FORT BEND COUNTY HISTORICAL COMMISSION

ORAL HISTORY COMMITTEE

Interviewee: **Leon Anhaiser (Imperial Tour)**

Interview Date: 03/27/2009

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Transcriber: Marsha Smith

Location: Imperial Refinery, Sugar Land, Texas 22 Pages

Transcript

ADOLPH: This interview was taken while walking through the abandoned Imperial Sugar Plant with Leon Anhaiser, former Vice President Refinery Operations, and Sugar Lander by birth.

ANHAISER: These three buildings had three different operations. You had the unloading station, the raw sugar warehouse, which is the tin building, and this tall building with an elevator. It took the sugar out of the raw sugar warehouse and put it into the first step of processing.

ADOLPH: So you were saying that the first step was the train coming in.

ANHAISER: The first step in the process was the transporting of the sugar in rail cars, primarily from suppliers in Louisiana or Texas, or from Galveston where ships came in bringing raw sugar. Raw sugar was then transferred to Sugar Land in railroad cars and unloaded at the raw sugar unloading station. The sugar dropped down between the tracks into a tunnel onto a conveyor belt, which took it into the raw sugar warehouse next to the unloading station. It was dropped on the floor in the warehouse. Under the floor was another tunnel and you could open gates beneath the floor of the warehouse so the sugar could flow by gravity towards the elevators, which took it to the raw sugar filtration and melt stations. The sugar was melted into a liquid after it went through a centrifuge, which washed off the molasses. The liquefied sugar from the melter then traveled to the filter station where phosphoric acid and lime were added to precipitate out impurities. These impurities were then removed through filtration and the liquid was pumped to the Char House for decolonization.

Sugar Land was always a marginal growing area for sugar cane because of its temperatures. The problem was that if you had a freeze, the crop was destroyed. That's the biggest danger in growing cane and Sugar Land has freezes from time to time. Louisiana and Florida have temperatures that are more moderate and the Rio Grande Valley as well.

ADOLPH: Wasn't it hot enough in Sugar Land year-round?

ANHAISER: Well, it wasn't that it wasn't HOT enough, but we couldn't take a freeze. A freeze was a disaster. Another issue was that the state made some changes in their convict lease system in about 1913.

They wanted to control all the prisoners which made prison labor less available. Harvesting and planting was very labor intensive in those days. Today it's ALL done with machinery.

ADOLPH: What years did you work for the company?

ANHAISER: From 1961 until 1995. I was born here. When I graduated from Sugar Land High School, I applied for the Kempner Scholarship, which was an engineering scholarship to attend Louisiana State University (LSU). It was the only sugar engineering school in the United States. It was a four year scholarship. Sugar engineering is almost identical to chemical engineering.

[Seeing bees nearby Anhaiser mentions bees.] One of the challenges with sugar is to minimize your spillage. It's not good to have sources for bees to come get it. Bees need it in liquid form. Those bees we see right now are by what was the liquid sugar loading station. There's always going to be a drip here or there ready for them.

If you did everything right, you didn't have a problem because when you dropped it out of the rail car, it went into a hopper, and the hopper was control-fed out the bottom, so you didn't have spillage unless you had a malfunction in the conveyor.

POLLICOFF: Would you talk about the reason for the height of the raw sugar warehouse?

ANHAISER: Raw sugar is like sand. You see in the background, the raw sugar warehouse. It has concrete sides that have exterior angular supports. The raw sugar was dropped in the warehouse and was only allowed to pile up as high as the concrete. These outside supports kept the sugar from pushing the walls out. If the sugar were ever to get as high as the metal siding, it would push them out and sugar would fall outside of the building. We supported the concrete with outside supports and those triangles. The peak of the building was designed for the natural peak of the sugar. The sugar was put into the warehouse from a central elevator, and as it fell onto the pile, it ran down the sides until it made its own natural peak. That peak was angled relative of the natural peak that raw sugar would make as it built up inside. We had the capacity to store about 40,000,000 pounds of sugar in that building. Then it would be withdrawn from the bottom where there were gates and a tunnel underneath the warehouse. It would fall onto a conveyor belt and was taken into the elevators to go into the melt house.

ADOLPH: So when sugar is dropped onto the ground, it naturally forms an arc?

ANHAISER: Right. It forms a peak like this [steeples hands]. You've got to remember that raw sugar is coated with a thin coating of blackstrap molasses. This molasses has a resistance to flow. If it were just regular white sugar, it would have a different peak. Raw sugar has molasses in it and molasses tends to stick the crystals together. So, the angle is pretty predictable.

ADOLPH: The angle of the roof parallels the angle of the sugar as it falls? Why couldn't you build a straight building and have the angle of the sugar inside the building? Why was it important to build the roof to match the sugar?

ANHAISER: There are two questions there, really. One of the questions is that, for the money spent, you get the maximum amount of sugar stored by a building with this type of angular roof. We also wanted to be able to rotate the sugar in and out at OUR management, and if you went straight up, then you would run into the possibility of it becoming a solid block of sugar. It might be almost impossible to get it out if the sides were straight. This way we could get in through the doors and push the sugar from the end. What didn't fall in the conveyors was pushed from the sides. We would have to inventory periodically, which required emptying the entire warehouse.

ADOLPH: So molasses was used pretty much throughout the process?

