

11566

DEPT. OF LABOR

INTER-OFFICE MEMORANDUM

TO

J. M. Walton
KOC, Permanent

DATE May 3, 1971

FROM A. J. Trommershausen

COPIES TO

D. R. Canham
J. P. Hughes, M.D.
R. B. Loomis
C. O. Scilacci
A. E. Strong

AT 2675 OB

PLAINTIFF'S EXHIBIT

KG-32

SUBJECT Noise Survey/Industrial Hygiene Inspection - Cushenbury

On Wednesday, April 21, a noise survey and an Industrial Hygiene Inspection were made at your Cushenbury cement plant. The results and recommendations have been discussed with you and the plant people, but are briefly reported in this memo.

A. NOISE

The results of the noise measurements follow, along with the estimated hours of daily exposure, and the maximum permissible daily exposure without ear protection as defined by the Walsh-Healey Act:

<u>Location & Situation</u>	<u>dBA</u>	<u>Estimated Hours Worked Per Day</u>	<u>Maximum Exposure- Hours Per Day*</u>
Mill Motor Room			
North end near control panels	93	6	5 $\frac{1}{4}$
South end at C-300 Compressor	97	6	3
Electric Shop work bench	92	1	6
Mill Building			
South end near entrance	95		4
Near raw mills - on floor	102	8	1 $\frac{1}{2}$
Near finish mills - on floor	99	8	2 $\frac{1}{4}$
Compressor room	104		1 $\frac{1}{4}$
Finish mills - control deck	97	2	3
Near millers' shack	96	6	3 $\frac{1}{2}$
Inside shack	76	3	Over 8
Raw mills - control deck	96	2	3 $\frac{1}{2}$
Kiln Floor			
Near head of kilns	96	3	3 $\frac{1}{2}$
Fuel flow valves	100	3	1
Primary air fan - #1 kiln only	108	1	3/4
Control rooms	77	5	Over 8
Control - near vibrators (#1 & #2)	80		Over 8

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<u>Location & Situation</u>	<u>dBA</u>	<u>Estimated Hours Worked Per Day</u>	<u>Maximum Exposure- Hours Per Day*</u>
Quarry Trucks - inside cab			
Uphill, empty, windows up	94)	2	4½
Uphill, empty, windows down	99)		2½
Dumping into crusher	90		8
Downhill, loaded, windows up	89)	2	Over 8
Downhill, loaded, windows down	89)		Over 8
Toe Drill in Operation			
At front near controls	112	1	½
Near back of tracks	106	2	¾
Next to compressor	102	2	1½
006 Electric Shovel			
Operator's cab	85	7	Over 8
Inside cab while stopping swing	97	1/2	3
Inside motor room during operation	98	2	2-¾
Inside motor room while stopping swing	107	1/4	¾
Readings by State Safety Engineer			
Water truck - uphill with load	101	2	1-¾
Rotary Drill			
Next to engine start button	101		1-¾
Outside controls	94	2	4½
Inside controls	84	5	Over 8
Secondary crusher			
Shaker screens - outside	99	1/2	2½
Inside control room	77	7½	Over 8

*Without ear protection

It can be seen from the table that there are three areas which have hazardous exposures and where ear protection should be mandatory. These are:

1. Mill motor room
2. Mill building
3. Toe drill operation

The kiln floor also has hazardous noise exposures under present conditions, but ear protection should not be required after the #1 primary air fan is removed and boxes are built around the fuel flow valves.

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The plant medical department is well equipped with an audiometer and a sound booth, and has a capable and interested nurse. A few suggestions on audiometric testing technique were made to the plant nurse to bring her up to date on the latest methods. Explanations were also given to indicate the importance of doing audiometric testing only at the beginning of the shift, before noise exposure occurs. As rapidly as time permits, audiometric tests should be made on practically all of the plant employees including supervision to re-establish baseline audiometric tests.

At the time of the visit, only a few of the workmen exposed to hazardous noise levels were wearing ear plugs. Although a start has been made, a great deal more effort is needed. The plant nurse can be of considerable assistance by talking briefly to each man as she performs audiometric tests, fits ear plugs or gives out ear muffs.

The ear plug now being used (Lee Sonic - which contains a metallic valve) is not on the approved list in California because it does not attenuate well at the lower frequencies and presents somewhat of a safety hazard should the wearer receive a bump on the side of the head. My recommendation is that no new plugs of this type be purchased, their use gradually phased out, and that they be replaced by approved devices. Our current recommendations, in order of choice, are:

1. Muff - American Optical; Model 1600
2. Plug - Willson "Sound Silencer"; Models EP100 and EP100S
Model EP100 is the regular size and will fit about 90% of the ears. Model EP100S is a smaller size which will probably accommodate the remainder.
3. "Swedish Wool" (disposable cotton-like material)

Billesholm - Rockford I.C. Webb, Inc.
301 N. Madison Street, Rockford, Illinois 61110
Quiet-Down - Flents Products Co., Inc.
103 Park Avenue, New York, New York 10017

B. DUST

Considerable airborne dust in the working areas was noticed during the visit. Some of the dust was caused by the high velocity winds. In the mill building, however, considerable dust was being generated from transfer points. Cement dust was literally ankle deep in some locations. In discussion with Ed Strong, Plant Manager, it was brought out that additional dust collectors are on order, with others to follow, and this should eventually alleviate the internally generated dust.

