

WATER AND WASTEWATER PLANNING AND INDUSTRY

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The authors describe their experiences in planning and developing a private industry in Portales, New Mexico. Mr. Ben Henneke, President of Energy Fuels Development Corporation, provided his perspective as he worked with the city in locating his corporation. Mr. Mike Obrey, City Manager of Portales, relates the city's experience in dealing with an incoming industry. The trials, tribulations and eventual success of this cooperative effort are discussed. A video of the presentation is available on loan from the Water Resources Research Institute. The following is a transcribed and edited version of the presentation.

HENNEKE: I would like to apologize to you because Mike Obrey and I are the least qualified speakers you will hear during this two-day conference. We've had no long experience, no education, nor even any abilities in the area of water management, water rights or anything else relating to water. What I want to provide you with is a brief, totally different kind of approach to site selection planning from a purely industrial perspective. Mike Obrey will fill you in on the process of negotiating and cooperating, from a city's standpoint, in an economic development project.

In 1980, while I was living and working in Tulsa, Oklahoma, I was approached by a former employer to look at the ethanol industry and determine whether or not it made sense to open a plant. At the time I was running a coal industry; it was going terribly and I was pretty bored so I took his offer. The result was what is now called the New Mexico Grain Power Inc. in Tucumcari, New Mexico.

This industry is a 3-million gallon a year ethanol correction facility. The site selection process had been nationwide and we ended up, and I'm still not completely sure why, in Tucumcari. In selecting a

site, we were looking for, among other things, raw material availability. To run an ethanol plant, water is a crucial raw material. Water is crucial for the processing of raw materials and for mixing with grain to make the liquid which becomes beer. Ethanol is then distilled from the beer. The distillation process creates a very expensive water disposal problem. A key part of an ethanol plant is the water disposal system.

In 1980, and later in 1983 and 1984, we began looking for sites which had adequate agricultural water for an ethanol plant. Last year's drought makes it abundantly clear how important it is for a processing plant to have adequate agricultural water. As a truck receiving plant, we are dependent on local crops for supply and we need water for our own processing.

I didn't really take water planning very seriously at Grain Power in 1980. Through a series of misunderstandings among the engineers, the city, and myself, we located this plant in an area which only had about 15 feet to the water table and was permeable. That is not a smart place to put the plant because every time you spill something it goes out onto the ground and impacts the water table, which in turn alerts the Environmental Improvement Division.

Because of a misunderstanding between a farmer and the city manager, we were moved from the original site and nobody gave any consideration to the availability of water at the new site. We were moved to an area where our waste water would go directly to a sewage plant that had just been built. That was a brilliant stroke of luck, we thought, because we'd be able to blame our smell on the sewage plant. An ethanol plant smells a little bit like a bakery; yeasty with a kind of whole wheat

smell. We thought it would be great to be able to blame any worse smells on the sewage plant because everybody knows sewage plants smell. The problem that occurred there was inevitable. Being roughly 100 yards from the sewage plant, any time the ethanol plant had a spike of wastewater it would hammer the treatment plant.

In the old theory of always trying to fight the last war and making sure you are paying absolutely no attention to the future, Energy Fuels came to Portales to site a new plant thinking we could work out all the old problems. Energy Fuels uses about 150,000 gallons of water a day that goes into a cooling tower. Some of the water is processed and almost all processed water is recycled as it goes into wash downs and cleanups. Any plant using 150,000 gallons of water a day is going to put out a waste stream that is made up of biocides from the water cooling tower, water-treatment chemicals emitted from the coal-fired and gas-fired boiler, all of which are very standard in any industrial use. Nearly every factory or industry has a cooling tower or needs some sort of steam and therefore, water treatment.

Occasionally, dumping of alcohol occurs. We spend a lot of money trying to make alcohol and normally you would not want to put alcohol in the sewer. However, you would be amazed what any set of operators can achieve on any given day at two o'clock in the morning as far as which valve gets opened and which valve gets closed. If you have alcohol being distilled and sewers open, I can assure you, at some point, there will be alcohol in the sewer. Mike can tell you what he said to me one morning after we ruined the sewage plant by dumping alcohol.

