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**STATE OF NEW MEXICO  
BEFORE THE SECRETARY OF ENVIRONMENT**

**IN THE MATTER OF THE DRAFT FINAL  
PERMIT FOR THE TRIASSIC PARK  
WASTE DISPOSAL FACILITY  
U.S. EPA NO. NM0001002484**

**No. HRM 01-02 (P)**

**HEARING OFFICER'S REPORT**

**I. INTRODUCTION**

Applicant Gandy Marley, Inc., ("GMI" or "Applicant") seeks a hazardous waste disposal facility permit for a facility located near Roswell in Chaves County, New Mexico. The New Mexico Environment Department (NMED) Hazardous Waste Bureau (Bureau) supports the issuance of the permit with conditions necessary to protect public health and welfare and the environment.

This matter was heard between October 15 and 19, 2001, in Roswell, New Mexico. The Bureau was represented by Susan McMichael, Claybourne Clark and Julia Mullen of NMED's Office of General Counsel, along with Charlotte Robinson, a contract attorney; and the Bureau's position was presented by staff members Stephen Pullen and David Cobrain, and RCRA consultants Constance Walker, Stephen Druschel and June Dreith.

Those present on behalf of the Applicant included attorneys Pete Domenici, Jr. and, briefly, Dan Dolan; engineer Patrick Corser; geologist Jim Bonner; zoologist/ecologist Joe Merino; meteorologist R.C. Cudney and toxicologist Albert Westerman; governmental relations consultant Ken Schultz; and GMI officers and directors Dale Gandy, Larry Gandy, and Mark Marley.

Conservative Use of Resources and Environment (CURE) was represented by the Environmental Law Center, particularly Douglas Meiklejohn and Heather Green. Their experts and other witnesses included CURE members Jimi Gadzia, Holly Harris-Schott, Michael Porter, Elisabeth Price, Deborah Petrone, Librado de la O and Victor Blair; environmental researcher and educator Paul Robinson, hydrologist George Rice; and research biologist James Bailey. Deborah Reade participated on behalf of Citizens for Alternatives to Radioactive Dumping (CARD). Nicole Rosmarino was present for Forest Guardians. Allen and Linda Squires testified as veterinarians and dairy owners. The Hanratty Law firm entered an appearance but did not appear. Jim Ficklin of Southwest Sound and Video and his staff provided interpreting services for the entire hearing.

Many members of the public were present in addition to the parties at various times; the parties and several others participated extensively in questioning and testimony at the hearing.

The voluminous record proper includes, *inter alia*, the administrative record of nearly 25 linear feet, including approximately 20 linear feet of bound documents going back to 1994, when the Applicant first submitted an application, and at least two additional iterations of that application, site characterization documents, correspondence between the Bureau and its contractors, permit completion checklists, disclosure statements and public comments. There are also approximately 4 linear feet of correspondence files. The Index to the Administrative Record has been updated several times. These were all the public records used in evaluating the permit application.

The record also includes the records kept by the Hearing Clerk in four files and several binders. These volumes include, *inter alia*, the notice of completeness

determination, the notice of docketing and hearing officer assignment, entries of appearance for each of the parties, notices of intent to present technical testimony before each of the scheduled hearings, many motions and responses to motions, orders on the motions, a notice of hearing, the notice of transcript filing, post-hearing submittals from the parties, the final draft permit prepared by the Bureau, and this Report. Finally, the record includes the transcript of the proceeding, in 4 volumes, and all of the exhibits.

At the Bureau's request, I left the hearing record open for an additional week for the purpose of accepting written statements from those attending a meeting in Hagerman facilitated by Mr. Pullen with an interpreter. Although there were many opportunities for public comment to be given during the hearing (see below), the Bureau was concerned that some in Hagerman had been unable to travel to the hearing, or were intimidated by the setting, and went there to facilitate the preparation of written statements that would become part of the record. The comments taken there have been summarized in the Bureau's post-hearing submittal, and will not be further summarized in this report. The submittals are uniformly opposed to the landfill, some of them very simply; at least two of the comments came from persons speaking during the hearing.

I received another item following the hearing, for which I had not explicitly left the record open, which is the updated version of the Applicant's disclosure statements. This prompted motions to exclude the documents, or to reopen the hearing for cross-examination on them. I denied these motions but did extend the time allowed for post-hearing submittals. The applicable law contemplates updating of the statements at any time. Pursuant to the Department's permitting regulations, 20 NMAC 1.4, I would forward it for your consideration regardless.

## **II. SUMMARY OF TESTIMONY**

[Many of the witnesses also “adopted” their written testimony as that testimony was summarized or written out in the attachments to the parties’ Notice of Intent to Present Technical Testimony. These documents are part of the record, and I have not further summarized them here.]

### **A. For the Applicant Gandy Marley, Inc. (GMI)**

#### **1. Patrick Corser**

Mr. Corser is a civil geo-technical engineer. Mr. Corser was called for the purpose of admitting a videotape presenting a general overview of the Triassic Park facility. The videotape of Applicant’s Exhibit No. 1.

Mr. Corser testified later that he is a registered professional engineer, and has been involved in the design, permitting and construction of six hazardous and mixed waste landfills across the U.S. He is familiar with the federal regulations addressing the permitting of RCRA facilities, including 40 CFR Parts 264 and 270, and the New Mexico hazardous waste regulations as well. GMI accepts the draft permit as issued with the exception of one issue on closure cost estimates.

Mr. Corser described each part of the draft permit, and stated as to Parts 1 through 6 and Parts 9 and 10 that there were no challenges to these parts apparent in the notices of intent to present technical testimony filed. He also stated that each of the parts complied with the federal regulations. There is a challenge to Part 7, Vadose Zone Monitoring, but he believes it satisfies applicable federal regulations if there is a ground water monitoring waiver. He believes there is a challenge to Part 8, Closure and Post-Closure Care; the Applicant and the Bureau have a dispute over closure costs.

The Applicant applied for the ground water monitoring waiver because they felt it was more protective of the environment. Daily probes will be made of the two vadose zone sumps, and monthly probes will be made of the 10 monitoring wells to be installed, for sixty years, assuming the facility operates for thirty years and the post-closure monitoring continues for another thirty years. He believes this is sufficient to detect an impact to the subsurface. If liquid is found, it will have to be characterized and removed or other corrective action taken.

In applying for the waiver the Applicant worked closely with department staff to develop the criteria modeled to demonstrate that the environment would be protected. He believes the waiver satisfies the federal regulations.

In preparing the closure plan, he relied on the unit costs of actual construction at other facilities. The two areas of disagreement with the Bureau staff include a question as to whether waste generated as part of the closure can be put into the landfill before the final cover is constructed (the Applicant assumes that it can be; Bureau staff assume it must be hauled to a separate facility); and the unit costs for the individual components that make up the cover. He bases the number proposed from the Applicant on recent hard bids that have been implemented at other sites. Bureau staff assume bids would be received for the entire cover, without regard to the different layers; in his experience materials may be installed by different contractors. He believes the best way to do the pricing is on a per layer bid basis. On the other dispute, he believes that a fill-in plan for the landfill would allow a sufficient amount of space for waste generated as a part of closure. Generally, the storage units are closed first, then the treatment units, then the landfill.

His calculations do envision a third party completing the closure tasks, with supervision costs for NMED oversight.

The Applicant is prepared to implement the recommendations of the New Mexico Game and Fish Department, and to participate in a consultation with U.S. Fish and Wildlife regarding endangered species.

On cross-examination Mr. Corser stated that it was their understanding that hazardous waste generated by U.S. corporations operating outside the U.S. is considered in-country waste. He agreed that waste characterization is important and required by the permit before the waste can be accepted by the Applicant. The generator of the waste provides the waste characterization information. He has not investigated whether maquiladoras or other corporations operating outside the U.S. have access to laboratories qualified to do sampling and analysis. The Applicant intends to rely upon acceptable knowledge to characterize the waste, in lieu of sampling analysis. He agrees it would be important to understand the relationship of the waste generated to the processes used in order to implement acceptable knowledge, and that supporting analytical data would be important.

Mr. Corser acknowledged that none of his cost estimates were based upon actual costs in New Mexico.

A Dockum monitor well will not be installed along the northern boundary of the landfill in Phase 1A because the site characterization data indicates that the beds dip to the east and the alluvial deposits flow to the west, so they are installing wells to the east and the west. They don't see potential for migration to the north. He has not estimated

the liquid content of the waste after the landfill is closed. Fly ash, cement and other soils will be mixed with liquid wastes as stabilizing agents.

All facilities will be clean-closed except for the landfill, which will remain in place. The waste in the landfill will presumably always be hazardous. He cannot guarantee that the liner and the cover won't leak. The cover includes three feet of soil over geo-synthetic components. They have not defined specific vegetation for the cover; they plan to work with the Soil Conservation Service to come up with an appropriate seed mix and application rate. If the root systems are deep, it is possible they could affect the integrity of the cover. Post-closure care costs include a large allowance for dealing with erosion problems. Drainage ditches would probably be located around the perimeter of the cover or on top of the cover to control runoff. They intend to use the soil stripped off the original landfill footprint as part of the final cover, to revegetate the same soil that is at the surface now.

Mr. Corser agreed that stresses to the liner system could result from the consolidation or settlement of waste in the landfill. Their analyses show that the stresses are well within the design limits specified by the manufacturer. Excessive stresses can accelerate microfractures in the liner, and can degrade or thin the liner. The manufacturer does not provide a guarantee.

He's very comfortable saying the liner will last 50-100 years, but there are geologic components proved to be around for thousands of years, and they are the backup system for the geo-membranes. Geomembranes have come into common use in the last 20-30 years. The leachate pumps would not be working after the thirty-year post-closure

period; in their experience, the landfill does not generate any more leachate after the cover is put on.

Four monitoring wells are proposed for the east side, and four for the west side, with two on the east side having both shallow and deep installations, for a total of ten wells. Their conclusion that the geocomposite and vegetative cover removes 99 percent of precipitation is based on an EPA model known as HELP: Hydrologic Evaluation of Landfill Performance. The water that does get through will go to a drainage pipe, and drain to the low spot at the perimeter of the landfill. He believes this system could last longer than one hundred years. The components are the best available technology, recommended by EPA to meet RCRA requirements.

They are required to monitor quarterly with an organic vapor meter to see if any organic gases are coming off the landfill. If at closure there were such gases, they would have to incorporate a gas drainage layer into the cover system. The containerized waste is generally in drums; to fill around the drums they would use dry soils. They cover the wastes each day with cover soils, but the wastes could be exposed to the wind in the course of a day before they are covered. It is possible that conditioning the soil would create dust, but generally they are adding water at the same time they are disking so it does not create a lot of dust.

The general soil cover stockpile will be there for the life of the facility. It could create dust in winds, as could excavation and roads and surface impoundments. Water spraying does not stop all wind dispersal. By enclosing the facility in a building, they are reducing the potential for windblown material to migrate. They have filters in a bag house for the air, and the filters would be disposed of in the landfill. Because the sludge

in the evaporation pond is very viscous, he does not believe there is a high potential for the generation of dust.

If discrepancies relating to a shipment cannot be resolved within fifteen days, the Applicant must notify NMED, and the waste is ultimately returned to the generator. If a leak is found in one of the wells after closure, the Applicant has to undertake corrective action procedures. Closure costs do not envision corrective action. Liability insurance coverage is another financial mechanism to address contingencies.

Mr. Corser also testified on rebuttal for the Applicant. Knowing that the department was proposing a cap cost of \$2.25-2.27 a square foot, and that this was based on the averaging of 4 figures, one of which \$4.50, the other three figures would have to have averaged \$1.50 a square foot, which is less than the number GMI proposed of \$1.60 a square foot. He would consider the \$4.50 figure suspect, as being three times higher than the average of the other data points.

Mr. Corser also described the steps taken to support the ground water monitoring waiver, and the conservative parameters used as input for the MULTIMED model. The infiltration numbers used are very conservative because during the life of the facility, they have two liners in place, and two leachate collection systems. They have to monitor the sump every day for liquids, and pump them out if they find them. During the post-closure period, they've backfilled the landfill, put a cover on it, graded it for drainage, and re-vegetated it. In each circumstance, he believes it would be reasonable to assume zero infiltration, but they modeled with .42 and .84 inches per year. Even with those conservative assumptions, they calculated a travel time to the Santa Rosa Sandstone, the uppermost aquifer, of between 1,600-3,200 years. The waiver was to not monitor the

aquifer, but they have proposed something more protective of the environment, and installed wells to monitor between the Upper and Lower Dockum.

On cross-examination of his rebuttal testimony, Mr. Corser stated that in preparing his numbers he had not consulted other consulting firms, but has utilized their experience with bids from other contractors and utilizing contractors actually installing the material. His figures were filed on October 11, 2001, after the draft permit was issued.

The groundwater modeling transport performed did not assume flow through fractures. They believe the Lower Dockum unit is homogeneous.

## 2. Joe Merino

Dr. Merino is an employee of Engineering-Environmental Management, and was retained by GMI to assist with issues of threatened and endangered species. He has a bachelor's and a master's degree in zoology and a PhD in ecology. He has practiced environmental consulting for 30 years, with the last 15 years spent mainly on issues involving threatened and endangered species.

The lesser prairie chicken is a candidate species for listing under the Endangered Species Act; i.e., sufficient information exists to consider listing the species as threatened or endangered, but it is not the highest priority currently under consideration.

GMI would have a facility constructed at its site in four to five years. The general procedure is to request from the Fish and Wildlife Service a list of species of general concern in the area of the proposed project. He is not aware of any federally listed threatened or endangered species on the GMI property, but there is no currently updated

list from the Service, nor has a biologist made a study of threatened or endangered species.

If GMI were to engage in an informal consultation with the Service, a survey would be conducted by biologists familiar with species of concern to see whether the species is resident on the property and to see whether the habitat on the property is sufficient to sustain a viable population.

He has made a very brief review, and found that the habitat for the lesser prairie chicken and the sand dune lizard is marginal. Grazing has altered the habitat. His understanding is that GMI is prepared to go through the informal consultation process and to accept any recommendations made by the agencies interested in the conservation of rare species.

A non-game biologist with the New Mexico Department of Game and Fish has reviewed the permit and visited the site. He said that the site was within the range of the sand dune lizard and the lesser prairie chicken, and made recommendations for the mitigation of potential impacts to either specie. In a letter dated September 20, 2001, the recommendation was to construct an enclosure fence of metal flashing at the base of a six-foot chain link fence constructed around ponds and basins at the site. Another recommendation was to relocate, if possible, any hazardous waste storage facilities planned for construction near shinnery oak [chicken and lizard habitat] to another area within the site.

Finally, the biologist writes that the Department believes that the fencing, with the bird netting mitigation measures already committed to in the permit, will be sufficient to protect the lesser prairie chicken from impacts associated with the project.

### 3. R.C. Cudney

Mr. Cudney is a meteorologist with a specialty in modeling the transport of airborne contaminants. In evaluating the transport of airborne contaminants from the Triassic Park Facility, he relied primarily on the data set commonly used by the New Mexico Environment Department Air Quality Bureau in the Permian Basin. He also used site-specific data from the Roswell area.

Mr. Cudney was asked to evaluate worst case accidents and release scenarios from normal operations of the facility. He modeled both with artificially conservative assumptions and with real data. For the release scenario he assumed the compound was benzene, which is highly volatile, carcinogenic and toxic.

The closest receptor is the Marley Ranch, 2.9 miles from the facility. The next closest receptor is the Kolb residence, 4.75 miles from the facility. He did read the Squires' report on commercial dairy farms in the surrounding communities. He believes Roswell is 40-45 miles from the facility, and that Hagerman and Dexter are more than thirty miles from the facility. His modeling showed concentrations a couple orders of magnitude below EPA's levels of concern at three miles, so in his opinion there is virtually no exposure in those towns. This includes potential exposure to PCBs, much less volatile than benzene, which would be indistinguishable from background.

On cross-examination, Mr. Cudney acknowledged that he does not know how typical the evaporation rate for benzene is compared to the entire list of wastes proposed to be disposed of in the landfill. He did not model any scenario in which more than one 55-gallon barrel was spilled. He does not know if off-site monitoring of airborne emissions is planned, and would not recommend it. He did not consider standards

relating to the impact of benzene on animals such as livestock. He did no evaluations of particulate emissions, either from the landfill or from traffic on the roadways.

#### 4. Albert Westerman

Dr. Westerman is a toxicologist for the state of Kentucky; he is the manager of the Risk Assessment Branch. He evaluates health effects for humans and wildlife on a daily basis. He did review the letter from the Squires.

PCBs are semi-volatile oils. They cling to soil fairly well. It's possible but very unlikely that dust containing PCBs from the facility will affect a dairy herd thirty miles away. Material will be covered every day, which reduces the chance it will move off-site, and if it does, he expects it to stay within the immediate area of the landfill. Organic matter clinging to soil will be heavier than typical dust.

On cross-examination, Dr. Westerman stated that the modeling did consider long-term human health effects, essentially the cancer risks from thirty years of exposure. He did not look at wildlife, but the impacts on humans and cattle would be very similar. Studies have mostly reviewed the impact of PPBs rather than PCBs, and have shown that very low levels in the feed accumulated in the cattle and then appeared in the milk of the dairy cows. He did not look at the effects of particulates from the facility. He believes the water used as part of the normal operation of the facility should reduce the dust coming from the facility, though it will not eliminate it.

