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Johns-Manville

Internal Correspondence

To: H. B. Moreno - 3-03

Date: June 10, 1977

From: W. B. Reitze - 1-06

Copies: P. Kotin, M.D. - 1-06
W. Paul, M. D. - Asbestos

Subject: VISIT TO ALMERIA, MEISA AND ASBESTOS DE MEXICO

As can be seen from the attached, Almeria and MEISA have a number of problems which must be corrected as soon as possible. I do not view the solution to any of these problems as difficult. I do, however, believe that they must be corrected if we are to maintain a healthy workplace.

I view the situation at Asbestos de Mexico as grave. We have some 900 to 1200 employees at considerable risk. Environmental control efforts, as well as housekeeping efforts, at the very best must be considered rudimentary. In most cases there are no such programs at Asbestos de Mexico. I realize that we are a minority stockholder (40%) and that we do not have the operating responsibility for Asbestos de Mexico; however, I believe that our continued participation in this venture, without insisting upon a general overall cleanup is immoral, if not criminal. With our past knowledge of environmental conditions as they relate to health drawn from our domestic activities, plus the fact that the Mexican Social Security Administration informed us that almost one-third of our population has asbestos-related disease, we cannot plead ignorance.

In spite of the above strong language which describes the plant as it is, I feel that with effort on all our parts, that is, International; Health, Safety and Environment; and above all the Mexican representatives, we can bring Asbestos de Mexico up to J-M standards. It most certainly will take a lot of work on all our parts, but if we are unwilling to spend that time, effort and money to do this, then we should consider giving up the operation. I might add that to give up an operation of this size and potential would not be in our best interests. Therefore, my strong recommendation would be to begin a massive educational campaign followed by appropriate expenditures at the plant to clean up.

Please feel free to call upon HS&E and myself for any phase of the cleanup.

WBR

W. B. Reitze

Hank
our telephone conversation indicates you
... well on the way to
... providing the Mexican
... Bill

VISIT TO MEXICAN OPERATIONS--MEISA, ALMERIA, AND ASBESTOS DE MEXICO

MEISA

On Monday, June 6, I met with Carlos Montoto and Sergio Gomez Chavez. We discussed the MEISA operation in detail and toured the operation. There are a number of areas that need attention. Carlos Montoto is well aware of all the areas that need attention, but I will enumerate them for the record.

We have quite a few asbestos braiders braiding both chrysotile and crocidolite that have no dust control equipment connected with the operation. Some of the twisting is done with the yarns in a moistened condition, which does tend to reduce the dust. Some consideration should be given to equipping the braiding operation with dust control equipment or other dust suppressant methods to supplement the wet twisting.

The asbestos feeding operation for the service sheet line appears to be in need of additional hooding. At present there appears to be insufficient air to contain the dust. It is difficult to determine whether this is all due to the operation's hooding or whether the baghouse is of insufficient capacity to handle the load.

In the mill board line, the asbestos charging operation at the beater is not hooded or vented, and one would have to surmise that this produces the same conditions that were produced at Manville and Waukegan before control devices were installed. The hand-operated trim saw in mill board has insufficient ventilation to control the dust.

Generally speaking, environmental conditions in the plant, as viewed from visual inspection, indicate that while there are a number of problems in addition to the above, the problems are not of major magnitude and should not take a great amount of funds to correct.

MEISA participates in the required government physical examination program, which consists of bringing a physician to the plant twice a year to conduct a rather cursory medical examination which includes inspection of the eyes, ears, teeth, a stethoscope examination of the chest, and a check to see if all major limbs are present. This examination does not include any chest X-rays nor pulmonary function testing. If any adverse effects are uncovered with this casual examination, Social Security may be requested to bring the trailer to the plant site and take the small 6" by 6" (TB) X-rays. This has not been done at MEISA.

My recommendations would be as follows:

1. An immediate assessment of what the costs would be to correct at least the above-mentioned dusty spots and that work should commence as soon as possible thereafter.

2. I will arrange for an industrial hygiene survey to be completed within the next three months. This would include the monitoring of the asbestos stations, the noise, the solvent levels, and any other potentially troublesome areas. This industrial hygiene survey will accomplish several things. We will be able to identify further potentially troublesome areas, so that the men are protected and we do not spend any money for corrective actions needlessly.

3. Since the current physical examination program is totally inadequate, I would recommend that a physician be selected and the employees possessing the greatest longevity be given this examination. It is my understanding that there are seven persons who were hired prior to 1964 and the balance of the total 30 hourly people were hired after 1970. Considering the small number of people involved, this should not pose an expensive venture. Regardless of the expense, we must be aware of what our actual health picture is at this location. As soon as Bill Paul, our new Corporate Medical Director, comes on board, I will ask that he and Drs. Wright and Kotin meet together to aid in the selection of a physician.

4. Since I am not quite sure that the plant supervisory employees below the level of Carlos Montoto are fully aware of the entire asbestos and health problem, I intend to furnish Carlos with brochures and other material so that he can begin talks with supervisory personnel to make them aware of the asbestos and health problem.

Almeria

On Wednesday, June 8, accompanied by Carlos Montoto, I visited the DE mine and mill and met with Rigoberto Gonzales. The mining operation appears to have few problems. Because of the high moisture content at present, dust during the scraping and loading operations appears to be minimal. A dust problem does exist when the scrap from the mill is returned to the mine as waste.

