Union Township Board of Supervisors
Special Meeting
September 9, 2013

The Board of Supervisors Meeting was called to order by Chairperson Linda Evans-Boren at 6:30 p.m. The meeting was held at the Union Township Municipal Building, 3904 Finleyville-Elrama Road, Finleyville, PA. The pledge of allegiance was recited. Board Members in Attendance by roll call were Steve Parish, Larry Spahr, Linda Evans-Boren, Andrew Tullai and Brenda Cushey.

Also in attendance, Dennis Makel–Solicitor, Harold Ivery–Building Code Official, Peter Grieb–Code Enforcement Officer, Judy Taylor–Treasurer, Debra Nigon–Secretary. Carl DeiCas, Township Engineer. Additional attendees were Keith McKay, Project Manager, Geokinetics, Doug Garrett, Cougar Land Services, Joel Starr, EQT geophysicist, Jessica Carpenter, Community Relations for EQT, as well as a geologist, Andrew H. Stern, Director, Environmental Services, Chester Engineers.

Mr. Keith McKay gave a presentation explaining the seismic data acquisition process and how seismic data is used as a tool by fuel and gas companies to establish sound locations for wells. He said that, without the direction and accuracy provided by seismic data, wells may be started and need to moved and other missteps could be made.

Mr. McKay stated that the Geokinetics project which will occur in Union Township and other areas is 82 square miles in size, and takes 10 months to prepare. Once prepared, it will take 45 days to record the job. Preparation takes the most time. The program, which is designed to be a vibroseis program, is set up to have 96 sources per square mile.

A peak particle velocity study was done and was supplied to the Township. Peak particle velocity is a measure of energy moving through the earth at a certain rate of speed. Per the peak particle velocity data which has been accumulated and studied by various researchers and the PA Department of Mines, it requires .5 inches per second of peak particle velocity to cause minimal damage which is plaster cracking and dry wall damage. He said that a structure at 50 feet away from the vibroseis truck would be exposed to about .18 inches per second of peak particle velocity. Using on-board, real-time monitoring, the trucks will stay below .365 peak particle velocity in order to stay below the minimal damage range and fall within the safe blasting criterion for residential structures.

He said that each and every street is not used as a vibrator source. They only use the streets that make sense and which are accessible. In addition, flaggers will be out with the trucks. Three vibroseis trucks will operate in tandem to provide the energy sources necessary to create the seismic waves which can be recorded. The trucks are 265 feet long. Since the trucks need to turn around at the end of the street if it is a dead end, some streets are unusable. It was also pointed out that if the structures are closer to the road than the current encroachment requirement of 150 feet, than that street could not be used. Or if the structures were closer to the road than the 50 foot encroachment (in conjunction with the lower peak

particle velocity of .365 at the truck and .19 at the structure) proposed by Geokinetics, than the road could not be used.

In more rural areas, shot holes are used to obtain the seismic data. A 2.2 lb. charge, which is a light charge, is placed in a 20 foot hole. The holes which contain the 2.2 lb. charges are placed at intervals and set off one at a time from one side to the other. The holes are no closer than 325 feet from any structures. At 325 feet, a structure will receive zero percent of that charge. Pentalite is the seismic charge used. Pentalite is a version of dynamite. Mr. McKay said that, if you were standing behind the person detonating the charge, you would hear a thump when it goes off. At 200 feet, you would hear nothing. The holes are filled with gravel up to the last two feet which is filled with native soil. The charges are specifically used in very remote areas. The charges will not be set-off on streets or near neighborhoods.

There were questions about the integrity of old gas lines and structures under the ground.

Mr. McKay said that a hazard survey is performed in the second step of the preparation work. During the hazard survey, surveyors physically look for homes, wells, pipelines, and structures.

In reference to the map placed in the Board Room regarding source points and receiver positions, Mr. McKay said that the red dots are energy sources (vibroseis truck or dynamite chart), and the blue dots are receiver positions (geophone stations). He explained that the map in the Board Room is a pre-plot map which shows a best case scenario. When the pre-plot is designed, he said that the hazard data telling them where any obstacles on the ground might exist is not yet available. It is during the hazard survey, when all the obstacles in the way of the “best case scenario” are identified and a new map/survey plan is constructed.

The third step in the process, is the actual recording. Receiver cables are the size of an extension cord. At each receiver station or position, there are six geophones and a recording box with an antenna on it and six sensors on the ground. The recording boxes will ultimately contain the data which is downloaded to create the seismic data product.

In regard to questions about mine proximity, Mr. McKay responded that there has not been an adverse situation with a mine in this area in their experience. They don’t want to be less than 50 feet above the top of a mine when they dig a shot hole and they use whatever maps are available to them. They do look at all the maps and information they can access from the DEP in regard to the location of mines. They also want to hear from residents with any knowledge they have about mines.