#### 5. Jim Bonner

Mr. Bonner is a registered professional geologist. They conducted three separate subsurface drilling initiatives: in 1994, in 1995, and in 1999. In 1993, they had done a literature search regarding siting a facility within a thick sequence of very low

permeability Triassic sediments. Very tight clays retard potential movement from the facility, and keep outside fluids from migrating in. They also drilled 50-60 widespread shallow drill holes. Even if pressure were to cause a fracture, the elastic clays tend to seal themselves again.

In 1994, they blocked out two-thirds of the project area with a grid and completed 33 drill holes. They wanted to confirm low permeability clay beds, and they were looking to characterize ground water. They found no saturation within the 480-acre project area. They did find three places north and east with perched water, a saturated layer between two unsaturated layers. They reviewed oil well logs to get a feel for the overall stratigraphy at the site, and to confirm their own observations.

The site is about one mile west of the Ogallala Formation, and physically below it. There was a thin veneer of detrital material, of surface sands, gravels and clays. They saw 10 to 30 feet of alluvial sediments covering up the Triassic red beds. Mudstones, clays and siltstones made up the Upper Dockum, which is called the Chinle Formation in other parts of the state. Below the Upper Dockum is a thick sequence of very low permeability dark red- purple mudstones, in which all of their holes bottomed.

In 1995, they went to drill more drill holes and more core holes, and found that the contact between the Upper and Lower Dockum was extremely predictable. In 1999 they completed several more drill holes as part of a site characterization. They could not find anything to characterize as an aquifer in the Upper Dockum, so the Lower Dockum is considered the uppermost aquifer for this project. The quality of the water in the Lower Dockum is very poor, in excess of 10,000 parts per million total dissolved solids (TDS), and not protected by New Mexico groundwater regulations. Seven miles away

and five miles away, the USGS has regional water quality wells showing the same poor quality water.

They were granted a ground water monitoring waiver from monitoring the deeper unit. Instead of monitoring a zone of poor quality water 600 feet down, they are monitoring a vadose zone within a couple hundred feet of the facility. They would know of a release much sooner. In order to qualify for the waiver, they had to perform contaminant transport modeling.

The state has set out various monitoring requirements for the facility, including monitoring of the vadose zone and sediments above and within the Triassic beds.

On cross-examination, Mr. Bonner agreed that the water level in well WW-2 was 158 feet. Total depth of the well was in excess of 700 feet. He can say definitively that based on information in USGS logs the source of the water in WW-2 is the Lower Dockum. In WW-1 there may be mixing of Lower Dockum water with perched water from the Upper Dockum. It is still poor quality water at 11,000 TDS.

WW-1 and WW-2 were drill hole borings and were not completed as monitor wells. No monitor wells are installed at the Lower Dockum. The saturated portion of the Upper Dockum is 3,600 feet due east from the proposed landfill. Going northeast from the site it would be approximately one-half mile from the boundary of the property.

The water from the Ogallala going into the Upper Dockum gets trapped in small sandstone lenses within the Upper Dockum. He believes it would take millions of years for contaminants to reach the saturated portion of the Upper Dockum.

Water can move laterally through the topmost area, the alluvium, but for the landfill, they plan to excavate sixteen feet and replace it with a low-permeability clay

plug. It is possible to miss vertical fractures without slant drilling, but they saw no evidence of fracturing in the high altitude color photography. Fractures would not be apparent from cuttings in air drilled holes. There is a thick sequence of halite 200 feet beneath the Lower Dockum aquifer; halite is susceptible to dissolution with fluids. They see no evidence of dissolution features. Precipitation at the site evaporates from the alluvium.

Mr. Bonner also testified for the Applicant on rebuttal. He clarified certain locations on a map, and that he was speaking about site boundary lines rather than property boundary lines in measuring the distance to the point where they found no saturation in the Upper Dockum. The furthest edge of the Phase 1A landfill to the well location showing no saturation is 3,800 feet. Mr. Bonner also went into more detail regarding the oil well logs and how they supported the site characterization.

#### 6. Larry Gandy

[Mr. Gandy was called by CURE to answer questions.] Mr. Gandy testified that he is the vice president of Gandy-Marley, Inc. He is also the sole designated emergency coordinator for the proposed facility at this time, when nothing is at the site. During construction or operation, one of several designated emergency coordinators will be required to be on call 24 hours a day to contact the right regulators and emergency response and fire and ambulance as needed.

Mr. Gandy knows there is a long list of hazardous wastes proposed for acceptance at the facility, including PCBs, benzene, TCE and toluenes, metals, volatiles and semi-volatiles. He is not sure if the facility will accept tetrachloroethylene or cyanide salts, and does not know the effect of a possible spill of these substances. GMI will accept

arsenic, but he does not know what effects arsenic might have in the event of a spill or if an employee has contact with it. He does not know right now the effects of any specific waste on humans if there were a spill or an accident.

GMI has a couple letters of memoranda in place with Tatum and Lea County for emergency response. This includes fire, police and emergency medical technicians. He has not yet made attempts to make them aware of the hazardous wastes the facility will be accepting. His training in hazardous waste management includes a HAZWOPER course, 40-hour certification, and he has been re-certified several times.

No one from the state has asked him if there have been any changes to his personal disclosure statement since he filed it in 1995. The driver's license expiration is later now; he owns different cars; and a loan noted on the disclosure statement no longer exists.

#### 7. Dale Gandy

[Mr. Gandy was called by CURE to answer questions.] Mr. Gandy testified that he does not recall any communication with NMED about his disclosure statement in the last year. One of the loans noted no longer exists; the other may be higher than indicated earlier. Mr. Gandy is the president of the Gandy Marley Corporation. Bill Marley and Larry Gandy are vice-presidents; Bob Marley is secretary/treasurer; the board of directors includes Mike Marley, Mark Marley, Jon Gandy and Alta Gandy.

On cross-examination, Mr. Gandy testified that he has not had discussions with NMED or given them documents discussing the possibility of turning the facility into a mixed waste landfill. He cannot guarantee that he won't. He has no intentions of applying to take mixed or radioactive waste. Their research shows they can make an

adequate amount of money without turning it into a mixed waste landfill and remain in business for thirty years.

They have considered the financial mechanisms available. The Gandy and Marley families together have a lot of collateral, and they have visited financial institutions that are interested. The first estimate of the assurance needed was 9 million dollars; it is now up to 13.1 million.

Mr. Gandy has not received notification that he has to supplement his disclosures; he would comply with it immediately.

#### 8. Ken Schultz

Mr. Schultz testified as part of GMI's rebuttal. He is a government relations consultant, and has worked for various industries, handling government affairs.

The meeting at the Sally Port Inn followed a suggestion from the department that it would be useful to have a meeting in an informal setting, to allow the public to ask questions, and to explain the project and the safeguards planned. The manager from the department's Roswell office was the facilitator that evening. That night they were getting ready, setting up a table on the outside of the room where the meeting was to be held for the sign-in sheets. The woman he found out later was Ms. Gadzia started setting up another table with pamphlets on it opposing the project. He approached her and asked whether she had permission to be there. She said they were only handing out literature, and that she believed they did have permission from the hotel. He went to the desk, asked for the manager, spoke with the assistant manager who knew nothing of it, and said she would attempt to contact one of the two daytime managers. He went back to the room and was welcoming people when the signs went up and the petitions came out.

Although the foyer is fairly large, their table was set up immediately to the left of the one entrance door from the outside, and there were two people with petitions standing in the entrance from the hallway right before you would come into the meeting room. So it was a problem for people. When asked to sign in, a couple people said they already had, and when he stated that what they would have signed was a petition to oppose the project, they stated they hadn't been told that. Meanwhile, it had taken the assistant manager a long time to contact the manager who had given the permission, and the manager indicated he had not had all the information. He did not know they would be inside the building instead of outside, and he did not know that the information being distributed was in opposition to the project. The assistant manager said to Mr. Schultz: "He has authorized me to call the police if you desire." Mr. Schultz said there was no need for that because they were putting their stuff away and getting ready to leave, and almost everybody is already in the meeting. He did not threaten to have anyone arrested. In a prior life he might have been able to do that, in Albuquerque, but he doesn't have that kind of authority in Roswell.

On cross-examination, he stated he believes the meeting in question was on May 15<sup>th</sup>; they had three or four meetings prior to that in 1995. He was not aware that CURE was an organization or that they were involved. There were two newsletters in 1994 or 1995 to educate the public about the proposed facility. Other than the public notices in newspapers and direct mail, he has not discussed the current draft permit with anyone, verbally or in writing.

Over the last several years, they have been asked from time to time to update the legislative interim committee for hazardous waste. The Roswell Chamber of Commerce

has been fully aware of the project, and sent a letter of support. Labor unions or construction trades were in attendance at two of the meetings this year, and supported the project. At the public meetings they tried to explain the project and the process, and always gave out Mr. Gandy's telephone number.

At the public meeting on July 19 in Hagerman, the presentation was not translated into Spanish. Someone had made a request for the question and answer period to be translated, and they had been willing to and did comply with the request, but people left before the question and answer period started. If they had been requested to make the presentation in Spanish and English, they would have considered it. He believes they did make an effort to find out what people needed to be informed. They did not prepare materials in Spanish early in the process. Other than the last information meeting, they did not have presentation materials in Spanish. The meteorologist and toxicologist were available at the last information meeting, but not in earlier meetings, because they didn't know there would questions in those areas.

On redirect examination, Mr. Schultz stated that the meteorologist and the toxicologist were hired to give logical responses to people who had raised questions during the voluntary public information meetings; there is no requirement that they be hired to support the RCRA permit itself. Translation was available on the evening they testified during the hearing; no one was using the translation services, however.

#### 9. Mark Marley

Mr. Marley testified as part of Applicant's rebuttal. The Marley family has had the ranch where the facility is proposed to be sited since 1966-67. They graze cattle there. They have wells on top of Caprock with an extensive pipeline system that waters

everything down below the cap. There are some springs on the edge of the cap, and they attempted to develop them years ago, but they didn't produce much, so they rely on the water from the top of the cap and the wells, through the pipeline system. They have never attempted to develop an economic supply of water from the Upper Dockum or the alluvium because there's never been any evidence it would be worth doing; all the evidence has been to the contrary. There isn't much water, not even enough to water livestock, and what's there is not of sufficient quality. Of the 480 acres, he doesn't believe there would be more than 20% of the shinnery oak habitat that Mr. Bailey described. Mr. Marley indicated by drawing on a map that the oak is in the southwest quadrant of the site. He does not have education or experience as a wildlife biologist. They have treated some of the pastures for shinnery control; the area of shinnery oak has shrunk as a whole. He later clarified that the shinnery has not shrunk on the site, as opposed to the ranch as a whole. On the site it has been very stable.

The amount of water required to operate the site if the permit is granted would be equivalent to the amount of water it would take to maintain a 14-acre hay field. His understanding is that the water will have to come from valid, existing water rights.

Later, Mr. Marley testified concerning the location of WW-1 on the map marked as Applicant's 7; it is at an intersection he is extremely familiar with.

## B. For CURE

### 1. Jimi Gadzia

Ms. Gadzia is a member of CURE. She is currently serving as chair of the New Mexico Environmental Improvement Board, but is here as a concerned citizen of Roswell, struggling to understand the science and attempting to evaluate the impacts on

her family and community. She has also experienced a great deal of frustration concerning public anticipation in this matter. During the July 17<sup>th</sup> public meeting, CURE had requested and received permission to hand out flyers in the outside foyer of the hotel where the meeting was taking place. They were doing this quietly and without obstructing traffic, but Ken Schultz, a Gandy Marley representative, angrily threatened to have her arrested. She is strongly opposed to the permitting and construction of the facility.

EPA regulations provide that where the state undertakes specific program functions, it shall encourage and assist public participation. A member of CURE submitted a request for hearing in an e-mail of June 11, 2001. The project director, Steve Pullen, wrote back to say he had not followed the appropriate format. The person then sent another e-mail that complied. State regulation on hazardous waste permits provides that if a timely request for public hearing is received, the Department, acting in conjunction with the permit Applicant, will respond to the request in an attempt to resolve the issues giving rise to the opposition. Mr. Pullen made no further communication with this person. She attended the May 4, 2001 public meeting but numerous questions remained unanswered at 11:00 p.m., when the meeting adjourned, many of which concerned geological or hydrological issues the department staff could not answer or had not considered. Department staff, owners and operators and a few select members of the public met again in Tatum to continue the discussion, but the public was not invited or given notice. An amended Fact Sheet was sent to her dated August 27, 2001, but no explanation of the amended parts was included, and the amended parts were not available when the notice of public hearing was published, as required by

regulation. Members of the public requested copies of the financial disclosure forms required by regulation, but were told they were confidential. They had to have a lawyer file a motion to get them.

EPA recommends early community involvement in the siting of RCRA hazardous waste facilities. She first became aware of the facility in May 2001, several years after the Applicant began to seek the permit. As the first such facility in New Mexico, the department should have considered that the public needed the same long learning curve they needed. Quality of life concerns have not been considered by the state. Neighboring ranches will be devalued economically. The facility will bring new employment that does not match the job skills of the local residents. Taxpayers will bear the cost of road maintenance and emergency response. Trucks will have to travel through Roswell or through Tatum to reach the facility. Diversion would mean the trucks would travel through residential neighborhoods, past schools, and on narrow bridges. The department is not meeting its mission by treating this facility as an island. Shipments to Triassic Park will not have the protections of shipments to the WIPP site. Sixty years from now, today's best available technology will appear archaic. There are few grasses left at the site due to overgrazing; re-vegetating to match will create an area subject to severe erosion.

On May 4, 2001, GMI stated that the oil and gas industry needs this facility. She has been unable to verify this statement by speaking with men in the business in Roswell. California has only three such facilities, and Texas has only three, one of which is located near the border with New Mexico and reported a large financial loss last year due to lack of waste. The national waste disposal association has stated that disposal capacity in the

U.S. far exceeds the supply. If the operation is losing money, she fears corners will be cut. At the July 17, 2001 public meeting, department staff admitted that inspections will be infrequent, and that monitoring will take place in Santa Fe based on reports. She does not believe it is responsible for the department to permit a facility without a need, without experienced and knowledgeable owners and operators, and when there is a question about whether the Bureau can adequately monitor the facility's operations.

Ms. Gadzia then offered signatures from over 300 people opposing the site and other hazardous and radioactive waste sites in the region.

On cross-examination, Ms. Gadzia stated that she did not draft the petition, and the signatures were obtained between the May 4 meeting and the hearing. She does not have information on the current hazardous cargo coming through Roswell, and has not previously tried to stop it. She does not know if the trucks coming to the Gandy Marley facility will represent a statistically significant increase of the existing hazardous cargo through Roswell.

She is aware that public meetings were held prior to the time she moved to Roswell three and one-half years ago, but had heard that the department denied the permit and did not realize it was a continuing effort. The incident with Ken Schultz occurred at the Sally Port Inn in Roswell. They were off to the side in a roomy foyer, and they were not stopping people.

On rebuttal, Ms. Gadzia described the incident with Mr. Schultz in more detail: she and Mr. Blair had visited the Sally Port Inn the afternoon prior to the public information meeting of July 17<sup>th</sup> and asked the hotel staff if it would be permissible for them to have materials outside the meeting room. They talked with Judy Hernandez, the

Catering Director for the Inn, and she gave her permission. The next evening prior to the meeting she arrived with information from CURE. They had petitions and information, and they set up in the foyer outside the meeting room. The foyer is 35 feet wide. Three members of CURE were there talking with people who came in, and they were standing behind the table, not impeding people as they came in. They did not approach people with the petitions; people had to come to the table to see the material. Several people did not know anything about the facility and were not comfortable signing the petition, and some people who were supportive of the facility did not sign. Mr. Marley came over to look at the materials, and she assumed he was not thrilled to see them there, but he was extremely gracious. A short time later Mr. Schultz approached them enraged telling them they had no right to be there and that unless they left right away they would be arrested by the police. Ms. Gadzia tried to tell him they were surprised by his reaction and that they had permission. Mr. Schultz didn't know they had permission, although he had spoken with hotel staff, and he was very upset.

When they were dealing with the issue of being thrown out or arrested, someone signed the petition without speaking with them, although they had intended to speak with everyone who signed before they signed the petition. One of the CURE members, an elementary school teacher, was very frightened. Mr. Schultz's anger was intense, and she was worried she would lose her job if she were arrested. Ms. Gadzia visited with the desk clerk and told her that they had gotten permission from the catering director, but she said there was no manager there at the time, that they didn't know what to do, and that they would have to leave. She requested that hotel staff call the manager at home, and the manager said that since they were being rude and disruptive they would have to leave.

When she explained what they were doing, and said they were not being disruptive, the manager said they could stay. She feels that these intimidation tactics are harmful to the public process.

## 2. Holly Harris-Schott

Ms. Harris-Schott is a member of CURE and strongly opposes the draft permit. She lives twenty miles out of town, in Bottomless Lakes State Park, so she is closer to the facility than the people of Roswell, and she is very concerned for her family's safety. She also has general safety concerns related to increased traffic, possible accidents or spills, and the ground water monitoring waiver. Given the sheer size of the permit, she focused on the part she could understand as a botanist, and found the environmental assessment extremely lacking: they covered the site environment of 480 acres in four short paragraphs.

## 3. Michael Porter

Mr. Porter is a member of CURE. GMI has been seeking its permit since 1994, and has garnered in that time a handful of letters of support. CURE has been opposing the site for five months, actively for just three months, but has a lot of support for its opposition. Mr. Porter then read a list of seventy towns from which CURE drew its support in opposing the site, including towns in other states.