The mill operation presents a few problems, the greatest of which is the stack emissions. The plant manager informed me that over two tons of fines go out the stack every day. The plume from the plant is visible for many miles and creates not only a problem for the surrounding village, but also an in-plant workplace problem. We are under fire by the Mexican government to correct this problem of stack emissions. I believe that this should be done as soon as possible. This correction will certainly lessen the in-plant condition, but other steps must be taken to reduce worker exposure to free crystalline silica. The packer stations expose the workers to considerable amount of visible dust, and the many leaks in the material conveying systems also contribute to the workplace burden.

Here again, our plant meets the requirements of the Mexican government Social Security Administration in that all employees are given an examination twice a year, and the book is kept indicating that the employees are "apt" and "not apt". In addition, at Almeria the Social Security Administration comes in once a year with their trailer and takes the small 6" by 6" X-rays. On top of this, a program was instituted at the mine several years ago where the employees are sent into Guadalajara to a clinic and the fullsize chest X-rays are taken and evaluated by a radiologist. The plant informed me that to date only one individual has been identified as having pneumoconiosis. It is also my understanding in talking to the plant that the man is well aware of his condition. The plant manager selected the larger X-rays of most of the older workers at the plant and I brought these back with me. Dr. Wright is currently evaluating these films. This should give us a better idea of where we stand regarding the health picture of our Almeria employees.

During our visit, we witnessed the unloading of a boxcar of opened asbestos fiber which is to be used in the Fibra-Flo blending operation. The condition of the car, regarding broken bags and loose asbestos, was one of the poorest I have witnessed in many years. It could not be determined immediately where the shipment came from, whether it was old stock from the Lompoc closeout or whether the material was shipped from the Fresno fiber opening contractor, but in any case, it arrived in poor condition. The facts are being checked and an answer will be forthcoming. The actual site where the Fibra-Flo is blended was inspected, and this operation is totally unaceptable. As it now exists, a man must climb up a 10-foot ladder with the asbestos sack on his head, rest it on the narrow edge of a mixer and shake the contents into the mixer. It then goes to a bagging station with totally inadequate ventilation. It would be my recommendation that this station not be used any more until such time as the planned new equipment is installed. (It was my understanding that we were discontinuing the manufacture and sale of Fibra-Flo in our foreign markets. I am not sure whether this is

a reversal in policy, and I would very much like to be aware of any such reversal.)

My recommendations would be as follows:

1. That the correction of the stack emissions be accomplished as soon as the work can be accomplished, and certainly by the end of the next fiscal year. It is my understanding that the two tons per day now going up the stack is a marketable commodity and could be used to at least offset the operational costs of the new dust control equipment.

2. I will arrange for an industrial hygiene survey to be made within the next three months so that we may determine with greater accuracy the exposure of our workers.

3. Depending upon the review of X-rays by Dr. Wright, I will request Dr. Bill Paul to follow up on the medical program.

4. Some consideration must be given to a central vacuuming system at Almeria. This would improve housekeeping tremendously and also reduce the overall dust burden in the plant. I would also recommend that some consideration be given to an air wash system for the bags, so that when they are shipped out the generous coating of dust that now goes with them could be removed.

Asbestos de Mexico

On the morning of Tuesday, June 7, I visited the Asbestos de Mexico operation and met with Francisco (Poncho) Aviles, Plant Manager, and Francisco Glennie, Employee Relations Manager. My guide on the plant tour was Poncho Aviles. Environmentally, this plant is among the worst I have visited, and apparently is similar to the descriptions and photographs that I have reviewed of some of our own operations in the States 25 or 30 years ago. There is a large population--about 800 hourly workers and some 400 office or supervisory workers--so that we have at risk approximaterly 900 people. The charging stations in the AC pipe line have totally inadequate or nonexisting dust control equipment. The same can be said of the flat or corrugated board lines. While most of the asbestos used in production is chrysotile Calaveras CA, a considerable amount of crocidolite and amosite is used.

There are pipe lathes and millers in the finishing department without any dust control equipment at all. Visibly, the dust at the charging stations and the finishing line is very apparent. In a number of cases, the raw fiber on the floor is to the shoe top level. The storage areas contain many broken bags of asbestos and no attempt is made to repair the bags or in any way contain the fiber. In one storage warehouse, an area approximately 20' by 30' contained a pile of blue fiber from broken bags approximately 4' high. In order to use this fiber in the mixing operations, it is necessary for men to use scoop shovels and sacks to rebag it. Plant cleanup is accomplished by brooms. The scrap grinding operation has intolerable amounts of dust and noise, and used bag handling is done in the most casual way. In several cases piles of paper and plastic bags 10' to 15' high were noticed. Workers then gather these bags, bundle and sell them. The housekeeping program appears to be rudimentary, if at all in existence.

Waste water from the AC pipe operations is discharged into a low lying area which must be retrenched and cleaned out at frequent intervals. This cleanout is done by an outside contractor. I witnessed 10 individuals with shovels digging in the trenches and throwing the dusty asbestos waste from the dried sludge ponds up into large heaps. It is very apparent that the plant management is totally unaware of the asbestos and health problem.

The large silica grinding operation produces vast quantities of dust as well as noise. Poncho Aviles pointed out to me that their equipment is totally inadequate to accomplish the task that it is being used for. Mr. Aviles also indicated that a contract has been awarded to Western Control Engineering for a complete evaluation of the environmental needs of the operation.

In my conversations with Francisco Glennie, he indicated to me that the Mexican Social Security Administration has passed the word to him that approximately 30% of the hourly employees have some asbestos-related disease. He further expressed a desire for information which could be used in their recently established

Asbestos de Mexico (continued)

training department. He has hired a safety engineer to assist him, as well as a man to train both new employees as well as update the older men.

