

**CHANCE ET AL., APPELLANTS, v. BP CHEMICALS, INC., APPELLEE, ET AL.**

**[Cite as *Chance v. BP Chemicals, Inc.*, 1996-Ohio-352.]**

*Real property—Determining actionable trespass—Property owners subsurface rights are not absolute—Subsurface rights include the right to exclude invasions of subsurface property that actually interfere with the property owners’ reasonable and foreseeable use of the subsurface.*

(No. 95-970—Submitted May 8, 1996—Decided October 30, 1996.)

APPEAL from the Court of Appeals of Cuyahoga County, Nos. 66622 and 66645.

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{¶ 1} This litigation commenced on July 17, 1991, when the named plaintiffs-appellants, Rose M. Chance, Eliza Avery, and Bessie Shadwick, filed a complaint in the Court of Common Pleas for Cuyahoga County on behalf of those whose interests in real property had allegedly been injured by the described operation of a chemical refining plant operated by defendant-appellee BP Chemicals, Inc. in Lima, Ohio. Appellants’ claims focused on appellee’s practice of disposing of hazardous waste byproducts from the manufacture of industrial chemicals through the use of “deepwell” injection technology. Appellants in essence claimed that the “injectate” placed under the surface of appellee’s property by appellee had laterally migrated to be below the surface of appellants’ properties and that the migration violated their rights as property owners.

{¶ 2} Appellants sought recovery for trespass, nuisance, negligence, strict liability, and fraudulent concealment. The complaint prayed for one billion dollars in general and punitive damages and included a request for injunctive relief. Appellee answered the complaint on October 24, 1991, and denied that appellants were entitled to recovery.

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{¶ 3} On June 17, 1992, appellants moved for class certification and filed a memorandum in support, stating that the controversy was particularly appropriate for resolution as a class action and urging that all requirements for class certification were met. On July 30, 1992, appellants moved for a ruling on their class certification motion before the court entertained a motion for summary judgment to be filed by appellee, arguing that the case could be certified without an evidentiary hearing. Appellants did not make any suggestion in this motion as to how the class should be described if the court did grant class certification.

{¶ 4} On July 31, 1992, appellee filed a motion for summary judgment with a supporting brief. Appellee stated in the brief that deepwell injection is used by companies and governmental entities throughout the country and the world to place waste liquids thousands of feet deep into the earth, under thick layers of nonporous rock. Appellee claimed that the injectate at the Lima location is ninety-five percent water, approximately four percent dissolved salt and approximately one percent organics, and that the injectate disperses into the native fluid (connate brine) that naturally exists in the geologic rock formations where the injecting is done.

{¶ 5} Appellee stated that it had three active deepwells at its Lima site, with the oldest well having been used continuously since 1968. Appellee stated that it operated the three injection wells pursuant to permits and regulatory practices of both the Ohio and United States Environmental Protection Agencies and argued that the wells were safe and the technology behind them effective. Among the reasons listed by appellee for its position that summary judgment was appropriate were that appellee had not violated a duty owed to appellants, that no injectate had migrated under appellants' properties, that appellants had no damages, and that some of the claims advanced by appellants were unavailable as a matter of law.

{¶ 6} Appellants' response to the summary judgment motion, filed on September 30, 1992, stated their positions that what appellee was injecting was actually dangerous toxic waste and that the waste had migrated away from the

property owned by appellee for a distance of approximately four to five miles in all directions. Appellants stated that extreme pressures were used by appellee to inject the waste into the rocks beneath the area. Appellants claimed that appellee had damaged the substrata of appellants' properties, that the substrata had been made unusable for other purposes, such as oil or gas extraction, and that their property values had been lowered by the deepwell injection. Among the arguments made in support of their case was that appellee was being unjustly enriched by using appellants' properties to dispose of toxins that would cost more to dispose of in some other way, so that appellants deserved a part of appellee's profits in return for the use of their properties.

{¶ 7} On December 2, 1992, after the trial court had heard oral arguments on the summary judgment motion, the court ruled in favor of appellee on appellants' claim for punitive damages and on appellants' claim for intentional or negligent infliction of emotional distress. The court denied summary judgment to appellee on appellants' other claims.