The department has made little or no attempt to assess the economic impact of such a site and the state at large. A cost/benefit analysis is notably lacking from the permitting process. Unlike WIPP, the site will be privately owned, and costs associated with use of the facility will be borne by taxpayers instead of the federal government. Information from a nearby site in Texas suggests that gross receipts taxes will be less

than expected, particularly if the two facilities are competing for waste. Many aspects of the basic landfill system are 25 years old; in the meantime, new technologies for the treatment of waste have been developed, and the state should demand something better than burial. He doubts the truth of the statements made that the state cannot exceed federal requirements. The liner specified for the site has good chemical resistance, but a number of mechanical properties that make it less than perfect for the job, including fairly high thermal creep and a tendency to crack along wrinkle lines. HDPE is difficult and expensive to install and repair in the field, and is prone to environmental stress cracking. A California researcher has concluded that all HDPE liners leak in a rather short period of time. Although leakage from the liner may be captured by the pump system, this is true only until the facility is closed. Many of the chemicals in heavy metals do not degrade over time, and will migrate downward to a primary source of water for the region.

Mr. Porter then set out a number of specific comments about permit language, section by section, suggesting a number of substantive and grammatical changes. He believes these changes should be made even if state regulations cannot be more stringent than federal regulations.

On cross-examination, Mr. Porter stated that no one is in charge of CURE; they reach consensus at regular meetings held on Sunday afternoons in a local restaurant. CURE has indicated in information it sent out that the facility has the potential to accept nuclear waste. The statement would not be accurate as the permit stands now.

His understanding is that DOE is working on a Broad Spectrum Initiative, attempting to find contractors to receive mixed waste.

#### 4. Elisabeth Price

Ms. Price is a member of CURE and opposes the facility. Her specific concerns include facility security and truck traffic, the large perimeter without 24-hour/day guards, the nature of the waste being accepted, which may or may not be properly reflected on the manifests, emergency response and the tracking of truck drivers.

#### 5. Deborah Petrone

Ms. Petrone is a member of CURE, and does not believe the facility should be permitted. Her concerns include the following: hydrology and geology are not exact sciences, and the analyses were based on sampling and modeling, which represent extrapolation. It's difficult to prove or disprove that toxic substances can cause cancer. She does not believe the Applicants have sufficient knowledge and experience to operate the proposed facility. When a hydrologist from the New Mexico Bureau of Mines and a local well driller came forward to refute GMI's geohydrology, they were apparently dismissed. Some of the local politicians do not have the best interests of the community in mind. The public did not have adequate time to study the issues involved, and there is misinformation circulating. There is no guarantee that air and water pollution won't occur. The waste anticipated far exceeds New Mexico's share of the country's waste. Some companies are taking care of their own waste now, which is perhaps why the hazardous waste industry is on decline. The state may not have the resources to monitor the facility adequately. The involvement of the public in this process has been wrought with confusion. Dairies and ranches will be adversely affected. There will be an economic and psychological impact of having a waste facility in the middle of a green belt. The decision to issue the permit may have already been made, and could be a

detriment to the community, the region and the state. Southeastern New Mexico may be targeted for waste facilities because the area is largely poor, uneducated, Hispanic and elderly.

On cross-examination Ms. Petrone agreed that in the three years after the permit would be issued and before the facility would begin operating they would have time to develop or obtain employees who could deal with possible emergencies.

The members of CURE have been so busy preparing for meetings and hearings and educating the public they have not produced a written operating charter, but they get along very well without one. The telephone number on the public information document is for a local answering service.

On re-direct examination Ms. Petrone stated she does not believe the permit should be issued without the Applicant contacting emergency responders.

On rebuttal, Ms. Petrone stated that one person did walk up and ask if the petition was the sign-in sheet, that was Commissioner Harold Hobson. He didn't sign it. She has felt intimidated in this process. Early in the process, she received an e-mail from Robert Marley that read in part "I would like to know exactly what entitles you to protest the construction of this facility. What exactly are your credentials? ....You don't know the facts and you have no right spreading word of mouth rumors over the Internet...." Another time a man called from the Department of Taxation. Mr. Blair answered the phone, and spoke with him. When the man asked who he was, Mr. Blair replied with "Vic." The man asked if he was Victor Blair of CURE. Ms. Petrone found that intrusive and she's been afraid.

## 6. Librado de la O

Mr. de la O is a member of CURE and believes the facility will harm everyone. He has lived in Hagerman since 1971. He attended the first public information meeting but was not able to understand anything because it was not in Spanish. He does not read.

On cross-examination, Mr. de la O stated he did not understand that there had been a request for Spanish translation of the question and answer portion of the meeting, and that translation was available for that portion. He left when several others left.

## 7. George Rice

Mr. Rice has a master's in hydrology and has spent most of his career since the early 1980s working with groundwater contamination problems associated with hazardous wastes, including uranium mill tailings, air force base wastes, the high-level nuclear waste repository at Yucca Mountain, a landfill in San Antonio and the Pantex plant in Amarillo. He has installed a number of groundwater monitoring systems and vadose monitoring systems.

In this matter, he reviewed the Applicant's materials, and visited the site, but was unable to view the escarpment. He believes there are two areas of serious deficiency relating to the ground water monitoring variance in the draft permit: he does not believe the Applicant has done the hydrologic investigations necessary to determine whether a variance is warranted, and he does not believe the Applicant has used the conservative assumptions required to estimate travel times. He further believes there are a number of deficiencies in the characterization of the geology and hydrology of the site: the Applicant doesn't know where the groundwater is, horizontally, in the Upper Dockum or vertically, in the Lower Dockum. The Applicant doesn't know whether the groundwater

in the Lower Dockum exists under artesian pressure. The Applicant does not appear to have considered the possibility of fast flow paths, such as fracture sand buried stream channels. The Applicant doesn't appear to know the flow direction in the Upper Dockum. He does not believe the Applicant has done an adequate job of characterizing hydraulic conductivity. He believes there is a discrepancy on the map showing the location of well WW-1 and its distance from the site.

As to hydraulic conductivity, there are five wells where the Applicant might have conducted aquifer tests to get a representative value of conductivity. Instead, they took cores from the subsurface materials, and sent them to a laboratory where permeability tests were conducted. Such core tests do not give a true picture of the bulk hydraulic conductivity or permeability of a unit. Core samples tend to underestimate permeability of a unit.

Liners do not last forever. The majority of primary liners that have been installed leak. The San Antonio landfill is lined in some places with a three-foot clay layer and in other places with a composite liner, clay and geomembrane. It has contaminated groundwater in the area. The cover at the same landfill contained large desiccation cracks. Liners leak as a result of manufacturing defects, installation defects, deterioration, stretching, and chemical attack. No one will guarantee a liner against leakage.

The Applicant's proposed monitoring system does not meet his definition of vadose zone monitoring; it does not include suction lysimeters or neutron access tubes. It is a ground water monitoring system which might intercept saturation.

The Applicant is missing information necessary to characterize groundwater conditions, including the distance between saturated zones in the Upper Dockum and the facility, depth to groundwater in the Lower Dockum, the possibility of fast flow paths, hydraulic conductivity and the direction of water in the Upper Dockum. He does not agree with Dr. Bonner that water in the Upper Dockum from the Ogallala is trapped there; he believes it may be going into the Lower Dockum. Mr. Rice used Exhibit 1 to show that the Applicant does not know what the water level in WW-2 or WW-1 represents, as the water may be coming from one of three places. This means the Applicant does not know how thick the unsaturated Lower Dockum is beneath the site. Inconsistent statements have been made about the distance from the site to the saturated Upper Dockum to the east.

He does not believe the estimates of travel time are adequate because the Applicant didn't consider possible fast flow paths, and didn't, in its calculations, maximize the rate of liquid movement. The best way to identify fractures is through angle coring. Fractures are common in this type of unit. A local water well driller told him he has installed many wells in the Dockum in the area, and he believes it is fractured.

He does not believe Applicant's calculation that it would take over 3,000 years for groundwater to flow 1,000 feet is a reasonable, conservative estimate of groundwater flow rates. A figure from the Montgomery Watson document shows that the more permeable units in the Upper Dockum do extend for considerable distances without interruption. And this is what you would expect if there were a buried stream channel. Using the same formula Applicant did, Darcy's Law, but plugging in more appropriate and conservative numbers, Mr. Rice calculated the rate of groundwater flow as a little

more than nine feet per year, and the amount of time for groundwater to move 1,000 feet as 108 years. He also believes the leachate infiltration rate would be much larger than Applicant calculated.

In describing laces with perched water, Dr. Bonner neglected to mention boring PB-14, a boring in the Upper Dockum upgradient of the landfill, 100 feet deep and 40 feet west. Water was found at a depth of 42 feet when it was drilled. The Applicant pumped water from the boring once a week for six weeks and each time the water level recovered to a depth of 42 feet. The TDS of a sample was about 4,900 parts per million, significantly lower than the TDS values mentioned for the Lower Dockum. Additionally, there is no explanation for the water's presence. It might be a deeply incised stream channel or a fault.

In his opinion, because of the deficiencies in characterization and calculation, the draft permit should not be issued as it is written.

Fluids moving as unsaturated flow will not flow into sumps.

On cross-examination, Mr. Rice acknowledged that he is not a geologist, and has worked on behalf of a permit Applicant just once since 1993, for the San Antonio landfill facility. He was involved in selecting liners in the late 1980s. He agrees that the Upper Dockum is about 100 feet deep, and the Lower Dockum goes down more than 600 feet, and that the Upper Dockum is more fluvial and the Lower Dockum is more predominantly mudstone. He agrees that the Ogallala Aquifer is upgradient of any water that could be under this site, and that the escarpment largely establishes its western extent. The alluvial surface slopes toward the west, but the interface between the Upper and Lower Dockum slopes east and northeast. He would have drilled at least one deep

hole on the facility, upgradient of the landfill, and grouted it to prevent contaminants from getting in. He does not have an opinion on the uppermost aquifer beneath the facility—he doesn't believe there's enough information to make that determination. He believes the Upper Dockum fits the definition of an aquifer, but not beneath the facility; it's dry. The Lower Dockum might be the uppermost aquifer at the facility, but he needs more information to conclude that.

Darcy's Law and the MULTIMED Model are both ways of calculating groundwater flow rates. Darcy's Law does not account for contaminant fate and transport; the Model does.

As to hydraulic conductivity, he was not aware that GMI didn't use the number he used out of the group of data they had because they ran quality assurance and it was a statistical outlier. But it may not have been appropriate to throw it out because it may represent a fast flow path. Still, laboratory error is always possible. Having removed that piece of data, GMI's value represents an averaging of all other values, and still does not use the worst case scenario.

Mr. Rice agrees that permeability conditions and gradient are not uniform beneath the site. He doesn't consider the monitoring system to qualify as a vadose zone monitoring system because it cannot detect unsaturated flow. Initially, as leaks develop from the bottom of the landfill, it will move out as unsaturated flow. As the leachate encounters fractures, the Dockum interface or other low permeability zones, it could pool and move as saturated flow. Based on the design of the landfill, if there is unsaturated flow at the landfill, it could reach the upper geomembrane and pond, and be removed by the leachate removal system; or, if there is a defect in the upper system, move down to

the leachate detection system and be removed there; or, with a defect in that system, it could move into the Dockum. A leak at the lowest point would also have to go past a sump, which is monitored for fluids.

Mr. Rice would recommend the use of both vadose zone and groundwater monitoring at the site. The groundwater monitoring proposed is a good start; he would add more wells, particularly to the north side of Phase I, since the slope of the contact goes to the northeast. For vadose zone monitoring he would install suction lysimeters and neutron probe access tubes beneath the landfill and along the sides. He thinks a more thorough characterization of the Lower Dockum should be done, to know groundwater levels, possible fractures and hydraulic conductivity. If the ground water monitoring waiver is still appropriate, this could perhaps be the end of the monitoring. If, however, the information indicated the Lower Dockum is susceptible to contamination, they should also put monitor wells in the Lower Dockum.

It is possible there is sufficient water in the vicinity of the site to operate the proposed facility, but he does not know. The idea of groundwater stopping at a barrier without further movement is unlikely.

On re-direct examination, Mr. Rice agreed that a leak could occur anywhere in the 40-acre footprint of Phase I, and not necessarily just above the sump.

On rebuttal, Mr. Rice testified that he does not agree with Mr. Pullen that the monitoring system proposed by the Applicant will provide the earliest detection of leakage. He thinks it's highly unlikely that leaks would be moving as unsaturated flow [sic?]. To detect contaminants as early as possible, you need to install a system that detects them as unsaturated flow. He thinks it's reasonable to believe that buried stream

channels would be continuous over great distance and would represent a potential fact flow path. He does not believe that Applicant's Exhibit 9 is helpful to determine where the Santa Rosa formation is. He believes the distance from WW-1 to the landfill is still unknown.

On cross-examination, Mr. Rice agreed that he has no evidence he can point to for fractures in the Lower Dockum, and he has not reviewed the MULTIMED model, or performed a Darcy's Law analysis for travel time from the base of the landfill through the Lower Dockum. He does not know if the regulations require any monitoring other than monitoring of the uppermost aquifer.

#### 8. James A. Bailey

Dr. Bailey has a Ph.D. in wildlife ecology and has worked as a research biologist and a full professor. He is familiar with the lesser prairie chicken. It once existed in parts of five states, including New Mexico, but is gone from 92 percent of that range. Legally, the U.S. Fish and Wildlife Service has determined that the species warrants listing as a threatened species under the Endangered Species Act, but the listing is precluded due to higher priorities for other species. In New Mexico, a status review was initiated in 1997, a report completed in 1999, and three recommendations were made that it be listed to the state game commission. The commission refused to accept the recommendation, and it was withdrawn. The status investigation continues today.

Biologically, the lesser prairie chicken is gone or very nearly gone from 56 percent of its historic range in New Mexico. In Southeast New Mexico, last year there were only two leks or breeding groups; one of the two leks had only two birds on it for

half the lekking season. In some areas the population is sparse and scattered; in only 21 percent of the historic range do the birds persist in reasonable numbers.

There is a prairie chicken range largely to the west of the project site here. The populations are doing especially poorly in this area. Dr. Bailey agrees with Mr. Merino that there may be impacts to the habitat of the lesser prairie chicken and the sand dune lizard to the extent the facility is placed in shady shinnery oak. He doesn't fully agree that most chicken activity takes place within two miles of lek sites, nor does he agree that the grazing is too intensive to maintain the bird's habitat. Even degraded habitat with a reasonable amount of shinnery oak would be used for brood habitat and wintering, and would be important habitat. Furthermore, the effects of grazing are reversible. He would also note that the sand dune lizard, a state-listed threatened species, was not addressed in Mr. Merino's testimony.

The lesser prairie chicken has declined over the last one hundred years due to the cumulative effects of habitat loss, degradation and fragmentation. This facility would add to those cumulative effects. Another issue is noise. There is evidence that noise during the breeding season interferes with breeding behavior. The Bureau of Land Management restricts noise from oil and gas activities in the mornings during breeding season. He would recommend that noise be restricted from an hour before to an hour after sunrise between March 5 and June 15.

On cross-examination, Dr. Bailey agreed that mesquite habitat would not be core habitat for the bird. He agreed that the letter from the Game and Fish Department represents their official position on the consultation. He does not know of any provision in the New Mexico Hazardous Waste Act that would require restrictions for noise during

the breeding season. He agreed that the proposed site is on the boundary of the chicken habitat, and that there is no suitable habitat for them further east. He did speak with Rand French, the BLM biologist, about this project, and Mr. French did not express concern about the project.

The sand dune lizard may be one of the most endemic lizards in the country; i.e., it has the smallest geographic range or comes close. Populations are reduced around oil and gas activities and as a result of the use of the herbicide tebuthiuron. There's no reason the lizard wouldn't be at this site because its habitat is there. To minimize effects on the chickens and the lizards, in addition to the noise restrictions, he would locate the facility as far east as possible. There is also the potential to mitigate by providing off-site habitat, particularly for the lesser prairie chicken.

#### 9. William Paul Robinson

Mr. Robinson has a Master's degree in regional and community planning and has worked for 25 years at Southwest Research and Information Center in Albuquerque, an environmental research and education center. He has also taught at the University of New Mexico as an adjunct professor in planning and environmental assessment and policy. In this matter he reviewed the draft permit and application in some detail and the applicable statutes and regulations. He has not been to the site.

Closure and post-closure plans are fundamental aspects of an effective operating plan and regulatory program for a waste facility. The life of the hazard of the materials disposed of is a critical determining factor in how long a management strategy should be effective. To his knowledge, there have been no hazardous waste disposal permits issued previously.

The closure performance standard set out in federal regulations specifies that hazardous waste facilities will be closed in such a way to minimize the need for further maintenance at the facility and to protect human health and the environment by controlling, minimizing or eliminating potential releases of hazardous waste to the environment. The facility will meet a clean-closure performance standard for all units except the landfill and will not impact any environmental media in excess of agency-approved background levels or pose a threat to human health or the environment. Post-closure care involves long-term maintenance, monitoring and reporting of activities that are carried out after closure is completed. He does not believe there is a basis for limiting anticipated post-closure care to thirty years; the life of the hazard and the risk of potential releases do not end at thirty years.

Mr. Robinson described the proposed vegetative cover on the landfill, but he does not think the requirements for the vegetative cover in the draft permit are adequate. He doesn't think there's much attention paid to the performance criteria that should apply to a cover that provides a substrate for plant growth. This is a high standard for soil, and yet there is no discussion of nutrient availability, organic material content, microbiological characteristics, salinity, and other soil attributes. There is no list anywhere of what species might be planned, level of establishment, measures of cover density or herbaceous growth of matter volume.