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The use of the 3-M disposable type masks should be encouraged. Also, chest x-rays should be done every five years for reasons of medical surveillance, since the dust exposure will probably always be significant because of the wind situation, and the free silica exposure is not known.

The handling of asbestos was not observed during the visit; but, because of the serious health implications of the inhalation of asbestos, the use of suitable respirators during the bag dumping operation should be seriously considered. The 3-M disposable mask is not suitable for asbestos. The American Optical disposable dust and mist respirator, however, is satisfactory (Cat. No. R-1040).

C. MISCELLANEOUS

Since unchlorinated well water is used in the plant, it is recommended that arrangements be made for regular monthly bacteriological testing. This usually is a free service of the County Health Department.

The plant has particularly good medical coverage, both at the plant and by competent and interested outside physicians and a radiologist. The nurse, "Tommie" Erskine, appears to be doing an excellent job of handling her assignments. The first aid and emergency care capabilities of the nurse and supervisors are also outstanding.

The plant has a good ongoing program of radiation surveillance with film badges, and periodic visits by a health physicist for area monitoring with instruments, and employee indoctrination.

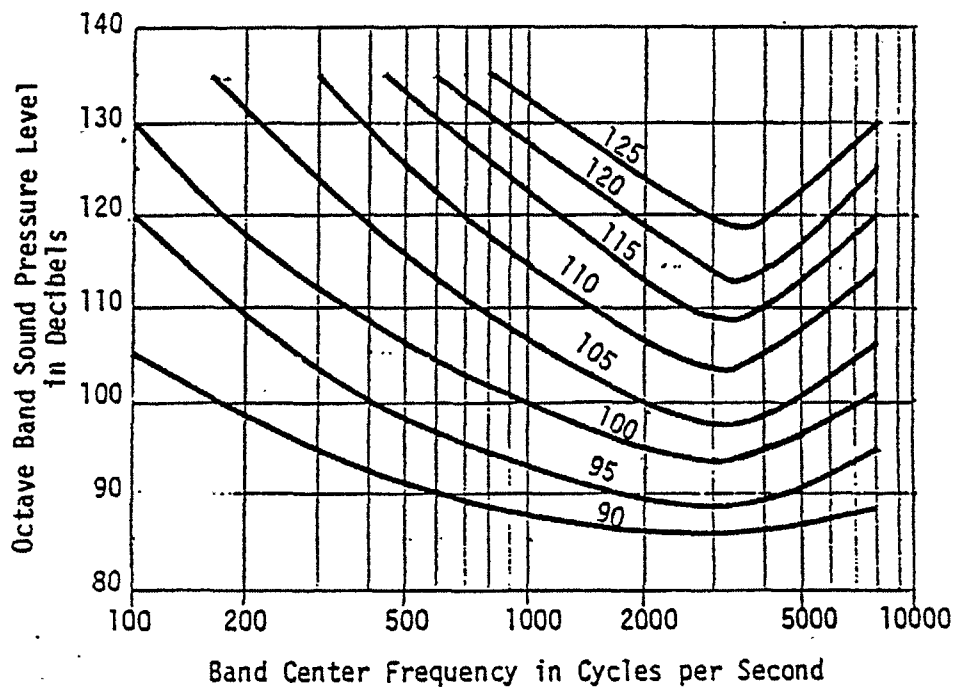
The able assistance of Brent Loomis during the visit was greatly appreciated.

gb
Attachment

WALSH-HEALEY PUBLIC CONTRACTS ACT

Occupational Noise Exposure - Section 50-204.10 of Safety and Health Standards
for Federal Supply Contracts

- (a) Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table I of this section when measured on the A scale of a standard sound level meter at slow response. When noise levels are determined by octave band analysis, the equivalent A-weighted sound level may be determined as follows:



Equivalent Sound Level Contours. Octave band sound pressure levels may be converted to the equivalent A-weighted sound level by plotting them on this graph and noting the A-weighted sound level corresponding to the point of highest penetration into the sound level contours. This equivalent A-weighted sound level, which may differ from the actual A-weighted sound level of the noise, is used to determine exposure limits from Table I.

- (b) When employees are subjected to sound levels exceeding those listed in Table I of this section, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of the table, personal protection equipment shall be provided and used to reduce sound levels within the levels of the table.
- (c) If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.
- (d) In all cases where the sound levels exceed the values shown herein, a continuing, effective hearing conservation program shall be administered.

Table I
PERMISSIBLE NOISE EXPOSURES*

<u>Duration Per Day</u> <u>Hours</u>	<u>Sound Level dBA</u> <u>(Slow Response)</u>
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

*When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions -- $C_1/T_1 + C_2/T_2 + \dots + C_n/T_n$ -- exceeds unity, then the mixed exposure should be considered to exceed the limit value. C_n indicates the total time of exposure at a specified noise level, and T_n indicates the total time of exposure permitted at that level.

Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