ANHAISER: The manufacturer of the raw sugar to protect it from bacterial action put molasses on the raw sugar crystals. Molasses has a very high hygroscopic pressure, and penetration is almost impossible by bacteria. So, the higher density of molasses, the more security you have from bacteria attacking the sucrose, which is what you are interested in.

ADOLPH: Earlier we were swarmed by a large number of bees. Are they attracted to the molasses?

ANHAISER: They're attracted to sugar. There is not a whole lot of sugar left around here, but there are still some hives in the neighborhood and I think they are around picking up anything they can that's left over.

ADOLPH: You said they were honeybees. Are they friendly neighbors?

ANHAISER: Yes. Italian bees are what beekeepers normally have. They are very docile. They didn't tend to harm the employees at all. Though our task was to make as many areas safe from bees as possible primarily by keeping the sugar spillage to a minimum.

GOODSILL: What are these pipes for?

ANHAISER: They are what we call a pipe chase. The pipe chase is a structure that carried all of the liquids. From this building we pumped everything over to the Char House.

GOODSILL: Sugar flowed through these pipes?

ANHAISER: Yes. The liquid sugar, after it's melted and filtered, was pumped all the way over to the Char House. The inside of the melt house was about the same temperature as the outside temperature. We had fans, but they just brought in air temperatures from the outside. As more people got used to air conditioning, we built little offices and control panels which were air-conditioned. While an employee was making his rounds and looking at all the equipment, he would be in the natural temperature. When he finished up, he'd go do his book work and watch his instruments inside an air-conditioned booth.

The Char House is the tall, red brick structure on the right in this photo of the abandoned Imperial Sugar refinery.

We used to receive all of our raw sugar in 325-pound bags. It was very labor-intensive because you would have to unload the bags by hand from the rail cars. Then you had to cut them open and you'd have a TON of jute bags to move! Those were all man-handled originally. But that wasn't at THIS location. We had another location where that happened.

ADOLPH: So from here, the sugar went through the pipes to the Char House?

ANHAISER: Yes. After the sugar liquor was filtered in the filtration station and went into the pipes that are located on this pipe chase, it was pumped over to the Char House for decolorization. When we are talking about liquor, it's nothing more than sugar dissolved in water. But it's at a very high concentration. These were all in about 65% solids.

GOODSILL: The liquid that was in here – what color was it?

ANHAISER: Brown.

GOODSILL: How brown? Real dark?

ANHAISER: Well, it all depended upon the raw sugar color. Each one varied a little bit. Some could be light tan, others could be dark brown. Each one had a different characteristic, depending on the origin, variety and growing conditions. There were three boilers in there. The old ones were permanent structures, but later on, as engineering improved, you could buy a boiler, and they'd just bring it in and set it down. It was all gas-fired.

ADOLPH: The power plant powered the entire refinery?

ANHAISER: At the power plant, you'd put water in a boiler and turn it into steam. Then you'd take the high-pressure steam and run it through the electrical generators and make electricity. That would drop the pressure down to a lower pressure that we could use in the refinery for boiling sugar in the pans.

ADOLPH: You made your own electricity?

ANHAISER: We made our own electricity and originally, we also supplied electricity to the town of Sugar Land. The old power plant, the yellow brick building that was across from the water tower, supplied the power. During the Depression, money was really tight, and in order to save the refinery, they needed some cash. So, they went to Washington because Washington was allowing grants to build electric power plants. They got a grant and built this power plant, but utilized some of the money to keep the refinery going and save the refinery.

At 212 degrees and higher, sugar will get dark very quickly and become molasses. If you boil it at a low temperature, the process is significantly reduced. So, we boiled sugar at between 160 and 180 degrees. We did that by creating a vacuum. As the sugar began to boil, it gave off steam from the water. We would take the steam up and condense it with water. The water got hot, so we brought it over here, cooled it down, and sent it back over to condense some more. By condensing the steam from the pans, we were able to regulate the pressure and create a vacuum so we could boil at much lower temperatures.

GOODSILL: Another topic – when you went to Hawaii, what was your job there?

ANHAISER: They built a brand-new plant that was totally computerized, a totally new concept. They couldn't run it, so they asked me to come run it. (laughs)

GOODSILL: Why couldn't they run it?

ANHAISER: Everybody was interested in the newest technology, but they didn't know basic principles. They could look at an instrument and tell you something was wrong, but they had NO clue about the factors that caused it to be wrong. So, they had no idea where to go to fix the problem. They needed some old people who didn't know any better! (laughing) Nothing's really changed except how you treat the information you gather. Our plant was in Aiea on Oahu, and every day when I went to work, I saw Pearl Harbor and the Arizona Memorial.

ADOLPH: That must have been a rough job, working in Hawaii!

ANHAISER: Well, when the problems got solved, it was fun.

GOODSILL: Four million pounds a day in Sugar Land, WOW.

ANHAISER: You have X amount of volume you have to move, and you're going to move it slowly or quickly. The faster you move it through the process the better. With automation you use fewer people.

The Maintenance Department that has since been torn down WAS right here. Over there was the Machine Shop. We had a big fleet of trucks. They built this parking lot for the fleet to park and drop all their trailers. The maintenance, refueling and everything else for trucks was right over there.

ADOLPH: The workers had to get used to working in pretty hot temperatures.

ANHAISER: Well, you know, we didn't know what a hot temperature was. A lot of us grew up working out in the fields, picking cotton, and you didn't know it was supposed to be cool. So, it wasn't hot. The hottest place was in the Char House, which would reach 140 degrees on one floor.

