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CITY OF BRISTOL *v.* TILCON MINERALS, INC.

TILCON, INC. *v.* CITY OF BRISTOL

(SC 17305)

(SC 17306)

Borden, Katz, Palmer, Vertefeuille and Zarella, Js.*

Argued November 27, 2006—officially released September 25, 2007

Ben M. Krowicki, with whom were *Susan Kim* and *Brian R. Hole*, for the appellant-appellee (plaintiff in the first case, defendant in the second case).

Edward T. Lynch, Jr., with whom was *Stephen J. Anderson*, for the appellee-appellant (defendant in the first case, plaintiff in the second case).

Opinion

ZARELLA, J. In these consolidated proceedings, the city of Bristol (city), the plaintiff in the first case and the defendant in the second case, appeals from the judgment of the trial court reassessing damages awarded to Tilcon, Inc. (Tilcon),¹ the defendant in the first case and the plaintiff in the second case,² for the city's taking by condemnation of easements and other rights on 24.84 acres located within a 184 acre tract of unimproved land owned by Tilcon to remediate potentially contaminated groundwater emanating from the city landfill (statutory taking).³ The city also appeals from the trial court's judgment in favor of Tilcon on Tilcon's claims of inverse condemnation and trespass for the city's de facto taking of an additional 19.85 acres of adjoining land contaminated by the landfill (de facto taking). Tilcon cross appeals from the trial court's judgment denying its request for reasonable attorney's, appraisal and engineering fees pursuant to General Statutes § 48-17b⁴ in the inverse condemnation action.

On appeal, the city challenges the damages awards for the statutory and de facto takings on the grounds that the trial court improperly: (1) concluded that residential development was the highest and best use of the Tilcon property; (2) adopted the " 'lot method' " of valuation and determined that contaminants generated by the landfill precluded Tilcon from developing the land subject to the statutory taking for residential purposes; (3) determined that the city had inversely condemned an additional 19.85 acres of adjoining land; (4) determined that the date of the inverse condemnation was the same date as the statutory taking; and (5) found in favor of Tilcon on its permanent trespass claim. In its cross appeal, Tilcon claims that the trial court improperly failed to grant its request for reasonable attorney's, appraisal and engineering fees in the inverse condemnation proceeding. We conclude that the trial court properly determined that the highest and best use of the property subject to the statutory taking was for residential development and properly found in favor of Tilcon on its claim of permanent trespass as to the adjoining land. We also conclude, however, that the trial court did not properly apply the lot method of valuation in reassessing damages for the statutory taking and improperly concluded that the city took the adjoining land by inverse condemnation. Accordingly, we reverse in part the judgments of the trial court.

The following relevant facts are set forth in the trial court's memorandum of decision. "[The city] began operating a landfill on land bordering the town of Southington in 1946. The landfill was located on an existing brook and swampy area. It evolved from an open burn dump to an open dump, then to a sanitary landfill operation in 1966. In 1984, it became a municipal solid waste landfill operating under a state permit to discharge

water. In 1987, the solid waste permit for the landfill was modified to include a one acre ash disposal area. The area was later expanded in 1988 to seventeen acres on the easterly portion of the landfill to provide for ash residue disposal from the [city] resource recovery facility. In 1995, the department of environmental protection [department] initiated a proceeding against the city . . . to prohibit the discharge of water, substances or materials, including but not limited to leachate, from the landfill into the waters of the state. This resulted in a consent order dated October 24, 1995, with the state of Connecticut, in which the city agreed to cease the disposal of solid waste to the landfill on or before March 1, 1997, to hire consultants to investigate the potential impact of the leachate generated at the landfill, both before and after closure, on the quality of surface water to the south of the landfill, and to submit a plan for remediation of potential contamination of land outside of the landfill. As a consequence of the consent order, the city . . . on July 18, 1997, filed a statement of compensation with [the trial] court and deposited \$50,000 for the taking of easements and other rights on 24.84 acres of Tilcon's property for a period of thirty-one years. On August 15, 1997, [the city] recorded the certificate for taking in the Southington land records, condemning the following areas: (1) two 'zones of influence easement areas' containing approximately 14.3 acres; (2) two 'monitoring well easement areas' containing approximately 36,800 [square feet]; (3) three 'access easement areas' containing approximately 10.7 acres on the Tilcon property; together with (4) the exclusive right to 'withdraw ground water from the zone of influence areas'; (5) the right to release and deposit contaminants and pollutants directly and indirectly on or in the groundwaters and subsurface rocks and formation within the zone of influence areas; (6) the right to enter on, over and across and under the access easement areas and the monitoring well easement areas and to transport such machinery and materials as may be required for the purpose of collecting environmental data, extracting water from monitoring wells and conducting such investigations and tests which [the city] deems necessary in order to monitor and treat the groundwater within the zone of influence area; (7) the right to pump and treat water from the access easement areas for the purpose of remediating contamination from [the city's] landfill of the groundwater within the zone of influence area; (8) the right to enter on, over, across, under and upon the access easement areas and the monitoring well areas on foot or by vehicle and transport such machinery and materials as may be required for the purpose of maintaining, repairing and replacing any and all facilities located within such easement areas; and (9) the right to enter on, over, across and upon the access easement areas and monitoring well easement areas on foot or by vehicle and transport such machinery and material as may

be necessary or convenient for the purpose of exercise in the easement taking.

“In addition, [the city] condemned a two year right to enter upon the access easement areas and monitoring well easement areas to construct and install four monitoring wells within the monitoring well easement area together with associate pumps, piping, hardware and equipment.”