Two and one-half feet of cover is substantially less cover than is currently being applied at a number of sites in New Mexico, including solid waste facilities and mines. Three and one-half feet is more typical, with an 18-inch growing medium on top of an infiltration barrier cover. The rooting depth of plants could potentially have some impact

on the cover, but he thinks it is not a particularly important problem where erosion potential is the primary risk. Once liners are exposed, they deteriorate rapidly. The drawings don't show the resolution of surface water drainage issues. The drawings should show the surface water diversion ditches described in the application. 800 years is a more appropriate time to use as a performance standard for the cover of the completed landfill than the 30-60 years that has been discussed. 60 years is not significant in the life of the hazard.

The application does not include a financial assurance proposal but a cost estimate of what closure activities might total and a brief discussion of those activities. The plan is lacking and shallow, and has no standard of durability for the vegetation. The main risk here, which is the long-term erosion of the cover, is not addressed in a way that defines the risk or identifies performance standards. No representation is made as to what financial assurance mechanisms might be appropriate or available. Mr. Robinson then referred to the "Cost Estimate of Landfill Closure Items" document in the application to note a number of deficiencies there, and a million-dollar difference between the estimates for the cover by the Applicant and by the Bureau.

The deficiencies, in his opinion, include the following: there is no description of the vegetation to be applied, merely a statement that something would be done to Soil Conservation Standards. The unit price per acre varies from \$2,000, which he believes to be too low an estimate, to more than \$10,000. In constructing the landfill cover, indirect costs are reflected at 10%, while in other part of the Estimate, it is listed at 25%, which is more appropriate. There is no discussion of amenities being added to the soil, as necessary, and the cost and availability of water is not addressed. The post-closure

period is shown as thirty years, with nothing to address the possibility of additional costs or alternative post-closure periods. The estimate includes figures for erosion damage repair, but he does not see the basis for those figures. The figures have developed through a series of discussions between department staff and the Applicant, with some compromises on the larger items, but he believes the line item unit costs should be based on a standard unit cost estimating handbook or other standard tool or reference. The Applicant's cost estimates include no money for the disposal of hazardous and non-hazardous waste that will be generated at the time of final closure. And the Applicant may no longer be present at the time of closure, so the estimate should include a value which contemplates closure by a third party.

On cross-examination, Mr. Robinson stated that the bulk of his work has been for individuals or organizations that are not the Applicant in a permit proceeding. He got involved in this project in May 2001, and has spent several weeks reviewing the application and the draft permit, among other documents. He has not spoken with anyone at the state involved in the permit writing, or with the Applicant's technical consultants.

He agreed that on-site disposal capacity would exist in terms of air space at closure, if the permit allowed that use, although the availability of financial assurance might depend upon organizational or operational capacity. Mr. Robinson agreed that the federal regulations provide that the Applicant may use costs for on-site disposal if he can demonstrate that on-site disposal capacity will exist at all times over the life of the facility, but he noted that the word used is "may," and believes that the financial assurance contingencies should address premature closure, as a reasonable precaution.

The primary indirect cost areas include mobilization, demobilization, engineering, insurance, profit and the cost of NMED administration. He agreed that 25% indirect and 10% supervision on top of direct and indirect would be at the higher end of the range he believes is appropriate for such costs. For the landfill cover system, where indirect costs are shown as only 10%, he does not agree that the design still to be done would be limited. He agreed that with a line item that is substantially procurement and which does not involve as much design or installation the indirect costs may be lower.

On re-direct examination Mr. Robinson agreed that there were two circumstances in which waste generated by demolition at the landfill at closure might have to be taken to a different facility: the landfill no longer has the capacity, or the landfill is no longer an operating facility and so cannot accept it. He strongly recommends that a full suite of indirect costs be included in the financial assurance for each aspect of closure and post-closure.

On rebuttal Mr. Robinson testified that the way in which Mr. Cobrain differentiated between direct and indirect costs was different from the way in which he did, and the way in which the Applicant did, and the way in which the department and other state agencies have done in the past. He understands direct costs to include actual unit costs for the activity, including labor, equipment and materials. Indirect costs are in addition to those, including administrative, engineering, insurance and profit costs. It also appears that neither Mr. Corser nor Mr. Cobrain used verifiable sources of independent costs, such as industry cost guidebooks or heavy equipment handbooks. He believes this is a serious problem, as it means the costs are not verifiable, and are not sufficiently specific to allow updating on an incremental basis, as provided by the

regulations. He believes the basis for specifying soil cover costs was insufficient; there was no consideration of acquisition and transport, and no attention to the qualities of the soil cap necessary to support vegetation.

He believes the figure of 5% of the total costs for indirect costs and supervision is overly optimistic. He believes there are several fundamental changes appropriate in the permit. First, he would develop the closure and post-closure plan to a sufficient level of detail to allow accurate cost estimates to be generated. Second, he would recalculate the cost estimates, using independent sources of construction activity cost and adding indirect and supervision costs on top of the unit costs. Third, he recommends the Applicant be required to identify a proposed financial assurance mechanism and indicate whether assurance is available at the amounts needed from providers, so that the cost estimate has some link to the financial assurance.

On cross-examination Mr. Robinson agreed that under the RCRA regulations, if GMI failed to implement one of the approved financial assurance mechanisms 60 days before receipt of waste, they would not be able to receive waste.

#### 10. Victor Blair

Mr. Blair testified for CURE on rebuttal. He recalled a conversation with Steve Pullen, more than one, in which Mr. Pullen asked him what they were fishing for on the Applicant's personal disclosure statements. Mr. Pullen told him he had asked the Applicants if they had anything to modify, and they had nothing to amend.

On cross-examination Mr. Blair stated they were looking for violations or infractions that might not have been disclosed. On questioning by the hearing officer as to what evidence they had that the category relating to violations and infractions was

outdated Mr. Blair mentioned OCD documents and OSHA infractions on the part of Gandy Corp. The OSHA violation documentation was on the Internet, and related to two men going into a tank without respirators. The OCD documents related to inspections of the oil treatment plant near Crossroads, and indicated that the tanks had overflowed and spilled oil on the ground. There was also a letter about a contaminated well on the Price Ranch and a statement that the contamination may have come from the Gandy Pits. Mr. Blair could not say whether he saw documents that represented actual decisions or findings of violation or notices of deficiency in the files. He did see the word “violation” in the OCD documents.

C. For CARD

Deborah Whitney Reade

As Ms. Reade distributed her handouts, she noted that a new census was recently completed, but not all of the data is available, so some of the data shown is older. She used the new data where it was available to her. The thesis of her argument is that NMED and the Applicant should do a more detailed socioeconomic and health evaluation of the affected population before deciding to grant or deny the permit. She believes that not only are there particularly sensitive subpopulations that would be disparately impacted by the facility, but that siting the facility in this area is generally not protective of human health and the environment.

She will present information on Chaves and Lea Counties because radii of 25 and 30 miles fall almost completely within these two counties. Poor health and mortality are very closely tied to race, ethnicity and poverty. New Mexico has 55.3 percent people of color. Ms. Reade then gave the percentages for several towns and the U.S. Lea and

Chaves Counties have a higher percentage of people living in poverty than the state of New Mexico overall. There is a direct correlation between being minority and living in poverty.

Ms. Reade showed a map reflecting sites with contamination and sites with permits that emit contaminating substances. Ms. Reade then showed a handout with a web site from the New Mexico Department of Health. In the state of New Mexico the release of air pollutants are highest in the northwest, south and east. Sources include refineries, mines, power plants, vehicles, blowing dust and fires. Airborne particulate matter is a major cause of air pollution and New Mexico has the highest level of airborne particulate matter in the nation. Particularly high concentrations of particulates occur where bare soils are exposed to dry, windy weather.

Ms. Reade's next handouts related to the lack of higher education in the area and among people of color. People with a high school education or less are twice as likely to lack health care coverage. Chaves and Lea Counties have very high rates of respiratory disease and mortality compared to the rest of the state and the country.

In conclusion, the site chosen for this facility is surrounded by a sensitive population and especially sensitive subpopulations of color that are already burdened by poverty and the worst health in the state of New Mexico. The facility is proposed for an area that already has more than its share of pollution and industrial facilities and dumps that create pollution and contamination. It has some of the most polluted air in the state, in a state with the highest level of particulates and air pollution in the nation. The addition of more particulates will further stress the already weakened respiratory systems of this population. The carcinogens in the waste, if released during normal operations,

could have further deleterious effect on human health in this area. Exposure to trucks and traffic should also be taken into consideration. All the little towns in discussion here are on the WIPP route, and all the people are potentially exposed to chronic low-level radiation, the effects of which are not totally understood. Because of the numerous socioeconomic and environmental factors which already impact the minority subpopulations, what might be small effects in other parts of the state are multiplied many times so as to cause a disparate impact which is not protective of human health. Her recommendation is that the Department conduct a detailed study of the affected population in this area, as recommended by EPA guidance, and that this be done before the permitting decision is made.

On questioning and cross-examination Ms. Reade stated that she has a bachelor's degree in social sciences, and additional education in graphic design and illustration. She has worked professionally as a graphic designer for over twenty years, and specialized for 10-12 years in map design. She has no experience or education in medicine. The map she displayed of facilities and sources of pollution in the area was based on some personal knowledge, interviews with local people, discussions with NMED staff, NEPA documents from DOE, and the New Mexico highway map. She has not asked NMED staff to review the map for accuracy or completeness. Similar maps for other areas of New Mexico do not yet exist, but they are in the process of preparing such a map for the state of New Mexico.

Ms. Reade agreed that the map contains "anecdotal information" insofar as she is not a cartographer who creates maps from data points, but rather a map designer who uses a variety of reference materials to create maps. If she were to do more research it is

possible she would find more sites to put on the map. She does not claim that every existing pollution source is on the map. She agreed that when she said the area had been “targeted” for numerous types of waste facilities it was an inference rather than a statistical analysis.

She would define “affected community” as a community that could potentially have its health impacted in a negative way by the activities or emissions from the facility’s construction, operation or closure, accidents, or transportation to and from the community. Potential health impacts could differ from actual health impacts. The proper way to define the outer limits of a potentially impacted community would have to be decided, and then a study could be done to determine actual health effects. The study should include those living within at least 40 miles, maybe 50 miles.

#### D. For Forest Guardians

Nicole Rosmarino

Ms. Rosmarino testified that Forest Guardians is deeply concerned about the proposed facility, and in particular its impact on two highly imperiled species, the lesser prairie chicken and the sand dune lizard. Since 1998, the lesser prairie chicken has been regarded by the U.S. Fish and Wildlife Service as meriting a threatened listing under the Endangered Species Act. The sand dune lizard is described as facing possible extinction.

The environmental consultant hired by GMI did not contest the fact that these two species are imperiled, and agreed that habitat loss and fragmentation is a primary cause of their imperilment, and that this project will contribute to that loss and fragmentation. As unlisted species, they have no enforceable protection.

By their imperilment, these species have shown us that we have destroyed too much shinnery oak, and it is time to restore that habitat. Both species rely heavily on this tall grass. The threatened status of these species is the result of current land uses. Triassic Park will compound the damage. In 1973 this nation pledged to never again knowingly allow a species to go extinct. Many scientists argue that the protection of native species in ecosystems is vital to human survival.

E. Allen and Linda Squire

The Squires have owned and operated Southwind Dairy in Hagerman since 1994. They both have a DPM degree in veterinary medicine and a combined 80 years of experience in the dairy industry. They moved to the area for several reasons: opportunities to use their skills and experience, ample water supply, reasonably priced land, very good local feed supply, growing infrastructure of dairy services, a willing lending community, a ready and willing local labor force, and a wonderful climate. Had they known of a toxic waste dump in the valley, it would have been a strong negative influence on their decision. They have worked hard over the past ten years to build their business, and see a good future here.

Mr. Squire described the local dairy industry and its economic footprint in Chaves County: Chaves County is currently the home of over 40 large dairies averaging over 2,000 cows. Land sellers have to certify that they know of no toxic or otherwise noxious chemicals discharged or spilled on the land; banks view environmental liabilities negatively. Payroll at the Squires' Dairy exceeds \$600,000 a year, and virtually all of it is spent in the local community. An NMSU extension dairy specialist calculated in 1999 a total economic impact of over \$500 million per year for the Chaves County dairymen

alone, while the economic impact of the 159 dairies across the state was nearly \$1.5 billion.

Ms. Squires stated that the siting of the facility presents a risk to those in the area, particularly when they consider the vast expanses of land available across the state. Risks stem especially from the heavy metals GMI would accept. In the course of working up a series of immune function problems in their herd a few years ago, they tested feed, water, soil, liver tissue, serum, milk, meat and bone with a focus on minerals and heavy metals. They found a trace mineral deficiency of copper, but it was difficult because they were looking at only 20 parts per million variation of one element in the feed ration. They had witnessed first hand the extremely sensitive interrelationships between the necessary trace minerals and all the other elements that exist in the feed, the soil and the water. Even in minute amounts, other metals can interfere with copper uptake and metabolism. Drought and dust storms followed by torrential rains could add to the background levels of the metals.

They are also concerned about PCBs and PPBs, which have spread through the planet and climbed up the food chain. Exposed birds exhibit reduced mating success and other reproductive problems. The Bitter Lakes are close to the proposed facility. PCBs and PPBs have an affinity to fatty tissues, and milk is important as a route of excretion, because toxic metals can be passed from cows to people through dairy products. Residue problems in the milk would occur way before the animal's health was impaired.

Benzene is a known carcinogen, and they understand the purpose of the evaporative ponds is to put it into the atmosphere, assuming that it will be in non-harmful amounts by today's standards. But standards change as more knowledge becomes

available, and what was tolerable earlier may not be considered tolerable in the future. The dairy industry has worked hard to foster the image of milk and dairy products as clean, nutritious and wholesome food, and any report involving dairy cow exposure to toxic waste could have a drastically negative impact on consumer confidence and affect the milk markets. They urge the Department to choose a very conservative approach.

On cross-examination the Squires stated that environmental regulations apply to their dairy, and they do have a groundwater discharge permit, which is meant to prevent risk through nitrate exposure to the groundwater. If there were risks associated with nitrates per se, they would be very localized. Nitrates are chemical; they are also fertilizer. Mr. Squire agreed that the closest dairy is approximately 30 miles as the crow flies, and that it would be very difficult to produce water in the vicinity of the proposed facility that would be sufficient to support a dairy.

Ms. Squire noted that background levels should be examined; although she is not necessarily concerned about the metals already part of the background, she is concerned about additional metals added to the background levels.

The Squires did attend the meeting in Hagerman, but Mr. Squire does not remember hearing the information from the toxicologist and meteorologist that Mr. Domenici described as being part of their testimony at the hearing.

#### F. For the Hazardous Waste Bureau

##### 1. Stephen Pullen

Mr. Pullen is the Triassic Park project manager for the Hazardous Waste Bureau of the New Mexico Environment Department. He has worked for the Department for ten years, eight years in the regulation of hazardous waste. His prior work experience was as

a field geologist. He has a bachelor's of science in geology and graduate level studies in oil well geophysical logging and hydrology. He has completed a number of RCRA training courses.

Mr. Pullen prepared several sections of the Bureau's written testimony in this matter, and it was peer reviewed by Ms. June Dreith.

RCRA Part 264 requires that a permit contain a number of general standards and a number of specific standards. The general standards include preparation and prevention procedures, a contingency plan and emergency response procedures, manifesting requirements, record keeping requirements, reporting requirements, activities that must be conducted in the event of a release, requirements for closure, post-closure and financial assurance. Specific standards include requirements for containers, for tanks, for treatment in surface impoundments, for disposal in landfills and a specific standard for air emissions. The draft permit meets the regulatory requirements set out in RCRA Part 264.

Regarding site characterization, it was his responsibility to ensure that it was sufficient to be able to evaluate the ground water monitoring waiver and the proposed vadose zone monitoring system. Mr. Pullen reviewed all of the references within the permit application, and consulted with other professionals who had knowledge of the site's geology and hydrology, including a couple of individuals in the State Engineer's Office, the U.S. Geological Survey Office in Albuquerque, and Corky Glenn, a neighbor of the proposed facility and a well driller. Other members of the Bureau, Bob Sweeny and David Cobrain, witnessed the drilling program site characterization activities.

He believes the distance to ground water in the Upper Dockum and Lower Dockum aquifers has been sufficiently determined. Boreholes were drilled to the Lower

Dockum Aquifer, the Santa Rosa Sandstone. This information was compared to oil well geophysical logs, which showed depth to ground water was approximately 700 feet from the surface at the proposed site. Drilling was performed 3,600 feet east of the proposed facility in an effort to identify the saturated interval within the Upper Dockum, or above the contact between the Upper and Lower Dockum, or associated with the Ogallala Aquifer (these are referred to interchangeably). They found no water at that distance. Ultimately, these figures were used to demonstrate that the ground water monitoring waiver was appropriate. Oil well logs are considered excellent indicators of the existence of fluids, particularly high TDS waters.

He believes the gradient of the Upper and Lower Dockum has been sufficiently characterized; the gradient is generally to the east. The Applicant showed this with oil well logs, the literature, and the drilling operation.

The significance of the poor quality water in the Lower Dockum Aquifer is that it suggests that the ground water is relatively static in that aquifer, that fresh surface waters are not significantly migrating to that aquifer. That substantiates the suggestion that the Lower Dockum Formation is relatively impermeable, and that there are probably not significant fractures or faults there. If there were significant transport from the surface to the aquifer, the high TDS values would become diluted.