What you are feeling out here is what they would feel at different times of the year inside. During the cold weather, they'd close some of the windows of the Char House to keep the wind out. Not much different from your home. They would wear a coat and they were busy, walking around, keeping going.

These are liquid sugar tanks, two sucrose tanks and an invert storage fifty-tank. These tanks would be filled with 67.2% sucrose. Sucrose was what Coca-Cola and Pepsi used. There is a pump station. You talk about bees! It's a pump that pumped the sucrose out into the trucks. There's a pump in there, you can see it from here as you walk by. You always have a little leak from the pumps.

In front of us you see the liquid sucrose storage tanks silos. These tanks received finished liquid sugar product, ready to be used in soft-drink manufacturing plants. Buying it in the liquid form meant they didn't have to use bags or labor. They just pumped it straight into their process. The density of this was 67.2% sucrose. Knowing that, they could calculate exactly the mix of the sugar solids with their products in order to make Coke or Pepsi or any other soft drink.

These silo tanks are all stainless steel. All the piping is stainless steel. The sucrose would be pumped into it, and then when the truck came over to the loading station, they would start the pump. It would pump it right out of these storage tanks into the tanker truck and that would be delivered to the customer.

ADOLPH: Sucrose production wasn't part of the original business. When did that start?

ANHAISER: Sucrose is sugar. You have the solid that you use in your kitchen. When we dissolve it in water, we call it liquid sucrose or liquid sugar. They are the same thing. Sucrose in liquid form became more sophisticated in the '60s and '70s. Everybody was changing over to that and getting away from the bags because of the labor associated with bags. Liquefying the solid sugar and handling the quality control. enabled us to send it to the customer for them to use directly in their process.

We always had to make the granular sugar. Once we made the crystal and dissolved it, then we would put it in these tanks and ship it. This was liquid sucrose, and that was nothing more than sugar dissolved. We had another product called Invert 50. We would 'invert' some of the sugar – that means we would split the sucrose molecule into dextrose and levulose also known as fructose. Dextrose, levulose and sucrose were utilized in a lot of drinks, mainly because they have different sweetness levels.

ADOLPH: Earlier you mentioned you were producing how much sugar per day?

ANHAISER: In Sugar Land, we were doing about 4 million pounds of sugar per day on the average in the '90s.

ADOLPH: You mentioned that you wouldn't see a plant built like this any more.

ANHAISER: No. All the new plants do the same processes, but the equipment is different. It's outside and not in buildings, and really automated.

That great big line carried water to the cooling tower. We used power plant condenser water from Oyster Creek until the late '90s. It was used for condensing the steam, and then returned to Oyster Creek.

GOODSILL: Down the flume in front of the Teacherage?

ANHAISER: Yes, all the way down to Guenther Street and Venice. There was a big tunnel under the sidewalk, which has now been demolished.

GOODSILL: The hose would come down and just fill it up?

ANHAISER: Yeah. You just stick it in the top. You see that valve there? The big one? He had his pump controls here and the meters there are still some intact. They would set how many gallons they wanted to put in the tank truck, so they wouldn't run over. The meter automatically shut off when complete.

GOODSILL: The railroad is another part of the story, isn't it?

ANHAISER: This particular railroad line had to do with the sugar cars that were moved back and forth through here. We could actually load tankers with liquid sugar. It held about four times as much as a regular truck. You could move all the way back that way, or you could move all the way across here if you wanted to. Actually, you could get onto the train in that direction WAY back behind Nalco. There were two ways to do it. It makes a complete circle. We just moved cars in and out. We had track mobiles that set on the tracks, and you could move so many cars at a time.

ADOLPH: So these are Imperial's rail lines, not Union Pacific's?

ANHAISER: The railroad company maintained the rails. They had to negotiate to get rid of them. We had our own conductor who drove track mobile.

ANHAISER: The rail lines that are here were part of the circle. The cars were dropped off on sidings, and then brought across the road. That opening there is to the liquid sugar trucks. Or if there was a problem with us having construction or any type of maintenance that had to be done on the tracks on that end, we could bring the cars in here. If we had maintenance on this end, we could bring the cars in from the opposite direction. This particular bridge was very important in that it completed the circle of the rail cars.

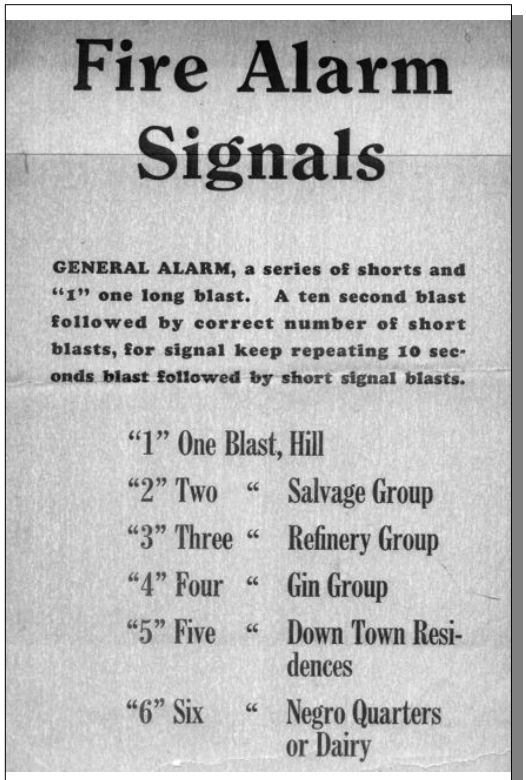
This railroad track here, this bridge, was part of the connection. We had two ways to get into the refinery. We had a siding over by the main line where we could drop cars off and bring them across this road and bridge into the refinery. Or they could be positioned there for loading liquid sugar. They could also be pushed all the way back out across to the area where we could get to the raw sugar warehouse. In case we had maintenance issues on one end or the other end, we had two ways in and two ways out. We could continue to move all the rail traffic through the refinery.