On October 15, 1997, Tilcon filed an application for review of the statement of compensation (application for review) with the trial court, claiming inadequate damages for the statutory taking, for the reduction in value caused to Tilcon's adjoining land and for the additional costs required to develop or to use its remaining property. Tilcon also alleged claims of inverse condemnation and trespass on the ground that leachate from the landfill had contaminated an additional 19.85 acres of its property. After the city sought to dismiss the inverse condemnation and trespass claims on the ground that the trial court lacked jurisdiction to hear them because they fell outside the scope of the proceeding on the application for review, Tilcon filed a separate complaint, dated April 22, 2003, alleging trespass and inverse condemnation. On that date, Tilcon and the city also filed a joint motion to sever the trespass and inverse condemnation claims from the compensation claim in the application for review and to consolidate the cases for trial. On May 9, 2003, the trial court granted the parties' joint motion.

Thereafter, the consolidated action was tried to the court. In its memorandum of decision dated June 9, 2004, the court reassessed damages for the statutory taking and rendered judgment increasing the award from \$50,000 to \$324,785. The court also rendered judgment in favor of Tilcon on its inverse condemnation and trespass claims and awarded \$201,760 in damages for the city's de facto taking of the additional 19.85 acres of land that Tilcon claimed had been contaminated by the landfill.⁵ The court denied Tilcon's request for attorney's, appraisal and engineering fees. This consolidated appeal and cross appeal followed.

I

We begin with the city's challenge to the trial court's reassessment of damages for the statutory taking. The city claims that the trial court improperly determined that a residential subdivision was the highest and best use of the Tilcon property, even though Tilcon had extended its mining permit for an additional two years shortly before the taking and did not develop a residential reuse concept plan until after the city had exercised its power of eminent domain. Tilcon responds that the trial court's determination of the highest and best use was proper because the land had been zoned as residential for many years, mining operations had ceased prior

to the taking and there was a reasonable probability that the site would be put to residential use in the reasonably near future. We agree with Tilcon that the trial court properly found that the highest and best use of the land was for residential development.

In making its determination, the trial court evaluated testimony from, inter alia, appraisers for both the city and Tilcon, and from Frank T. Lane, director of real estate and environmental compliance for Tilcon. The court stated in its memorandum of decision that Tilcon “[f]or many years . . . had mined [approximately 184 acres⁶ of] land [in the town of Southington] south of the landfill and north of Eightmile River for sand and gravel that it used in its extensive highway construction business. In 1996, however, it ceased mining the property for that purpose. It retained some fill on the property in order to retain its mining permit and to continue to mine sand and gravel on the [neighboring] property . . . to the north [Norton property] and east of Tilcon’s property and also on the property . . . to the east of the Norton property [Reynolds property].⁷ The property subject to the easement [taken by the city] was used as an access to the Norton and Reynolds properties but there are alternate, feasible routes over the Norton property and other land of Tilcon.”

The court further observed that Tilcon had a business plan, effectuated in the past, of covering excavated land with fill and subdividing it for the sale of residential lots following completion of its mining activities.⁸ The court noted, however, that the city’s appraiser had determined that the highest and best use of the property was “ ‘[for] the current sand and gravel mining operation for the next ten to twenty years,’ ”⁹ whereas Tilcon’s appraiser had determined that the highest and best use of the property, which was zoned for residential use, was for single-family homes.¹⁰ In addition, the court stated that it had viewed the property and had observed that the site had access to town roads and to public water and that the surrounding area had been developed with attractive homes and a golf course. Briarwood College and ESPN, Inc., a large television facility, both of which employed many workers and provided a potential market for single-family homes, also were located nearby. The court thus agreed with Tilcon’s appraiser that the highest and best use of the property was for residential development.

It is well established that “[a] property’s highest and best use is commonly accepted by real estate appraisers as the starting point for the analysis of its true and actual value. . . . [U]nder the general rule of property valuation, fair [market] value, of necessity, regardless of the method of valuation, takes into account the highest and best value of the land. . . . A property’s highest and best use is commonly defined as the use that will most likely produce the highest market value, greatest

financial return, or the most profit from the use of a particular piece of real estate. . . . The highest and best use determination is inextricably intertwined with the marketplace because fair market value is defined as the price that a willing buyer would pay a willing seller based on the highest and best possible use of the land assuming, of course, that a market exists for such optimum use. . . . The highest and best use conclusion necessarily affects the rest of the valuation process because, as the major factor in determining the scope of the market for the property, it dictates which methods of valuation are applicable.” (Citations omitted; internal quotation marks omitted.) *United Technologies Corp. v. East Windsor*, 262 Conn. 11, 25–26, 807 A.2d 955 (2002). “In determining its highest and best use, the [court may also] consider whether there was a reasonable probability that the subject property would be put to that use in the reasonably near future, and what effect such a prospective use [might] have had on the property’s market value at the time of the taking.” (Internal quotation marks omitted.) *Northeast Ct. Economic Alliance, Inc. v. ATC Partnership*, 256 Conn. 813, 829, 776 A.2d 1068 (2001). “Finally, a trier’s determination of a property’s highest and best use is a question of fact that we will not disturb unless it is clearly erroneous.” *United Technologies Corp. v. East Windsor*, *supra*, 26.

“[I]n a case tried before a court, the trial judge is the sole arbiter of the credibility of the witnesses and the weight to be given specific testimony. . . . The credibility and the weight of expert testimony is judged by the same standard, and the trial court is privileged to adopt whatever testimony [it] reasonably believes to be credible. . . . On appeal, we do not retry the facts or pass on the credibility of witnesses.” (Internal quotation marks omitted.) *Id.*

We conclude that the trial court properly found that the highest and best use of the Tilcon property was for a residential subdivision. The court carefully considered the testimony and written reports of the two expert witnesses as well as Lane’s testimony and found the Tilcon witnesses to be more persuasive. The property was zoned for residential use, Tilcon’s mining operations on the property had for all practical purposes ceased several years before the taking, town roads provided access to the site, city water was available to support future residential development and Tilcon had prepared a concept plan based on town regulations demonstrating the feasibility of subdividing the property for single-family homes. See *French v. Clinton*, 215 Conn. 197, 199, 575 A.2d 686 (1990) (trial court considered concept plan for marina in determining that marina was highest and best use of property, even though required permits had not been sought or approved). Furthermore, the court had visited the site and observed that a residential subdivision would be

compatible with the surrounding land uses. See *West Haven v. Norback*, 263 Conn. 155, 173, 819 A.2d 235 (2003) (referee sitting as court on appeals in condemnation cases has duty of making “independent determination of value and fair compensation in the light of all the circumstances, the evidence, his general knowledge and his *viewing of the premises*” [emphasis added; internal quotation marks omitted]).

