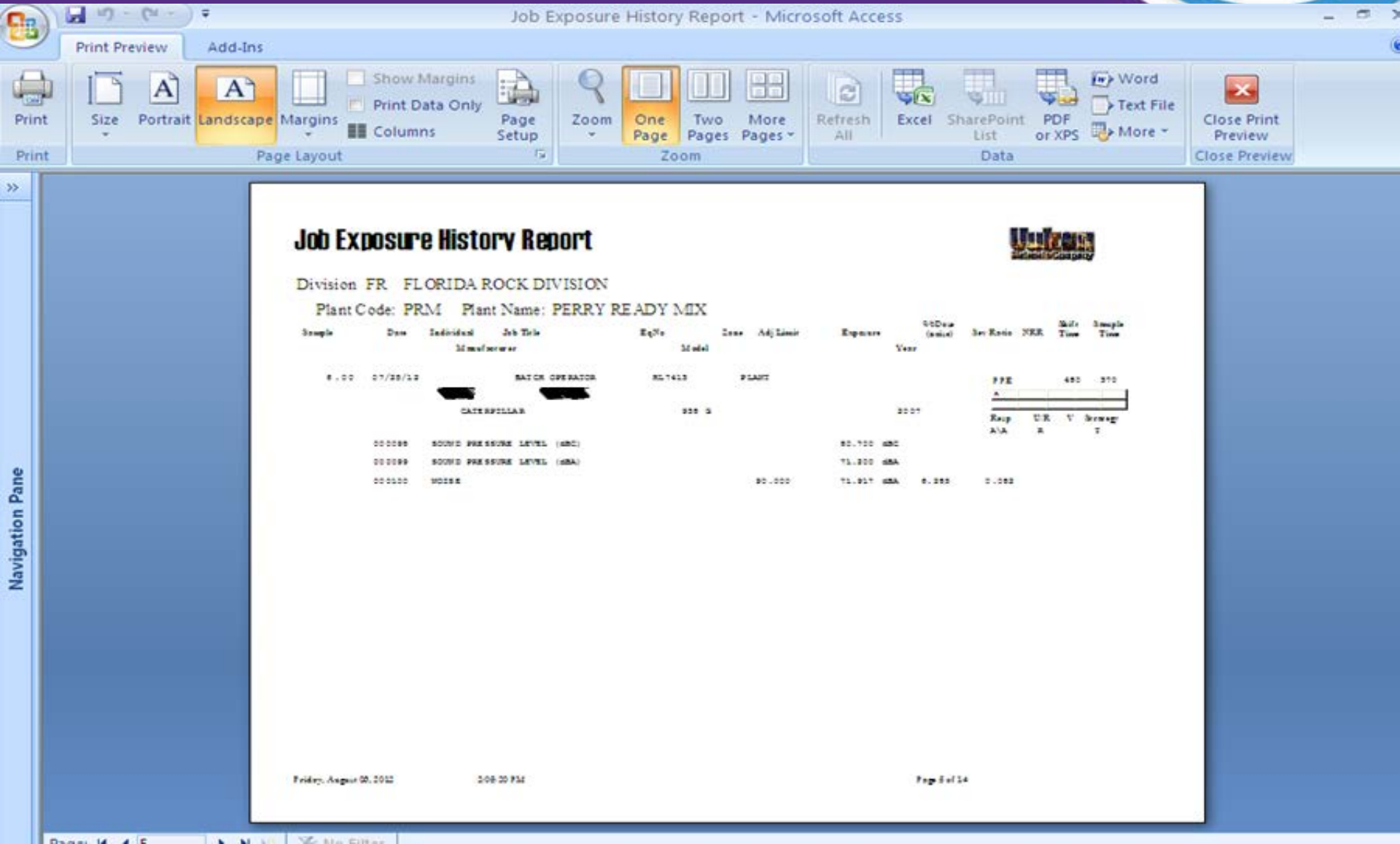
Industrial Hygiene Information Management System (IHIMS) Houses Industrial Hygiene Data