Mr. Pullen was responsible for putting together the team of individuals who processed the waiver request. For such a request to be granted, the regulations require three things: (1) the Applicant must demonstrate that the travel time for fluids migrating from a regulated unit to the uppermost aquifer exceed the period that the facility is open plus the post-closure care period associated with the regulated unit; (2) the travel time

must be calculated using very conservative assumptions, assumptions that would maximize the rate of fluid migration to the uppermost aquifer; and (3) the ground water modeling or calculations must be certified by a qualified professional. The Bureau imposed still more conservative requirements for the waiver: they required that the travel time be a minimum of 800 years, and that the Applicant use the MULTIMED model provided by EPA for the transport. The Applicant did use parameters that maximized the rate of fluid transfer, including the maximum hydraulic gradient for the lithologies along the contact between the Upper and Lower Dockum. The Applicant modeled the time for fluids to migrate from the regulated units to both aquifers and satisfied the Bureau that they could meet the requirements of the regulations. They also submitted a certification statement. Beyond the modeling results, other grounds supporting the waiver include the vadose zone monitoring system that has been proposed and will be more protective; the impermeability of the Lower Dockum; precedent at another facility in Lea County with similar geologic and hydrologic conditions; and a requirement in the permit that if any condition used in the modeling changes during construction or operation, the Applicant is required to submit a permit modification eliminating the waiver, with an opportunity for public involvement. A change in conditions could include a release from a unit or the discovery of large quantities of water. At this time, the Applicant has met the requirements of the regulations to receive a ground water monitoring waiver.

Mr. Pullen wrote the permit conditions associated with the vadose zone monitoring. It is preferable at this site to the ground water monitoring because it will most certainly detect significant amounts of leakage from the regulated units; it will

detect releases before they get 700 feet down to the aquifer; and it is the most reliable system of monitoring.

As for the Applicant's disclosure statements, if there are changes in the information, the Applicant must submit in writing within 30 days notification of those changes. The Applicants have not notified the Bureau of any changes; the first he heard that there were changes was during the hearing.

He did not advise Mr. Corser verbally or in writing that for the purposes of financial assurance, hazardous waste must be removed from the site at closure rather than being disposed of in the landfill.

On cross-examination Mr. Pullen agreed that the Department couldn't use the fact there may be a change that was not reported to deny a permit unless the Applicant doesn't provide the information within 14 days after notification.

He stated he believes the water level in WW-2 was found where it was because there is a hydrostatic head that drives the water up; he believes the Santa Rosa is under confined pressures. The evidence that the water did not come from a higher place is the fact that they were able to drill to depth using air rotary drillings, and getting cuttings the entire time, until 600-700 feet. He doesn't know why monitor wells installed in the Lower Dockum would be necessary. He believes that to the east of the proposed facility there is generally no groundwater until a distance of at least 3,600 feet. He believes the gradient is to the east, and that the water to the north and the south is perched water not related to the Ogallala or the Upper Dockum, perhaps at the contact between the alluvial material and the Upper Dockum sediments. The water may have come from a number of draws down off the Caprock, or cattle stock tanks holding water.

In his opinion, if there is an escape of leachate, it's likely to happen below the sumps in both the landfills and the surface impoundments. That's where significant amounts of fluid will accumulate, and the pressures will be generated to drive waters through a possible hole in the liner. He believes the vadose zone monitoring system sump below both systems will be the quickest way to determine if there is a release. Lysimeters and neutron probes might detect leaks earlier than the monitoring wells. There is a system of monitoring wells along the perimeter of the landfill. There are monitoring wells along the eastern boundary of the landfill to detect any significant amounts of fluid accumulating on top of the contact between the Upper and Lower Dockum, as close to the landfill as possible. It might not take too much fresh water to significantly dilute the high TDS water in the Lower Dockum. Assuming the leachate could get to the water, a little bit of leachate at high concentrations could affect the water.

He does believe the most reasonable highest permeability value should be used in migration analysis, but not necessarily the highest, if it is a circuitous lens of sandstone which would require the contaminant to follow a convoluted course. Their assumption has been that waters will travel along the contact between the Upper and Lower Dockum where they meet a variation of hydraulic conductivity numbers. Site characterization has shown the lithologies along the contact between the Upper and Lower Dockum. Leachate won't migrate through the contact, but through the higher permeability units. A figure of the north/south cross-section of the Dockum shows a continuous pathway of about 3,000 feet in the higher permeability unit above the mudstone.

He questions the reliability of wells constructed in lysimeters and neutron probes; supplementing the vadose zone monitoring system would not hurt the monitoring system.

The most recent date on the disclosure statements is 1996. He did not and is not aware that anyone else in the Bureau asked the Gandys and the Marleys if the information had changed.

The site in Lea County with a ground water monitoring waiver is the Lea County landfill. He believes the vadose zone monitoring system is the most reliable because he believes that releases from the regulated units will travel in saturated conditions in accordance with the hydraulic gradient at the site, travel directly to the contact between the Upper and Lower Dockum, migrate down and encounter the vadose zone monitoring wells.

He does not know about irrigation out there, but he believes there are a few stock tanks that get water from the alluvial material above the Dockum, and some production wells within the Santa Rosa sandstone for drinking water, perhaps, but he does not believe they are high producers.

He does not believe he ever told Victor Blair that all the department had to do was print a legal notice in Spanish for the dump, and he does not believe it to be true. They tried to communicate with the public in numerous ways, including notices in the newspaper, on the radio, and by mail. They noticed most of their activities on the Spanish station in Roswell, and put many of their notices in Spanish in the newspaper, not all. They started publicizing in Spanish when they became aware of individuals who were interested in the matter and were monolingual Spanish speakers.

To his knowledge, the department has not received information from the Gandy Marley Company or those associated with them indication of interest in having a mixed waste facility at this site.

## 2. Constance Walker

Ms. Walker has a bachelor's in geology and a master's in geology with a focus on geochemistry. She has 18 years of consulting experience, 13 specifically in the RCRA arena. She has reviewed about a dozen waste analysis plans as part of the review process for permit applications, and has experience reviewing sampling and analysis plans submitted by treatment, storage and disposal facilities. She reviewed the waste analysis plan submitted by the Applicant.

40 CFR 264.13 requires that detailed chemical and physical analysis of a representative sample of waste be obtained prior to waste treatment, storage and disposal. GMI will obtain this detailed analysis prior to acceptance of any waste at the facility. The generator provides the waste characterization. Sampling is required, to ensure the permittee understands the chemical content of the waste, along with a description of the sampling methods. She believes the sampling plan includes a lot of information concerning the collection of samples at the facility. It includes a description of the equipment that will be used, a location where samples will be collected, the frequency of sample collection, the types of samples to be collected, a section on quality assurance and quality control, and a section on sample information documentation. GMI can not use alternative sampling methods without seeking a permit modification. She believes the Applicant's sampling plan provides information to demonstrate compliance with 40 CFR 264.13.

She recommends that the phrase "certain hazardous debris" be removed from Section 2.4.2.a of the permit, because it does not accurately reflect the dilution prohibition in 40 CFR 268.3; removing the language will clarify that the permittee shall

not accept hazardous debris that does not meet the land disposal restrictions (LDR) treatment standards. She recommends that the word “appropriate” be removed from Section 2.5.2.a of the permit to clarify that the analysis on the pre-acceptance side will include all of the analytes in Table 4-1, and not just a subset.

“Acceptable knowledge” in this context is a characterization process whereby you obtain the detailed chemical and physical information through process knowledge or process information about the waste in terms of how it was generated. Criteria are used to determine whether the acceptable knowledge is satisfactory. The evaluation criteria would include examining the relationship of the waste to the process information. An assessment would include availability of supporting analytical data. A specific correlation of the chemistry in process lies with the chemistry of the waste they are accepting.

Process variability and waste treatment activities are important to understand as well. She believes the waste analysis plan complies with the requirements of 40 CFR 264.

On cross-examination, Ms. Walker stated that the facility is not allowed to accept debris waste that has not been treated to LDR standards. If the debris is chemically contaminated, it would have to be treated prior to acceptance. If debris waste were the higher percentage waste in a container, Ms. Walker agreed cans of solvents would not be sampled and analyzed, but would come through with acceptable knowledge. There is a disallowance in the permit for fingerprint requirements with respect to debris waste.

On re-direct examination, Ms. Walker agreed that debris waste is a heterogeneous waste stream that does not lend itself to sampling analysis, and yet it is still required to be

characterized. If waste were accepted from outside the U.S., the corporation would be a generator under this permit, and would be required to perform waste characterization in accordance with the waste analysis plan.

### 3. Stephen Druschel

Mr. Druschel works for Techlaw as a senior consultant in the environmental group. He has a bachelor's and a master's degree in civil and environmental engineering and is currently matriculated as a doctoral student in environmental engineering. He has worked as a civil engineer for over 20 years, the last 13 with hazardous waste remediation and regulatory compliance. He has worked in approximately 30 states doing design, remediation, construction management, project management, and review for state and federal regulatory agencies, private industry and government owners and operators. He is a registered professional engineer with special expertise in RCRA air quality issues. He also teaches training courses on regulatory compliance for EPA.

He reviewed the Triassic Park permit primarily for RCRA air compliance. 40 CFR Part 264.1080 (Subpart CC) does not apply to this facility because there are no units proposed that have process vents associated with the specific treatment mechanisms under 40 CFR Part 264.1030 (Subpart AA). 40 CFR Part 264.1050 (Subpart BB) applies to piping and process equipment, which would include pumps, compressors, sampling valves, flanges, valving and any kind of pipe-related appurtenances that contact or contain hazardous waste. Subpart CC applies to the container management at the site, the tank management, the treatment of waste in tanks or containers, and the storage of the waste in the evaporation pond.

All hazardous waste is subject to the air rules under RCRA. The waste has to be tested to ensure that organic content is below a regulatory threshold or that treatment occurs to control the organic air emissions from that waste. The facility must test all waste arriving on-site before it is placed in any container or tank or surface impoundment or in the process piping. If it is not tested, it is automatically assumed to be above the threshold level and must be treated as if it has excessive organic content requiring control. In his opinion, the air quality provisions of the draft permit meet the requirements of 40 CFR Part 264.

#### 4. June Dreith

Ms. Dreith is employed by Techlaw. Previously she worked at the Colorado Department of Health in the Hazardous Waste Section. She has a bachelor's of science in environmental health. She has worked in the hazardous waste field for approximately 24 years, involved in compliance and enforcement inspections, permitting of hazardous waste treatment, storage and disposal sites, and remediation of hazardous waste sites, QA/QC of permit applications, NOD [notices of deficiency] reviews, training in RCRA, and compliance inspections of WIPP. Techlaw provided engineering review for the Triassic Park permit application, and evaluated many of the permit conditions the department drafted. Ms. Dreith managed the process, and did the technical evaluation of the general facility standards, including the contingency plan.

There are two sections associated with emergency response in the regulations, Subpart C (264.37), on preparedness and prevention, and Subpart D (264.52), on the contingency plan and emergency procedures. These subparts requires the facility to make arrangements with local fire and police departments to be sure they are familiar

with the layout of the facility, the characterization of the waste and hazards associated with the waste, the evacuation routes, and the locations of the people who will be working with the waste. They must document the arrangements they have with the local agencies and the hospital for the contingency plan. Several permit conditions address these requirements, and state that the arrangements must be provided to the department, and that notification must be made if the arrangements are terminated, and that the plan must be updated at the time a facility is certified. The draft permit does have training requirements for emergency coordinators. Requirements include on-the-job and classroom training. The emergency coordinator must be familiar with state, local and federal regulations and control procedures. The coordinator must be able to do health recognition of the types of hazardous waste taken, and be familiar with the emergency response equipment at the site. There is training as well for record keeping and reporting. Additional training is required by OSHA. A trained emergency coordinator must be available at the time the facility starts operating. There have to be five emergency coordinators or alternates for the facility.

On cross-examination Ms. Dreith agreed that the emergency coordinator needs to know what wastes are being accepted at the facility, to be able to assess possible hazards associated with the wastes, and to understand the constituents of the waste accepted at the facility.

On re-direct examination Ms. Dreith stated that the emergency coordinator would need to be trained probably just prior to the receipt of waste, 30-60 days before. There is no requirement that Mr. Gandy be trained today.

## 5. David Cobrain

Mr. Cobrain is employed by the New Mexico Environment Department Hazardous Waste Bureau. He is a project leader, responsible for permitting and corrective action at three refineries and other RCRA facilities. He has been employed by NMED for two and one-half years. He has a bachelor's degree in economics and a master's degree in geology. Prior to joining the department, he worked for nearly ten years as a field geologist and project manager. Most of his experience is directly related to field site assessments and remediation.

He is familiar with the Triassic Park permit application, and specifically with the closure and post-closure care requirements and financial assurance portions. He is familiar with the RCRA financial assurance requirements. Permitted facilities are required to prepare cost estimates for closure and post-closure care under 40 CFR Parts 264.142 and 144, to fulfill the requirements of Subpart G. After the permit is issued, and 60 days before the receipt of hazardous waste, the instrument of financial assurance must be in place. Post-closure financial assurance must be provided for thirty years. Based upon the circumstances existing during the post-closure period, the secretary of the department has the option of extending or shortening the period of post-closure.

The amounts of financial assurance imposed in the draft permit are \$10,485,914 for closure, and \$3,678,082 for post-closure. In his opinion these amounts meet the applicable RCRA requirements. There is a difference of approximately \$1.2 million between the draft permit and the permit application, reflecting primarily differences in cap construction for the landfill. In calculating costs, he relied on construction drawings in the permit application, and when he needed additional information he sought it and

received it from the Applicant's consultants. He does not remember ever telling the Applicant's consultants that in the course of closure all hazardous waste would have to be moved from the site rather than being disposed of in the landfill. His costs for closure do not assume that any waste is transported off site.

To figure unit costs he conducted a survey of New Mexico contractors. He also consulted EPA, the Utah Department of Environmental Quality, and two hazardous waste landfills, one in Utah and one in Texas. He did not rely on figures received from the Applicant or its consultants. He arrived at his figures first and then checked them against the Applicant's. Where there was a large discrepancy he called them for clarification. The purpose of the communications with the Applicant's consultants was not to reach a compromise but to understand the basis for their figures. If he believed their reasons were valid or more conservative than his own he used them. He does not doubt the validity of the method used by Mr. Corser to obtain the cost of the cap closure; he simply used a different method, based on a survey of New Mexico contractors, that he believes more accurately reflects the average cost proposals that would be received by the state to do the work.

He included in his cost estimate for soil removal at each of the individual units, with the exception of the landfill, the number of 10% of the ultimate waste being considered hazardous. He considers this a conservative figure, as he would not expect it to be that high, considering his experience at a large number of site assessments.

In his experience the project management costs are fairly small as a percentage of the entire costs of a project in which a consulting firm hires a contractor. He would not expect them to exceed 5% of the total costs of the project. Administrative costs would

probably not be 25-30% of the total project costs. His experience with preparing bids for government agencies is that insurance is not included as line item, but assumed by the contractors that are bidding.

On cross-examination Mr. Cobrain stated that to arrive at his cap construction figure he had conducted a confidential survey of New Mexico contractors, and had contacted EPA. He understands that the state bases its procurement decisions on many things, including a bias or preference toward in-state contractors. The contractors had experience with cap construction for landfills, but not subtitle C landfills. He gave them the specifications in the permit application. The figures ranged from \$2 to \$4.50 a square foot from the contractors and \$5.74 a square foot from EPA. He threw out the figure from EPA because he had not spoken directly with the contractor in that case and averaged the others to arrive at the cost in the draft permit, which is approximately \$2.25 a square foot.

The cost of the cap does not reflect an assumption that the cap will be made from on-site material. The state would require insurance of any contractor who would perform work. When he performed the survey, he asked the contractors to include in their costs the establishment of a vegetative cover that would consist of native grasses. He did not specify the origin of the material.

He assumes that Mr. Corser's bid is an interested party bid, not a third party bid. There were third parties providing actual purchase agreements as part of Mr. Corser's information.

## G. Public Comment

1. M. Tom Stewart: Many senior citizens moved to Roswell because New Mexico is a relatively clean state. He knows many who are now contemplating making a mass exodus. There are presently 13 sites in the western U.S. that accept hazardous waste, and six of them are in dire financial straits. He doesn't understand the need for another one.

Mr. Stewart testified later that he believes the facility should take only waste from American businesses in the U.S.

2. Einar Johnson: GMI stated there would be 3-5 trucks of hazardous waste per hour per day. This means between 72-120 trucks per day will be traveling to and from the site for Phase I alone. The cumulative impact of Phase II and III were not addressed in any of the information provided to the general public, which has denied the public an opportunity to review and comment on the total impact of the site.

GMI representatives also stated that responsibility for roads leading to the site would fall to the City of Roswell, and the WIPP bypass would handle the truck traffic. The bypass is on the west side of town, however, and does not connect with any road going east to the site without a trip through town. Main Street already needs repair after a major overhaul five years ago. The taxpayers of Roswell should not be stuck with an additional road maintenance bill. He believes every waste truck should pay a user fee. He can find no identifiable benefit to Roswell or its citizens from the proposed facility, and strongly recommends the permit be denied.

3. Mary Deborde: Ms. Deborde wonders where they will get all the water they need; Roswell already has a shortage. She also opposes any more waste material coming in from other states.

4. Linda Shirley: Ms. Shirley is a concerned mother with a small child; she believes a study should be done of health impacts from the facility.