In addition, Tilcon had implemented plans in the past to reclaim and to sell previously mined land for an industrial park and a residential subdivision. See footnote 8 of this opinion. Evidence further indicated that Tilcon had renewed its mining permits for the principal purpose of maintaining its ability to mine the adjacent Norton and Reynolds properties and to regrade the Tilcon property upon completion of those activities. Witnesses for Tilcon also testified that access roads to the adjacent Norton and Reynolds properties and the on-site storage of mined materials could be relocated so as not to interfere with the proposed residential development and, in any case, all mining of the Norton and Reynolds properties was expected to be completed by August, 2004. Both appraisers finally indicated that it was highly unlikely that the town would rezone the presently nonconforming property for a nonresidential use.

That the concept plan showing the feasibility of residential development was prepared for litigation purposes and that Tilcon did not intend to develop or to market the property for single-family homes in the *immediate* future¹¹ does not alter the fact that residential development would have yielded the highest market value, greatest financial return and most profit at the time of the statutory taking. See *United Technologies Corp. v. East Windsor*, supra, 262 Conn. 26. In fact, there was no evidence, other than the city appraiser’s unsupported opinion, that the property would yield a greater financial return as a sand and gravel operation than as a residential subdivision. Accordingly, the trial court’s finding that there was a reasonable probability that the property could or would be used for residential development in the reasonably near future and its corollary finding that the highest and best use of the property was for residential development were not clearly erroneous.

II

A

The city next challenges the trial court’s reassessment of damages for the statutory taking. Specifically, the city contends that the court improperly adopted the “lot method” of valuation, despite the fact that Tilcon had made no effort to subdivide the property, to obtain the necessary approvals for subdivision of the property prior to the taking or to provide the court with credible

evidence of the costs of subdivision. Tilcon replies that neither its own appraiser nor the trial court used the lot method of valuation and that neither viewed the property as “improved, but rather, as unimproved, but likely to be approved R-40 subdivision lots.” We conclude that the trial court improperly used a modified version of the lot method of valuation in determining the value of the property taken and in calculating the damages award. Accordingly, the award of damages for the statutory taking was improper.

As indicated in the record, the court relied almost entirely on the report of Tilcon’s appraiser, who had determined that the 24.84 acres subject to the taking were capable of supporting, in full or in part, fourteen residential lots with a value of \$25,220 per unimproved lot. The court thus found a total value of \$353,080 for the fourteen lots before the taking, which the court discounted for thirty-one years at a 10 percent rate of return on the ground that the property could not be developed while the easements were in place. The court determined that this yielded a discounted value after the taking of \$18,395 for the 24.84 acres and a net damages award of \$324,785.

The Tilcon appraisal was based on a comparable sales analysis of six properties in Southington, approximately twenty to twenty-six acres in size, that had been sold for residential development between 1996 and 1998. Each sale involved unimproved land with approved subdivisions and access to utilities at the time of, or immediately following, the conveyance.¹² The sales figures were adjusted upwards or downwards by 5 to 10 percent to account for differences with the Tilcon property in location, access to utilities, subdivision approval, time and the proximity of the Tilcon site to an amusement park.

In describing its approach, Tilcon’s appraisal report stated in relevant part: “Residential land for development typically sells on the basis of what an investor/contractor anticipates he can yield from the sale of improved lots or the improved lots with single-family homes. Investors consider carrying cost, overhead, risk and profit in purchasing land. One of the most critical issues is how many lots can be achieved from the parcel. . . .

“This appraisal will analyze the value of the subject site from the land sales found in the market place. The value is estimated by adjusting the sales on a per buildable lot basis.” No information was provided in the appraisal report, however, nor was any evidence subsequently presented at trial, as to the specific costs of subdividing the Tilcon property or the expenses associated with preparing, marketing and holding it for future sale to a developer.

In contrast, the city’s appraiser, who determined that

the highest and best use of the property was for the continuation of Tilcon's mining operation, had used the sales comparison approach to analyze comparable properties between ten and more than 150 acres in size. After adjusting the respective property values for various qualitative considerations, market conditions and location, he concluded that the value of the Tilcon property as a whole prior to the taking was \$1,850,000, or \$10,000 per acre.¹³ He then determined that, because the taking would not affect the highest and best use of the property for mining activities during the next ten to twenty years, the impact of the easements on the property value would be minimal. He therefore concluded that the statutory taking would reduce the value of the 184 acre property to between \$9700 and \$9800 per acre, thus yielding a damages award of approximately \$50,000.

We first set forth the standard of review. "In actions requiring . . . a valuation of property, the trial court is charged with the duty of making an independent valuation of the property involved. . . . [N]o one method of valuation is controlling" (Internal quotation marks omitted.) *Sheridan v. Killingly*, 278 Conn. 252, 259, 897 A.2d 90 (2006). "In determining the value of the property taken, the trier arrives at its own conclusions by weighing the opinions of the appraisers, the claims of the parties, and its own general knowledge of the elements going to establish value, and then employs the most appropriate method to determine the damages that result from the taking. . . . [T]he trial court has the right to accept so much of the testimony of the experts and the recognized appraisal methods which they employed as he finds applicable; his determination is reviewable only if he misapplies, overlooks, or gives a wrong or improper effect to any test or consideration which it was his duty to regard. . . . On appeal, it is the function of this court to determine whether . . . [the conclusions of the trial court] are legally and logically correct and whether they find support in the facts set out in the memorandum of decision; where the factual basis of the court's decision is challenged we must determine whether the facts set out in the memorandum of decision are supported by the evidence or whether, in light of the evidence and the pleadings in the whole record, those facts are clearly erroneous." (Citations omitted; internal quotation marks omitted.) *Pandolphe's Auto Parts, Inc. v. Manchester*, 181 Conn. 217, 220–22, 435 A.2d 24 (1980); see also *Robinson v. Westport*, 222 Conn. 402, 414, 610 A.2d 611 (1992) (court's determination as to proper method of valuing property taken by eminent domain is question of fact subject to review under clearly erroneous standard).