Throughout the plant respirators were very much in evidence. All that I saw appeared to be brand new respirators that could not have been out of the box for more than a few hours before I arrived on the scene.

Mr. Glennie also informed me that a physical examination program is in the initial stages of development. This would supplement the required government examination which, for our purposes, appears to be practically worthless.

Mr. Ricardo Cabrera called me while he was in Mr. Glennie's office and chatted briefly about the environmental problems, and much later in the evening I had a chance to briefly meet with Mr. Cabrera at the motel in Guadalajara. At this meeting he informed me that he will be in Denver for the next four or five weeks.

Recommendations:

1. Since I feel a big part of the problem is due to an almost complete lack of understanding of the asbestos and health problem among the top management at Asbestos de Mexico, my first recommendation would be to meet with them personally and furnish them with any and all available materials we have that would aid them in updating their plant management on the hazards of asbestos. The initial session might well be held when Ricardo Cabrera visits us later in the month.

2. Mr. Cabrera also informed me that by the end of June he should have in his hand a copy of the report from the consulting firm which would outline all the steps that would be necessary to make the plant environmentally safe. If it is not possible to accomplish all of these programs at once, we might well be able to discuss with Mr. Cabrera some priority classification.

3. Immediate steps must be taken to improve the housekeeping at Asbestos de Mexico. Vacuum systems should be installed, regular maintenance of baghouses should be undertaken, instruction should be given in work practices that do not create unusually large amounts of dust. An upgrading of the housekeeping program could well provide a 30% or more reduction in the existing horrendous conditions at the plant.

4. An immediate follow-up on their projected medical surveillance program should be undertaken and as soon as the program is off the ground, a visit by Dr. Bill Paul would be in order to assess the program and further clarify the 30% occupational disease report from the Mexican Social Security Administration.

W. Farrell - Mexico City July 26, 1978

W. R. Paul, M.D., 1-06

File

CHEST ROENTGENOGRAM - ALMERIA

Enclosed please find Dr. Wright's and my readings of the Almeria x-rays. I apologize for the delay in getting these to you.

If acceptable to you, we will arrange for Rod Gomez to return the x-rays to you.

WRP/plu
Enc.

Johns-Manville

Internal Correspondence

To: W. Farrell - Mexico City

Date: May 2, 1980

From: W. R. Paul, M.D., 1-06 Bill

Copies: File

Subject: X-RAYS REQUIRED - ALMERIA

Due to the cancellation of Bill Reitze's trip to Mexico, please send the x-rays requested directly to me. Thanks.

WRP/plf

Johns-Manville

Correspondencia Interna

Para: R. González, Almería Fecha: 25 April 1980

de: W. Farrell, JM-M

Copia: W. R. Paul, M. D., 1-06 Denver
W. B. Reitze, 1-06 Denver

Referencia: NEW X-RAYS REQUIRED - ALMERIA PERSONNEL

Rigo:

Would you please arrange for <u>new</u> chest X-rays to be taken of the following workers between now and 9 May so as to be able to deliver all of them personally to Bill Reitze when he visits your plant on 12 May?:

1. Oliverio Rubio
2. Pilar García
3. Nicolás Sandoval
4. Gregorio Pérez
5. Abundio Cervacio Flores
6. Salvador Avina Segura
7. Juan Laureano Velázquez
8. José Félix Sevilla

Please impress upon the person making the X-rays that many have been impossible to read and interpret in the past due to their being "fuzzy" (caused by physical movement of the individual at the moment they were taken) and, therefore, he should be sure the subject holds complete still.

Dr. Bill Paul particularly asked for the new X-rays of these people when I spoke with him on the telephone this morning.

Thanks very much for your cooperation.

W. Farrell

Rigo, Due to the cancellation of Bill Reitze's trip could you send the x-rays to me. Thanks.

Johns-Manville

Internal Correspondence

To: R. Gonzales - Almeria

Date: September 2, 1980

From: W. R. Paul, M.D., 1-06

Copies: G. Read, 3-14

Subject: X-RAY PROGRAM ALMERIA

The following five people should be followed up in December or January with repeat x-rays. Please forward these to me for my review:

1. Oliverio Rubio Castro
2. Nicholas Sandoval
3. Abundio Servacio Flores
4. Pilar Garcia Espino
5. Roberto Castillo Rios

WRP/pll

Almeria X-Rays.

OLIVERIO RUBIO CASTRO

PILAR GARCIA ESPINO

NICOLAS SANDOVAL LIMONES

SALVADOR AVIÑA SEGURA

GREGORIO PEREZ GAMBOA

J. FELIX SEVILLA ORTIZ

JUAN LAUREANO VELAZQUEZ

ABUNDIO SERVACIO FLORES

MR. W. FARRELL

(Contact Bill Farrell through Lenda Smith at 3877 (Gordon Clark's ext)

This pkg of X-rays is one of three being brought to HSA E. These were brought by Bill Farrell.

The ones on the list marked with an option "X" are the ones retaken by Dr Wright's request. The other list are new ones.

Bill Farrell has asked if these can be read before all clients are to Mexico can be returned by Friday.

ABUNDIO SERVACIO FLORES

PILAR GARCIA ESPINO

NICOLAS SANDOVAL LIMONES

OLIVERIO RUBIO CASTRO

GERMAN ARREOLA CORONA

LORENZO MEZA CANTOR

NOE RUBIO SUAREZ

EZEQUIEL CANTOR RAMIREZ

ILDEFONSO RAMIREZ CERVANTES

GILBERTO MORA MORA

RUBEN PEÑA GOMEZ

OSWALDO CASILLAS ORTIZ

RAMON RAMOS VALENCIA

JACINTO ISIDORO RAMOS

FRANCISCO DIAQUINO RAMOS

JUAN MARES GUTIERREZ

J. JESUS ANGUIANO MONTES

EFREN HERNANDEZ HDEZ.

