MEMORANDUM FOR RECORD

BY: Lee B. Grant, M.D.

DATE: November 29, 1965

SUBJECT: Medical Staff Visit to Port Allegany, October 25 - 28, 1965

1. This is really five plants in one. The following is a breakdown of each of these operations.

Plant No. One is a glass block plant. When in operation this is a 24-hour-a-day, 7-day-a-week operation and there are 90 employees. Jack Binder is the superintendent and his assistant is Glen Turner. This plant, however, is usually shut down 4 to 6 months each year. It will not now start up again until March 1, 1966.

Plant No. Two is the foam glass plant. It is a 24-hour-a-day, 7-day-a-week operation and there are125 employees in this plant. Mr. H. L. Weaver, nicknamed "Bucky," is the plant manager. Plant No. Five is a fabricating plant for the foam glass. This is a one-shift, five-day-a-week operation in which there are 35 employees. Fred DeVries is the manager. He also is the manager of Plant No. SIX which is a ureafoam plant with 10 employees. Plant No. Eight is a unibestos plant with 40 employees. This is a two-shift, five-day operation. Mr. C. W. Dolaway, nicknamed "Checky," is the plant manager. During the time that Plant No. One is not making the glass block they usually have an off season glass brick decorating operation which consists of spraying a lead pigment glaze on the glass brick which is then fired into the brick.

2. Plant No. 8 started up just about a year ago. Shortly after its start up, an industrial hygiene survey was conducted in June to evaluate the employees' exposure to asbestos and silica dust. This survey was done by the State of Pennsylvania. A number of the employees in this plant, namely, the conveyerloader, building operator and some of the saw operators were exposed to asbestos dust exceeding the TLV of five million particles per cubic foot of air. In addition to the 40 regular employees in this department, there are about 6 service department employees who spend all of their time in the asbestos department. Others exposed to asbestos are unloaders who about once every 4 or 5 months spend 4 to 5 days unloading burlap bags containing asbestos from box cars. These unloaders are usually from the work gang and are not the same people used each time. The ingredients are scrap, DX and DX-11 which are two forms of asbestos (incidentally, this asbestos comes from Africa and is amosite type. It has a relatively high specific gravity and it is not shredded as much as the asbestos in the textile industry is shredded, both of which increase its settling rate from the air. Dicalite Grade 185 is a diatomaceous earth that is supplied by Great Lakes Carbon Corporation and is shipped from California. About 2 to 3 bags of this material are used per eight-hour shift as a filler material. These ingredients are chopped up and mixed and pneumatically conveyed to a building machine where they are laid down on a conveyer. They are then sprayed with a liquid solution of sodium silicate which is about 80% water and 20% silicate. This material is received from Dupont or Philadelphia Quartz. The ratio of fiber to sodium silicate and water is about 1:1 for the larger pipe and it is 1 to less than 1 for the

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smaller diameter pipe. The material is then rolled on a steel drum, smoothed, clay coated, the steel drum is removed and the pipe is then put unto a conveyer which carries it through a drying oven, the temperatures of which begin at 250 and then to 350 and then to 450 in three different parts of the drying oven. The day I visited the plant, it was a relatively cold day outside and all the windows and doors were closed. There was no make-up air for the ventilating system and therefore they were operating at a much reduced capacity and there was a noticably heavy concentration of asbestos dust particularly around the loading machine and the building machines although there was some noted in the saw areas as well. Only pre-employment X-rays have been done on any of the employees in this area.

3. The Port Allegany Plant was started up in 1937 as a glass block plant. In 1942, foam glass was added - in 1955, fabrication of foam glass was added - in 1961, the urethane foam was added - in 1968, unibestos was added.

4. Urethane Foam Department. Shortly after the start up of this operation, the Industrial Hygiene Foundation did a survey of this area and generally found conditions well-controlled with no significant exposure to TDI. In the operation, a prepolymer prepared by the Chase Chemical Company consisting of a polyall resin and TDI are combined with a premix which is made up on site and consists of polyall resins and some silicones and a catalyst and other materials. When these materials are combined, there is a levining effect and a hardening effect which produces the bun. This is all done under what appeared to be adequate exhaust ventilation, however, the exhaust fumes are ventilated to the outside and are not scrubbed out. There have been a number of people who have been sensitized by the TDI including the plant manager, Mr. Larry Griffith. Therefore, it is doubtful whether the controls are entirely adequate. Further fabrication of the bun takes place in a temporary like loose plastic hood area where the buns are cut with hot steel wires of various sizes. Recently, in addition to the exhaust ventilation of this temporary like hood, they have also placed local exhaust ventilation on each of the cutting arms where the wires are attached. This seems to be quite effective in fume capture.