Turning to the applicable legal authority, Connecticut courts have recognized the well established constitutional principle that "[t]he owner of land taken by condemnation is entitled to be paid just compensation.

Conn. Const. art. I, § 11. If the taking is partial, the usual measure of damages is the difference between the market value of the whole tract with its improvements before the taking and the market value of what remained of it thereafter. . . .

“[R]aw land as such, with little or no improvements or preparation for subdivision may not be valued as if the land were in fact a subdivision The accepted rule for the evaluation of such land, therefore, is that the land will be considered in its present condition as a whole, with consideration given to any increment or enhancement in value due to the property’s *present adaptability* to subdivision development. . . . 4 P. Nichols, *Eminent Domain* (3d Ed.) § 12.3142 [1] [a], pp. 12-335 [through 12-356].” (Citations omitted; emphasis in original; internal quotation marks omitted.) *Minicucci v. Commissioner of Transportation*, 211 Conn. 382, 384–85, 559 A.2d 216 (1989).

In determining the adaptability of a property to residential use, “[t]he landowner need not establish the development potential of the property for the proposed use by a preponderance of the evidence, but only that it is reasonably so. The court is to value the tract of land only, and not to determine how it could best be divided into building lots, nor to conjecture how fast they could be sold, nor at what price per lot. Once the question as to the adaptability of a condemned tract of land for subdivision purposes has been answered, the real problem as to valuation must be faced. Does it enhance the market value and, if so, by how much. [4 P. Nichols, *supra*] §§ 12B.14 and 12B.14 [1], pp. 12B-151 through 12B-158.” *Newington v. Estate of Young*, 47 Conn. Sup. 65, 81, 777 A.2d 219 (2000).

Fair market value for the partial taking of land suitable for subdivision also may be determined by the lot method of valuation, in which the land is valued according to the number of buildable lots that the property can support. The lot method is most reliable in estimating value when substantial steps have been taken toward subdivision, as when portions of the tract already have been subdivided or partially developed, because tangible evidence of this nature clearly demonstrates the land’s potential use as a subdivision. See 4 P. Nichols, *supra*, § 12B.14 [1] [c], pp. 12B-178 through 12B-179. In such cases, “[t]he costs to the developer are no longer speculative, the value of the individual lots in the market may be ascertained with as much certainty as in any other condemnation proceeding, and the possibility of such a use is no longer remote.” *Id.*, § 12B.14 [1] [d], p. 12B-181.

A modified version of the lot method of valuation also may be used when few, if any, tangible steps have been taken toward subdivision of a property. Sometimes called the “residual approach,” an appraiser using this method “estimates a sale price for each individual,

developed lot, multiplies that price by the number of lots in the tract, then deducts the estimated costs of development and marketing” to arrive at a final estimation of the property’s value. *United States v. 99.66 Acres of Land*, 970 F.2d 651, 655 (9th Cir. 1992); see also *Robinson v. Westport*, supra, 222 Conn. 404–405 (describing lot method as approach in which land is appraised by establishing value of finished lots and then subtracting capital costs of improvements necessary to put them in that condition). Sufficient evidence of the costs associated with subdividing, preparing and marketing the land, however, must be provided to ensure the integrity and accuracy of the valuation process.

When used in this state to value unimproved land, the modified approach to the lot method of valuation has been strictly applied. In *Robinson v. Westport*, supra, 222 Conn. 407, the trial court rejected the lot method of valuation employed by the parties’ appraisers in estimating damages for a partial taking of the plaintiffs’ undeveloped property because evidence as to the value of the hypothetical subdivision lots was “too speculative”¹⁴ On appeal, we affirmed the trial court’s decision, emphasizing that we did not agree with the proposition that “the lot method of appraisal should *never* be admitted in condemnation cases involving unimproved raw land . . . [but that] the better view . . . is that a lot method appraisal can be admitted in appropriate cases if the proponent offers credible evidence of the costs of subdivision—e.g., the expense of clearing and improving the land, surveying and dividing it into lots, advertising and selling, holding it, and paying taxes and interest until all lots are sold. . . . The potential value of land if subdivided could well be considered by a willing buyer and a willing seller where subdivision is a reasonable possibility and the costs of subdivision are not speculative or uncertain.” (Emphasis added; internal quotation marks omitted.) *Id.*, 407–408, quoting *United States v. 47.3096 Acres, Etc., In Oxford Township*, 583 F.2d 270, 271–72 (6th Cir. 1978).

We further stated in *Robinson* that, although a plaintiff “need not take specific steps toward subdivision in order for the lot method to be considered, evidence of any attempts to prepare for a future subdivision [of the property] tend to make such use more reasonably probable and less speculative. As the proponent of a hypothetical highest and best use is able to progress along the spectrum from raw land with few or no improvements to, ultimately, a completed subdivision, the weight to be assigned such evidence will be enhanced. 4 P. Nichols, [supra] § 12B.14 [1] [b], pp. 12B-175 [through 12B-179].” *Robinson v. Westport*, supra, 222 Conn. 409. We finally acknowledged that “[t]rial courts must be afforded substantial discretion in choosing the most appropriate method of determining the value of a taken property. . . . In condemnation proceedings, the trial court is more than a trier of facts or

an arbiter of . . . [the] opinions of [expert] witnesses; it is charged with the duty of making an independent determination of value and fair compensation in light of all the circumstances, the evidence, its general knowledge and its viewing of the premises. . . . [T]he trial court [is] not, as a matter of law, bound by the valuations or valuation methods used by the appraisers but [may] consider the comparable sales of land that [are] in evidence as well as the raw data utilized in the presentation of the lot method approach in independently determining fair market value.” (Citation omitted; internal quotation marks omitted.) *Id.*, 410.