BENITO VICENTE HERNANDEZ

ANTONIO PONCE DE LEON URIBE

GREGORIO ESCOBAR RODRIGUEZ

ANTONIO LAGUNA FLORES

JOSE HERNANDEZ VALLE

MANUEL DE LOS SANTOS ASCENCIO

ANTONIO ALDRETE MARTINEZ

MIGUEL OLMEDO RODRIGUEZ

JOSE GONZALEZ GLEZ.

FELIPE DE JESUS ALFARO AGUILAR

MARIO ALEJANDRO SEDANO SERRANO

RODOLFO ENCISO GOMEZ

FERNANDO FLORES CORONA

FRANCISCO JAVIER ORTIZ CARRANZA

SALVADOR AVIÑA SEGURA

RAFAEL CASTRO RODRIGUEZ

J. JESUS ESCOBAR RAMIREZ

RAMON BARRAGAN FRIAS

JOSE ANGEL HERNANDEZ HDEZ.

JOSE PEÑA GOMEZ

CAMILO SAYULA PEREZ

FRANCISCO JAVIER VALADEZ MARTINEZ

JORGE LOPEZ SANCHEZ

J. DOLORES FLORES CASTELLANOS.

MR. C. SPHAR

RAYMUNDO JARAMILLO LOPEZ

x JESUS VALLE CABRERA – abnormalities

J. GUADALUPE MORALES BONALES

JOSE GAMIÑO ORTEGA

U – GREGORIO CRUZ DURAN

VICENTE NOGAL GERTRUDIS

PEDRO VALADEZ MARTINEZ

LUIS GUTIERREZ LOPEZ

JOSE NIEVES RODRIGUEZ

ROSENDO VERONICA LOMELI

LUCIANO OCHOA DIAZ

PEDRO BELTRAN ORTIZ

U – FRANCISCO CONTRERAS DIAZ

FRANCISCO JAVIER CORONA VERVERA

U – BONIFACIO RODRIGUEZ ORTIZ

ALFONSO MARQUEZ MEDINA

RUBEN MORALES BELTRAN

MARCELINO SOLANO MEZA

OSCAR JIMENEZ URZUA

ILDEFONSO RAMIREZ CERVANTES

ELIDIO CASTRO BEAS

VICENTE OLMEDO HIDALGO

U – PALEMON JUAREZ ZAMBRANO

MANUEL RAMIREZ TRUJILLO

RAFAEL RODRIGUEZ MARTINEZ

MANUEL GUZMAN RODRIGUEZ

JORGE OCHOA ZAMORA

LAZARO GRACIANO HERNANDEZ

This is all the list of X-rays I brought from Armenia.

[signature]

JOSE LUIS DELGADILLO LOPEZ

JAVIER EVANGELISTA LOPEZ

ANTONIO OLMEDO UREÑA

RODOLFO FLORES ESCOBAR

PEDRO MENDO RAMOS

PABLO TOSTADO VELASCO.

ARNULFO ARREOLA CORTES

ROBERTO CASTILLO RIOS

JOSE TRINIDAD AGUILAR

SERAFIN TORRES SALDAÑA

ODILON RAMIREZ RODRIGUEZ

JUAN DIAZ CAMARENA

JAVIER ESTRADA LEON

AUSTREBERTO NUÑEZ FRIAS

CARLOS DE LOS SANTOS MAGALLANES

RAUL ESPARZA FLORES

CARLOS DIAZ ORTIZ

PEDRO CERVANTES CARRANZA

MARIANO ABEL GARCIA MACIEL

PORFIRIO PONCE FLORES

CAMILO CAJERO VALERIO

J. GUADALUPE NUÑEZ GONZALEZ

RAFAEL GONZALEZ TORRES

J. JESUS ARREOLA CORONA

JOSE LUIS CASILLAS ORTIZ

JESUS PRECIADO TOVAR

ANDRES MARTINEZ JIMENEZ

J. FELIX SEVILLA ORTIZ

JAVIER RAMIREZ CORTES - excellent.

MR. R. JOHANSON

GREGORIO PEREZ GAMBOA

BENJAMIN RABALERO BARAJAS

MARIO PEREZ BECERRA

JUAN LAUREANO VELAZQUEZ

SABINO ZUÑIGA VELAZQUEZ

CARLOS BELECHE GONZALEZ

U - JOSE TORRES CISNEROS

APOLINAR MEZA OCAMPO

U - IGNACIO ZEPEDA GARCIA

PATRICIO MENDOZA SERRANO

U - CLAUDIO GOMEZ REYNAGA

✗ SIGIFREDO CASTRO MARTINEZ - abang.

RIGOBERTO GONZALEZ ARAMBURO

JOSE LOPEZ NUÑEZ

JUAN CARLOS PEÑA MAGALLANES

FLORENTINO SOLIS HERNANDEZ

J. ISABEL BARBOSA ESPARZA

REFUGIO MORALES BONALES

GUILLERMO LAUREANO VELAZQUEZ

JOSE ORTEGA VERONICA

J. JESUS BELTRAN ORTIZ

RAFAEL PEÑA MAGALLANES

JESUS MANUEL GARCIA VILLALOBOS

JUAN TORRES AVILA

MR. W. FARRELL

1774547 JMANME

APR 2? ...