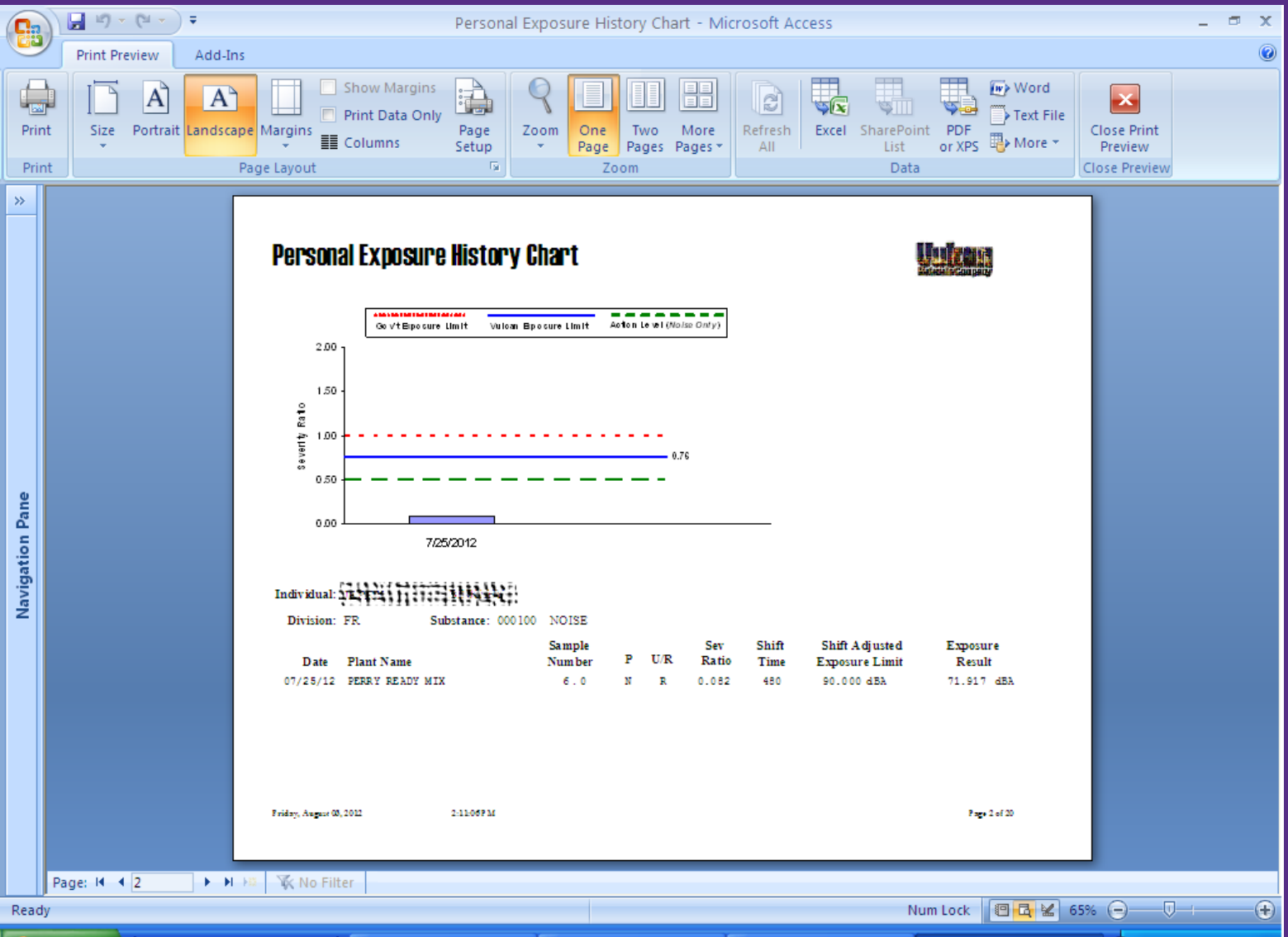
IHIMS Report Criteria Screen



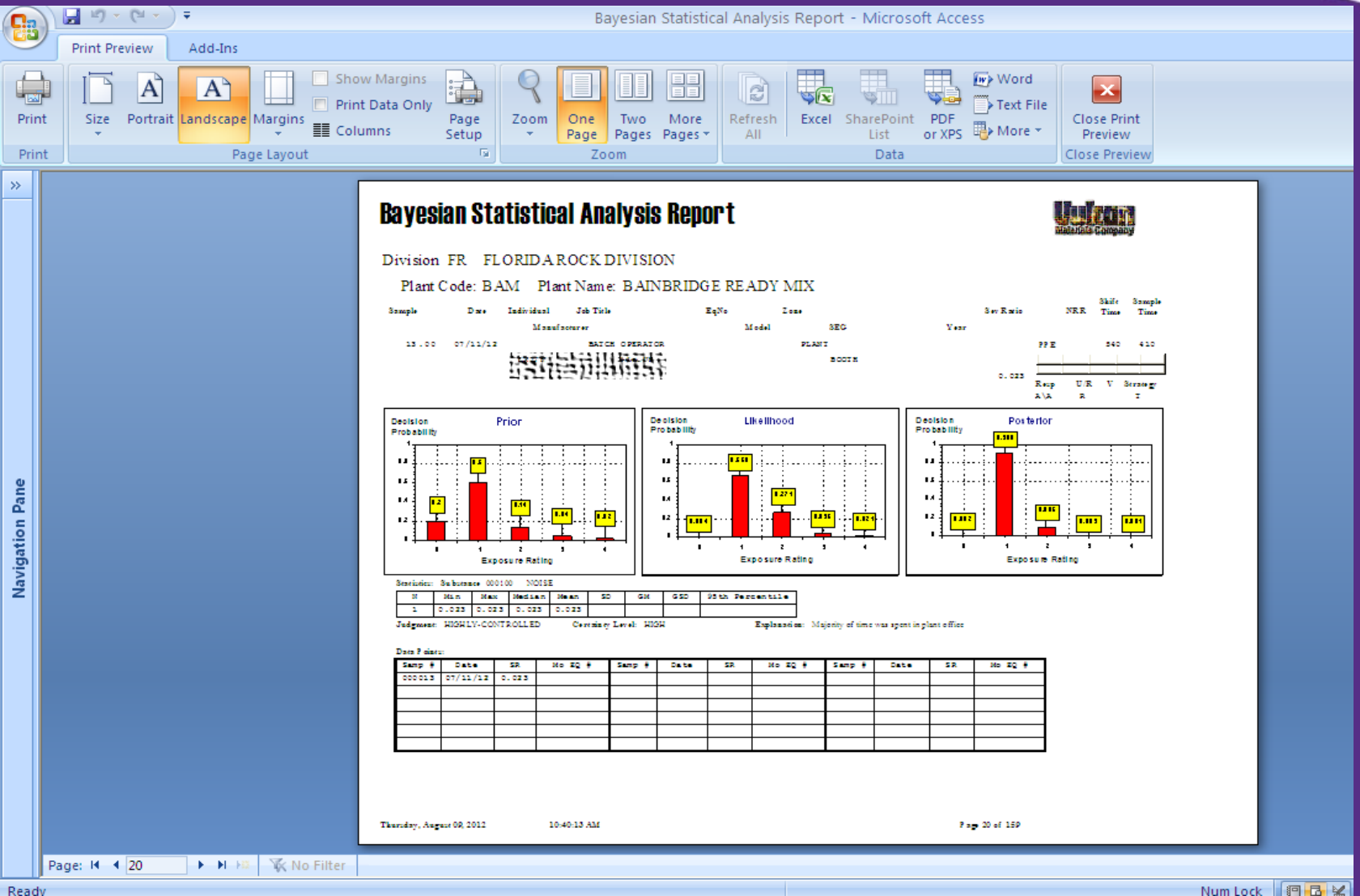
IHIMS Job Exposure History Report



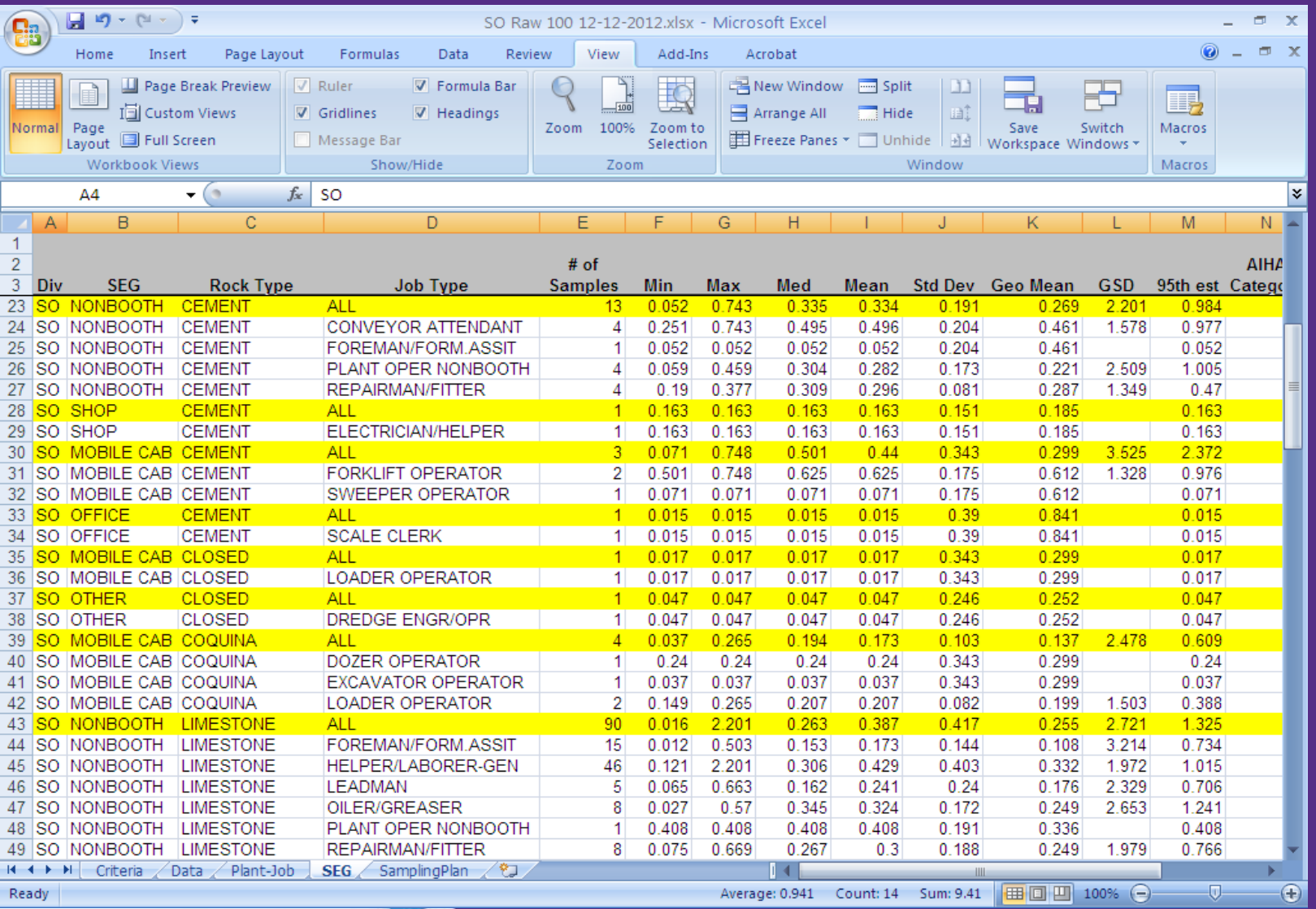
IHIMS Personal Exposure History Chart



IHIMS Bayesian Statistical Analysis Report

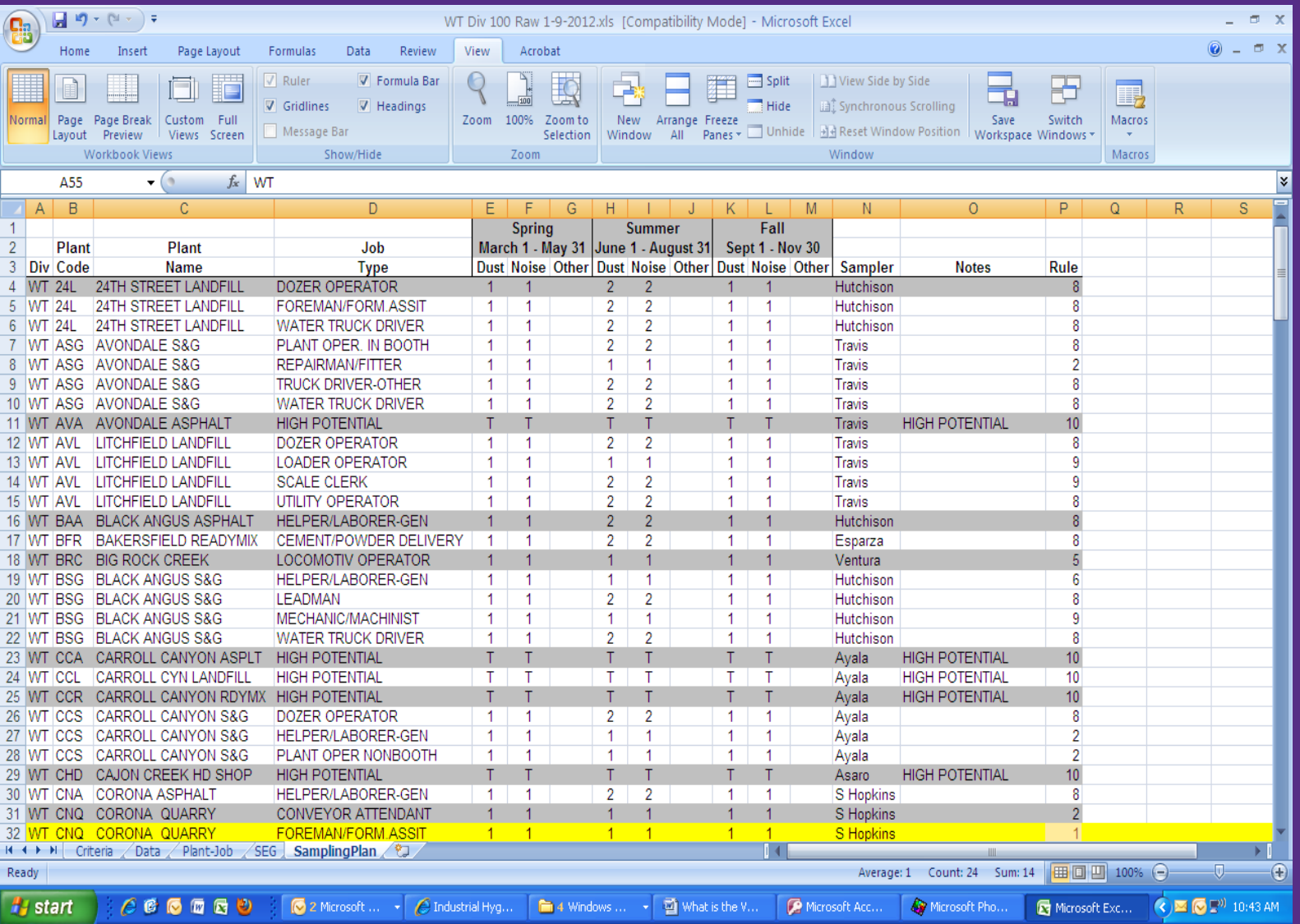


IHIMS Sampling Plan Report SEG Tab



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2					# of									AIHA
3	Div	SEG	Rock Type	Job Type	Samples	Min	Max	Med	Mean	Std Dev	Geo Mean	GSD	95th est	Catego
23	SO	NONBOOTH	CEMENT	ALL	13	0.052	0.743	0.335	0.334	0.191	0.269	2.201	0.984	
24	SO	NONBOOTH	CEMENT	CONVEYOR ATTENDANT	4	0.251	0.743	0.495	0.496	0.204	0.461	1.578	0.977	
25	SO	NONBOOTH	CEMENT	FOREMAN/FORM.ASSIT	1	0.052	0.052	0.052	0.052	0.204	0.461		0.052	