In the present case, neither party presented the court with a valid method for determining the value of the property taken and for calculating the damages award. Using the comparable sales approach, the city selected vacant residential parcels from ten to more than 150 acres in size as the basis for its valuation of the Tilcon property as a whole prior to the taking. It then reduced the per acre value of the Tilcon property by a factor of 1.9 to 3 percent to determine the effect of the taking on the value of the entire tract. This methodology was flawed, however, because it was premised on the assumption that the highest and best use of the property was for continuation of Tilcon’s mining operation for the next ten to twenty years, when in fact, the highest and best use of the property was for residential development. Consequently, the appraiser’s determination that the property as a whole would suffer only a slight diminution in value after the taking because of the minimal effect that the contamination would have on mining activities rested on the improper conclusion that the mining operation would continue into the foreseeable future.

Tilcon’s analysis, which the trial court adopted in all essential respects, was equally flawed. Applying the comparable sales approach in the context of a modified version of the lot method of valuation, Tilcon first determined that the highest and best use of the property was for residential development and that the twenty-four acres subject to the statutory taking could be subdivided into fourteen lots. It then identified comparable subdivided properties of approximately twenty to twenty-six acres in size that had been sold within seventeen months of the statutory taking and adjusted their value by 5 to 10 percent to account for differences with the Tilcon property in location, access to utilities, subdivision approval and time. Tilcon finally determined that the twenty-four acres subject to the statutory taking could not be developed for the thirty-one year duration of the easements, and thus discounted the value of the property at a 10 percent rate of return for thirty-one years. This approach, however, suffered from the deficiencies described in *Robinson*, in which we agreed with the trial court that the plaintiffs’ evidence had been too speculative and stated that the lot method

of appraisal is admissible in condemnation cases involving unimproved raw land, but only if “the proponent offers credible evidence of the costs of subdivision— e.g., the expense of clearing and improving the land, surveying and dividing it into lots, advertising and selling, holding it, and paying taxes and interest until all lots are sold.” (Internal quotation marks omitted.) *Robinson v. Westport*, supra, 222 Conn. 408, quoting *United States v. 47.3096 Acres, Etc., In Oxford Township*, supra, 583 F.2d 271–72; but see *Pape v. Guadalupe-Blanco River Authority*, 48 S.W.3d 908, 915–16 (Tex. App. 2001) (“even though a tract of [raw, undeveloped] land is adaptable to subdivision for commercial or residential lots one seeking to prove the value of such a tract of land may not show what the price of the lots would be if subdivided, or show the price for which already subdivided lots [are] selling”).

In this case, as in *Robinson*, Tilcon’s appraiser failed to provide the court with sufficient evidence to compare the property in question with the six subdivided properties described in his report. For example, there was little or no evidence regarding the actual cost of subdividing and holding the property, including the cost of surveying and dividing the property into lots, advertising and marketing the property to potential buyers and paying the required taxes, interest and other carrying costs of the property until it could be sold. Moreover, Tilcon provided no timeline indicating how long it would take to obtain the necessary subdivision approval or to locate a suitable buyer, which could have a significant effect on the property’s value, depending on market conditions. In addition, the report described the comparable properties as “vacant,” thus implying that they were in a natural, undeveloped state, whereas the Tilcon property, having been the site of a mining operation for many years, will require regrading when Tilcon ceases its mining activities to restore the land to an approximation of its former condition. The property also will require the relocation of certain on-site roads that presently provide access to mining activities on the adjacent properties. Tilcon did not provide evidence of such costs to the court. Finally, although the appraisal adjusted the value of the comparable properties by a factor of 5 to 10 percent to account for differences with the Tilcon site in location, time of sale, access to utilities and subdivision approval, these adjustments did not provide sufficient information to make proper comparisons because they were far too general and speculative, particularly in the absence of any attempt to explain the underlying reasoning used in making the adjustments. Such information would have included, for example, the actual cost of subdivision approval, which could vary depending on the size and characteristics of the property in question and the nature and extent of modifications required to obtain local approval of the proposed subdivision plan. For

all of the foregoing reasons, we conclude that the trial court's determination as to the value of the property was too speculative and uncertain because it was not supported by sufficient evidence, and, therefore, the court's award of damages for the statutory taking was clearly erroneous. See *Pandolphe's Auto Parts, Inc. v. Manchester*, supra, 181 Conn. 220–22; see also *Robinson v. Westport*, supra, 222 Conn. 407–408. Accordingly, the case must be remanded for a rehearing on damages.

B

Because it may arise on remand, we next address the city's claim that the trial court's reassessment of damages on the basis of Tilcon's purported inability to market or to develop the property with single-family homes for thirty-one years also is clearly erroneous. See *Berry v. Loiseau*, 223 Conn. 786, 832, 614 A.2d 414 (1992) (claim may be addressed by reviewing court if likely to arise on remand for new hearing on damages). The city specifically claims that the vast majority of Tilcon's property was not contaminated and that, even if certain areas had been contaminated, Tilcon suffered no damages.¹⁵

Tilcon acknowledges that, because the property has access to city water, the contaminated groundwater alone does not preclude residential development, but contends that the trial court properly considered the stigma of contamination in determining that Tilcon suffered damages. We agree with Tilcon that the trial court properly considered the stigmatizing effect of the contaminated groundwater. We also agree with Tilcon that there was sufficient evidence in the record to support the trial court's conclusion that the property could not be put to its highest and best use as a residential subdivision for thirty-one years.

In its memorandum of decision, the trial court noted that Tilcon's appraiser had concluded that “the easements taken by [the city] to pollute and to maintain effective control of the land for thirty-one years [would] have a chilling effect on Tilcon to develop its land during this period of time and also the contamination [would have] a stigma effect for the duration of the life of the easements. As a consequence of the easements and the stigma, [Tilcon's appraiser] determined [that] Tilcon [would] not be able to develop [the] land as currently zoned for its highest and best use for the entire thirty-one years of the easements.”