5. Tod Rockefeller: Mr. Rockefeller was an interested party in an earlier NMED permitting matter, and described several respects in which he believes NMED staff acted inappropriately or unlawfully in that matter. He has petitioned EPA for withdrawal of approval of New Mexico's hazardous waste program. EPA has not acted in six months and he plans to bring suit. After dismissal of his appeal by the New Mexico Supreme Court, he filed the case with the Supreme Court of the United States. Mr. Rockefeller submitted into the record a copy of his petition to EPA and his supplemental brief to his petition in the U.S. Supreme Court.

6. D.C. Birdsong: Mr. Birdsong is a safety inspector speaking for himself. When he was a boy there were terrible dust storms. They plowed the earth, planted trees, rotated crops and conserved water with dams. They don't have terrible dust storms anymore. He also worked for Chevron in California, where they drilled and produced oil wells from underneath downtown Los Angeles. He has dealt with waste disposal and pollution throughout his career, and it can be handled properly. With state and federal agencies setting compliance parameters for operating a hazardous waste disposal site and monitoring the site for compliance, he is sure it can be done with no harm to the surrounding environment.

7. Jose Trivizo: Mr. Trivizo testified that everyone is afraid of what is going to happen, but they don't want to admit that it's going to hurt the groundwater.

8. Maria de la O: Ms. De la O does not want the dump because it will affect all of them. She has asthma and cysts, and the dangers are there for everyone in the country and for the children.

9. Mark Robinson: Mr. Robinson is a petroleum geologist. He opposes the facility because there is a short supply of water there, and they are having difficulty meeting their obligation under the Texas compact. He also opposes it on the grounds that similar dumps are not surviving due to a lack of business.

10. Tom Blake: Mr. Blake spent his working career in the oil and gas industry. He declines to support the project because he is concerned about the possible terrorist use of or attack on the facility and the vehicles en route to the facility.

11. Betty Richards: Ms. Richards sang a short song set to the tune of "Ballin' the Jack" about the deck being stacked in favor of issuing the permit.

12. Tim Jennings: Senator Jennings is concerned that all dumps don't wind up in one state, and believes the states should work out reciprocal agreements to avoid that. He also believes there should be adjustments such as economic incentives for companies like Intel which have their high-paying jobs in one city and send their trash to another. He believes federal legislation is required to prevent dumping at the facility without accountability. He believes the state or the Applicant should develop further "hazmat" training for the fire departments responding to the facility. He believes airborne particulates should be monitored.

He is also concerned about the maquiladoras and other plants in Mexico; they have taken the jobs there but want to send the trash back here. This will create a depressed area in Southeast New Mexico. Finally, he's known the Gandys a short time, and the Marleys a long time, and believes they are reputable people and good neighbors.

13. Magil Duran: Mr. Duran is concerned about whether there is enough water to keep the people downwind from becoming sick, waste coming from other states, and the constant barrage of heavy trucks.

14. Max Coll: Ms. Petrone read a letter from Representative Coll into the record. The disposal of hazardous waste should not be looked on as an economic opportunity, but as being extremely dangerous, and it must be done carefully. Transporting and disposing large quantities of hazardous substances will have short-term and long-term effects on public health and the environment. Other important activities in Chaves County will be impacted. We should find another site to dispose of these wastes.

15. Alba Najera: Ms. Najera is from Hagerman and does not speak English, but knows from what she has read that the facility is bad for their health, the children and animals. She is opposed.

16. Ana Najera: She does not know much about the facility but has heard it is bad for children and opposes it.

17. Oscar Najera: Mr. Najera opposes the facility because it is very close to his house and the air will get to them because of the wind. He is afraid the children will become ill.

18. Baudello Ramirez: Mr. Ramirez does not believe the site is needed, and as a realtor is concerned that people will not want to move to New Mexico, and Roswell, if there is a waste site in the backyard.

19. Michael McKee: Mr. McKee supports the Applicant. He is the father of two young boys, active in his community, a businessperson, and a caring citizen. He counts the Marleys as among his closest friends. He is not an expert, but he sees GMI offering scientific data and evidence to support their application, while the opponents are offering supposition and extreme possibilities.

20. Reece Blake: Ms. Blake is a realtor in Roswell. She believes we must look closely at the possible accidents involving the release of hazardous wastes in town. She also wonders how we can recommend to newcomers that they move to the land of enchantment when there is poisonous waste dump in the backyard.

21. Christopher Meeks: Mr. Meeks opposes the facility. They are not certain that this would not cause cancer or birth defects throughout Roswell. Tourists come here, and they could track disease from the hazardous waste back to their homes and give it other people.

22. Katie Bird Humphreys: Ms. Humphreys has been in Roswell since 1981, had two boys born there, and plans to stay. She has no problems with the plans for Triassic Park. She feels it is well planned, and will be a place where waste can be controlled.

23. Jaime Chavez: Mr. Chavez works with the Water Information Network out of Albuquerque, New Mexico. The Network is a member of COREF, a bi-national organization of environmental concerns and social and economic justice issues in the border area. Particularly with the NAFTA concerns regarding the intake of potential

maquiladoras waste from Mexico, they are concerned with the issue of public transportation and movement of toxic material across the border.

Mr. Chavez spoke of globalized neo-liberalism and the sacrifice zone along the border between the U.S. and Mexico, successful bi-national opposition to a nuclear cemetery in Sierra Blanca, the future source of drinking water in the region known as Conejo-Medanos, the necessity of constructing a waste disposal site for the maquiladoras, the lack of security for waste, pollution, cancer, and the dangers of WIPP. They are convinced today more than ever it is necessary for the people to unite, not for war, but for peace and to defend the environment.

24. Sue Graham: Ms. Graham is 100% against Triassic Park. She has several concerns: the constant traffic traversing Roswell for the next 20-25 years; the negative impact on their economy, including real estate and tourism; the lack of preparedness of the medical community to handle a release; and an overtaxed budget for road maintenance. Her impression is that the department works for GMI rather than the people of New Mexico. Whenever GMI wanted a change in its permit, it was granted. But when the citizens wanted an extension of time in which to review the permit, it was denied. The department in charge of looking after the welfare of the citizens is running roughshod over them.

25. Tammy Gill: Ms. Gill has lived here 12 years and opposes the facility. It should be moved to the Marley Ranch.

26. Stuart M. Pritchard: Mr. Pritchard is a retired lieutenant colonel, U.S. Air Force. He began to hear about this only lately through news media and the neighbors. He didn't think too much about WIPP because the Carlsbad population wanted it and it

seemed to have enough governmental control. Here he sees very limited information. He worries about whether their disposal methods are such that they'll protect against the movement of certain harmful elements through wind or climate or environment. He worries about trucks going through Roswell streets with their materials. There are people fairly close, and an opportunity to expand. Roswell has wonderful things, but he fears their deterioration. He definitely opposes the facility.

27. Catherine Montano: Ms. Montano has been an anti-nuclear activist for 11 years, not by choice. The environmental division has a horrifying track record, and the State of New Mexico is number one in the nation highest in radiation spills. The Cerro Grande Fire last year put out tons of radiation. The Constitution assures the right to clean air, clean water and clean soil. Every river in the state is radioactive. Science says that WIPP should not happen, because New Mexico is one of the largest karst (or cavernous) areas in this hemisphere. Plutonium is an impossible technology, and they don't know how to control it. This radioactivity will be kept in our atmosphere, and go around the earth for eternity.

Ms. Montano then listed a number of areas throughout New Mexico where plutonium or radioactivity have been found: Cochiti Lake, Socorro, White Sands, Albuquerque, Manzano Mountains, Gallup, Grants, Laguna, Acoma, Shiprock, Church Rock, the Rio Grande, the Rio Puerco, and Fort Sumner, where the department knew of contamination as early as 1995 but took no action. There is a lot of cancer in Ms. Montano's family and in the state of New Mexico. In 1990, they presented 17,000 signatures to Governor Bruce King. In the future, all highways will be radioactive and we won't be able to travel them. EPA and NMED do not protect the people, but are paid

to rubberstamp everything. New Mexico has been a sacrifice zone for the nation for over 50 years and is grossly contaminated. Water is the life of this planet, and if we continue to inject her with poisons she will die. She is against the permit. We need to respect the earth. They will sue the state and the EPA if they have to because they are tired of being sick.

28. Sue Ann Carpenter: Ms. Carpenter was raised in Roswell. Her grandfather came out in 1918 and started a business that is still running now. She is strongly against the facility.

### **III. RECOMMENDATION**

Based on the record as a whole, I recommend that the permit be issued for the facility, subject to several conditions necessary to protect health and the environment.

### **IV. DISCUSSION/ANALYSIS**

[Note that unless otherwise indicated, page references are to the parties' post-hearing submittals, and in the Bureau's case, to the NMED Response to Comments document behind tab i of their submittal.]

#### **A. The Permitting Process and Procedures**

The draft permit for the proposed Triassic Park Facility was originally issued on April 4, 1996 for public comment and review. Based on the public comment received, the Bureau rescinded that draft and required GMI to amend its permit application. On March 15, 2001, the Bureau issued a second draft permit, but there were errors in the published version so it was rescinded as well. On June 15, 2001, the Bureau issued a third draft permit, with a Fact Sheet, and publicly noticed its availability for review and comment through publication in English and in Spanish in newspapers of local and

statewide circulation, radio announcements in English and in Spanish, and mailings to approximately 800 people who had requested such notice.

The public notice of the draft permit and the Fact Sheet each contained all required elements set out in 20 NMAC 4.1.901. The draft permit was available for review and comment for 125 days (80 days longer than required by regulation). Copies of the draft permit and Fact Sheet were placed at the Roswell Public Library, Tatum Town Hall, the Bureau's office in Santa Fe, and on the department's web site. A Supplemental Fact Sheet was prepared and distributed in August 2001. The Fact Sheet was translated into Spanish in August 2001, and mailed to all who requested it.

A public hearing was requested and held, 125 days following proper notice (95 days beyond the notice required by regulation); the hearing was simultaneously interpreted into Spanish in its entirety. Several parties entered their appearance and many people participated in the testimony and the questioning. A week after the hearing, a facilitated meeting was held to take additional written comments for the record; the meeting was interpreted into Spanish. Five public information meetings, not required by statute or regulation, were held by the Applicant between May and July 2001. One of the meetings had an interpreter available for the question and answer session, as had been requested. An additional public information meeting was held, with an interpreter and Applicant's expert witnesses, on the evening before the hearing began.

The Bureau and the Applicant met all applicable regulatory requirements for notice and participation, and the Applicant went further to provide information and answer questions about the facility outside the regulatory process.

CURE (see pp. 22-26) and CARD (see pp. 42-44) contend that the department and the Applicant have deprived several members of CURE and other members of the public their right to meaningful participation in this proceeding. I strongly disagree with this contention. Specific bases for CURE's and CARD's statements are addressed below:

1. In connection with Mr. de la O's ability to participate in the process, CURE states that "Applicant would not give a presentation in Spanish" at the public information meeting in Hagerman. It is true that Applicant *did* not give its presentation in Hagerman in Spanish. There is no evidence that Applicant *would* not have given a presentation in Spanish if asked; in fact, the evidence is to the contrary. When asked, the Applicant provided interpreting services, for pre-hearing meetings and for the hearing.

This is an important distinction, for those who would claim that a process does not meet their needs bear some responsibility for timely making their needs known. Although CARD refers to "continual requests," the record shows that the Applicant received only two requests for Spanish interpretation at the public information meetings held in the months before the hearing. One of the requests was received a day after the meeting was held (May 4/May 3, 2001); the other request, for the Hagerman meeting, was a request for interpretation of the question and answer period. Applicant met that request. In retrospect, it may seem illogical that a presentation would be given only in English, to be followed by questions and answers about the presentation in Spanish, but having met the request as stated, it is not correct to state now that the department and the Applicant have "prevented...participation [in the process], particularly by members of the public who neither speak nor read English." (CURE, p. 23)

Again, they bear some responsibility for assuring their own participation, and it is disappointing that many members of the audience in Hagerman chose to leave before the question and answer period rather than stay, in order to make a point about the failure to make the presentation in Spanish, as well, when they had not made that request.

CURE also states (p.23) that members of the public who do not speak and read English had as their only opportunities to learn about the proposed facility the hearing and the meeting held after the hearing on October 25, 2001. This is incorrect; at the hearing officer's request Applicant held a final public meeting, with its experts, and with Spanish interpreters, on October 15, 2001, the evening before the hearing began.

I would add here that CURE requested a list of key words and phrases related to the meeting and hearing in English, Spanish and "Tex-Mex," the last said to be the local dialect. I spent a fair amount of time pursuing this request, and began with the Applicant's interpreter. Mr. Ficklin stated that he could provide Spanish translation, and he did, but not translation for Tex-Mex for several reasons, including the lack of an established, uniform dialect in Roswell and the normal usage of Tex-Mex in non-technical conversation, such that technical terms would not have Tex-Mex equivalents. CURE provided two other interpreters' names, and I made contact with each of them before the hearing. They both agreed with Mr. Ficklin that Tex-Mex did not have equivalents for technical terms. The list in English and proper Spanish was distributed to the parties and at the last meeting and the hearing, in addition to the Fact Sheet in English and Spanish.

2. In connection with Ms. Gadzia's participation in the process (CURE p. 24),

I did hear Ms. Gadzia testify that GMI representatives were unable to answer questions about the facility at a May 2001 meeting, but I do not have enough information to conclude that this was a violation of the public participation requirements. Is it a question that might have been answered by department staff, or at another meeting, or, ultimately, at the hearing, where Ms. Gadzia was represented by counsel?

As for the incident at the Sally Port Inn, Ms. Gadzia was clearly upset by it, and entirely credible in her description of the incident. It was not, however, even by Ms. Gadzia's own description, a matter of the Applicant or its representative attempting to prevent her from attending and participating in a public information meeting or the hearing. It was a misunderstanding in a hotel foyer caused in part by the hotel staff, and by the conflict between her desire to express opposition to the facility immediately prior to or simultaneous with a public information meeting and Mr. Schultz's desire to reduce confusion in connection with the public information meeting they were hosting in a room next to the foyer in the hotel that evening. Ms. Gadzia was able to overcome her feelings about the incident and participate fully in the hearing. I do not believe this incident represents a violation of the public participation requirements for a RCRA facility.

3. It is undisputed that the Applicant's disclosure statements were out of date at the time the hearing was held; during the hearing, as noted above, CURE elicited testimony from the Gandys in particular that their driver's license had new expiration dates, that they drove newer cars than when they had originally filled out the forms, and that their debts had changed. There was also testimony from Mr. Blair that there had been OSHA violations and OCD violations, and after the hearing the Applicant submitted updated disclosure forms reflecting events relating to OSHA violations in 1988 and a

settlement of those violations. CURE contends that this is a violation of public participation requirements insofar as it means the public did not have an opportunity to review the updated personal disclosure statement prior to the public hearing.

While, ideally, personal disclosure statements would be updated prior to the hearing, in this case, I do not believe that Applicant's failure to update them prior to the hearing represented a violation of the public participation requirements. As to the driver's license expiration dates and the cars driven by principal parties, I do not see how the changes to those sections are sufficiently substantive to warrant further comment. The debts owed by the principal parties could be more important, certainly, but in this matter are not being used by any party as grounds for permit denial or special conditions in the permit, for example, or for any other purpose.

The most serious of the deficiencies in the statements was the failure to include anything about OSHA violations. Applicant did not construe "environmental violations" to include OSHA violations, and so did not mention them when the forms were originally completed. Documentation relating to the OSHA violations was submitted after the hearing and prior to the submittal of post-hearing filings.

First, I urge the Bureau to revise its personal disclosure statement forms in at least two respects: clarify that the forms are not, in fact, "confidential when completed," although some small portions of them may be; and if OSHA violations must be disclosed with other environmental violations, state that clearly on the form to avoid misunderstanding.

Second, assuming here that the Bureau properly construes the language in the forms now to include OSHA violations (I do believe that), I do not believe public

participation was limited by Applicant's failure to include the information on the original forms. Mr. Blair clearly knew of the violations, and the underlying facts, and CURE had an opportunity to cross-examine the Applicant's witnesses about this, and to offer evidence of their own on this point. They were not precluded in pursuing this topic at hearing; the only limitation I imposed was on the testimony that was sought on the personal consequences of the OSHA violations to the employees not wearing respirators.

This is not to say that CURE is responsible for updating the statements themselves; the Applicant bears that responsibility, and failed to update until after the hearing. But the Applicant's failure on this point did not diminish the public's ability to participate in the hearing and to explore prior environmental violations. Although I disagree with Applicant's statement that "the entire issue of disclosure forms does not involve the hearing officer nor is it part of the permit process" (GMI, p. 25), it is true that no party is suggesting that these violations represent a sufficient ground under NMSA 1978, Section 74-4-4.2 to deny the permit for willful disregard of environmental laws.

4. The inclusion of information in the administrative record after the public hearing, and the correction of the Administrative Record Index, was unfortunate. Ms. Reade spent a lot of time effectively assisting the Bureau with its own document management and indexing. The corrections did result in extensions of time for the parties' post-hearing submittals, but did not result in a re-opening of the hearing, notwithstanding requests to do that. The Bureau noted in its response to one motion that the documents had not been relied on in issuing the draft permit. This may be arguable in the instance of the Applicant's response to a NOD, but I do not believe it warranted re-opening the hearing. CURE, CARD and other members of the public had the opportunity

look at motion

and did question the Applicant's witnesses and the Bureau's witnesses on the permit, the deficiencies noted in the application, rotary air drilling, and every other matter related to the wells at the site. The public was not denied an opportunity to participate in the process as a result of the record corrections made subsequent to the hearing.