26	SO	NONBOOTH	CEMENT	PLANT OPER NONBOOTH	4	0.059	0.459	0.304	0.282	0.173	0.221	2.509	1.005	
27	SO	NONBOOTH	CEMENT	REPAIRMAN/FITTER	4	0.19	0.377	0.309	0.296	0.081	0.287	1.349	0.47	
28	SO	SHOP	CEMENT	ALL	1	0.163	0.163	0.163	0.163	0.151	0.185		0.163	
29	SO	SHOP	CEMENT	ELECTRICIAN/HELPER	1	0.163	0.163	0.163	0.163	0.151	0.185		0.163	
30	SO	MOBILE CAB	CEMENT	ALL	3	0.071	0.748	0.501	0.44	0.343	0.299	3.525	2.372	
31	SO	MOBILE CAB	CEMENT	FORKLIFT OPERATOR	2	0.501	0.748	0.625	0.625	0.175	0.612	1.328	0.976	
32	SO	MOBILE CAB	CEMENT	SWEEPER OPERATOR	1	0.071	0.071	0.071	0.071	0.175	0.612		0.071	
33	SO	OFFICE	CEMENT	ALL	1	0.015	0.015	0.015	0.015	0.39	0.841		0.015	
34	SO	OFFICE	CEMENT	SCALE CLERK	1	0.015	0.015	0.015	0.015	0.39	0.841		0.015	
35	SO	MOBILE CAB	CLOSED	ALL	1	0.017	0.017	0.017	0.017	0.343	0.299		0.017	