It is generally acknowledged that “the existence of contamination may stigmatize [a] property, making it less attractive, even after full remediation.”¹⁶ 7A P. Nichols, *Eminent Domain* (3d Ed. Rev. 2007) § G13B.04 [1], p. G13B-75. This court, in particular, long has recognized the effect of stigma in significantly reducing the value of property taken by eminent domain. See *North-east Ct. Economic Alliance, Inc. v. ATC Partnership*,

supra, 256 Conn. 833–34 (“[i]t blinks at reality to say that a willing buyer would simply ignore the fact of contamination, and its attendant economic consequences, including [stigma to the property even after full remediation], in deciding how much to pay for the property”); *Northeastern Gas Transmission Co. v. Tersana Acres, Inc.*, 144 Conn. 509, 514–15, 134 A.2d 253 (1957) (general public belief in danger from proximity of gas transmission line properly considered by court in fixing market value of land after taking by temporary and permanent easements); see also *Bristol v. Milano*, 45 Conn. Sup. 605, 622, 732 A.2d 835 (1998) (prospective nature and extent of possible contamination of property and waters from adjacent landfill will create reasonable and well-founded public belief in health hazard and danger for duration of limited easements that must be taken into consideration in fixing market value of property).

According to Tilcon’s concept plan, which was drawn to conform with town regulations, the 184 acre site is capable of being divided into ninety-six lots. The access easements alone, however, which affect 10.7 acres, will have a direct impact on seven of the fourteen lots allegedly involved in the taking. These lots clearly cannot be developed for thirty-one years. Four of the lots burdened by the access easement and the remaining seven lots also are adjacent to or located within the two “zones of influence” and the monitoring well easement areas, which together comprise more than 14.3 acres. Activities permitted in the easement areas that are likely to contribute to a public perception of the entire 24.84 acres as a danger to public health include: the construction, installation and continued presence on the site of the monitoring wells and their associated pumps, hardware, piping and equipment; periodic visits by technicians to withdraw groundwater for testing; the release and deposit of contaminants and pollution directly or indirectly into or on the groundwater and subsurface soils and formations; the transportation of machinery and equipment over the property to collect data, extract water and conduct investigations and tests for the purpose of monitoring and treating the groundwater; and the pumping of water to remediate the contamination. The chilling and stigmatizing effect of the easements and permitted activities on future residential development cannot be underestimated. We therefore conclude that the trial court properly determined that the easements would preclude residential development of the 24.84 acres for thirty-one years because there would be no demand for housing on that portion of the site during those years.¹⁷ Accordingly, we reject the city’s claim that the trial court, in reassessing damages, improperly considered Tilcon’s purported inability to market or to develop the property with single-family homes for thirty-one years.

The city next claims that the trial court improperly concluded that it took 19.85 acres of adjacent land by inverse condemnation. In particular, the city claims that, because Tilcon never sought access to the contaminated groundwater for its mining operations and never intended to use the groundwater for residential development, no compensable property interest was taken. It also claims that Tilcon has provided no evidence that the property cannot be utilized for *any* reasonable or proper purpose. Tilcon responds that a de facto taking has occurred because mining activities on the property in 1997 were minimal and the stigma created by the contaminated groundwater has destroyed all reasonable and proper use of the property for residential development. We agree with the city that the contaminated groundwater did not constitute a taking by inverse condemnation.

In concluding that the city had taken 19.85 acres of Tilcon's land by inverse condemnation, the trial court found that a plume of contamination extending from the landfill had affected the groundwater in an area beyond that subject to the statutory taking. According to Tilcon, the contaminated area was capable of being subdivided into sixteen lots. The court noted the differing opinions of the parties and their consultants as to whether a "till ridge"¹⁸ blocked the flow of contaminated groundwater into a portion of the area, but found "the evidence of the till ridge to be inconclusive." The court therefore found that the groundwater under the entire 19.85 acres was contaminated by leachate from the landfill.¹⁹ The court concluded that, although the city had not acquired easements over this area, as it had over the area affected by the statutory taking, the contamination had created a stigma that substantially interfered with Tilcon's right to use the property for thirty-one years and markedly depreciated its value. The court determined, nonetheless, that the contamination alone, without the easements acquired in the statutory taking, "did not totally destroy the marketability of the lots," but, rather, that the stigma had reduced the value of the sixteen lots by one half.

Whether private property has been taken by inverse condemnation is a question of law subject to our plenary review. See *Textron, Inc. v. Wood*, 167 Conn. 334, 345, 355 A.2d 307 (1974). The trial court's conclusions must stand "unless they are legally or logically inconsistent with the facts found or unless they involve the application of some erroneous rule of law material to the case." *Id.*

"Inverse condemnation is a cause of action against a governmental defendant to recover the value of property which has been taken in fact by the governmental defendant, even though no formal exercise of the power of eminent domain has been attempted by the taking agency. . . . An inverse condemnation claim accrues

when the purpose of government regulation and its economic effect on the property owner render the regulation substantially equivalent to an eminent domain proceeding Accordingly, an inverse condemnation action has been aptly described as an eminent domain proceeding initiated by the property owner rather than the condemner.” (Citations omitted; internal quotation marks omitted.) *Cumberland Farms, Inc. v. Groton*, 262 Conn. 45, 73, 808 A.2d 1107 (2002).

“The word taken in article first, § 11 of our state constitution²⁰ means the exclusion of the owner from his private use and possession, and the assumption of the use and possession for the public purpose by the authority exercising the right of eminent domain. . . . Although property may be taken without any actual appropriation or physical intrusion . . . there is no taking in a constitutional sense unless the property cannot be utilized for any reasonable and proper purpose . . . as where the economic utilization of the land is, for all practical purposes, destroyed. . . . A constitutional taking occurs when there is a substantial interference with private property which destroys or nullifies its value or by which the owner’s right to its use or enjoyment is in a substantial degree abridged or destroyed.” (Citations omitted; internal quotation marks omitted.) *Tamm v. Burns*, 222 Conn. 280, 284, 610 A.2d 590 (1992).