22/4/83

TO: W. R. PAUL, M.D., 1-45 DENVER

CC: R. GOMEZ, 3-14 DENVER
G. READ, 3-14 DENVER
R. GONZALEZ, ALMERIA

REURTELEX 9 APRIL, THE COPY OF YOUR 20 FEB. MEMO WAS RECEIVED HERE ON 16 APRIL AND THE ORIGINAL LOCATED AT ALMERIA, S.A. ON 18 APRIL (IT HAD BEEN SENT ENCLOSED IN A SEALED ENVELOPE CONTAINING X-RAYS ADDRESSED TO CENTRAL DE DIAGNOSTICO TOLSA, GUADALAJARA). TO ANSWER YOUR ORIGINAL QUESTION, X-RAYS OF GREGORIO PEREZ, ARMODIO GERVACIO FLORES AND JOSE FELIX SEVILLA ARE BEING RETAKEN THIS WEEK AND WILL BE SENT TO YOU VIA W. REITZE WHEN HE RETURNS TO DENVER AFTER HIS VISIT TO ALMERIA 12 MAY. REPEATS ON REFUGIO MORALES ROSALES AND IGNACIO ZEPEDA GARCIA WILL NOT BE DONE AS BOTH HAVE LEFT THE COMPANY. I HAVE THOROUGHLY REVIEWED THE TOTAL CONTENT OF YOUR MEMO WITH RIGO GONZALEZ ON 18 APR. AND AM SENDING YOU A CONFIDENTIAL REPORT TODAY WITH COMMENTS ON EACH EMPLOYEE LISTED.

W. FARRELL

1774547 JMANMET.
JOHNMANVIL DVR
X
...
JOHNMANVIL DVR
.
JOHNMANVIL DVR
.

Almeria. . previous smoker
1- should note use of cigarettes
2- hearing tests. ??
3 [illegible] history on another form

Johns-Manville

Internal Correspondence

To: Distribtuion below

Date: March 17, 1978

From: W. B. Reitze 1-06

Copies:

Subject: INITIAL INDUSTRIAL HYGIENE SURVEY - ALMERIA

The attached report dealing with the Almeria location is self-explanatory.

I am sure all of us are aware of the conditions at Almeria, and this report comes as no great surprise. In some cases, the cristobalite levels are 10 times the TLV. Since engineering steps are being taken to correct the conditions, the only proposal that I would make is immediate action to institute a very rigid respiratory protective device program. By separate memo to Bill Farrell, I will advise of a program to accomplish this in a very short period of time. Hopefully, we will be able to furnish direct help in this matter.

Please keep us advised of the engineering progress.

WBR

W. B. Reitze

Attach.

Distribution:

H. B. Moreno	3-03
A. L. Cini	3-03
G. Read	3-03
W. Farrell	Mexico City
A. T. Strochel	2-13
K. A. Roberts	3-03
G. L. Swallow	1-06

Johns-Manville

Internal Correspondence

To

Date: March 15, 1978

From: G.L. Swallow - 1-06 WHQ

Copies:

Subject: INITIAL INDUSTRIAL HYGIENE SURVEY
ALMERIA MEXICO
FEBRUARY 20, 1978

Attached is the numerical recap and all stations report giving the results of the Almeria Industrial Hygiene Survey conducted the week of February 20, 1978. The Initial Survey established sampling stations at all operating dust, noise and fume/vapor locations at both the plant and the mine. This survey established 20 dust (including 3 asbestos) 10 noise and 1 fume/vapor station at the Almeria Operation.

DUST AND FIBER

An important note must preclude the presentation of any data relative to dust exposures at the Almeria operation. Just prior to our sampling (24 hours) the area received a large amount of rain which tended to act as a dust suppressant. Consequently the magnitude of the determinations, although they look to be somewhat large, could in fact be even larger.

In order to make you aware of the sampling techniques employed in this survey a brief review of the individual methods used is included.
QUARTZ AND CRISTOBALITE- Airborne quartz and cristobalite determinations are done to determine the amount of respirable particulate in the plant and mine atmosphere. Determinations are done on both a personal and a station basis with primary emphasis on the personal sample. The present sampling/analytical method enables us to qualitate and quantitate for quartz and cristobalite on the same sample which previously was not possible. This sampling method gives very specific results relative to each individual contaminant as well as to the individual station.
FIBER- All fiber determinations at the Almeria operation involved the use of chrysotile in the fibra flo product line. Determinations were done in accordance with the NIOSH (National Institute of Occupational Health) Procedure, P&CAM 239, "Asbestos Fibers in Air." This determination visually counts the number of fibers greater

than 5 micrometers in length with a length to width ratio of 3:1 or greater, in essence, those thought to be respirable.

The status of a station, over or under established standards, is determined by comparison with the OSHA, Occupational Safety and Health Administration, standards. These values are shown on the all stations report and indicated as "TLV's." (Threshold Limit Value)

Prior to an in-depth discussion of individual station results I would like to draw your attention to the results of station D-85, GENERAL ROOM SAMPLE, BETWEEN KILNS. Exposures to cristobalite are at approximately 50% of the TLV in this ambient location at the plant. This is an extremely high level of cristobalite exposure in a non-working area. The purpose of this sample was to determine the ambient dust concentration created by the poor operating condition of the kilns, which includes the leaking seals and the emissions from the stacks. This generally high background is present throughout the entire operation. All surfaces are heavily covered with material from the stack emissions and the leaking kilns, undoubtedly this is evidenced in the results of the occupational exposures.