Wash down material is periodically put into the sewer. That wash down material is essentially oatmeal, not a chemical, not a heavy metal, not mining materials, nothing very exciting, but it is oatmeal. If a town full of people were to eat oatmeal in the morning and simultaneously go to their garbage disposals and scrape out their bowls, that oatmeal would cause a lot of excitement at the city treatment plant. Energy Fuels also has had spills as the result of an operator lifting a gate instead of closing a gate or an operator saying, "Gosh, this tank was supposed to have been emptying for the last twelve hours. I forgot, but I sure can't tell anybody, so maybe I'll just go ahead and send this straight to the sewer."

OBREY: Portales is like every city in New Mexico in that we are extremely anxious for industrial recruitment and out-of-town business referrals. Our

experience with Energy Fuels taught us that we couldn't handle the business when we got it. We spent most of our time doing remedial work preparing the infrastructure of the city to deal with businesses like Energy Fuels. I honestly never considered that Ben would dump alcohol because I assumed he was trying to sell the stuff and any dumping would be accidental.

I think I was the first person Ben met from Portales. At the time, I was Director of Community Development. Energy Fuels was partially funded with an Urban Development Action Grant (UDAG) through the Community Development Program of the U.S. government. The grant required that Ben and I work together from the beginning and that has been the key to our success. Ben and I have always communicated well. If a problem arose, we'd call each other and get it solved. The main ingredients were patience and communication when working with an industry like the ethanol industry. Our ability to communicate well became especially important to me when I became city manager because I had to solve the problems I created while I was Director of Community Development.

I think every city manager acts as if he or she knows how a plant, such as Energy Fuels, works. They don't. I didn't, but I do now. Ben's engineers, some of the finest in the field, provided the city with all kinds of data that weren't correct. Our engineers provided Ben with all kinds of data that weren't correct. We've had to manage largely through good communication and patience with one another. We think Ben's proud but we can still fight a little bit when we think he's at contract level or above. He thinks he's way below but we debate that constantly. The key is patience and communication.

I think with the exception of Tucumcari, Energy Fuels is the only ethanol plant that discharges into a municipal sewer system. It cost the city about a million dollars to upgrade our sewer facility but we were happy when it was complete. Portales had made the mistake of spending money hiring people for economic growth, giving them a valuable piece of property in our industrial park, and not providing them with necessary resources like electrical or natural gas capacity. We really were not prepared for growth but largely through Ben's patience and a lot of his money, we now are prepared. Focusing on growth is what I've been doing since I became city manager thanks to Ben coming to Portales.

HENNEKE: Mike and I will go through the process of establishing Energy Fuels in Portales. Energy Fuels came into town and gave the city 24 hours to

sign what was called the "seduction resolution." This agreement was part of the UDAG process, a very weird process, which unfortunately is one of the federal programs that was cut in the last few years. The process begins with the UDAG office announcing that it is ready to accept new projects. A company then has about 20 days to do four years of work.

We immediately needed data from the city. We had selected Portales as our site largely in a vacuum because one of the things I've learned about site selection is to never let the town know about you or you'll never get off the phone with all the people who will want to talk to you about why their town represents a unique and perfect opportunity. Because of this lesson, the city staff had never seen much of us. We certainly had not seen much of them. Upon arriving in Portales we asked the city for data for the federal planning process. All of this information had to be accumulated in 36 hours; there was plenty of time for careful review!

Knowing the Ogallala aquifer was underneath the ground, we began looking within a fifteen mile radius of Portales. We knew the water quality varied and didn't mind drilling four or five wells to find good water. When you are spending \$30 million to develop a plant, you can afford to drill several wells. We were unconcerned about not having enough water for the operation.