36	SO	MOBILE CAB	CLOSED	LOADER OPERATOR	1	0.017	0.017	0.017	0.017	0.343	0.299		0.017	
37	SO	OTHER	CLOSED	ALL	1	0.047	0.047	0.047	0.047	0.246	0.252		0.047	
38	SO	OTHER	CLOSED	DREDGE ENGR/OPR	1	0.047	0.047	0.047	0.047	0.246	0.252		0.047	
39	SO	MOBILE CAB	COQUINA	ALL	4	0.037	0.265	0.194	0.173	0.103	0.137	2.478	0.609	
40	SO	MOBILE CAB	COQUINA	DOZER OPERATOR	1	0.24	0.24	0.24	0.24	0.343	0.299		0.24	
41	SO	MOBILE CAB	COQUINA	EXCAVATOR OPERATOR	1	0.037	0.037	0.037	0.037	0.343	0.299		0.037	
42	SO	MOBILE CAB	COQUINA	LOADER OPERATOR	2	0.149	0.265	0.207	0.207	0.082	0.199	1.503	0.388	
43	SO	NONBOOTH	LIMESTONE	ALL	90	0.016	2.201	0.263	0.387	0.417	0.255	2.721	1.325	
44	SO	NONBOOTH	LIMESTONE	FOREMAN/FORM.ASSIT	15	0.012	0.503	0.153	0.173	0.144	0.108	3.214	0.734	
45	SO	NONBOOTH	LIMESTONE	HELPER/LABORER-GEN	46	0.121	2.201	0.306	0.429	0.403	0.332	1.972	1.015	
46	SO	NONBOOTH	LIMESTONE	LEADMAN	5	0.065	0.663	0.162	0.241	0.24	0.176	2.329	0.706	
47	SO	NONBOOTH	LIMESTONE	OILER/GREASER	8	0.027	0.57	0.345	0.324	0.172	0.249	2.653	1.241	
48	SO	NONBOOTH	LIMESTONE	PLANT OPER NONBOOTH	1	0.408	0.408	0.408	0.408	0.191	0.336		0.408	
49	SO	NONBOOTH	LIMESTONE	REPAIRMAN/FITTER	8	0.075	0.669	0.267	0.3	0.188	0.249	1.979	0.766	

IHIMS Sampling Plan Report Plan Tab



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Normal | Page Layout | Page Break Preview | Custom Views | Full Screen | Ruler | Gridlines | Message Bar | Formula Bar | Headings | Zoom | 100% | Zoom to Selection | New Window | Arrange All | Freeze Panes | Split | Hide | Unhide | View Side by Side | Synchronous Scrolling | Reset Window Position | Save Workspace | Switch Windows | Macros