The severity of the dust exposures at the Almeria operation is emphasized by the presence of large amounts of cristobalite in the final products. Bulk (non-respirable) samples indicate 52 to 78% cristobalite content and 0% quartz content. Respirable gravimetric samples indicate results averaging about 25% cristobalite and close to 0% quartz. These type of numbers are what would be expected in respirable gravimetric samples.

STATION D-4W, FIBRA FLO PACKER OPERATOR

The results indicate an exposure to cristobalite exceeding the TLV by a factor of greater than 10 times. Fortunately the exposure to asbestos fiber is minimal at this operation due to the low percentage of fiber in the product. Sampling at this location involved the mixing, bagging and sewing operations. The operation uses an open top mixer fed by an operator climbing a ladder with the bagged material on his shoulder, bag filling done manually and lastly sewing of the bags, also manually. To eliminate the large exposures to cristobalite the following is recommended:

1. If at all possible replace the entire operation with a modern system designed to handle the product.
2. If replacement is not possible:
   A. Develop a feed system for the mixer
   B. Close the mixer to the ambient Air
   C. Install a packer
   D. Ventilate entire system

STATION D-3D, #1 MANUAL PACKER OPERATOR

The results at this station indicate an exposure to cristobalite exceeding the TLV by a factor of about 5. No ventilation control is in existance at this station. The operator manually hits the bag trying to compress the product to enable the proper weight filling, this procedure creates large clouds of dust. The bags are then manually weighed and set aside for the sewing operation. This location should be supplied with ventilation control and packers to help eliminate the large exposures to dust.

STATIONS D-4D & 5D, #2 PACKER OPERATOR AND TAKE OFF OPERATOR

Results at these stations exceed the TLV for cristobalite by a factor of 1. This reduction in exposure is due in part to the presence of process ventilation. Note that the exposure to the takeoff operator is considerably greater than that to the packer operator. The takeoff man physically seem to have a much larger contact with the bags and tends to throw them onto pallets creating large clouds of dust in the process. Although capture velocities averaged 300 fpm, which is relatively good, they were insufficient at the packer operation. The takeoff operation exposure seems to come from the bags themselves. The throwing of the bags to the pallets creates excessive amounts of dust. Elimination of these problems may be accomplished by a close inspection of the filling valve on the bags and also a new loading procedure for the palletizing.

STATION D-1S, WAREHOUSE LOADER - UNLOADER

The results at this station exceed the TLV for cristobalite by a factor of greater than 10. Asbestos exposure was minimal. Again in this operation the operator has a large amount of contact with the bagged material. Loading and unloading of bagged material involves a lot of throwing of the bags. This throwing creates large amounts of dust. I think the valve on the bags leaks more than should be expected and should be investigated for possible modification or replacement. The work routine could also be altered to eliminate the throwing of bagged material.

STATION D-5S, QUALITY CONTROL OPERATOR
These results barely exceeded the TLV for cristobablite but still they did exceed the standard. The operator's exposure could come from either the plant or the quality control laboratory. Considerable amounts of material were noted in the ventilation duct in the laboratory. I think the laboratory handling of samples in the dry state should be closely looked at. The addition of adequate ventilation control at key operations in the laboratory would help eliminate exposures to toxic materials.

Note that the exposures at the mine were well within the TLV's. I think that again it should be noted that the conditions at the mine may be somewhat atypical due to the rain previously mentioned. The raw diatomaceous earth has a very low toxicity due to the absence of any crystalline material, this in turn results in a rather high TLV.

Also please note that of the remaining 14 stations not specifically mentioned, 6 exhibited exposures approaching the TLV.

NOISE

As stated before ten noise stations were established at the Almeria operation. Four of these ten stations exceeded safe exposure limits.
Noise sampling takes into consideration the cumulative exposures of an individual throughout his work routine. Consequently, a station is not judged to be over by a single determination but by a series of determinations taken either at given intervals throughout the work routine or taken continuously.
At this point our suggestion is to equip and make mandatory the wearing of ear protection at stations D-1W, #1 CRUSHER OPERATOR, D-3W, FIBRA FLO PACKER OPERATOR, N-3D, #2 PACKER OPERATOR AND N-1M, TRACTOR OPERATOR at the mine.

FUME/VAPOR

The two stations established for determination of Carbon Monoxide exposure in the warehouse operation indicated that exposures were very minimal (less than 5% of TLV) resulting in no hazardous exposures.

GENERAL REVIEW

As an immediate action I suggest that you develop a comprehensive respirator program. Several instances were noted where operators were wearing handkerchiefs for respiratory protection. The establishment of this program will help in protecting our plant workers until we can design and install engineering controls.

I believe the cleaning up of the Almeria operation can best be begun with the stack emissions due to the fact that this source is contaminating the work environment severly. The second area of concern should be the Fibra Flo operation. The antiquity of the methods used to produce this product is shocking. I think lastly, and possibly the area which may eventually protect more employees, is the design and installation of local ventilation to service the major operations within the plant.

In conclusion I think that the International Division should take a very thorough environmental look at the Almeria Location, develop priorities (emission, Fibra Flo operation, Local Ventilation) and some type of time table for implementation.