{¶ 8} The trial court held a pretrial conference on March 23, 1993 and set the trial date for November 3, 1993. The trial court set due dates for the parties to file briefs on issues relating to certification of the class. In a series of filings by each side, the parties made arguments to the trial court concerning how the class action was to be conducted. Many of these arguments concerned the possibility of bifurcating the action, so that whether appellee was liable would be determined first, and if liability was found, then damages would be quantified at a later time. Appellants generally opposed bifurcating the action in this way, although they did indicate at one point their amenability to a form of bifurcation that would include delaying determination of damages until after the extent of migration had been resolved. Appellee argued in favor of bifurcation of liability and damages.

{¶ 9} The issue of the extent of the lateral migration of the injectate was vigorously contested by the parties at all stages throughout the litigation, and both

sides presented extensive arguments based on expert testimony to support their respective positions on the extent of the lateral migration. The extent of migration was a particularly crucial factor in appellants' case, in that their theory of recovery was predicated upon the presence of injectate below the surface of their properties and the violation of property rights due to the presence of that injectate. Appellee continued to assert that there was no liability regardless of the extent of migration and argued that bifurcation was appropriate because if it prevailed on the liability question there would be no need for further proceedings.

{¶ 10} Appellants, on May 27, 1993, moved to amend their complaint to add a request for a judgment declaring that appellants owned everything below the surface of their properties, including the geologic formations into which the injectate was allegedly going, and further declaring that they had the right to exclude appellee from using their properties. The motion to amend was denied by the trial court.

{¶ 11} On August 9, 1993, the trial court issued its class certification order. The court certified a class "for purposes of a trial on the issues of where the injectate is located and whether there is liability to any member of the class." The certification order made no mention of how or when the amount and distribution of damages would be determined if liability were found.

{¶ 12} In addition to setting forth the issues for trial, the trial court's certification order also defined the class: "The class consists of persons owning real property, as of the date the complaint was filed, within the following limits around the three deepwells at BP Chemicals' facility in Lima Ohio: 4.88 miles west of well 2; 4.58 miles north of well 3; 3.25 miles east of well 1; and 3.05 miles south of wells 2 and 1." The trial court adopted this class definition from an opinion of one of appellants' experts regarding his conclusions on the distances the injectate had migrated.

{¶ 13} On September 23, 1993, the trial court issued an order requiring appellants' counsel to mail notice of the class action to identifiable class members by October 6, 1993, and to publish notice by the same date in The Lima News. The order provided that class members would have until October 27, 1993, to opt out of the class by mailing a request for exclusion to appellants' counsel.

{¶ 14} The parties disagree over whether appellants had requested that their expert's opinion of the extent of the migration be used to define the class. In any event, appellants' attorneys did not initially object to the class definition, but later encountered problems when they prepared to send notices to members of the class using this class definition. Because the defined area did not directly correspond to any mailing list that could be practically compiled, appellants came to realize that some people would surely receive notices who should not. Also, because no map was included as part of the class description, there would be confusion about who was in the allegedly affected area.

{¶ 15} The trial court journalized an entry on October 5, 1993, which approved the parties' agreement that the mailing date of the class notice would be extended to October 8, 1993, and the appellants' counsel published the notice and accomplished the mailing before that date, with notices apparently sent to in excess of 20,000 people on October 7, 1993. Those property owners not wishing to be involved sent in requests to opt out of the class, which were filed with the court.

{¶ 16} Plaintiff-appellant Mary Virginia Rauch, a member of the described class, received a class notice. Appellant Rauch did not return an exclusion request, but instead filed a document denominated a "motion to intervene" with the trial court. In this document, appellant Rauch claimed that she needed additional time to decide whether to intervene, opt out, or remain as a passive class member, arguing that the time period set by the trial court for sending in exclusion requests was too short. The trial court denied appellant Rauch's motion in an entry journalized on November 4, 1993.

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{¶ 17} A final pretrial conference was held on October 27, 1993. At that time, the trial court granted several of appellants' motions to exclude evidence regarding the importance of appellee's operations to the Lima economy, including the exclusion of evidence of the number of jobs provided to local people by appellee. The trial court granted several of appellee's motions to exclude evidence from the trial, including the exclusion of evidence regarding complaints about appellee's facilities that did not involve the deepwell injecting. The trial court also granted appellee's motion to exclude evidence of problems at deepwell sites other than appellee's facility at Lima. Other rulings entered by the trial court included excluding evidence regarding Ohio's property disclosure law, excluding evidence regarding appellants' CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act, Sections 9601-9675, Title 45, U.S.Code) claims, excluding evidence regarding emotional distress, and excluding evidence regarding affordability of the Lima housing market.