We conclude in the present case that the trial court improperly determined that the city took the additional property by inverse condemnation because the contaminated groundwater did not substantially interfere with the present or future use of the property. The contamination had no effect on Tilcon’s access to the Reynolds and Norton properties or on its storage of mined materials. Insofar as Tilcon intended to market the property for residential development in the reasonably near future, it anticipated that any proposed development would be served by the public water system. In addition, there was no evidence that residential development would be physically restricted because of the contaminated groundwater. Even after the trial court found that the stigmatizing effect of the contamination would diminish the property’s value, it did not conclude that Tilcon’s right to use the property was substantially “‘abridged or destroyed.’” *Id.* Rather, the trial court found that the contamination “did not totally destroy the marketability of the lots.” The court’s opinion that the value of the lots had been reduced by only one half further suggests that it did not believe that the property could not be utilized “for *any* reasonable and proper purpose . . . as where the economic utilization of the land is, for all practical purposes, destroyed.” (Emphasis added; internal quotation marks omitted.) *Tamm v. Burns*, *supra*, 222 Conn. 284.

Tilcon argues that inverse condemnation can occur

even when property has not been appropriated to the extent that no value remains, and that “[e]njoyment and use of the entire property need not be completely destroyed for land to be deemed taken.” *Citino v. Redevelopment Agency*, 51 Conn. App. 262, 280, 721 A.2d 1197 (1998). Tilcon contends that all mining activities on the property had been completed by 1996 and that all “practical” uses of the land, including for residential development, were precluded by the plume of contaminated groundwater and the stigma it created. Tilcon thus maintains that it has lost all “‘reasonable and proper’” use of the property for residential development. We disagree.

Connecticut law on inverse condemnation requires total destruction of a property’s economic value or substantial destruction of an owner’s ability to use or enjoy the property. See *Tamm v. Burns*, supra, 222 Conn. 284; *Wright v. Shugrue*, 178 Conn. 710, 713–15, 425 A.2d 549 (1979) (taking of only means of access to first parcel constituted inverse condemnation, but partial taking of second parcel did not have similar result because property still could be used in natural state or for residential development). Although it may be difficult to determine in certain close cases whether the alleged infringement on property rights is sufficient to constitute the type of complete taking that inverse condemnation requires, this is not such a case. Tilcon was not deprived of all reasonable and proper use of the property because the groundwater had no effect on its present mining-related activities and Tilcon introduced no evidence that the property could not be marketed for residential development even if burdened by a stigma. Accordingly, we reject the trial court’s conclusion that the city took the property by inverse condemnation and its subsequent award of damages on that ground.²¹

IV

The city further claims that the trial court improperly found in favor of Tilcon on its permanent trespass claim. Specifically, the city claims that (1) Tilcon did not prove all elements of the claim, (2) the court’s reasoning was without factual or legal foundation, (3) neither the court nor Tilcon disputed the fact that the alleged pollution was only temporary and would be remediated and (4) the court failed to hold Tilcon to its burden of proving that it was damaged because of the alleged trespass. Tilcon responds that the contaminated groundwater constitutes a direct injury to its exclusive possessory interest in the property. Tilcon also maintains that there is no evidence that contamination of the site will be remediated after thirty-one years. We agree with the trial court that the contaminated groundwater constituted a trespass. We do not agree, however, with the court’s determination of damages.

In its memorandum of decision, the trial court summarily concluded that extension of the plume of con-

tamination under the same 19.85 acres involved in the inverse condemnation claim had damaged Tilcon's land and had depreciated its value, thus constituting a trespass. The trial court declared that, although a plaintiff normally is obligated to prove that the trespass is permanent, "the thirty-one years it is likely to take [the city] to remediate the contamination of the landfill is permanent enough." The court then stated that the measure of damages in a trespass action based on invasion of another's land is the diminution in value of the land that results from the invasion and that the damages in the present case would be the same as for the inverse condemnation, namely, \$201,760, or one half of the property's value. Nevertheless, the court did not make an actual award of damages on the trespass claim because it previously had awarded damages for the city's de facto taking of the same property by inverse condemnation.

Before we address the merits of this claim, we set forth the applicable standard of review. "[T]he scope of our appellate review depends upon the proper characterization of the rulings made by the trial court. To the extent that the trial court has made findings of fact, our review is limited to deciding whether such findings were clearly erroneous. When, however, the trial court draws conclusions of law, our review is plenary and we must decide whether its conclusions are legally and logically correct and find support in the facts that appear in the record." (Internal quotation marks omitted.) *Miller v. Westport*, 268 Conn. 207, 214, 842 A.2d 558 (2004). Whether the trial court properly concluded that the city trespassed on Tilcon's property is a question of law subject to our plenary review.

The city's first claim is that Tilcon failed to prove the essential elements of its trespass claim. We disagree. "The essentials of an action for trespass are: (1) ownership or possessory interest in land by the plaintiff; (2) invasion, intrusion or entry by the defendant affecting the plaintiff's exclusive possessory interest; (3) done intentionally; and (4) causing direct injury. *Avery v. Spicer*, 90 Conn. 576, 579, 98 A. 135 (1916); 75 Am. Jur. 2d, Trespass §§ 3, 8, 14, 25, 35 [1991]. The invasion, intrusion or entry must be physical. . . . [B]ecause it is the right of the owner in possession to exclusive possession that is protected by an action for trespass, it is generally held that the intrusion of the property be physical and accomplished by a tangible matter. Thus, in order to be liable for trespass, one must intentionally cause some substance or thing to enter upon another's land." (Citation omitted; internal quotation marks omitted.) *Abington Ltd. Partnership v. Talcott Mountain Science Center for Student Involvement, Inc.*, 43 Conn. Sup. 424, 427–28, 657 A.2d 732 (1994). A trespass may be committed on, beneath or above the "surface of the earth," which includes "soil, water, trees, and other growths" 1 Restatement (Sec-

ond), Torts, Trespass on Land § 159, comment (b), p. 281 (1965). “A trespass need not be inflicted directly on another’s realty, but may be committed by discharging foreign polluting matter at a point beyond the boundary of such realty.” 75 Am. Jur. 2d 45, supra, § 56.