#### B. Siting--Environmental Justice

The primary thrust of CARD's presentation and argument is summed up in paragraph 18 of its Conclusions of Law (CARD pp. 36-7): "It was NMED's affirmative duty to insure that Applicant addressed all Title VI issues (including environmental justice concerns) during the permitting process. A breach of that duty, whether for timidity or lack of vigilance, violated the substantive rights of all persons in the surrounding communities as might fall within the purview of EPA's Title VI regulations." CARD relies on a number of sources for its arguments, including an investigation report from EPA of a Title VI complaint ("Select Steel"), case law, and a number of EPA directives, including the Interim Guidance issued for the investigation of complaints of environmental justice.

As noted, I did make an evidentiary ruling that the evidence planned for presentation by CARD was not relevant to the permitting action, following a motion from the Applicant, but I invited an offer of proof which was laid out in some detail by Ms. Reade pursuant to the applicable procedural regulations in the event the Secretary disagrees with the ruling and wishes to consider the evidence in deciding whether to issue the permit.

First, there are a number of statements made by CARD with which there can be no reasonable disagreement:

- (1) Title VI prohibits discrimination based on race, color, or national origin under programs or activities of recipients of federal financial assistance.
- (2) EPA has adopted Title VI implementing regulations that prohibit unjustified discriminatory effects which occur under federally-assisted programs or activities (40 CFR Part 7).
- (3) Facially neutral policies or practices that result in discriminatory effects violate EPA's Title VI regulations unless they are justified and there are no less discriminatory alternatives.
- (4) NMED is a recipient of EPA financial assistance and is therefore subject to the requirements of Title VI and EPA's implementing regulations.
- (5) Section 7.30 of EPA's implementing regulations provides that no person may be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving EPA assistance on the basis of race, color or national origin.
- (6) Section 7.35(b) prohibits recipients from administering their programs in a manner that would have the effect of subjecting individuals to discrimination because of their race, color, or national origin.

The leap CARD makes from these truths, however, is that the Applicant and/or the department must conduct a study and expressly establish and analyze in a permitting hearing i) the racial and ethnic composition of the neighboring communities, ii) the economic conditions existing in neighboring communities, iii) the pre-existing health of

the residents in neighboring communities, iv) the clustering of existing industrial and waste facilities near the proposed facility, and v) the cumulative environmental burden borne by the impoverished minority communities. (CARD p. 41) The further leap is that, on the basis of such an analysis, the permit must be denied. I do not believe either of these leaps is mandated here by the Title VI regulations or the Interim Guidance, nor are they consistent with applicable New Mexico law.

Second, CARD gives a fair description of Alexander v. Sandoval, 121 S. Ct. 1511 (2001) and South Camden Citizens in Action v. New Jersey Department of Environmental Protection, I and II, and to the extent my comments in ruling on the Applicant's motion at hearing were not articulate or specific, I would like to clarify my understanding of the issues and add a few comments about the Select Steel report cited by CARD.

As noted by CARD, Alexander v. Sandoval does not bear directly on the question of whether evidence of potential disparate impact in an environmental permitting proceeding is relevant. The ruling was that private citizens cannot use Title VI to sue state agencies over unintentional discrimination. (Individuals can bring suit against states for intentional discrimination. Intentional discrimination is not alleged in this matter by any party; the only evidence on this point shows that Applicant chose the site for its geologic characteristics after hiring a consultant to review potentially suitable sites in Texas and New Mexico.) I mentioned it because it gutted the only ruling I had read in which a court stayed a permit as having been issued in violation of the civil rights law for failure of the issuing agency to perform a disparate impact analysis (Camden Citizens). There is some question as to whether the plaintiffs may still be able to pursue a 1983

claim (unlikely, in my opinion), but effectively the ruling in Alexander v. Sandoval leaves the Interim guidance as the only obvious avenue of redress for citizens with complaints against a state under Title VI. I believe the courts have closed their doors.

The Interim Guidance, meanwhile, does not provide much guidance on a number of critical points and, from the perspective of a permitting agency, seems unworkable as it is currently drafted. Among other things, the Guidance is directed to EPA investigators reviewing a permitting action after the fact. No guidance or other directives have been provided to the permitting agencies themselves, setting out a mandate or providing the resources to conduct a statewide demographic and facility survey, for example, to then consider them in individual permitting actions. Having received EPA approval for its permitting program, including its permitting processes and procedures and siting regulations, NMED would have to change its regulations and its statute and re-submit its program for approval before it could substantially change its practices or deny a permit on new grounds.

Under long-standing state law, state hazardous waste regulations may be no more stringent than federal regulations, but the parallel federal regulations don't require proof of "no disparate impact" by the permitting agency during the permitting proceeding, and don't provide new grounds for the denial of a permit. Key terms and phrases in the Guidance such as "disparate impact" and "cumulative impact" are not defined, nor are there indicators given for measuring such impacts. Geographic parameters are not set out. The Guidance is severely lacking as Guidance, is not directed to this agency, and does not change a result that would otherwise be reached under state law and regulation.

Nevertheless, the department embraces the concepts embodied in Title VI and its implementing regulations, and would not behave in a way which jeopardized its funding. In my experience, NMED is fully committed to the principles of environmental protection and civil rights, and does not discriminate based on race, color, national origin or other protected status. There is no question that we need to treat all citizens fairly, and that no group of citizens should be subjected to a disproportionate burden of environmental impacts. The question is whether the applicable permitting and siting regulations already provide protection against such discrimination, and if not, how to go about amending the state regulations in an orderly manner.

I believe the procedural regulations already assure full access without discrimination to the permitting process for those who wish to participate (see above, Section A), but improvements are always possible. Establishing criteria for when Spanish will be used for public notices and fact sheets would be helpful, for example, in making the provision of such notices less reactive and subjective. Codifying our now established practice of providing for public comment outside of working hours in all hearings with significant public interest might reduce confusion.

On the question of whether a certain community is being subjected to disproportionate impact, it appears that the Bureau gave some consideration to the matter; although it took a “neutral” stance during the hearing on the question of whether CARD’s testimony should be excluded, its response after the hearing to the comments concerning environmental justice was that it “does not believe the Triassic Park facility is located in an area that raises environmental justice issues.” No further explanation is given, but the evidence on the precise location of the facility (not the 25-50 mile radius CARD was

urging consideration of) shows that the nearest receptor is the Marley Ranch, 2.9 miles from the proposed facility, and the second nearest receptor is the Kolb residence, 4.75 miles away. There are fewer than a dozen receptors within 10 miles. Hagerman and Dexter are more than 30 miles from the proposed facility; Roswell is 40-45 miles away. At three miles, air modeling shows concentrations a couple orders of magnitude below EPA's levels of concern, and PCBs would be indistinguishable from background. I assume the Bureau was considering these facts and perhaps others in making its response. If we are to require the Bureau to make its analysis explicit, however, it is appropriately a regulatory matter so that it can be collaboratively developed with those who will be affected by it, and promulgated with full consideration of the other regulations it will have to be reconciled with.

The Select Steel report is instructive on at least two points—EPA's analysis of the issues, including a review of modeling, and the way in which they addressed the air quality complaints regarding several pollutants covered by the National Ambient Air Quality Standards (NAAQS). With respect to the NAAQS-covered pollutants, EPA states that it believes the air quality in a surrounding community is presumptively protective, and that emissions of a pollutant will not be viewed as having an "adverse impact" where the area is in compliance with the ambient standards and will remain in compliance even after the facility challenged begins operating. Having decided that there was no "adverse impact" as a result of the compliance with ambient standards EPA did not look at whether the impact was disparate. If EPA's "adverse impact" analysis is going to end with the question of whether the facility meets applicable health-based standards where those standards exist, and whether the modeling was conducted

appropriately, it is a very limited analysis indeed, not surprising where EPA has not made the effort to revise its siting regulations to include any other analysis.

For those pollutants not covered by NAAQS, EPA states that Title VI calls for an examination of whether those pollutants are so concentrated in a racial or ethnic community that the addition of a new source will pose a harm to that community, but a further reading shows that they rely primarily on modeling to conclude that significant impacts will not be found beyond the fence line, and that Select Steel's emissions would contribute minimally, if at all, to the possibility of adverse health effects.

Ultimately, I did not see a way of reconciling the state law under which hazardous waste permits in New Mexico are issued, and which provides very limited grounds on which to deny a hazardous waste permit, with CARD's contention that the department cannot issue the final permit or the completeness determination or the draft permit before certain studies of socio-economic realities and environmental justice are made.

As part of her offer of proof, Ms. Reade submitted all documents she would have made part of her full presentation, and briefly described the importance of each one. If the Secretary chooses to consider the evidence as part of the permitting decision, it is part of the record, but I do not believe it warrants denial of the permit, even if given full weight.

The Interim Guidance sets out five basic steps for investigating environmental justice complaints related to permitting: (1) identifying the affected population, (2) determining the demographics of the affected population, (3) determining the universe of facilities and total affected population, (4) conducting a disparate impact analysis, and (5) determining the significance of the disparity. (Guidance, pp. 9-11) Ms. Reade did not

identify the affected population. She offered general demographic information about the population within a 25-50 mile radius of the proposed facility without offering evidence of impacts from the facility at those distances. (There was a statement during the hearing that one can smell a refinery from 40 miles, but EPA is focusing on measurable pollutants rather than odors. Additionally, I see no indication in the Guidance or Select Steel that EPA would consider such a large area to be the “affected population.”) No evidence was presented on unaffected populations, such that a comparison could be made between them and the affected population, however it is defined, and the universe of facilities was not methodically established, either for the area in question or for other areas. Using Select Steel as a guide, the air modeling showed no adverse impact, and without an adverse impact, one does not get to the question of whether there is a disparate impact. Without any basis for comparison in any of the elements, disparity between this area and other parts of New Mexico could not be shown in any event.

Even if it could be reconciled with state law, the environmental justice case here fails under the Interim Guidance and under Select Steel.

### C. Endangered Species Act

As noted above in the summary of testimony, the two animals of concern for this property are the Lesser Prairie Chicken and the Sand Dune Lizard. The property contains shinnery oak, which could be habitat for these animals, although the bluestem grasses necessary to constitute the habitat have been grazed down, so the habitat is marginal.

Testimony on these animals and the vegetation at the site was provided by GMI’s witnesses, CURE’s witnesses and the Forest Guardians. No one disputed that the species are imperiled but not listed, and thus without enforceable protections under the law.

The Bureau deferred to the New Mexico Game and Fish Department on this issue, and participated in a consultation. Game and Fish issued a letter dated September 20, 2001 (in the record as part of the NOI attachments for Dr. Merino's testimony) in which they stated that the implementation of the fencing and bird netting mitigation measures already committed to in the draft permit will be sufficient to protect the Lesser Prairie Chicken from impacts associated with this project. They also made recommendations for site fencing to protect the Sand Dune Lizard; the Applicant has also agreed to the inclusion of the fencing requirements in the permit.

The question then is whether the Department should impose the other two mitigation measures proposed by CURE (CURE p. 44): a requirement to build the facility as far east as possible, because the shinnery oak there is on the west side of the property; and a requirement to restrict noise between March 1<sup>st</sup> and June 15<sup>th</sup> each year from one before sunrise to one hour after sunrise to avoid interfering with the mating calls or cackles that attract female birds to the lek sites for breeding.

It is true that Dr. Merino seemed agreeable during his testimony that these things would be done if feasible, or if impacts were shown. (TR. p. 84) Without agreement by the Applicant, however, that these conditions may be "imposed" in the permit, I see no authority for their imposition where the species are not listed. The mitigation measures Applicant has agreed to appear in the final draft permit in Section IX.

#### D. The Ground Water Monitoring Waiver

Every post-hearing submittal addressed this issue at length. (See GMI, pp. 14-21, CURE, pp. 29-42, CARD, pp. 46-49, and the Bureau proposed findings and conclusions, pp. 40-45) The basic regulatory requirement is that the Applicant must implement a

ground water monitoring program capable of determining the facility's impact on the quality of ground water in the uppermost aquifer underlying the facility. The monitoring program must be carried out during the life of the facility and during the post-closure care period as well. The Applicant believes that monitoring the uppermost aquifer at this site would provide no meaningful information for thousands of years, as releases would have to travel through hundreds of feet of impermeable Triassic mudstone, so they sought and the Bureau approved a ground water monitoring waiver. The waiver is not a complete waiver of monitoring requirements. Rather than monitoring a zone of high-TDS water 600 feet below the facility, the Applicant will monitor the vadose zone closer to the surface with monitoring wells.

The regulations provide for such a waiver, but only if the Applicant meets certain standards. The applicant must demonstrate that there is no potential for migration of liquid from the facility to the uppermost aquifer during the active life of the facility and the post-closure care period (presumably 60 years at this site, but the Bureau required a showing of at least 800 years)(40 CFR 264.90(b)(4)). Further, in order to provide an adequate margin of safety in the prediction of potential migration of liquid, the applicant must base any predictions made on assumptions that maximize the rate of liquid migration. The demonstrations must be certified by a qualified geologist or geo-technical engineer.

Applicant utilized the services of both a professional geologist and a registered geo-technical engineer. The uppermost aquifer as defined by the regulations was deemed to be the saturated portion of the Lower Dockum. In addition to performing an analysis of possible migration to the uppermost aquifer, Applicant also performed an analysis of

possible migration laterally along the interface of the Upper and Lower Dockum, not because it was believed to be an aquifer, but because at times it might contain liquid water flow. In both analyses, Applicant's consultants relied on their professional expertise, nearby oil well logs, on-site borings and monitoring wells. They determined that the amount of time in which water might migrate directly beneath the property to the uppermost aquifer, or migrate laterally to the Dockum interface, would be thousands of years. The Applicant also agreed to install a series of 8 monitoring wells to monitor releases from the landfill into the area beneath it, and to monitor lateral releases. Two of the eight wells have shallow and deep components.

CURE contends that the waiver should be denied because the predictions made by the Applicant and the department are not based on the maximum rate of liquid migration. They have three grounds for this statement: Applicant used an average rate for hydraulic conductivity, Applicant has not demonstrated that it knows where the nearest groundwater is, and Applicant has not demonstrated that there are no fast flow features such as fractures that would lead to a more rapid rate of leachate flow. (CURE p. 31) CURE presented an experienced hydrologist, Mr. Rice, to address the waiver and other hydrologic issues at Triassic Park.

After considering the Applicant's assumptions of one-foot per year hydraulic conductivity, 48% porosity and a hydraulic conductivity of about 1%, the use of core samples in which different pressures were modeled in a laboratory, and the averaging of permeability numbers rather than the use of the single highest permeability number, particularly where homogenous transport is not assumed, he concluded that the predictions made to support the waiver were not based on assumptions maximizing the

rate of liquid migration. He also concludes that the horizontal distance to Upper Dockum water and the vertical distance to Lower Dockum water are inadequately established. He believes the possibility of fast flow paths such as fractures and buried stream channels was not sufficiently investigated, and that angle coring and a more extensive drilling program is necessary for full characterization.

The Applicant notes that the site is not homogenous, that the calculations are still conservative in that they use high permeability numbers and assume saturated flow, and that even with Mr. Rice's calculations, the migration time would be sufficient to meet the RCRA regulatory requirements. The Applicant characterizes the discussion of possible fractures as speculation insufficient to overcome the geologic assessments reached by the Applicant's experts, a professional geologist and geo-technical engineer.

The Bureau believes that GMI has made a reasonable effort to determine hydraulic conductivity, and notes that the Upper Dockum is not expressly protected by the regulation that requires using the most conservative assumptions (40 CFR 264.90(b)(4)). The Bureau does propose two additional monitoring wells to be constructed within the presumed saturated portion of the Upper Dockum. Among other things, the wells would be used to verify the hydraulic conductivity used to model transport within the aquifer.

The Bureau also believes there is sufficient documentation of the horizontal distance to the Upper Dockum water and the vertical distance to the Lower Dockum, including geophysical logs. The Bureau believes the existence of fast flow paths has been sufficiently investigated, but is proposing an additional deep vadose zone

monitoring well to help verify that significant amounts of ground water are not being transmitted through fractures or faults.

Although conductivity could be recalculated here several different ways, and the likelihood of fractures debated further, I believe the Bureau's approach of requiring additional wells for verification is a good one to address the concerns raised by Mr. Rice and CURE.

Other concerns raised by Mr. Rice included a monitoring system that will not detect unsaturated flow, unrealistic infiltration rates, and a liner system that is not likely to intercept leachate. As for the infiltration rate used when calculating fluid migration rates, his concern is that the Applicant's estimate is based on an open-range scenario and the existence of evapotranspiration. The Bureau notes that the infiltration rates used (0.60/inches per year in the Upper Dockum, and 0.84 inches per year in the Lower Dockum) were based on the maximum amount of water the respective formations can accommodate, not surface infiltration rates; I believe this is appropriate.

On the detection of unsaturated flow and liner interception, Mr. Rice recommended the use of suction lysimeters, tensiometers and neutron probes to capture samples and measure moisture content. Mr. Pullen testified that he considers the use of such instruments to be unreliable. (The Bureau's post-hearing comments stated that these instruments give false positives.) Ultimately, although I understand CURE's point that the ground water monitoring system in the Upper Dockum is not really a vadose zone monitoring system insofar as it does not measure fluids moving as unsaturated flow or being subject to capillary forces, the bottom line is accurate release detection. The Bureau's experts and the Applicant's experts were clear that the vadose zone monitoring

with groundwater monitoring wells is the system most likely to detect a release from a regulated unit at the facility (see the testimony of Corser, Bonner, and Pullen).