Another gentlemen in attendance, Mr. Andrew Stern of Chester Engineers, was asked by the Board to address the residents. Mr. Stern explained that he is a geologist with an undergraduate degree in geology and a masters degree in mining engineering. He is a co-worker of our Township Engineer, Mr. DeiCas who is also employed by Chester Engineers. Mr. Stern said that damage usually results in an insurance claim. He says that these claims are examined and studied to determine tolerable peak particle velocity levels. He said that .2 inches per second is a significant amount of movement, but that it has been determined that most houses can absorb that structurally. Plaster cracking is cosmetic damage that is much easier to cause than a beam or foundation cracking. He explained that buried objects like

pipes usually require a higher level of peak particle velocity (perhaps 20 inches per second) than structures above level since buried structures are confined in a space where not much movement can occur. For this reason, he said, it would be more likely that a dish would fall off a shelf or plaster would crack during seismic testing than it would be for damage to occur to underground pipes and structures.

Mr. McKay asked Mr. Stern to comment on the planned peak particle velocity of .196 exposure. Mr. Stern responded that this is way below damage level and that it would be a safe level in which to operate. Mr. McKay said that the 50 foot allowance is more than a safe distance but allows Geokinetics to get enough energy to record data. Mr. Stern says that the 150 feet in our Ordinance is very conservative. Mr. McKay said that Geokinetics would not exceed .365 inches per second, which is way below the .5 or .6 inches in our current Ordinance, if they are within 50 feet of a structure. He said that without the modification to our Ordinance, they would not be able to get good seismic results. Mr. Stern said that prior to accommodating their request to move the setback from 150 feet to 50 feet, they would need to demonstrate that they can stay below a peak particle velocity of .365 since the lower encroachment distance could potentially expose structures to more energy than may be acceptable. Mr. Stern said that Geokinetics could establish that they can stay within the limitation by discharging sample charges. Mr. McKay and Mr. Garrett said that sample discharges are not necessary since they are not considering going anywhere near 50 feet to a structure using the shot hole blasts and that they will only be using the 50 foot encroachment distance from the vibroseis trucks which will be using real time monitoring with a seismograph. They said that they will be reading the seismograph levels in front of everyone's home to ensure that the peak particle velocity will not go over .365. Mr. McKay said that they will never go over .35 and, at 50 feet, no home will be exposed to over .2 inches of peak particle velocity. Mr. McKay said that the way that they will prove that they did not cause damage is by the seismograph records that are retained.

Mr. DeiCas was asked by the solicitor and Board to provide his professional opinion on the request for a variance and asked for a review by Mr. Stern of the peak particle velocity study done by Geokinetics and supplied to the Township.

Public Comment

Ms. Karen Urso, 5209 Lew Street, says that she is concerned about old gas lines and other pipes underground. Even though she says that she has heard what the representatives have said about it taking a higher peak velocity to damage those pipes, she finds it hard to believe that it will not be more disruptive than a gravel truck. The concern over Lew Street and mine subsidence were allayed over the fact that the homes on Lew Street were closer than 50 feet to the road and the encroachment distance would not allow vibroseis testing to occur on that street. Also, since the road is a dead end, it most likely would not have been used anyway since there would be insufficient room for the trucks to turn around.

Mr. Kevin Daer, 6187 Route 88, asked whether a representative from EQT was available to answer questions about the ownership of mineral rights. Jessica Carpenter, Community Relations for EQT was present at the meeting. Mr. Joel Starr who is a geophysicist for EQT

was also in attendance. They explained that Chesapeake conveyed their interest in the gas and oil rights they held in Washington County to EQT. They said that Range Resources also has some minerals in the area also. Mr. McKay is an independent contractor retained by EQT and that EQT will solely own the data obtained. Mr. Starr said that EQT has a right to explore their minerals but wants to work voluntarily with residents. Mr. Daer asked how EQT gets from Mark Susko, address not provided, had a question on how long the vibrating will last in front of each structure. He was informed that the trucks will not be out in front of a structure for longer than two to three minutes.

Ms. McDonough, Lew Street, wanted to know who would own their residential information. Ms. Jessica Carpenter said that the personal information of the residents and the information obtained from the home inspections will not be provided to anyone. Mr. DeiCas suggested that the trucks be brought to the municipal building and allowed to vibrate at the levels intended in the Township with a set-back of 50 feet, so that interested residents and the Board could see first hand what that level of energy feels like. Mr. McKay said that this would be possible. Mr. McKay will get back to us with a date and time as soon as possible. A Saturday morning would be best.

Mr. Parish had a question about a surveyor that he saw on the road. Mr. McKay did not know who he saw but said that permission is required to be on private property. It could have possibly be a member of the hazard review team.

Motion to adjourn at 7:42 p.m.
Motion by Brenda Cushey, Second by Steve Parish
Roll call vote: Parish-yes, Spahr-yes, Evans-Boren-yes, Tullai-yes, Cushey-yes. Motion carried.

Debra A. Nigon, Secretary