{¶ 18} Trial commenced on November 3, 1993, and a jury was seated. Testifying for appellants were property owners who were concerned about the possible presence of the injectate under their properties. Appellants' key expert was a hydrogeologist who had developed a model to determine the extent the injectate had laterally migrated away from appellee's property. On cross-examination, appellee's attorney challenged the expert's model as inaccurate. The witness in turn explained the reasoning behind decisions he had made in setting up his model, and also criticized the model on extent of migration developed by appellee's expert. In particular, appellants' witness did not accept the accuracy of data obtained by appellee through its use of a test well to monitor the site, and so did not incorporate that site-specific data into his model.

{¶ 19} At the close of appellants' case in chief, the trial court granted appellee's motion for directed verdicts as to appellants' claims of ultrahazardous

activity, fraud, and nuisance. The trial court thus limited the case to appellants' trespass claim, eliminating other claims, including negligence, from the suit.

{¶ 20} Appellee's presentation of its case included testimony of a geological engineer on the permeability and porosity of the substrata into which the injecting was done. This geological engineer's testimony explained why, in his opinion, appellee's site in Lima was suited to deepwell injection. Several impermeable (or barely permeable) layers of rock contained the injectate in the relatively permeable and porous, mostly sandstone injection zone in the Eau Claire geologic formation (beginning at a depth of approximately 2,430 feet) and the Mt. Simon formation (beginning at a depth of approximately 2,813 feet). The geological engineer testified that in his opinion the injectate was safely contained in the injection zone. On cross-examination, appellants' attorney observed that the real issue was the extent of lateral migration of the injectate, so that the witness's testimony that the injectate had not migrated upward was irrelevant to appellants' trespass claim.

{¶ 21} Another of appellee's expert witnesses was a hydrogeologist who had developed his own model of the extent of lateral migration. This witness was critical of the model developed by appellants' expert and of appellants' expert's view of the extent of lateral migration, opining that appellants' expert had erred by failing to take into account available site-specific data in developing his model.

{¶ 22} Prior to the final arguments, appellants moved for a directed verdict, arguing that appellee had admitted through at least one of its witnesses that the injectate had migrated below the surface of the properties of at least some members of the class. Appellants sought a ruling that a trespass had therefore occurred and that damages could be presumed from the act of trespassing. The trial court orally denied the motion.

{¶ 23} On November 18, 1993, the jury returned a general verdict in favor of appellee on the trespass claim and answered ten interrogatories. The jury found

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(1) that the injectate was more than 2,600 feet below the surface of the earth; (2) that the model of appellee's expert best described the extent of its migration; (3) that appellants did not prove by a preponderance of the evidence that appellee had unreasonably interfered with the named plaintiffs' use of their properties; (4) that the named plaintiffs did not prove by a preponderance of the evidence that the deepwells had caused any actual and substantial damage to their properties apart from any claim of stigma or diminution in property values; (5) that appellants did not prove by a preponderance of the evidence that appellee had committed a trespass on the named plaintiffs' properties; (6) that the named plaintiffs did not prove by a preponderance of the evidence that the fair market value of their properties had been decreased as a direct and proximate result of the operation of the deepwells; (7) that no trespass as to the property owners had occurred, assuming portions of the injectate had migrated into the native brine flowing through the Eau Claire and Mt. Simon formations located more than one-half mile below the surface of their properties; (8) that appellants did not prove by a preponderance of the evidence that properties into which the injectate had migrated had suffered actual and substantial damage directly and proximately caused by the deepwells, apart from any claim of stigma or diminution in property values; (9) that appellants did not prove by a preponderance of the evidence that owners of properties into which the injectate had migrated had suffered actual damages directly and proximately caused by the deepwells; and (10) that appellants did not prove by a preponderance of the evidence that appellee was liable to any member of the class.

{¶ 24} Appellants appealed to the Court of Appeals for Cuyahoga County, and appellee cross-appealed. In addition, appellant Rauch appealed concerning the trial court's denial of her motion to intervene. The court of appeals consolidated the various appeals, and addressed them all in a single opinion.



{¶ 25} The court of appeals affirmed as to appellants' appeal (thus upholding the jury verdict in favor of appellee) and affirmed the denial of appellant Rauch's motion to intervene.

{¶ 26} The cause is now before this court upon the allowance of discretionary appeals—the appeal of the class appellants and also the appeal of appellant Rauch.