5. Glass Foam. One batch house provides batch for both the foam glass tank which is tank no. 2 and the glass block tank which is Tank No. 1. The basic batch for the two tanks varies only in the cullet. The glass block uses glass block cullet and the foam glass uses foam glass scrap. The batch consists of a Mapleton sand, a Barberton soda ash, rascrite which is a borax material, limestone and a methylene cyanide. The batch house is a three-shift operation in which there is an unloader, batch house operator and two mixing and melting maintenance people. An additional batch house operator is added when they are on two tanks. A five-gallon pail of levining is added to the foam glass in addition to the normal batch. This consists of sodium nitrate, sodium sulfate and fluorospar. The batch is fed into the tank with a fraser simplex screw type charger. This is a completely sealed operation as opposed to the usual open feeding in other glass tanks. Tank No. 1 which is only used about half the time is kept in heat between production runs. About 80 tons of foam glass is made per day - maximum capacity is about 85.

There are six cellulating furnaces. It takes a loaf about an hour to travel through the furnaces. One batch loader will need feed two furnaces. The manning of the stripping operation is similar to that at Sedalia. The following were notable differences between the Sedalia and Port Allegany operations in stripping. There was no scrubbing box at Port Allegany which removed excess from glass from the edges of the loaf. ~~Em~~ Half of the furnaces did side or horizontal loading of the lehr whereas at Sedalia, all of them used the side loading operation. The side loading ~~op~~ furnaces were 4, 5 and 6. The air turbulance pattern at furnaces 1 through 4 were also different than at Sedalia in that the dust was blown away from the operator, whereas at furnaces 4, 5 and 6 like at Sedalia, the dust was blown toward the operator. It had been reported that there were many more foreign bodies in eyes at the Sedalia operation than at the Port Allegany operation. In fact, the Port Allegany operation are not required to wear the side shields on their safety glasses as are the Sedalia operators. This safety glass bit is apparently related to Russ Brittingham's interest in 1960 in the large number of eye injuries that were occurring in Sedalia. He recommended something be done so Larry Griffith went to this side shield type glass even though he really didn't believe it was effective. He was the plant manager at Sedalia at that time.

6. Glass Brick. This production operation is reminiscent of the optical tank operation at Works 6. The molten glass is extruded like toothpaste into these molds which are on a rotating disc, The molds of the two halves of the final glass brick. These molds are then welding together much like in the glassweld operation at Lincoln following which they are put into a lehr and slowly cooled following a heating up to close to melting temperatures. After taking them off the lehr, they are sprayed ~~off~~ with a prime coat which is a hydrolyzed ethyl silicate and then a vinyl coat which is vinyl mersol. These coats are to provide a bond layer or an expansion layer between the glass and the mortar used to hold the glass bricks in place much as the mortar used in regular house bricks. The coat is then allowed to air dry and then packed and shipped. Mr. Roy Thompson is an employee who is suspected of having lead poisoning by his personal physician, Dr. Herman Moush. Dr. Moush is a friend of the plant industrial relations director, so I called Dr. Moush to discuss his findings. I also talked with Mr. Thompson about his complaints. The complaints and findings seem to be more closely related to hypertensive cardiovascular disease with the exception of a cramping and soreness of the stomach that Mr. Thompson has complained of within the last year. This, of course, could be caused by the pathology of the gastro-intestinal tract not related to lead intoxication. No gastro-intestinal studies have been made. Mr. Thompson complained of the dry paint causing his fingers to peel and crack. He said that while he was paint spraying, he kept his hands in rubber gloves and perspired a good deal under this and this caused his hands to be wet a good bit of the time. He had been working on this operation for about 3 years and it was only one year ago that he began to notice this fingernail infection which resembled very strongly a fungus infection. In discussion with Dr. Moush about Mr. Thompson, I suggested that I would obtain a lead urine analysis in not only Mr. Thompson but also other employees doing the same type of work and if these indicated an exposure, I'd have further industrial hygiene studies done to determine the source of the exposure.

7. Port Allegany Community Hospital. This is a very adequate hospital which was built about four years ago. There is a new part to the hospital which was just opened just this year. They are right now in the process of getting a new hospital administrator who will replace the nurse hospital administrator that they had had up to the present time. She wishes to retire. All four doctors who provide services to the plant are members of the staff of this hospital.

8. Fabricating. A similar condition was noted with reference to make-up air for theventilating systems-in the fabricating department that was noted in the unibestos department. This lack of make-up air significantly reduced the efficiency of local exhaust. They also noticed that the saw operators and other people working in the fabricating operation were not wearing safety eyewear. One of the things that is fabricated in addition to pipe insulation in this department is the GO acoustics material which is the glass foam with many holes punctured into it and it is painted. This GO acoustic material is a sound-absorbing material which is placed on halls to reduce sound reflections.