Buckman Direct Diversion Town Hall on Water Quality
August 26, 2008 – 6:00 – 8:30 pm
Southwest Room, St. Vincent Regional Medical Center

Summary of Questions and Discussion

Facilitator/Recorder: Lucy Moore

Welcome and Introductions: Mayor Coss welcomed the group and expressed his excitement in the upcoming groundbreaking for the Buckman Direct Diversion project. He thanked everyone for participating in the town hall on such a critical and complex issue as water quality. Chris Calvert, BDD Board member, also welcomed the audience and said he was looking forward to an educational evening. BDD Board member at-large Conci Bokum and BDD Board Chair Rebecca Wurzburger also attended.

Presentations: The four presentations are available on the BDD Project's website. Presenters were:

- Rick Carpenter, Project Manager, Buckman Direct Diversion and Senior Water Resources Coordinator for the City of Santa Fe's water division;
- Robert Gallegos, Compliance Officer and Environmental Specialist for the Public Utilities Department of the City of Santa Fe;
- Norm Gaume, licensed professional engineer specializing in water resources and water utility management, under contract to the City of Santa Fe and the BDD Board for the past several years; and
- Kerry Howe, Associate Professor in civil engineering at UNM, under contract to the BDD Board to perform an independent assessment of the effectiveness of the City/County Water Treatment Plant.

Biographical sketches of each presenter are available at the end of this document.

Approximately 70 people attended. A list of people who signed in is included at the end of the report.

Questions and Discussion:
Construction Activities: In response to a question regarding monitoring of construction by City staff, Rick Carpenter replied that the Owners' consulting engineer will monitor construction of the project on a full-time basis.

Water quality from old city wells: A city resident was drinking bottled water because of the poor quality of water from the older city wells. Although a recent sample showed the water free from bacteria, she was not convinced that it was safe to drink. Robert Gallegos replied that water from the older city wells complies with all federal and state safe drinking water standards.

LANL financial contribution to BDD: Several felt that LANL should be paying a significant share of the cost of the BDD. Many felt that the Labs should be asked to do more, and to pay a larger share of the treatment costs, in particular the cost of the advanced filtration. Rick

Carpenter answered that there are ongoing negotiations with LANL for additional monitoring, etc. There were also concerns that the LANL response to the letter of demands from BDD simply "pledged" to respond in certain ways.

Treatment in other comparable communities: A participant asked about comparisons between the treatment facility planned for BDD and treatment facilities in other communities. Kerry Howe replied that the treatment facility in Albuquerque (Albuquerque Bernalillo County Water Utility Authority) is comparable in its treatment processes but uses the more traditional granular media method of filtration. The City/County Water Treatment Plant will use more technologically advanced membrane microfiltration.

Surface Water Standards: A participant reported that the NM Surface Water Quality Bureau was considering lowering standards in the Rio Grande for plutonium and other radionuclides and asked the BDD Board's position. Norm Gaume replied that the BDD Board will discuss this issue at its September 11 meeting.

R 16 well: Several were concerned about the sentry well, R 16, which is a LANL aquifer monitoring well. The well should be replaced, they said. Robert Gallegos answered that LANL is planning on drilling a new well specifically to provide an early warning for the Buckman Well Field, perhaps as early as next year. LANL this year is required by the NMED Consent Order to install 20 new monitoring wells.

Howe Report: An audience member wondered why the Howe Report cited data from the 1950's when there is so much more recent data available. She was particularly concerned about the potential for radiochemicals to travel through microfilters. Kerry Howe responded that the information from the '50's was relevant because it evaluated 50 treatment plants for their ability to remove strontium from the water because of the concern about atmospheric nuclear bomb testing fallout. The 1950s were three of 47 references that he considered in preparing his report. Almost all other references are current time frame.

Distribution of BDD water: A participant asked how the BDD water would be distributed through the city and county systems. Would there be the same per cent of BDD treated water in every customer's supply, or would more or less of it be consumed by one area or another? Rick Carpenter responded that the percentage would vary (even daily) depending on the amount of groundwater used at any given time.

Quality of BDD Water: In answer to a question about whether or not the City/County Water Treatment Plant would soften the water, Rick Carpenter replied no.

Consumer Confidence Report: There were concerns that the Consumer Confidence Report from the City did not reflect findings in a DOE report that stated that cesium, plutonium and radium were all increasing. How can the public be protected against a very slow increase, an incremental degradation of water quality? Norm Gaume said that this could be addressed by report trends or changes and said that the BDD Board representatives were very interested in working with community members regarding how water quality measurement results should be reported.