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*Murray & Murray Co., L.P.A., James T. Murray and Joseph A. Zannieri,*  
for appellants.

*Katherine Walsh, Williams & Williams Co., L.P.A., and Mark R. Williams;*  
and *Thomas G. Rauch,* for appellant Rauch

*Squire, Sanders & Dempsey, Frederick R. Nance, Damond R. Mace and*  
*Steven A. Friedman;* and *David L. Bell,* for appellee.

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**ALICE ROBIE RESNICK, J.**

{¶ 27} This case presents unique questions surrounding the process of deepwell disposal of wastes. We stress at the outset that, because appellee's operation of the wells is authorized by the relevant regulating bodies, this case does not involve the general propriety of deepwell waste injection. This case also does not involve the specific question whether appellee should be using deepwell technology at its Lima facility.

{¶ 28} The Ohio General Assembly has set up a scheme for the granting of permits for and the supervision of injection wells by state agencies. See R.C. 6111.043 and 6111.044, formerly R.C. 1509.051 and 1509.081, enacted in 1967 by Am.S.B. No. 226, 132 Ohio Laws, Part I, 689 and 692. Appellee's operation of the wells is authorized by permits issued by the Ohio Environmental Protection Agency pursuant to R.C. Chapter 6111 and Ohio Adm.Code Chapter 3745-34. The United States Environmental Protection Agency, which also exercises some regulatory

authority over the wells, granted appellee's "no migration" petition on May 7, 1992, allowing continued operation of the wells. See 57 F.R. 23094, 23095.

{¶ 29} However, even though appellee operates the wells pursuant to the permits, that fact in and of itself does not insulate appellee from liability. R.C. 6111.08 provides: "Chapter 6111. of the Revised Code does not abridge rights of action or remedies in equity or under the common law, nor does such chapter, or any act done under such chapter, estop the state, or any municipal corporation or person, as riparian owners or otherwise, in the exercise of their rights in equity or under the common law to suppress nuisances or to abate pollution."

{¶ 30} As a preliminary matter, we affirm the portions of the judgment of the court of appeals holding that the trial court correctly granted summary judgment to appellee on claims for emotional distress and for punitive damages.

{¶ 31} We also affirm the court of appeals' holding that the trial court properly directed a verdict in favor of appellee on the issues of nuisance, fraud, and ultrahazardous activity. Appellants desired to introduce evidence of problems, such as earthquakes and contamination of drinking water, at other deepwell sites, but were prevented from doing so by rulings of the trial court. Appellants had no evidence of specific problems at appellee's site, other than speculative opinion testimony that problems may arise in the future. As mentioned above, appellee's operation of the wells is fully authorized by the regulating bodies, and in the absence of evidence that appellee's wells were a nuisance or that appellee was negligent in some way, appellants could not recover on their nuisance claim.

{¶ 32} Moreover, we affirm the holding of the court of appeals regarding appellants' argument that appellee should have borne the burden of proving that no trespass occurred. Appellants base their argument on this issue on appellee's reliance throughout the litigation on voluminous data obtained from a "stratigraphic test well" drilled to monitor the three injection wells. Appellants argue that appellee's "unique access" to this data justified placing the burden of proof on

appellee. We agree with the court of appeals that appellants, as plaintiffs, bore the burden of proving all elements of their claim for trespass.

{¶ 33} Our agreement with the conclusions reached by the court of appeals on the foregoing issues leaves appellants' trespass claim as the principal issue to be resolved. Trespass is an unlawful entry upon the property of another. See *Keesecker v. G.M. McKelvey Co.* (1943), 141 Ohio St. 162, 166, 25 O.O. 266, 268, 47 N.E.2d 211, 214. In order to address the trespass issue, we first must examine the extent of the property interest owned by appellants involved here.

{¶ 34} Both parties have cited cases on oil and gas law, and ask this court to draw analogies between this case and oil and gas cases. Appellee in particular cites cases on the "negative rule of capture" and asks us to apply that rule. In *RR. Comm. of Texas v. Manziel* (Tex.1962), 361 S.W.2d 560, 568, the Supreme Court of Texas explained the negative rule of capture by quoting Williams & Meyers, *Oil and Gas Law* (1959), Section 204.5, at 60.2: "Just as under the rule of capture a land owner may capture such oil or gas as will migrate from adjoining premises to a well bottomed on his land, so also may he inject into a formation substances which may migrate through the structure to the land of others, even if it thus results in the displacement under such land of more valuable with less valuable substances."