Due to a combination of oatmeal, alcohol, and biocides, the sewage situation was a much more difficult problem. Once in awhile you will get a spill of alcohol that kills all your bugs and consequently the sewage system will not process the oatmeal. Or alternately, if biocides are put into the water cooling tower due to an operator's error, you not only throw away \$15,000 worth of water treatment chemicals, you kill the bugs needed to eat your oatmeal.

We went to the city with these concerns and asked if they could provide us with water and handle our wastewater. The city responded affirmatively as they were desperate for economic development opportunities. We did not take advantage of the city because we were not aware just how desperate they were.

OBREY: One of the reasons the city of Portales has been so patient with Energy Fuels is that the company spends \$45,000 a day buying grain from local farmers. There are other spinoffs: we have more people driving trucks bringing stuff and hauling stuff away from the plant than I thought was possible. It is an industry that's absolutely

compatible with our community and it's worth our investment.

Prior to Energy Fuels locating in Portales, there were 3 one-million gallon capacity ethanol plants located outside the city limits and not connected to our systems. Indirectly they were connected to the city because they bought cooperative water from us. Those three plants were using about 15 million gallons of water a month. The city itself used about 3 1/2 million gallons of water a month so we did not feel the plants' use was excessive. We are more fortunate than most places on the eastern side of the state because we have a little more water available to us. We probably will be in the Ute project later but the ethanol industry was tailor-made for Portales.

HENNEKE: Energy Fuels and the city signed a 27-year contract. This was not required by government regulations. The length of the contract was determined by my birth date and the fact that I would be 65 when it expired. We had no other reason; we didn't know how long to make it. Studies indicate the reservoir might be there in 27 years or it might not. Certainly the plant was designed for a lifetime of something over 10 or maybe 20 years. Mike and I, in a spirit of camaraderie, pulled that number out of the air.

The negotiation process for the water took a long time because the engineers, being unsure and conservative, padded the request for fear that there would not be enough water. The city, knowing its water system was at capacity, now had an opportunity to expand. Energy Fuels was willing to provide, and did provide, \$ 150,000 toward a million dollar expansion of the water system in Portales. Because I did not believe the engineers' estimates, I layered some additional conservatism on top. I initially negotiated for a certain amount of water and sewage capacity. Mike Obrey, who was present during most of the discussions concerning our water and sewage needs, wanted some slack in the water and sewage capacity for future development. The result of this process was an overtaking of the capacity, even though, theoretically, we had four times the capacity in the city sewage system than we thought we would need.

The process of developing a water and sewage contract had a beneficial effect on the project as well as the city. The city obtained a fairly substantial increase in capacity. The consequence for Energy Fuels was a better understanding of the company's goals. Both parties also developed an understanding of the other's needs. If I had not gone through this

process, we may have drilled a well and developed our own sewage system independent of the city. There have been other important outcomes: Energy Fuels has put a demand on city streets and roads far in excess of what we originally planned, as 40 to 50 trucks a day go in and out of our plant. Because the city staff was intimately involved in water planning, they had some ideas as to when paving of an area would be necessary. Using the water allocation process as a way to get parties talking to each other, before there is a problem, has been very useful.

The signing of the contract was also beneficial because it imposed limits on what Energy Fuels was allowed to do. Other industrial users were "grandfathered" in. That is one reason why the city was at capacity, although, on paper, the system should have been at about half capacity. Mike and his staff were able to go back to the users and gradually encourage them to set limits on what they would dump. The end result of the entire planning process for Energy Fuels is that although our operations are messed up on a daily basis, they are better than they might have been otherwise.

OBREY: Southwest Cannery is also located in Portales and is a pretty large water user. Problems with sugar water and biocides had been present for a long time but no one had paid much attention. In deciding upon a fee for Energy Fuels, we looked at what we had charged Southwest Cannery. The city had charged the cannery \$50 a month for years and the fee had been raised to \$52.95 a month a short time ago. It did not seem fair for Energy Fuels to be paying the rates that we wanted while Southwest Cannery was not paying their fair share. Now Southwest Cannery pays us about \$3,500 a month, which is probably just at cost. Working with Energy Fuels allowed us to act more responsibly with all industry in Portales.