A55 | WT

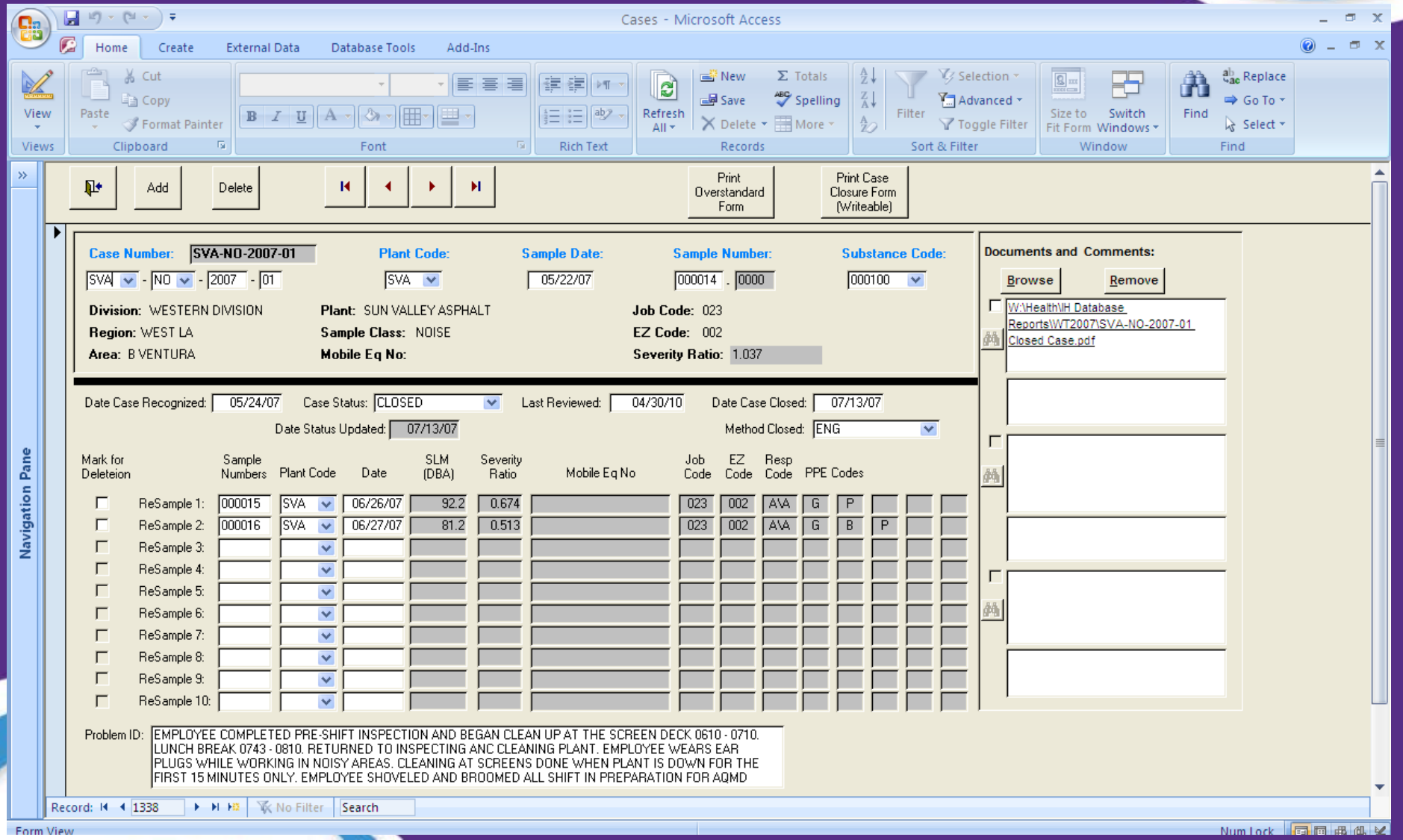
					Spring			Summer			Fall					
					March 1 - May 31			June 1 - August 31			Sept 1 - Nov 30					
Div	Plant Code	Plant Name	Job Type		Dust	Noise	Other	Dust	Noise	Other	Dust	Noise	Other	Sampler	Notes	Rule
WT	24L	24TH STREET LANDFILL	DOZER OPERATOR		1	1		2	2		1	1		Hutchison		8
WT	24L	24TH STREET LANDFILL	FOREMAN/FORM.ASSIT		1	1		2	2		1	1		Hutchison		8
WT	24L	24TH STREET LANDFILL	WATER TRUCK DRIVER		1	1		2	2		1	1		Hutchison		8
WT	ASG	AVONDALE S&G	PLANT OPER. IN BOOTH		1	1		2	2		1	1		Travis		8
WT	ASG	AVONDALE S&G	REPAIRMAN/FITTER		1	1		1	1		1	1		Travis		2
WT	ASG	AVONDALE S&G	TRUCK DRIVER-OTHER		1	1		2	2		1	1		Travis		8
WT	ASG	AVONDALE S&G	WATER TRUCK DRIVER		1	1		2	2		1	1		Travis		8
WT	AVA	AVONDALE ASPHALT	HIGH POTENTIAL		T	T		T	T		T	T		Travis	HIGH POTENTIAL	10
WT	AVL	LITCHFIELD LANDFILL	DOZER OPERATOR		1	1		2	2		1	1		Travis		8
WT	AVL	LITCHFIELD LANDFILL	LOADER OPERATOR		1	1		1	1		1	1		Travis		9
WT	AVL	LITCHFIELD LANDFILL	SCALE CLERK		1	1		2	2		1	1		Travis		9
WT	AVL	LITCHFIELD LANDFILL	UTILITY OPERATOR		1	1		2	2		1	1		Travis		8
WT	BAA	BLACK ANGUS ASPHALT	HELPER/LABORER-GEN		1	1		2	2		1	1		Hutchison		8
WT	BFR	BAKERSFIELD READYMIX	CEMENT/POWDER DELIVERY		1	1		2	2		1	1		Esparza		8
WT	BRC	BIG ROCK CREEK	LOCOMOTIV OPERATOR		1	1		1	1		1	1		Ventura		5
WT	BSG	BLACK ANGUS S&G	HELPER/LABORER-GEN		1	1		1	1		1	1		Hutchison		6
WT	BSG	BLACK ANGUS S&G	LEADMAN		1	1		2	2		1	1		Hutchison		8
WT	BSG	BLACK ANGUS S&G	MECHANIC/MACHINIST		1	1		1	1		1	1		Hutchison		9
WT	BSG	BLACK ANGUS S&G	WATER TRUCK DRIVER		1	1		2	2		1	1		Hutchison		8
WT	CCA	CARROLL CANYON ASPLT	HIGH POTENTIAL		T	T		T	T		T	T		Ayala	HIGH POTENTIAL	10
WT	CCL	CARROLL CYN LANDFILL	HIGH POTENTIAL		T	T		T	T		T	T		Ayala	HIGH POTENTIAL	10
WT	CCR	CARROLL CANYON RDYMX	HIGH POTENTIAL		T	T		T	T		T	T		Ayala	HIGH POTENTIAL	10
WT	CCS	CARROLL CANYON S&G	DOZER OPERATOR		1	1		2	2		1	1		Ayala		8
WT	CCS	CARROLL CANYON S&G	HELPER/LABORER-GEN		1	1		1	1		1	1		Ayala		2
WT	CCS	CARROLL CANYON S&G	PLANT OPER NONBOOTH		1	1		1	1		1	1		Ayala		2
WT	CHD	CAJON CREEK HD SHOP	HIGH POTENTIAL		T	T		T	T		T	T		Asaro	HIGH POTENTIAL	10
WT	CNA	CORONA ASPHALT	HELPER/LABORER-GEN		1	1		2	2		1	1		S Hopkins		8
WT	CNQ	CORONA QUARRY	CONVEYOR ATTENDANT		1	1		1	1		1	1		S Hopkins		2
WT	CNQ	CORONA QUARRY	FOREMAN/FORM.ASSIT		1	1		1	1		1	1		S Hopkins		1