{¶ 35} We find that the situation before us is not analogous to those present in the oil and gas cases, around which a special body of law has arisen based on special circumstances not present here. Although the above quotation from *Manziel* does contain the word "inject," the injection in that case was directly related to oil and gas extraction, and was fundamentally dissimilar to the unique situation before us, which involves the injection of waste byproducts from the production of industrial chemicals. Since appellee's injection well operation has nothing to do with the extraction or storage of oil or gas, we find the negative rule of capture inapplicable to our consideration of this case. For the same reason, we also reject appellants' argument that this court's opinion in *Columbia Gas Transm. Corp. v.*

*Exclusive Natural Gas Storage Easement* (1993), 67 Ohio St.3d 463, 620 N.E.2d 48, which involved the determination of compensation due for the appropriation of an underground gas storage easement, is relevant to the resolution of this case.

{¶ 36} Appellants argue in their Proposition of Law No. I that “[t]he owner of land has absolute ownership of all the subsurface property.” If this proposition is correct, then as one of the incidents of absolute ownership, appellants have the right to exclude others. See *Bank of Toledo v. Toledo* (1853), 1 Ohio St. 622, 662. Appellants claim that while this court has recognized some limitations on absolute ownership of air rights by surface property owners, no such limitation exists on ownership of subsurface property rights by surface owners.

{¶ 37} Appellants’ argument implicates the ancient Latin maxim *cujus est solum, ejus est usque ad coelum et ad inferos*, defined in Black’s Law Dictionary (6 Ed.1990) 378 as “[t]o whomsoever the soil belongs, he owns also to the sky and to the depths. The owner of a piece of land owns everything above and below it to an indefinite extent.” In *Winton v. Cornish* (1832), 5 Ohio 477, 478, this court appeared to adopt the position illustrated by that maxim, stating, “The word *land* includes not only the face of the earth, but everything under it or over it. He who owns a piece of land, therefore, is the owner of everything underneath in a direct line to the center of the earth and everything above to the heavens.”

{¶ 38} In *Willoughby Hills v. Corrigan* (1972), 29 Ohio St.2d 39, 49, 58 O.O.2d 100, 105, 278 N.E.2d 658, 664, this court, citing the United States Supreme Court in *United States v. Causby* (1946), 328 U.S. 256, 66 S.Ct. 1062, 90 L.Ed. 1206, stated that “the doctrine of the common law, that the ownership of land extends to the periphery of the universe, has no place in the modern world.” The court in *Willoughby Hills*, 29 Ohio St.2d at 50, 58 O.O.2d at 106, 278 N.E.2d at 665, quoted from *Hinman v. Pacific Air Transp.* (C.A.9, 1936), 84 F.2d 755, 758: “‘We own so much of the space above the ground as we can occupy or make use of, in connection with the enjoyment of our land. This right is not fixed. It varies

with our varying needs and is coextensive with them. The owner of land owns as much of the space above him as he uses, but only so long as he uses it.”

{¶ 39} Appellee claims that injectate is placed into the native brine in the Mt. Simon and Eau Claire formations, and that the native brine waters are “waters of the state” under R.C. 6111.01(H), and therefore are exclusively regulated by the state of Ohio. Appellee argues that the court of appeals correctly found that appellants have no possessory interest in these waters, and further argues that the alleged presence of injectate does not, as a matter of law, infringe any property right of appellants. To the extent that appellee appears to be arguing that the way the injectate disperses into the native brine serves to insulate appellee from all liability in all circumstances, we reject appellee’s contention. The native brine exists naturally in the porous sandstone into which the injecting is done. The injectate displaces and mixes with the brine in the injection zone. Appellants have a property interest in the rock into which the injectate is placed, albeit a potentially limited one, depending on whether appellants’ ownership rights are absolute. If appellee’s act of placing the injectate into the rock interferes with appellants’ reasonable and foreseeable use of their properties, appellee could be liable regardless of the way the injectate mixes with the native brine.

{¶ 40} Our analysis above concerning the native brine illustrates that appellants do not enjoy absolute ownership of waters of the state below their properties, and therefore underscores that their subsurface ownership rights are limited. As the discussion in *Willoughby Hills* makes evident, ownership rights in today’s world are not so clear-cut as they were before the advent of airplanes and injection wells.