The annual report requires that we provide information on contaminants detected in the water supply. Cesium has not been reported because it has not been detected.

Synergistic effects of multiple trace contaminants: A request was stated for research into the synergy effects of multiple contaminants that might be present at trace concentrations, particularly on fetuses, premature births, and hormonal imbalance. The panel indicated it would respond to this question at a later date after conducting research. *

Las Campanas treatment: An audience member asked what kind of treatment Las Campanas anticipated, believing it might be superior to that proposed for use at the City/County Water Treatment Plant. The panel said that Las Campanas design for its treatment plant is incomplete, and emphasized that the BDD treatment is "best available treatment technology" and "state of the art."

Basis of Federal Drinking Water Standards: There were concerns that the EPA water quality standards were targeted at a 150 pound male, and could be dangerously inadequate for other populations, like the elderly, pregnant women, children, etc. Kerry Howe explained that EPA risk calculations are extremely complex, and that they take many factors into consideration, including protection for "sensitive populations." *

Recent changes in Federal Drinking Water Standards: A participant asked if EPA had changed any standards in the last 8 years. Robert Gallegos replied that EPA in 1996 the Safe Drinking Water Act was amended which required the promulgation of several new standards, and in 2000 issued a new radiochemical rule, in 2001 issued a new standard for arsenic. EPA also has issued new regulations for disinfectant byproducts and chlorine. The new groundwater rule covers new contaminants, as well as viruses and bacteria.

Frequency of water quality testing: There were questions about the frequency of testing for heavy metals, radionuclides, pesticides and other toxins. Robert Gallegos replied regarding the regulatory requirements and indicated that other internal testing is more frequent. Surface water tests are done every year, and groundwater tests every three years. If results exceed standards, the department is bound by law to notify users but the time allowed for notification varies. For instance, a violation of the bacteria standard (which affects waterborne illness) or the nitrate standard (which affects infants) must be reported within 24 hours. Norm Gaume added that personnel at the City/County Water Treatment Plant will have access to real-time, on line quality control testing instruments and will frequently perform laboratory tests to determine the quality of the finished water.

Trends of Radionuclides in Groundwater: In answer to a question regarding trends in radionuclide concentrations in groundwater, Robert Gallegos said that there has been no fluctuation in radionuclides in the groundwater since testing began in 1974. A well in the Buckman field has tested high for naturally occurring uranium and is no longer being used alone.

Unregulated potential contaminants: A participant asserted that LANL has used every element (in various combinations) in the periodic table in the development of weapons. She asked that the Labs be required to do "some basic science" to identify all these elements. Another participant

asked if there was any toxin or contaminant that is not included in the Safe Drinking Water Act, but should be addressed by the City/County Water Treatment Plant. Staff said they would consider those questions and requests and will respond publicly. *

Epidemiological research: Another participant asked for epidemiological research on carcinogens in earth, air and water. The number of cancer cases seems to be rapidly increasing in his opinion. Norm Gaume noted that federal agencies have recently conducted several risk assessments and epidemiological research and that the results of such studies could be identified and made available. *

Long-term supplies: A participant asked if the impact of drought and climate change had been considered in the BDD planning. Rick Carpenter replied that the impact of drought – on both the macro and micro levels – was basic to planning for the region's water future, that that the BDD Project, which taps a separate source of water, was determined to be critically important to the water supply future.

Another question focused on the long-term cost analysis of providing a sustainable water supply for the future, including serious commitments to recycling and re-using water. Rick Carpenter answered that the City's long range water supply plan addresses these issues. He anticipates the Council will take up issues of reuse and recycling of water, including effluent, soon. Las Campanas and the City irrigate golf courses and recreation facilities in the City and County with treated wastewater effluent.

Ongoing communication with the public: BDD staff repeated a commitment to provide all information to the public, in whatever format is most accessible. They hope to hear from the public about the best avenues for communication.

Membrane Pore Size: A member of the audience asked for the size of the pores in the membrane filters. Kerry Howe reported that the preliminary design documents list the pore size to be 0.04 to 0.1 micrometers.

*Note: Subsequent to the Town Hall, the Project Manager decided that an expert "peer review" contractor will research and provide answers to this and other complex questions and requests for information regarding risk and drinking water standards for contaminants. On September 11, 2008. the BDD Board requested that the Project Manager proceed to procure these expert peer review services.