Criteria | Data | Plant-Job | SEG | SamplingPlan

Ready | Average: 1 | Count: 24 | Sum: 14 | 100%

start | 2 Microsoft ... | Industrial Hyg... | 4 Windows ... | What is the V... | Microsoft Acc... | Microsoft Pho... | Microsoft Exc... | 10:43 AM

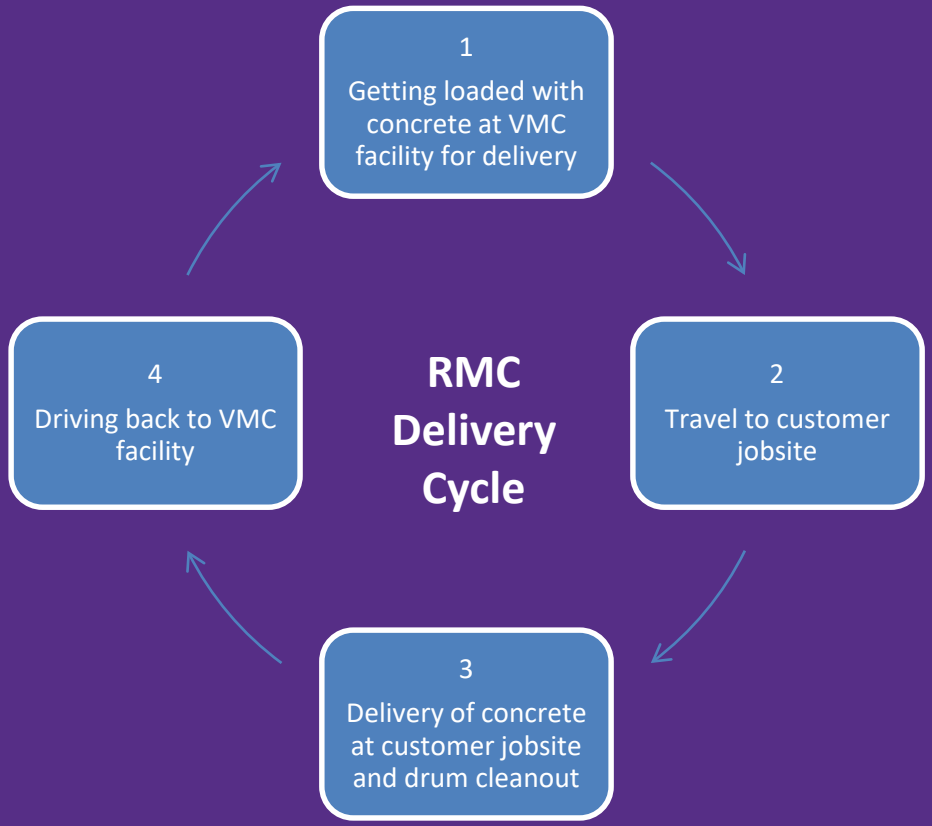
IHIMS Case Management Screen

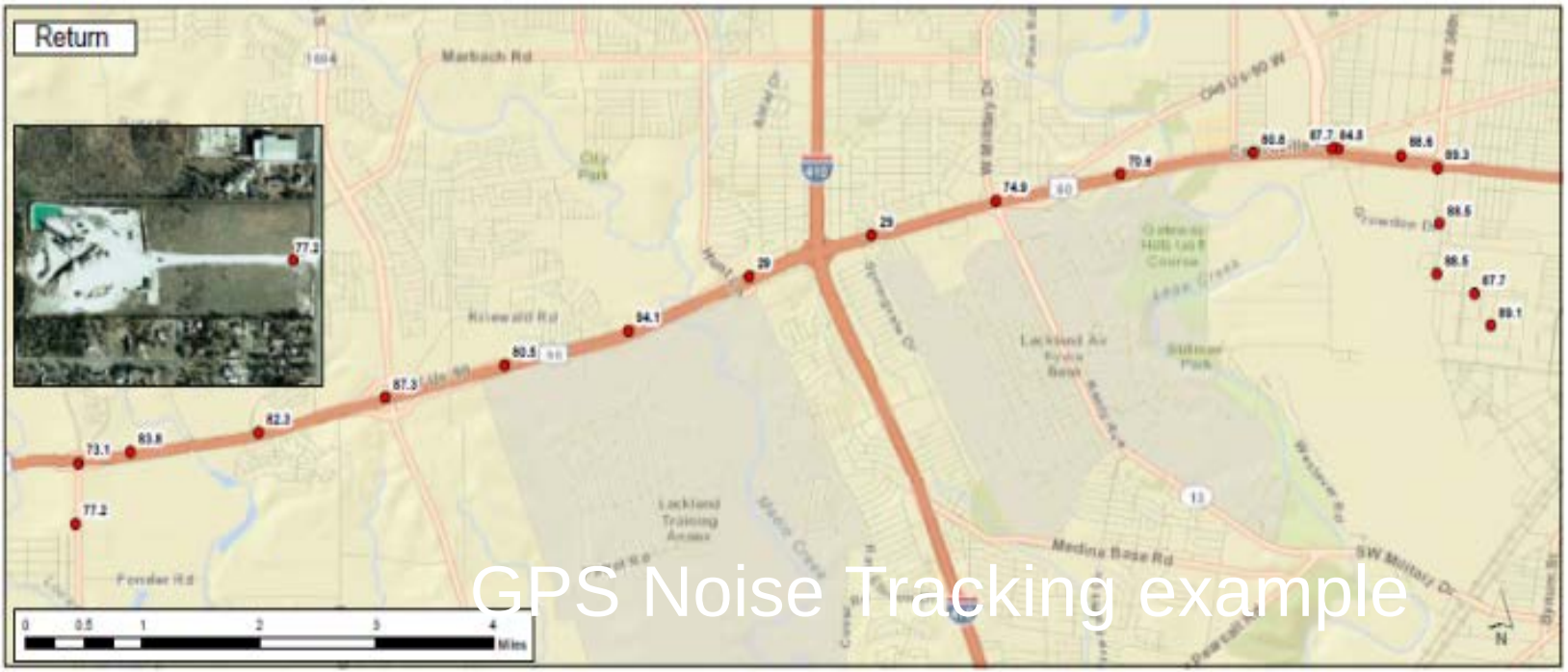


Innovations

GPS Noise Tracking With GIS

- Utilization of new technology for hearing conservation applications.
- Initiative to evaluate where Ready-mix Truck drivers are getting their exposures throughout a delivery cycle.





GPS Noise Tracking example

Vulcan Materials Company

GPS Noise Tracking

- Still working on limitations of data comparison between GPS units and dosimeter.

- Great tool to use “one-on-one” with the driver to show where exposures are occurring and identify anything they are doing while driving that could impact hearing.

- Looking at utilizing personal GPS units on individuals within our larger facilities who frequent multiple areas to determine where noise exposures are occurring and to educate the worker.

What is the IH sampling Certification Course?

- Must pass this course before you can conduct IH sampling
- Week long course with class, hands-on training and field work
- Attendees have extremely varying S&H backgrounds
- Includes in the field coaching and instruction
- Course is designed to provide detailed knowledge of Company IH programs/processes

What is the IH sampling Certification Course?

- Hands on with type of equipment sampler will be using
- Primary focus Respirable Dust, Noise and Welding Fumes
- Normally small groups of 4 to 10 persons
- Class emphasizes becoming familiar with Company field manuals and practicing sampling techniques.
- Instructors are certified samplers with IH experience and CIH

Industrial Hygiene Sampling Certification Course

- Classroom Information
  - Health Effects
  - Regulatory Standards
  - Resources available to samplers
  - Concentration Calculations
  - Sampling Procedures/Methods
  - Bayesian Analysis

Industrial Hygiene Sampling Certification Course

- Field Instructions
  - Calibration
  - Dust Sampling
  - Noise Sampling