ADOLPH: Were these rail lines owned by Imperial?

ANHAISER: I think the railroad company owned the rail lines, but this goes WAY back into some sort of agreement they made with the railroad in the beginning. I don't know who owned them. Probably the developer purchased them.

ADOLPH: You told me an interesting story that this bridge caught on fire?

ANHAISER: We had lightning strike here one time, and the bridge caught on fire. They had to bring people out to put the fire out here on the bridge. It actually CAN happen – you can have lightning start a fire on a bridge!


Fire Alarm Signals

GENERAL ALARM, a series of shorts and "1" one long blast. A ten second blast followed by correct number of short blasts, for signal keep repeating 10 seconds blast followed by short signal blasts.

"1" One Blast, Hill
"2" Two " Salvage Group
"3" Three " Refinery Group
"4" Four " Gin Group
"5" Five " Down Town Residences
"6" Six " Negro Quarters or Dairy

Older Sugar Land residents (and volunteer firemen) will remember the whistle tones were coded so they knew the fire location.

ADOLPH: Which leads to the question, how was fire suppression handled at this plant before the creation of the fire department?

ANHAISER: We had a volunteer fire department from day 1. It was mostly people in the refinery and the maintenance department. The volunteers would train on their own time. We had our own fire engine, and we had a place to keep it. We also had one of the guys who worked here as the Fire Chief. They would train, and whenever we had a fire anywhere in Sugar Land, the whistle in the power plant would blow a code. This code would tell the volunteers where the fire was. All they had to do, if they were home, was jump out of bed, or run out of the house. They could go directly to the location of the fire without having any voice communication.

The water tower was for the refinery sprinkler system. It's where we got the water to put out the fire. There is a water well over here, and there's a well over here. That's the ground tank. All the water for the town of Sugar Land went through there and was pumped to residential houses.

ADOLPH: So the company purchased the equipment, the company provided the training, the company sounded the alarm, and the company provided the employees who were members of this volunteer fire department?

ANHAISER: That's right. They volunteered. If they were working at the time of the fire, they were paid as if they were on the job.

This is the old power plant. Over there is where the new power plant was which gives you an idea of what happened with the construction of the new power plant.

GOODSILL: Was this one abandoned?

ANHAISER: Yeah.

GOODSILL: Never used again?

ANHAISER: Not as a power plant, but we used it for training and educational classes. It was used for meetings for non-profit groups, such as the Lion's Club.

Originally all the utilities were supplied by Imperial and controlled by Imperial. In 1959, when Sugar Land incorporated as a city, it took over the water supply. Until then we did it here. We did our own testing to make sure it met state standards; we put in chlorine and measured all that. I don't know the exact date they took over the water because there was a transition period. They didn't have the people or the expertise to do any of that.

ADOLPH: What was this building back here?

ANHAISER: This yellow brick building [since demolished] was the original power plant for Imperial Sugar. It's where they made the electricity and power. Next to it were the wells for the fresh water and the water for the city. There's a big concrete dome there that was kept full for the citizens. Not only did the refinery use the water, the citizens did as well. That's where the chlorination treatment of the water and the testing was done to make sure that it was safe for the residents. Originally, Imperial supplied all of the electricity and all of the water, and took care of all of the treatment of wastewater from the residents.

GOODSILL: Where does the water come from, originally?

ANHAISER: The water is all from artesian wells. There is a big river of water that flows under this area. There's a LOT of water there. Back when Imperial started, there weren't very many people in town, and the big river underneath us was used as the water source.

Let me tell you about dredging the creek. The dredge barge would get to a location, start the screw conveyor running, and go down slowly. The pump would pick water out of Oyster Creek and force it through this conveyor which fluidized the solids that the screw conveyor was stirring up.

EDITOR'S NOTE: Fluidization (or fluidisation) is a process similar to liquefaction whereby a granular material is converted from a static solid-like state to a dynamic fluid-like state. This process occurs when a fluid (liquid or gas) is passed up through the granular material. --*courtesy of Wikipedia*

Next, it would go through a floating pipe, all the way down and around the corner on the other side, almost to Dam 1, where we had built a system of dikes. The water would go in there, and then it would go around and around and settle out. Then the water would drop right back into Oyster Creek, free of all the solids. So, it was a circular type of thing, and it went on for ten or twelve years before they got it all out.

GOODSILL: And the stuff that they dredged out went to a landfill somewhere?

ANHAISER: It just went on top of Imperial's land across from Mayfield Park, on the north side of Oyster Creek. They thought that the silt from Oyster Creek would take many years to regenerate. They thought this silt would be really bad, and nothing would grow in it. Like many other theories, that was wrong. It was very rich, and within a year it was growing things. It's very good, fertile land.