{¶ 41} Consequently, we do not accept appellants’ assertion of absolute ownership of everything below the surface of their properties. Just as a property owner must accept some limitations on the ownership rights extending above the surface of the property, we find that there are also limitations on property owners’

subsurface rights. We therefore extend the reasoning of *Willoughby Hills*, that absolute ownership of air rights is a doctrine which “has no place in the modern world,” to apply as well to ownership of subsurface rights. Furthermore, as we will discuss below regarding other considerations in this case, given the unique facts here we find that appellants’ subsurface rights in their properties include the right to exclude invasions of the subsurface property that actually interfere with appellants’ reasonable and foreseeable use of the subsurface.

{¶ 42} Having determined that appellants’ subsurface rights are not absolute, we must determine whether appellants proved an actionable trespass given the facts of this case. The trespass appellants attempted to establish was an “indirect” one, and was complicated by the nature of the invasion of property that appellants were attempting to prove. The alleged invasion of property was dependent on appellants’ explanation of the extent of the lateral migration of the injectate and of how the injectate came to be under their properties.

{¶ 43} As discussed previously, the actual location of the injectate was vigorously contested by the parties throughout the litigation, with each side’s experts testifying as to the models developed to illustrate the extent of the migration. The parties’ experts disagreed as to the permeability and porosity of the rocks into which the injecting is done. Permeability and porosity are two factors upon which the models were based that would affect the extent of the lateral migration of the injectate. The experts also disagreed over the thickness of the “injection interval” into which the injectate is placed. If the injectate were placed into a relatively thin layer, as appellants’ expert placed it in his model, the injectate would laterally migrate farther than if it were placed in a thicker layer, as appellee’s expert placed it in his model.

{¶ 44} Another variable that figures in the equation involving lateral migration and the location of the injectate is the concentration of the injectate at any given point in the substrata as it intermixes with the native brine. As the

injectate diffuses into the brine, its concentration decreases as the distance from the injection point increases. Therefore it is theoretically impossible to define an absolute perimeter on the extent of lateral migration, since any statement on the extent of migration must be in terms of a particular concentration level at that perimeter. In addition, there was testimony about the degradation of the injectate, and how that degradation would affect the injectate's migration over time.

{¶ 45} All of these and more disputed variables went into the construction of the hypothetical models that attempted to illustrate the lateral extent of the migration. Given all these variables, there were great difficulties in appellants' establishing, as a factual matter, that a property invasion had occurred, so that appellants' claim must be regarded as somewhat speculative.

{¶ 46} Appellants in essence argue that through its rulings, the trial court mistakenly imposed a requirement that they prove "actual" damages as an element of their trespass claim. Appellants argue that damages can be presumed in every case of trespass, and given that the bifurcation order left damages to be quantified at a future time, the trial court erred in requiring proof of any damages at all, much less of "actual" ones. We do not accept appellants' argument in this regard in the specific circumstances of this case, but find that some type of physical damages or interference with use must be shown in an indirect invasion situation such as this. Even assuming that the injectate had laterally migrated to be in an offending concentration under some of the appellants' properties, we find that some type of physical damages or interference with use must have been demonstrated for appellants to recover for a trespass.

{¶ 47} Additionally, appellants in essence argue that even if the trial court was correct in requiring them to prove "actual" damages as an element of their trespass claim, the trial court erred by unduly restricting what type of damages they were required to demonstrate. For example, appellants argue that the trial court should have allowed appellants to present evidence that environmental stigma

associated with the deepwells had a negative effect on appellants' property values due to the public perception that there may have been injectate under appellants' properties and that the injectate may be dangerous. We find that the trial court did not abuse its discretion in the circumstances of this case in foreclosing appellants from presenting evidence of speculative stigma damages. Therefore, the trial court was correct in requiring appellants to prove some physical damages or interference with use proximately caused by the deepwells as part of their trespass claim in the circumstances of this case, thus placing on appellants the burden of establishing that the injectate interfered with the reasonable and foreseeable use of their properties.

{¶ 48} Appellants have cited no cases in which the non-negligent operation of a deepwell has resulted in liability. The court of appeals remarked in a footnote to its opinion that after extensive research of other jurisdictions, it was unable to find “a single cause of action based upon conceptual as opposed to actual and substantial damage associated with permitted, non-negligent deepwell disposal.” Our research also has produced no such precedent.