G.L. Swallow

JANESVILLE
INDUSTRIAL HYGIENE SURVEY SUMMARY

PLANT ALBURIA DATE MARCH 15, 1978
DIVISION INTERNATIONAL MANUFACTURING MANAGER
PLANT MANAGER ING. LIGOBERTO GONZALES ARAMBURO SURVEY DATE FEBRUARY 20, 1978

I. PERSONAL SAMPLES

A. These stations represent PERSONAL exposures which EXCEED the OSHA STANDARDS: D-4W, D-3D, D-4D, D-5D, D-1S, D-5S
N-1W, N-3W, N-3D, N-1M

B. SAMPLING STATIONS

	ESTABLISHED	SAMPLED	EXCEED OSHA STDS.
Dust	20	19	6
Asbestos Only	(3)	(2)	(0)
Noise	10	10	4
Fume/Vapor	1	1	0
TOTALS	31	30	10

II. AREA SAMPLES

A. These stations represent AREAS in which levels of hazardous substances or physical agents EXCEED the STANDARDS:
NONE

B. SAMPLING STATIONS

	ESTABLISHED	SAMPLED	EXCEED STANDARDS
Dust	4	4	0
Asbestos Area	0	0	0
Asbestos Collector	-	-	-
Noise	1	1	0
Fume/Vapor	1	1	0
Ionizing (Audit) Radiation	-	-	-
Non-Ionizing Radiation	-	-	-
Other	-	-	-
TOTALS	6	6	0

D.R. Christensen
Industrial Hygiene Supervisor

cc:
Manager, OEC
Originating Field Laboratory

INDUSTRIAL HYGIENE SURVEY
ALL STATIONS REPORT

DIVISION INTERNATIONAL PLANT ALMERIA-MEXICO SURVEY DATE 2/20/78

OCCUPATIONAL DUST

STATION NUMBER	STATION DESCRIPTION	HAZARD	TLV	CURRENT SURVEY RESULT	
D-1W	#1 Crusher Operator	µg Quartz	100.0	0.0	µg/M
		% Quartz	5.0	0.85	mg/M
		µg Crist.	50.0	0.0	µg/M
D-2W	#2 Crusher Operator	µg Quartz	100.0	< 16.8	µg/M
		% Quartz	> 1.43	0.38	mg/M
		µg Crist.	50.0	1.7	µg/M
		% Crist	2.50	0.38	mg/M
D-3W	Soda Ash Feeder	µg Quartz	100.0	< 15.1	µg/M
		% Quartz	> 1.43	0.28	mg/M
		µg Crist.	50.0	28.7	µg/M
		% Crist.	0.41	0.28	mg/M
(D-4W)	Fibra Flo Packer Operator	µg Quartz	100.00	0.0	µg/M
		% Quartz	5.00	2.34	mg/M
		µg Crist.	50.00	580.24	µg/M
		% Crist	0.19	2.34	mg/M
		Asbestos	2.0	< 0.1	F/CC
		Asbestos	2.0	< 0.1	F/CC
D-1D	#1 Packer Operator	µg Quartz	100.00	0.0	µg/M
		% Quartz	5.00	0.39	mg/M
		µg Crist.	50.00	41.0	µg/M
		% Crist.	0.44	0.39	mg/M

Crist. = CRISTOBALITE

DNO - DID NOT OPERATE
(⊃) - ABOVE TLV
* - PERSONAL PROTECTIVE EQUIPMENT NOT WORN WHERE REQUIRED
( ) - PEAK EXPOSURE
TWA - TIME-WEIGHTED-AVERAGE

INDUSTRIAL HYGIENE SURVEY
ALL STATIONS REPORT

DIVISION INTERNATIONAL PLANT ALMERIA-MEXICO SURVEY DATE 2/20/78

OCCUPATIONAL DUST

STATION NUMBER	STATION DESCRIPTION	HAZARD	TLV	CURRENT SURVEY RESULT
D-2D	#1 Packer Take-Off Operator	µg Quartz	100.0	0.0 µg/M^3
		% Quartz	5.0	1.41 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3
D-3D	#1 Manual Packer Operator' (Fines)	µg Quartz	100.0	< 28.9 µg/M^3
		% Quartz	> 1.67	0.76 mg/M^3
		µg Crist.	50.0	228.3 µg/M^3
		% Crist.	0.16	0.76 mg/M^3
D-4D	#2 Packer Operator	µg Quartz	100.0	< 18.0 µg/M^3
		µg Crist.	50.0	57.7 µg/M^3
D-5D	#2 Packer Take-Off Operator	µg Quartz	100.0	60.7 µg/M^3
		µg Crist.	50.0	102.5 µg/M^3
D-1S	Warehouse Loader-Unloader	µg Quartz	100.0	0.0 µg/M^3
		% Quartz	5.0	0.69 mg/M^3
		µg Crist.	50.0	210.1 µg/M^3
		% Crist.	0.05	0.69 mg/M^3
		Asbestos	2.0	0.1 F/CC

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INDUSTRIAL HYGIENE SURVEY
ALL STATIONS REPORT

DIVISION INTERNATIONAL PLANT ALMERIA-MEXICO SURVEY DATE 2/20/78

OCCUPATIONAL DUST

STATION NUMBER	STATION DESCRIPTION	HAZARD	TLV	CURRENT SURVEY RESULT
D-2S	Warehouse, Fork Lift Operator	µg Quartz	100.0	<17.5 µg/M^3
		% Quartz	>1.0	0.22 mg/M^3
		µg Crist.	50.0	43.6 µg/M^3
		% Crist.	0.24	0.22 mg/M^3
D-3S	Cleaner, Sweeper Operator (Hand)	DID NOT SAMPLE		
D-4S	Maintenance Man - In Shop	µg Quartz	100.0	<19.3 µg/M^3
		% Quartz	>0.77	0.17 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3
D-5S	Quality Control Operator	µg Quartz	100.0	<21.4 µg/M^3
		% Quartz	>2.50	0.98 mg/M^3
		µg Crist.	50.0	24.5 µg/M^3
		% Crist.	0.81	0.98 mg/M^3
D-6S	General Room Sample, Quality Control Room	µg Quartz	100.0	0.0 µg/M^3
		% Quartz	5.0	0.09 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3
D-7S	General Room Sample, Warehouse	µg Quartz	100.0	<19.3 µg/M^3
		% Quartz	>0.83	0.20 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3