As I mentioned earlier, they had barometric condensers, which condensed steam so that we could boil sugar under vacuum conditions. As a result, we had to have water to circulate through the barometric condensers. What was needed was a bigger volume of water. So, this area was dredged out by the American Canal Company. In 1937, it went to Water Control and Improvement District #1 (WCID #1) That's why it is so wide here because this is where the water originally was discharged when there was a sugar mill. To the right are the actual suction pumps that existed when the refinery was operating. This area also facilitated drainage.

So, there were two very good benefits. You had an area where you could use the water for barometric condensers, and you also had improved drainage. We're STANDING in the Brazos River Flood Plain. You see the high bank over there? Even though it's not a real BIG hill, it's big enough that it never flooded and was consequently called 'The Hill' area of Sugar Land. The area to the south of Highway 90 was prone to flooding, whereas 'The Hill' was not prone to flooding. There is black clay on 'The Hill' and red soil south of Highway 90.

ADOLPH: Was 'The Hill' the first subdivision in Sugar Land?

ANHAISER: That's where the homes were built for the workers because that area would not be flooding. That's why homes weren't built south of 90 first. Originally, they had a little bridge from 90 over the water on Main Street. In the old days, during rainy weather, you would have to BACK your car up that hill because you couldn't possibly get up the hill with one of those Model T's or Model A's, even though it was only a rise of 10 or 12 feet.

ADOLPH: What was the purpose of dredging Venetian Estates?

ANHAISER: Venetian Estates was one of the best swamps we had around Sugar Land! A lot of alligators were in it, and it was an area that wasn't being utilized. They had a vision to dredge out the swamps and make lakes. They piled up the soils they dredged, and that would be where they would build the homes. Every house would be on the lake. The lake is all water from wells. None of that water is drainage water.

ADOLPH: So they dredged Venetian for the specific purpose of building homes?

ANHAISER: That's correct. It was a subdivision from day 1. Imperial had several subsidiaries, such as Belknap Realty Company and other things. I'm not exactly sure how it all linked up.

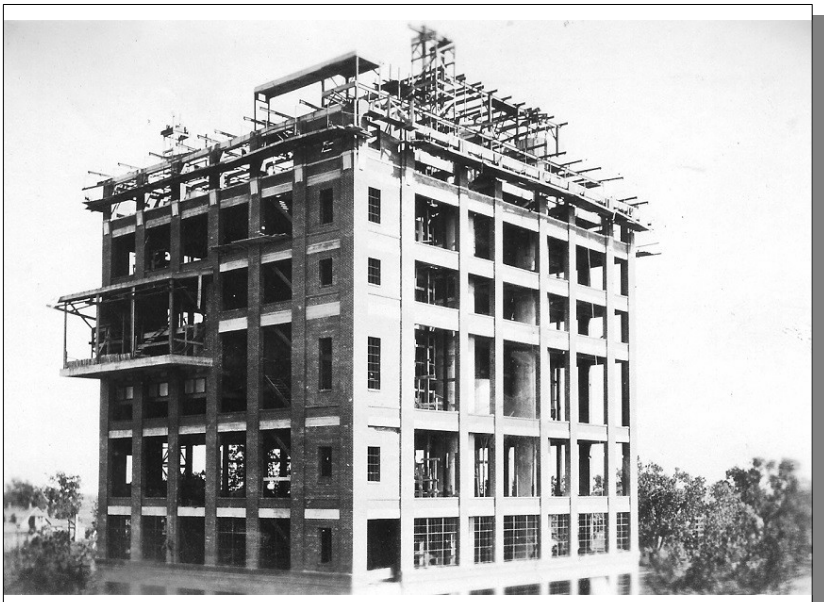
ADOLPH: In terms of the water, the company obtained water rights early on, which was visionary.

ANHAISER: The water rights were always owned by WCID #1. Water rights came from the American Canal Company. The whole idea here was to bring water through here for irrigation, and it was pumped from the Brazos River. They took natural ditches, widened them, and built dams to control the water and drainage. The water rights went to WCID #1, which was created by Fort Bend County at the request of the landowners of this area. It is a governmental agency recognized by the state of Texas. [No longer in operation.]

EDITOR'S NOTE: Since this interview WCID #1 is now part of the City of Sugar Land. For more information on water issues in and around the Sugar Land area, please read Leon Anhaiser;s previous interview, dated April 24, 2009, on this website at https://www.fortbendcountytx.gov/home/showdocument?id=30576.

ANHAISER: WCID#1 still exists today and owns the water rights from the Oyster Creek watershed. Next the Imperial Industries tour will move into the Char House.

ANHAISER: This was the last classic Char House built in the United States or anywhere else in the world. No one built a Char House after 1925. They went to granular carbon, ion-exchange and carbonation.



The Char House under construction on Kelly Blog in 1925. --courtesy Sugar Land Heritage Foundation

GOODSILL: Would the new processes affect the quality of the sugar?

ANHAISER: Actually, sugar made using the char has different characteristics than sugar made using granular carbon. It does different things like take out different things. It's a matter of looking at efficiencies and looking at supplies. Char was made of bones collected off the prairies. For centuries, you had bison and other animals dying, and as they died, their bones bleached out and dried out. When they got good and dried out and bleached, the bones were crushed and heated under controlled oxygen conditions. The bone was the structure to hold the carbon. The char was used as the media and when you put the sugar through there, it would take out the color and ash and other impurities. Syrup would go in a brown color and come out colorless, without any color whatsoever.