{¶ 49} We find that appellants, given all the factors present in this case, did not, as a matter of law, establish an unlawful entry on their properties by appellee. Our ultimate conclusion that appellants did not prove an actionable trespass is dictated by considering the sum total of the circumstances of this case, as we have done in our foregoing discussion. Appellee operates the wells pursuant to required permits; appellants' subsurface property rights are not absolute and in these circumstances are contingent upon interference with the reasonable and foreseeable use of the properties; the trespass alleged is an indirect one and, due to the type of invasion alleged, physical damage or actual interference with the reasonable and foreseeable use of the properties must be demonstrated; appellant's trespass claim is a novel one, of a type previously unrecognized by any court. When all of the circumstances of this case are considered, appellants' evidence of trespass was



simply too speculative. The trial court was correct in refusing to direct a verdict in appellants' favor that a trespass had occurred. In fact, we believe that the trial court could have granted a directed verdict to appellee on that claim at the close of appellants' presentation of evidence.<sup>1</sup> However, we cannot fault the trial court in these circumstances for allowing the claim to survive beyond that stage. Due to the unique nature of appellants' claim, the trial court understandably erred on the side of caution in allowing the case to go forward.

{¶ 50} Appellants make several arguments concerning procedural and substantive rulings made by the trial court that allegedly prejudiced their right to a fair trial. In particular, appellants take issue with the failure of the trial court to make the class action findings required by Civ.R. 23, as discussed by this court in *Warner v. Waste Mgt., Inc.* (1988), 36 Ohio St.3d 91, 521 N.E.2d 1091. *Warner* stands for the proposition that specific findings should be made in virtually every class action. The error, if any, is now moot. As to the trial court's refusal to grant a continuance, we find no abuse of discretion under the specific facts of this case. Furthermore, we believe that many of the rulings of the trial court that appellants object to were made as they were due to the speculative nature and novelty of appellants' claims. The procedural progress of this case was tied to the uncertainty of the substantive claims being made, and the procedural and substantive difficulties magnified each other, and caused many of the proceedings in this case to lack focus. For example, the dispute over the location of the injectate had a direct

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1. Against one member of the class, a directed verdict might not have been proper. An officer of a local business, Superior Forge and Steel Corporation, testified that his company abandoned plans to drill for natural gas on its property after learning of the deepwell waste disposal. After conducting a thorough review of this witness's testimony, we question whether, as a factual matter, the company would have actually followed through on plans to drill for gas on its property. However, if Superior Forge actually was prevented from enjoying the reasonable and foreseeable use of its property by appellee's deepwell operations, it may have had a cognizable trespass claim against appellee. In any event, this claim was resolved in appellee's favor by the verdict.

and inseparable effect on the problems encountered by the trial court in determining whether to bifurcate the action and also caused difficulties in defining the class.

{¶ 51} We are convinced that, at bottom, the question of the actual location of the injectate, at best a complicated inquiry not easily susceptible of a definitive answer, was further complicated by the fact that the parties were attempting to illustrate the extent of lateral migration based primarily on experts' hypothetical models that were each attacked in minute detail as flawed by the other side. When the nature of the alleged property invasion is considered in light of appellants' apparent lack of specific and readily demonstrable concrete damage, this was a highly unusual case. The parties in this litigation disagreed on virtually every facet of this case, both factually and legally, from the outset, which further complicated the role of the several judges who presided over the action and of the jury.

{¶ 52} We will not individually address all of the issues posed by appellants' remaining propositions of law. Rather, we simply state that we find no abuse of discretion in the rulings of the trial court on these issues.

{¶ 53} In addition, we agree with the holding of the court of appeals as to appellant Rauch's appeal and affirm it.

{¶ 54} For all the foregoing reasons, the judgment of the court of appeals is affirmed.

*Judgment affirmed.*

DOUGLAS, F.E. SWEENEY, COOK and STRATTON, JJ., concur.

MOYER, C.J., concurs in judgment only.

PFEIFER, J., concurs in part and dissents in part.

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**PFEIFER, J., concurring in part and dissenting in part.**

{¶ 55} I dissent from the majority's holding that the measure of compensation enunciated by this court in *Columbia Gas Transm. Corp. v. Exclusive Natural Gas Storage Easement* (1993), 67 Ohio St.3d 463, 620 N.E.2d 48, is

inapplicable to this case. The jury should have been instructed to apply the *Columbia Gas* test to determine whether any part of plaintiffs' properties affected by the injection had any rental value. I concur with the remainder of the majority opinion.

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