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( ) - PEAK EXPOSURE
TWA - TIME-WEIGHTED-AVERAGE

INDUSTRIAL HYGIENE SURVEY
ALL STATIONS REPORT

DIVISION INTERNATIONAL PLANT ALMERIA-MEXICO SURVEY DATE 2/20/78

OCCUPATIONAL DUST

STATION NUMBER	STATION DESCRIPTION	HAZARD	TLV	CURRENT SURVEY RESULT
D-8S	General Room Sample, Between Kilns	µg Quartz	100.0	0.0 µg/M^3
		% Quartz	5.0	0.93 mg/M^3
		µg Crist.	50.0	11.7 µg/M^3
		% Crist.	2.22	0.93 mg/M^3
D-9S	Mill Foreman	µg Quartz	100.0	<38.7 µg/M^3
		µg Crist.	50.0	11.6 µg/M^3
D-10S	General Room Sample, Employee Office	µg Quartz	100.0	<17.9 µg/M^3
		µg Crist.	50.0	0.0 µg/M^3
D-1M	#1 Tractor Operator, Mine	µg Quartz	100.0	<27.8 µg/M^3
		% Quartz	> 2.0	0.81 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3
D-1M	#2 Tractor Operator, Mine	µg Quartz	100.0	0.0 µg/M^3
		% Quartz	5.0	0.89 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3

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( ) - PEAK EXPOSURE
TWA - TIME-WEIGHTED-AVERAGE

INDUSTRIAL HYGIENE SURVEY
ALL STATIONS REPORT

DIVISION INTERNATIONAL PLANT ALMERIA-MEXICO SURVEY DATE 2/20/78

OCCUPATIONAL DUST

STATION NUMBER	STATION DESCRIPTION	HAZARD	TLV	CURRENT SURVEY RESULT
D-2M	Mine Helper #1	µg Quartz	100.0	<27.9 µg/M^3
		% Quartz	>2.50	1.19 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3
	Mine Helper #2	µg Quartz	100.0	<30.1 µg/M^3
		% Quartz	>0.40	0.14 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3
D-3M	Mine Foreman	µg Quartz	100.0	<27.9 µg/M^3
		% Quartz	>0.30	0.09 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3
D-4M	Truck Driver, Contractors #1	µg Quartz	100.0	0.0 µg/M^3
		% Quartz	5.0	0.63 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3
	Truck Driver, Contractors #2	µg Quartz	100.0	<39.2 µg/M^3
		% Quartz	>0.91	0.42 mg/M^3
		µg Crist.	50.0	0.0 µg/M^3

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INDUSTRIAL HYGIENE SURVEY
ALL STATIONS REPORT

DIVISION INTERNATIONAL PLANT ALMERIA-MEXICO SURVEY DATE 2/20/78

NOISE

STATION NUMBER	STATION DESCRIPTION	HAZARD	TLV	SURVEY RESULT DOSIMETER CALC. READING	TWA	RANGE dBA
N-1W	# 1 Crusher Operator	Noise	1.0	1.89	< 1.0	88
N-2W	# 2 Crusher Operator	Noise	1.0	0.35	1.0	85
N-3W	Fibra Flo Packer Operator	Noise	1.0	1.40	2.0	99
N-1D	# 1 Packer Operator	Noise	1.0	--	< 1.0	88
N-2D	# 1 Packer Take-Off Operator	Noise	1.0	--	< 1.0	86
N-3D	# 2 Packer Operator	Noise	1.0	0.49	1.30	92
N-1S	Warehouse Truck Driver	Noise	1.0	0.20	< 1.0	79
N-2S	General Room Sample, Warehouse	Noise	1.0	--	< 1.0	79
N-3S	Maintenance Man In Shop	Noise	1.0	--	< 1.0	88
N-1M	Tractor Operator	Noise	1.0	1.85	1.33	92
N-2M	Mine Foreman	Noise	1.0	0.00	1.0	--

DNO - DID NOT OPERATE
(oval) - ABOVE TLV
* - PERSONAL PROTECTIVE EQUIPMENT NOT WORN WHERE REQUIRED

INDUSTRIAL HYGIENE SURVEY
ALL STATIONS REPORT

DIVISION INTERNATIONAL PLANT ALMERIA-MEXICO SURVEY DATE 2/20/78

FUME/VAPOR

STATION NUMBER	STATION DESCRIPTION	HAZARD	TLV	CURRENT SURVEY RESULT
V-1S	General Room Sample- Inside Warehouse	C.O.	50	0.0 PPM 5.0 PPM 0.0 PPM TWA 1.7 PPM
V-2S	Warehouse-Fork Lift Operator	C.O.	50	0.0 PPM 0.0 PPM 5.0 PPM TWA 1.7 PPM

C.O.= Carbon Monoxide

DNO - DID NOT OPERATE
> - ABOVE TLV
* - PERSONAL PROTECTIVE EQUIPMENT NOT WORN WHERE REQUIRED
( ) - PEAK EXPOSURE
TWA - TIME-WEIGHTED-AVERAGE