Summary prepared by Lucy Moore and Norm Gaume.
Please contact Lucy with questions, or comments:
505-820-2166, or lucymoore@nets.com

List of Town Hall Participants who signed in (some participants elected not to sign in)

Joni Arends, Citizens Concerned for Nuclear Safety
Berleny (sp?) Armijo
Natalie Armijo
James Bearzi, NM Environment Department
Consuelo Bokum, BDD Board Member
Claudia Borchert, City of Santa Fe
Simon Brackley, Santa Fe Chamber of Commerce
Galen Buller, City of Santa Fe
Castagna
Chris Calvert, Santa Fe City Councilor and BDD Board Member
Margaret Josena Campos
Beth Corder
Barbara Crockett, CH2M Hill
Bob Beers
LeeAnn Dunn
Deanna Einsphar
Dave Englert, NM Environment Department
Bruce Gallagher
Mary Jo Hackett
Alan Hook
Bill Hume, Office of Governor Richardson
Frank Katz, City of Santa Fe
Danny Katzman, Los Alamos National Laboratory
Rebecca Kay, NM Environment Department
Fren Kel (sp?)
Bud Kelly
Diane & Mike Kenny
Phyllis Ko
Gary Martinez, City of Santa Fe
Rick Martinez
Charlie Nylander
Louise Pape
Danny Pederson
Mark Ryan, CDM
Mike Sanderson, Las Campanas
Doug Sayre, Santa Fe County
M.E. Seliruben (sp?)
Elana Sue St. Pierre
Liz Stefanics
Neva VanPeski
Nancy Werdel
Stephen Wimar

Biographical Sketches of Town Hall Presenters
Rick Carpenter

Rick, who has approximately 18 years of professional water resources experience, currently serves as Senior Water Resources Coordinator for the City of Santa Fe's water division, a position he has held for about 5 years. He was the project manager for the City's recently completed 12-million-dollar Buckman Wells project, and he is currently the project manager for the Buckman Direct Diversion project. Prior to the City of Santa Fe, Rick was the Principal Water Resources Specialist for the City of San Diego. He also worked as a water resources Project Manager for the U.S. Army Corps of Engineers.

Rick has a bachelor's degree in political science from San Diego State University and a Professional Certificate in Urban Planning and Development from the University of California at San Diego. He also holds a Master of Science degree in Physical Geography with an emphasis in water resources from the University of New Mexico and is defending his thesis this September.

Robert M. Gallegos

Robert has 17 years of experience in technical and management positions with the New Mexico Environment Department's Drinking Water program. He is currently an Environmental Specialist with the Public Utilities Department of the City of Santa Fe, where he provides assistance to the City's water, wastewater and solid waste programs. Robert services on the New Mexico Municipal League's Environmental Quality Association, which tracks and comments on environmental issues impacting municipalities. He also serves on the Northern New Mexico Citizen's Advisory Board, which provides assistance and makes recommendations to the Department of Energy on environmental cleanup issues at Los Alamos National Laboratory.

Robert holds Bachelor of Science and Master of Science degrees in biology from New Mexico State University.

Norm Gaume, P.E.

A Native New Mexican, Norm has lived along the Rio Grande for most of his life. He is a licensed engineer specializing in water resources and water utility management and has been working on the BDD Project under contract to the City of Santa Fe and the Buckman Direct Diversion project Board for the past several years. Norm was director of the New Mexico Interstate Stream Commission and engineering-adviser to New Mexico's Rio Grande Compact Commissioner from 1997 to 2002. Prior to that time, he was director of the City of

Albuquerque's Water Resources Division and Operations Manager of the Albuquerque Drinking Water Utility.

Norm holds Bachelor of Science and Master of Science degrees in electrical and civil engineering, respectively, from New Mexico State University.

Dr. Kerry Howe

Dr. Kerry Howe has more than 20 years of experience in environmental engineering, including 12 years working for a national environmental engineering consulting firm. He is currently an associate professor in civil engineering at the University of New Mexico, where he teaches courses in water treatment technologies and does research in water treatment and membrane technologies. He is the co-author of a leading textbook on water treatment, a registered professional engineer, and a board certified environmental engineer.

Dr. Howe was hired by the BDD Board to perform an independent assessment of the effectiveness of the proposed City/County Water Treatment Plant. He holds Bachelor of Science, Master of Science and PhD degrees in civil and environmental engineering from the University of Wisconsin, the University of Texas, and the University of Illinois, respectively.