The bone char's purpose is to remove colorants, ash and other things that are in the raw sugar from the wash plant. The sugar plant has a lot of things, off flavors and tastes, and things that you want to remove when you go to the pure sucrose, white sucrose step. Bone char was known to be the best material to do that.

Bones were mostly picked up and manufactured by suppliers. These bones were lying out on the prairie in the United States. They were sent to us in bags and we dumped them by hand into our columns. They used bone in the Sugar Land plant all the way up to the end. After getting it from the U. S., they got it from Scotland and then India.

Pictured is a mixer filling device used to wet the bone char with sugar liquor as the filter is being filled with bone char. The char had to be wet before it entered the char filter to avoid dry spots and allow even, proper flow.

Seitz-Plokuda archive

Next to the Char House, we added on the Granular Carbon House. Coal is a carbon, which was used to remove colorant, but it didn't do much for your ash. You could use bone char to take out the ash and other impurities, and let the granular carbon take out the color. That's why that was added on as a next step. We made the connection between bone char and granular carbon. The carbon could be used to take out a LOT of color, whereas the bone char was limited on the color. Putting these two together, in tandem, was a very good connection.

GOODSILL: And why was that an important job? Because you had to control access?

ANHAISER: Yes, we had to know who was coming in and out of a food plant, and he knew everybody, so we didn't need to have name tags or anything.

The Char House is what really moved a raw sugar plant to a refinery. Once you can decolorize the sugar and sell it as white sugar, then you become a sugar refinery. This area is the nerve center in sugar making, we called it the liquor gallery. [It is the part on the north side of the Char House that sticks out.]

The liquor gallery was the control center of the Char House. Everything was controlled from that location – valves in and out of all the columns. The operator could see what was going in, what was coming out, and check the quality.

Next we'll move to the second floor of the Char House where the gas went in. The fire was be in there. Normally you looked at the fire from here and judge the air by hand. You judged the air/gas ratio by sight. Once you'd seen it enough, you could get the right combination of gas and O2. Later on, we had infrared temperature meters, but in the beginning, you didn't have those.

ADOLPH: So, what happened on this floor?

ANHAISER: This was the head of all the bone char columns. There were 30 huge columns in the Char House that ran from the top floor down with ten in each house. We had A, B and C houses. When the columns were ready to be filled, we took bone char, which came to these columns by conveyor belts on the next floor and dropped the char down into this mixing device. The bone char and the liquor (or sugar solution) would go in at the same time. It would wet the bone char as it fell into the column.

The whole column would be filled with the bone char and liquid at the same time. Bone char is not very easy to wet, so you had to wet it a little bit at a time. By the time it was full to the top with bone char and liquor, a cap was slid around and bolted down. At that point, they would hook up the syrup to flow through from top to bottom. What we wanted to do was remove all the color, ash and impurities. The syrup ran through this particular column where one pass through removed most of the impurities and colorants.

That happened on the 5th floor. The bone char went all the way up to the 7th floor. Then it was dropped into bins, which fed it down on to the conveyors, and the conveyors took it into this column.

ADOLPH: How tall are the columns?

ANHAISER: I'm not sure. They are probably 60 feet.

ADOLPH: So they span several floors.

ANHAISER: We have one super-tall floor; it's like two floors but without flooring. There was no need for an intermediate floor.

ADOLPH: So after it left here, where did it go?

ANHAISER: The liquid that came out the bottom of the columns went up to the liquor gallery. The operator would determine the colorants, whether or not it needed to be further processed, or if it was ready to go to the pan floor. Sometimes he might pass some of the syrups through another column to make sure they met the color standards. The liquid was pumped into the Pan House and up into the storage tanks. Then it went into the centrifuge to separate the mother liquor from the crystals. In the Pan House, you ran around and opened and closed all the valves because in those days they were all manual. Later on, we put in automatic valves and could punch a button, and then we didn't have any pan boilers.

Employee George Morales was a pan helper. In his later years, he took a position as plant gatekeeper and spent most of his last years on the gate. Next the liquid is pumped over to the pan floor in the refinery, where it was ready to be boiled into a crystal.

> NOTE: See George Morales' interview on the FBC Historical Commission website at https://www.fortbendcountytx.gov/home/showdocument?id=43523

ADOLPH: Which is not in the Char House?

ANHAISER: Right. It's across the way. The sugar syrup was forced into the bone char columns, came out through these stainless-steel pipes, and went up to the liquor gallery. From there he could redirect it to any other column to re-circulate it, or he could send it to the pan floor to be crystallized.

ADOLPH: The concrete floors seemed a little soft in some areas. What's the corrosive?

ANHAISER: Whenever you get sweet water solutions you have bacteria and yeast as a nutrient medium. Their by-products are acid. Concrete is a base. So, the acid reacts with the concrete to cause the corrosion that you see on the concrete.

ADOLPH: When do you think these columns were made?

ANHAISER: I think they were made in the early 1920s because the building was finished in 1925. There were all made in here in the United States.

ADOLPH: What happened to the bone char?

ANHAISER: When the bone char was exhausted and wouldn't remove any more colorants, it was de-sweetened. All the sugar was taken out of it and dropped through a chute to a bin below where it could be fed into the kilns to be rejuvenated with temperatures about 1,200 degrees Fahrenheit.

ADOLPH: So you recycled the bone char?

ANHAISER: Oh, yes. The bone char was recycled. After it was dried and rejuvenated, it went on to the conveyor and elevator and straight back up and into the columns. It did go over a screen. As the colorants made the bone char particles heavier, we took off the heaviness, leaving pieces of bone char which were no longer able to do decolorization.