  - Observations
  - Note Taking
  - Interaction With Employees

Industrial Hygiene Sampling Certification Course

- After The Course
  - Course work graded
  - Certificates awarded
  - Samples analyzed & feedback provided
  - Mentoring in the field
  - Coaching

Fertile Ground for Future Initiatives

- Company structure helps ensure initiatives have strong support and innovation is encouraged.
- Leaders in the company understand and value hearing conservation as a core business initiative.
- Safety and Health process not static, it is viewed with a continuous improvement mindset.
- Safe-In-Sound application and review process helped incubate good ideas to better the program.

Future plans

- Possibility of having audiograms and hearing protection validation housed in one integrated system
- Connect Vulcan's IH data (IHIMS), audiograms, hearing protection validation systems
- Use of bar coding to improve audiometric testing and recordkeeping procedures
- Add 8000 Hz to audiogram process
- Create more advanced system to better measure ongoing hearing conservation effectiveness

Lessons Learned

- During the Safe-In-Sound application process we looked over our processes with a different mind set and identified ideas for improvements
- The time spent with the Safe-In-Sound assessment team hearing conservation experts during the site-visit provided a unique opportunity to get extremely valuable feedback
- The Safe-In-Sound process expanded our hearing conservation resource network
- We are always glad to benchmark with others to help share the lessons we have learned

Significance of the Award

- We feel very privileged to receive the Safe-In-Sound award.
- The Safe-In-Sound award is an outstanding testament to Vulcan's long standing passion for doing the right things in our occupational health program.
- Winning the Safe-In-Sound award helps us show the value of going beyond the minimum in a hearing conservation program.
- With the great ideas that have been identified during the Safe-In-Sound process our staff is up to the challenge of always pushing to make Vulcan's Hearing Conservation Program better.

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