Mr. Rice acknowledged that based on the design of the landfill if there is unsaturated flow at the landfill, it could reach the upper geomembrane and pond, and be removed by the leachate removal system; or, if there is a defect in the upper system, move down to the leachate detection system and be removed there; or, with a defect in that system, it could move into the Dockum. A leak at the lowest point would also have to go past a sump, which is monitored for fluids.

Further, the additional monitoring wells proposed by the Bureau will monitor existing shallow and possible deep saturated zones. Apart from the extra wells described above, Mr. Rice recommend the installation of additional monitoring wells to the north side of the landfill that monitor the contact between the Upper and Lower Dockum (Tr. 565). The Bureau concurs with this suggestion. Although the application demonstrates that the contact between the Upper Dockum and the Lower Dockum formations dips primarily to the east (based on the geophysical logs and the literature), the Structural Contour Map (Figure 3-6 of Attachment H to the Draft Permit) shows that below the proposed facility the contact has a more northerly dip. The Bureau proposes four additional monitoring wells northeast of Phase I of the landfill: (1) One well will monitor the contact within five feet of borehole WW-1 to measure changes in fluid chemistry and fluid level at a location where shallow groundwater currently exists. (2) One well will monitor the contact at the northeast corner of the facility boundary. (3) One well will monitor the contact  $\frac{1}{2}$  the distance between the northeast corner of the facility boundary and the northeast corner of the landfill on a line that intersects those two points, to assist

in determining the extent of Upper Dockum saturation, and to monitor possible migration toward the saturated zone. (4) One well will be located to sample fluids that may accumulate at or above the stratigraphic boundary between the alluvial material and the Upper Dockum, a shallow well to be located within 15 feet of the deeper well near borehole WW-1.

Finally, the granting of the waiver is not irrevocable. If any condition used in the modeling to support the waiver changes during construction or operation, the Applicant is required to submit a permit modification eliminating the waiver, with an opportunity for public involvement. A change in conditions could include a release from a unit or the discovery of large quantities of water. With the demonstration that's been made at this time, the Applicant has met the requirements for a ground water monitoring waiver.

#### E. The Contingency Plan and Emergency Procedures

CURE asserts that the Application should be denied because Applicant has not complied with the requirements of the Act and the regulations governing the proposed facility contingency plan and emergency coordinator. Alternatively, the application should only be granted with conditions to address these deficiencies. Ms. Dreith agreed that Permit Attachment C3 was a list of individuals and agencies GMI intended to contract with for emergency response and emergency services rather than the arrangements themselves, although there was evidence not part of C3 of a few memoranda of agreement already executed. (TRR. 877) Ms. Dreith also testified that they had recognized this and had added permit conditions 2.10.5 and 2.11.5 to add that the agreements themselves, including detailed information, be forwarded to the Secretary 30 days prior to operation, and that the list of emergency coordinators must be updated 15

days prior to operation. She had testified that in the case of new facilities it is not unusual for the updated list to be provided at the time of certification (15 days prior to operation) rather than as part of the application. (TR. 872)

I would note that, apart from not being unusual, it is clearly spelled out in the federal regulations, at 40 CFR 264.52(d), Content of Contingency Plan, “The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see 264.55), and this list must be kept up to date...*For new facilities*, this information must be supplied to the Regional Administrator at the time of certification, rather than at the time of permit application” (emphasis in the original). I recommend no changes to the draft permit beyond those already made to address the deficiencies or vagueness noted.

CURE’s examination of Mr. Gandy made it apparent that he is not yet familiar with the subjects he must know to be prepared to address emergencies that might arise at the facility. (Tr. 261-265) As Ms. Dreith noted, at this time this is no waste at the facility, and she believes he should receive his training shortly before the facility opens, which is a few years away. I believe the existing emergency preparedness provisions, with the training requirements in the draft permit, sufficiently address the concerns raised, and recommend no further changes.

#### F. The Acceptance of Waste From Mexico

Section 2.3.1 of the draft permit states that “the permittee shall not accept hazardous waste from a generator of hazardous waste located outside of the United States of America. If the permittee wishes to receive hazardous waste from a source located

outside of the United States, the permittee must apply for and receive a modification to this permit in accordance with 20.4.1.900 NMAC.”

Applicant filed a comment after it received this language indicating that it wished to clarify the language in this provision. (Applicant’s Notice of filing, September 17, 2001) Specifically, Applicant noted that the first sentence of the section states that the permittee shall not accept hazardous waste from a “generator” of hazardous waste located outside the United States where the second paragraph discusses a “source” located outside the United States. Applicant indicated that there is a standard protocol for the United States to accept waste covered by the North American Free Trade Agreement (NAFTA), i.e., certain waste coming from Mexico or Canada. The Applicant wishes to accept waste from Mexico and Canada, and believes Section 2.3.1 should be clarified to reflect that it does not preclude the importation of waste covered by the La Paz Agreement where an importer becomes the United States “generator” of the waste. (The La Paz Agreement is part of the record as an attachment to the Applicant’s NOI for Mr. Corser. I am forwarding an Annex to the Agreement for your review as well, Annex III, for reasons discussed below.)

The Bureau does not agree with GMI’s interpretation of Section 2.3.1 or of the La Paz Agreement. The Bureau notes that the La Paz Agreement simply establishes a framework for government-to-government cooperation in the field of environmental protection for the border area. It mandates that the parties to the agreement undertake practical appropriate measures to prevent, reduce and eliminate sources of pollution in their respective territories. It does not establish a legal framework in which a “generator” of hazardous waste located outside United States territory may be considered a

“generator” within the United States. (See the Department’s discussion in the proposed findings and conclusions behind tab ii.)

The Bureau is correct that the La Paz Agreement itself, executed in 1983 between Mexico and the United States, is a generally stated agreement with many broadly stated commitments. Article 3 of the Agreement, however, provides that the parties may conclude specific arrangements for the solution of common problems in the border area, which may be annexed thereto. Annexes may also reflect agreement on technical matters. There have been five annexes to the Agreement date, relating to border sanitation problems at San Diego, California and Tijuana, Baja California (Annex I); pollution along the inland international boundary by the discharge of hazardous substances (Annex II); the transboundary shipment of hazardous wastes and hazardous substances (Annex III); the transboundary air pollution caused by copper smelters (Annex IV); and the international transport of urban air pollution (Annex V). I have taken administrative notice of Annex III, although no party referred to it, attached it to this report, and recommend it for consideration of this matter.

Annex III includes articles setting out a preamble, definitions (the definition of “hazardous waste” is extremely broad and would appear to include “solid waste” as we define it), general obligations on the transboundary shipment of hazardous waste and hazardous substances, notification requirements from the country of export to the country of import, a provision for the readmission of exports, notification requirements for regulatory actions, compliance requirements, information exchange and assistance, protection of confidential information and damages, among others.

Article XI, titled “Hazardous Waste Generated From Raw Materials Admitted In-Bond” is the article relevant here: “Hazardous waste generated in the processes of economic production, manufacturing, processing or repair, for which raw materials were utilized and temporarily admitted, shall continue to be readmitted by the country of origin of the raw materials in accordance with applicable national policies, laws and regulations.”

This article appears to have been based on Article 55 of the Mexican Environmental General Law requiring that hazardous waste generated by the U.S. manufacturing plants in Mexico (“maquiladoras”) using duty-free “in bond” raw materials must be returned to the country of origin for disposal, minus, of course, the amount of “in-bond” material returned as finished product and with some allowance for shrinkage, depending upon the material.

I believe it’s appropriate to take notice that this is the same article that forms the legal basis for the acceptance of the waste this agency defines as “solid waste” from Mexico at state-permitted facilities such as the Camino Real Landfill in Sunland Park.

I have also reviewed the RCRA regulations on the export/import of hazardous waste, and agree with GMI’s description of the applicable requirements (GMI pp. 22-23): foreign waste must be imported by a U.S. “generator.” (40 CFR 262.60(a)) The waste is dually manifested by the foreign generator (40 CFR 262.60(b)(1)) and the U.S. generator (40 CFR 262.60(b)(2)). Absent both manifests and other required approval and notifications, the facility cannot accept the foreign waste. Properly manifested and delivered, however, the facility would be accepting waste from a legally authorized U.S. “generator.” The Bureau’s consultant on the waste analysis plan, Ms. Walker, agreed

that the permit requires a “generator” to follow the waste analysis plan, whether that generator is in the U.S. or has accepted waste from outside the U.S. (TR. 857-859)

I do not see the legal basis for excluding waste delivered to the facility by a U.S. “generator” in circumstances where that generator has received foreign waste, has met the requirements of the waste analysis plan, and the manifests are in order.

This is the one topic on which I received something like closing argument from the Bureau (see tab ii), and I have considered the arguments made there but still do not see the legal basis for excluding maquiladoras waste. The fact that the Bureau did not originally understand the permit application to seek the ability to accept foreign waste under the La Paz Agreement does not preclude its clarification at this point, particularly when the Applicant raised the issue before hearing and many who made comments in the hearing assumed it was part of the proposal. Mr. Corser did, as the Bureau notes, testify that he has no knowledge about whether facilities in Mexico have the capability to conduct sampling and analysis; this does not mean that they do not. The fact that the GMI permit does not now contain a procedure or process for the return of hazardous waste to Mexico where GMI is unable to accept it for failure to meet waste characterization requirements is not a basis for excluding the waste from acceptance; such a provision can be drafted now, if the Secretary agrees that the waste may be accepted, and if such a provision is necessary, beyond assuring that the waste would be separated and returned to the generator, as any unacceptable waste would be, foreign or not, with notification to NMED.

CARD included some discussion of this issue as well (CARD, pp. 51-52), focusing on the August 2001 final authorization of New Mexico’s hazardous waste

management program revisions by EPA: “The State of New Mexico also has adopted the regulations for Import and Export of Hazardous Waste. However, the requirements of the Import and Export Regulations will be administered by EPA and not the State because the exercise of foreign relations and international commerce powers is reserved to the Federal government under the United States Constitution. Therefore the State of New Mexico is not seeking authorization for this rule.”

I do not read this provision as CARD does, to preclude the acceptance of foreign wastes in a New Mexico disposal facility, but rather as relating to the enforcement of the import/export activities and notifications prior to the delivery of the waste to the facility.

Having said that, there may be something I do not fully understand about the program’s authorization, or the arguments made by the Bureau or CARD. Based on what I do understand and have read, I recommend that Section 2.3.1 be clarified or amended to reflect that it does not preclude the acceptance of waste properly imported from countries under the La Paz Agreement, properly manifested, and properly delivered with the required waste characterization to the facility.

#### G. Closure and Post-Closure Costs and Financial Assurance

CURE asserts that the proposed facility does not comply with the requirements in the Act and regulations relating to closure of the facility insofar as it does not provide for adequate re-vegetation and control of erosion. Mr. Robinson testified on the lack of erosion control and surface erosion diversions. He testified that it is a typical practice to locate surface water diversions every 150 to 300 feet on the contours in order to prevent gullies from forming and to prevent long run-off flow paths. (Tr. 698) This is particularly important where there is a soft cover of soil and vegetation rather than a

cover of riprap or rock less susceptible to erosion. (Tr. 650) Neither the application nor the draft permit identifies performance standards for the cover.

The Bureau's response to this comment is that Permit Condition 8.2.4 requires the permittee to maintain the effectiveness and integrity of the final cover through the post-closure care period, that Condition 8.2.3 reiterates the agency's prerogative to extend that period if necessary, and that Condition 8.3 assures the monies will be in reserve to perform these obligations.

A review of Condition 8.2.4, in particular subparagraphs (a) and (d) shows that reference is made to the corresponding federal regulations, particularly 40 CFR 264.310. Subparagraph (b)(1) requires the owner/operator to maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion or other events..." Subparagraph (b)(5) requires the prevention of run-on and run-off from eroding otherwise damaging the final cover. As Mr. Robinson notes, performance standards are not set out, but no language was proposed on more specific performance standards for the cover. The provision may benefit from more specificity, so I would recommend adding to the end of Section 8.2.4.a or 8.2.4.d the words "Surface water diversions or surface drainage ditches shall be installed as necessary to prevent gullies from forming." (Mr. Corser testified that they were already contemplating such ditches around the perimeter of the facility. (Tr. 232))

Mr. Robinson also testified that the vegetation performance standard and plan are lacking necessary detail, that the draft permit does not address the quality of the soil cap necessary to establish vegetation, that there is no planned maintenance or plan for possible reseeded. The Bureau's response to this comment is that the Bureau

subcontracted an engineering evaluation of the landfill design that included an evaluation and approval of the final cover design by a licensed professional engineer. Mr. Corser had testified that there is money set aside for possible reseeded. (Tr. 232)

Reviewing Section 8.1.2.b of the draft permit, again, I think it would benefit from more specificity, not that the specific information would be submitted at this time, but as part of the amended closure plan prior to closure. I would recommend language such as  
“In its submittal on the re-vegetation of the Landfill and Surface Impoundment areas,  
Permittee shall address soil quality, the seed mix planned in order to establish native  
grasses, the maintenance of the vegetation, and plans for re-seeding in the event the  
original vegetation planted fails.”

CURE further asserts that the application does not comply with financial assurance requirements, in several respects (CURE pp. 16-22), including the disposal of waste from the dismantlement of the facility, indirect costs, the lack of a specific financial assurance mechanism, and the failure to use cost estimation guidebooks.

I do not recommend changes to the permit based on these points, with the one exception noted below, for the following reasons: Attachment O to the draft permit does include the cost of facility demolition and waste disposal. I believe the Bureau and the Applicant are making a reasonable assumption that all waste generated during closure would be placed on site in the landfill, and that there will be sufficient capacity remaining to accommodate the waste and debris generated during closure.

Many of the “indirect costs” listed by Mr. Robinson are included in the information on which the unit costs were determined, and would not be separately called out. For example, profit and insurance costs are not included as line items in bid

packages, but are included as part of the unit costs. The cost of testing and calculation of the stabilization requirements for treating hazardous waste at the stabilization unit are included in the unit costs for stabilization of hazardous waste generated at each facility unit during closure.

A specific financial assurance mechanism is not required prior to 60 days before the initial receipt of hazardous waste, pursuant to 20.4.1.500 and 40 CFR 264.143-145.

The Bureau did not refer to cost estimation handbooks, but did conduct a survey of New Mexico contractors to obtain current rates for the tasks included in facility closure and post-closure care. The Applicant's cost estimate was based on a fee estimate provided by a contracted engineering firm using unit costs derived separately from the Bureau's. These estimates were largely reconciled, in part through discussion between the Applicant and the Bureau staff. If these methods had not been used, or if only one method had been used, or if the two methods had produced grossly different results, I would have recommended, as Mr. Robinson does, that the cost estimation handbooks be consulted. I believe the estimates as developed, however, are sufficiently well-established to comply with the regulations.

Mr. Robinson is correct that the design documents for the landfill cover contemplate that all phases of construction had been completed (TR. 689) and did not include a design cost to modify the design for Phase IA. The Applicant does not object to such an addition, and the Bureau has added the cost of engineering design for the construction of the final landfill cover as a line item in Table O2-1 of Attachment O2 to the Permit. I believe the addition is appropriate.

## H. Feared Hazards to Public Health

Although many citizens sincerely expressed their concerns and fears about the proposed facility, and although the Applicant did agree to some special conditions and limitations in response to those concerns, testimony from lay witnesses is insufficient basis for a finding that the facility will endanger public health or welfare or the environment, and it does not provide sufficient grounds for denial of the permit. See *Joab, Inc. v. Espinsosa*, 116 N.M. 554, 559, 865 P.2d 1198, 1203 (Ct. App. 1993), *cert. denied*, 116 N.M. 801, 867 P.2d 1183.

The Squires' testimony was particularly interesting, but I do not recommend denial of the permit or other special conditions based on their presentation. The evidence was that the nearest dairy to the facility was thirty miles away, and the modeling shows concentrations a couple orders of magnitude below EPA's levels of concern at three miles. (Testimony of R.C. Cudney)

The testimony concerning the anticipated truck traffic was compelling, and a consideration of the roads available in the area to get to the facility suggests that the concerns are not unwarranted. Having said that, there are a number of issues this agency cannot address through a hazardous waste permit. The permit does contain provisions designed to mitigate the impacts of truck traffic associated with the facility, including a provision that the arrival and departure of trucks will not be scheduled during peak traffic times. See Attachment A 1.4, Traffic Patterns. I do not have the legal authority to impose additional requirements beyond the ones already reflected in the draft permit.

Several expressed fears relating to the possibility that the facility will eventually apply for approval to accept mixed waste or low-level radioactive waste, but it is not a

part of this permitting at all. The facility is prohibited from accepting radioactive or nuclear waste (see Section 2.4.2 of the permit). A permit modification would be necessary if the applicant proposed to accept radiological wastes, and approval of such a modification would entail public comment, a permit from the Nuclear Regulatory Commission and New Mexico legislative action.

**V. RECOMMENDED FINDINGS AND CONCLUSIONS**

Recommended findings of fact and conclusions of law, largely drawn from those proposed by the Bureau, are attached and incorporated by reference.

**VI. RECOMMENDED FINAL ORDER**

A draft Final Order consistent with the recommendation above is attached and incorporated by reference.

Respectfully submitted,

**Original signed by:**  
FELICIA L. ORTH  
Hearing Officer