ADOLPH: So what you're describing is a closed system.

ANHAISER: It was a closed system where the bone char was reused numerous times. It was rejuvenated going back through the kilns and dropping down the columns. The idea here was gravity. It's going into the bins on the next floor. You'll see a bunch of bins. We could distribute it where we wanted it. We kept it in three houses; we put all the new char in House C, and as it became less good, we'd move it to B, then from B to A, and from A it went out as a waste product. We sold it to the cattle industry to be used in cattle feed.

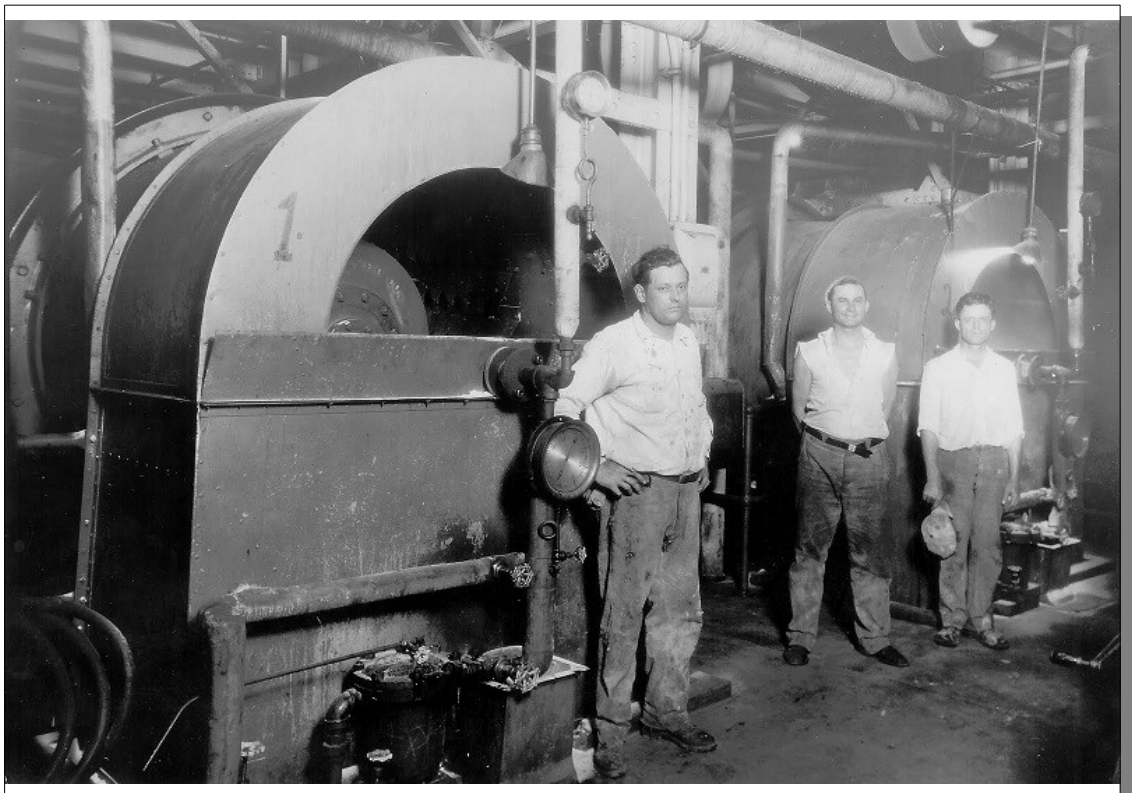
ADOLPH: So we're on the 3rd floor right now.

ANHAISER: The bone char has gone into the bins and now it went through these distributor-drying mechanisms. The object here was for the heat coming from the kilns to re-dry the bone char before it got into the kiln. When dry, it was dropped on each side into tubes which ran all the way down from this floor to the 1st floor and through the furnaces, which are below us. Inside the tubes, we had to control the oxygen. Carbon will burn at 1,200 degrees Fahrenheit, so you have to keep oxygen away from it in order to keep it from burning up all the bone char. That's what this equipment did – dry and distribute. Robert Sayre Kent received the original patent on the engineering designs.

ADOLPH: What was special about Mr. Kent?

ANHAISER: Mr. Kent was a very famous engineer, very innovative in developing new equipment during the early part of the 19th century. You'd have to look it up, but you can see he had a bunch of patents. 1907 is when this one was made. Here's the date and the patent number; November 10, '07 and this is February 21, 1911.

The pan floor is where the sugar boilers worked. Sugar syrup was brought over here to the refinery to storage tanks. The sugar boilers operated in what we called 'pans', which were really BIG sugar boiling tanks. They would bring in the sugar syrup, seed it with sugar crystals, and then grow the sugar crystals to the size that you normally see in your sugar bowl at home. When they got to the correct size, they would shut down the whole boiling process. They boiled at temperatures from 160 to 180 degrees Fahrenheit, doing it under a vacuum to keep the sugar from caramelizing. Next, the sugar was dropped down into mixers below on the next floor and fed into centrifuges. This is where the sugar crystals were separated from the mother syrup that was used when they were boiling it. Then you had wet, white sugar that went to the dryers.



The granulators is where the sugar was tumbled dried as wet sugar entered one end and came out the other end dried. Steam heated air was forced through the drier and evaporated the water from the tumbling sugar crystals. This is of the sugar feed end. Notice the steam gauge which controlled the heating of the air. *Seitz-Plokuda archive*

The dryers were back over there. There's one pan left. They would bring all the sugar down to the warehouse where they wanted it to be stored. Many times, it was hand palletalized and stacked up in the warehouse.

We also had automatic palletizers for those products that were routine, like 5 pound and 10 pound bags. Those would be palletized automatically, and forklifts would pick them up and store them in the warehouses until they were ready to ship.

ADOLPH: We are now in the building where they did the packaging of the sugar?

ANHAISER: That's correct. Starch was added in making powdered sugar. Starch was a desiccant to keep the powdered sugar from getting hard. When you take sugar and you pulverize it, it's very hygroscopic, which means it will take moisture out of the air very readily. Having the starch in there takes the moisture out of the air and keeps the powdered sugar from getting hard.

ADOLPH: You mentioned earlier that there were only three or four people who actually worked in the Char House. I assumed there were a lot more that worked in this facility.

ANHAISER: Yes. The packaging department was the biggest department in the whole operation, primarily because we had a lot of products that instead of being in a liquid and bulk form, were in individual 1 pound, 2 pound, 5 pound, 10 pound, 60 pound or 100 pound bags. You need a lot of people to move those around.

ADOLPH: So, the last step in the process was the trucks that pulled up to the loading bays to take the sugar off to their final destination.

ANHAISER: That's right. The trucks from the customers would come up here, and the orders would be filled. Each and every truck would be weighed in and weighed out to make sure they were loaded with the correct number of bags and that the weights checked out with the manually compiled weights.

I think that's about it, except for the happy customers who used the product in making their bakery items.

ADOLPH: And still do it.

ANHAISER: That's correct. Before, we didn't palatalize everything. They were just hand stacked.

ADOLPH: What were the silos for?

ANHAISER: Those silos were built out there for bulk sugar. We had silos inside for packaging, but they wanted to have more silos and more capacity for curing the sugar. By curing, I mean that sugar has a little moisture even after it's dried. So, we let it sit and put dehumidified air through it so when it was put in rail cars or trucks, it wouldn't get hard during shipping. It never got hard in the South, but if you took a car that was, say, 100 degrees and shipped it to where it was minus 10 degrees, then the dew point could be reached quite easily.

Whatever little air, with the moisture that was in the air, went instantly into the sugar and made it hard. This was undesirable. To prevent that from happening, we dried the sugar with dehumidified air, and then we put it in a rail car. As we filled the rail car, we put dehumidified air in the rail car. As the car left here, there was no water in the air around the crystals.

ADOLPH: So the silos were filled with granular sugar that was cured?

ANHAISER: Yeah, that's what the silos were for.

GOODSILL: In the final assessment, do you think it was a smart investment to build those silos?

ANHAISER: You know, it all depends on what their marketing strategy was at that time. They had several different refineries, so I can't predict what their plans were. They had to cure them sometimes. They also had to have some place to put the pallets that were damaged, then taken out and repaired.

ADOLPH: The silos are only about ten years old.

ANHAISER: Yes. I always thought if you put a few windows in them, you could make apartments in them. It would be just terrific! Each one of these would be a separate house.

GOODSILL: Would you say the amount of money they spent on the silos was one of the reasons why they failed to keep Imperial going?

ANHAISER: No, I don't think that had anything to do with it.

ADOLPH: There was a lot of debt in the companies they bought out and they were bad investments?

ANHAISER: That's my feeling.

ADOLPH: They tried to strike a deal with the union to retrain certain employees. The union balked, and they shut the plant down?

ANHAISER: I don't think the union had anything to do with it. This is not about Imperial but every company that buys another company has a plan. Their plan is: how are you going to pay for that. The first plan is, you get rid of employees and reduce labor force, hoping the savings you get from labor pays for your debt. That's one approach.

The other approach is you buy a company, break it apart, sell it in its individual parts, and you make money. That's really the only strategy. There's nothing really complicated about buying a company. So, they bought Savannah, and they bought Colonial. What was the idea there? Well, the bigger you are, supposedly, you get rid of your overhead, and you save a lot of money. Then you have a larger market and economy of volume. You control more volume, and you can control the price better. That's about any business.

ADOLPH: Just before they shut down, there was talk about keeping part of the business open. They were going to have to retrain employees because of the contract they had with the union. Senior employees were the ones who were required to stay. The union said, "No, we have a deal. Seniority stays." Instead of the company investing in retraining those more senior employees in other areas, they just shuttered the plant.

ANHAISER: I don't know. I wasn't involved in it. I've always said Imperial's Sugar Land location was difficult because it was not on a sea lane. All the other refineries in the United States have access to a port, and it goes straight to the refinery. We had the extra cost of having to ship to Galveston, bringing it by rail to Sugar Land, and unloading it. Although SOME of that was offset because when we shipped out from Sugar Land, we were closer to our customer base. It's all about monkeying with the numbers. But when you get right down to it, Sugar Land is in the middle of a growing metropolitan area with land values going up-up-up-up-up. The plants they kept are more agricultural. Colonial and Savannah were more agricultural. No sugar cane is produced in Savannah. They bring it all in. At Colonial, they grow sugar around Louisiana.

You're going to be importing over half the sugar from South America, the Philippines, Australia and everywhere else. It's a simple matter of too much debt and not enough income. That's what I think.

Interview ends