We conclude that the trial court’s finding of trespass in the present case was legally and logically correct and was supported by the evidence. It is undisputed that Tilcon owned the subject property. The trial court also accepted the testimony of Tilcon’s expert witness that the contaminated groundwater had extended beyond the statutory taking to the additional 19.85 acres and had deprived Tilcon of unfettered use of that property because Tilcon would have to rely on the public water supply to support future residential development on the site. See footnote 17 of this opinion.

Regarding the element of intent, “[i]t is enough that an act is done with knowledge that it will, to a substantial certainty result in the entry of the foreign matter.” 1 Restatement (Second), supra, § 158, comment (i), p. 279; 75 Am. Jur. 2d 45, supra, § 55. In the absence of authoritative Connecticut case law on the meaning of intent in a trespass action, we turn for guidance to federal law. In *Scribner v. Summers*, 84 F.3d 554, 558 (2d Cir. 1996), the United States Court of Appeals for the Second Circuit considered whether the migration of toxic substances from the defendants’ property to the plaintiffs’ property constituted a trespass. The court stated that, in determining the existence of the requisite intent for trespass, the issue was not whether the defendants had intended the contaminated substances to enter the plaintiff’s land, but whether the defendants had intended the act that amounted to or produced the unlawful invasion and had good reason to know or expect that subterranean and other conditions would cause the contaminated substances to migrate from the defendants’ to the plaintiffs’ land. *Id.* The federal court distinguished cases in which the requisite intent was lacking on the ground that the defendants in those cases did not have good reason to know that invasion of the plaintiff’s property would occur because the contaminants had been enclosed in storage tanks or kept in place by a retaining wall through which they had leaked or seeped. *Id.*

Applying a similar standard in the present context, we conclude that the city had the requisite intent to satisfy a claim of trespass because it knew that it was placing toxic substances in the landfill and that the landfill, which was not enclosed by a protective barrier, was located uphill from Tilcon’s adjacent property. Consequently, the city had reason to know that leachate from the landfill might invade the groundwater and migrate downhill to off-site locations. In addition, the city was permitted under the terms of the consent order to release contaminants into the groundwater flowing

under property owned by Tilcon and taken by the easements. The city thus had reason to know that contaminants released during testing and remediation would travel to nearby locations, including Tilcon's adjoining land. Accordingly, the trial court properly concluded that the city was liable for the intrusion of contaminants onto Tilcon's property.

The city next claims that the trespass is not permanent and that Tilcon did not prove damages. As noted previously, the trial court awarded the same damages for the trespass and inverse condemnation claims because the contaminated groundwater created a stigma that substantially interfered with Tilcon's right to use the property for thirty-one years. We agree with the trial court that the trespass may be considered permanent because of the length of time it is expected to continue.

"The measure of damages to be awarded for an injury resulting from a trespass depends upon whether the injury is permanent or temporary A temporary injury is one which may be abated or discontinued at any time" (Internal quotation marks omitted.) *Robert v. Scarlata*, 96 Conn. App. 19, 24, 899 A.2d 666 (2006), quoting 75 Am. Jur. 2d 95-96, supra, § 127. "[W]here the trespass is temporary in character, only those damages may be recovered which have accrued up to the time of the commencement of the action, since it is not to be presumed that the trespass will continue." 75 Am. Jur. 2d 96, supra, § 128. "When injury to property resulting from a trespass is remedial by restoration or repair, it is considered to be temporary, and the measure of [f] damages is the cost of restoration and repair." *Id.*, § 129. "Where a trespass is of a permanent nature, all damages, past and prospective, are recoverable in one action" and "the measure of damages is the decrease in the fair market value of the property" *Id.*, § 128.

Although the consent agreement requires that the city take measures to remediate potential contamination of property beyond the landfill, the agreement also permits the city to release contaminants into the groundwater and subsurface rocks and formations beneath the property taken by the easements as part of its testing and remediation program for the next thirty-one years. Accordingly, because these contaminants may be expected to migrate to the adjoining 19.85 acres of Tilcon's land, the trespass will continue for the thirty-one year duration of the consent agreement. We therefore conclude that the trial court properly determined that the trespass will continue and is, for all intents and purposes, permanent in nature.

We also conclude that, because the trial court improperly assessed the value of Tilcon's land prior to the statutory taking, which is also the basis for the court's award of damages in the trespass action; see part II A

of this opinion; the judgment must be reversed in part and the trial court must hold a rehearing on damages.

The judgment on the application for review of the statement of compensation for the statutory taking is reversed as to the award of damages only; the judgment in the second action is reversed as to the finding of inverse condemnation and as to the award of damages for trespass, and the cases are remanded for a hearing in damages.

In this opinion the other justices concurred.

* The listing of justices reflects their seniority status on this court as of the date of oral argument.

¹ These appeals involve two corporations, namely, Tilcon, Inc., and Tilcon Minerals, Inc. The trial court and the parties, however, appear to treat these corporations as synonymous. Accordingly, all future references in this opinion to Tilcon are to both corporations.

² The city appealed to the Appellate Court from the judgments of the trial court in both cases and Tilcon cross appealed from the trial court's judgment in the second case. We subsequently transferred the appeals to this court pursuant to General Statutes § 51-199 (c) and Practice Book § 65-1.

³ In 1996, the Connecticut General Assembly enacted No. 96-12 of the 1996 Special Acts, which permitted municipalities to acquire or to condemn property rights outside their borders for the purpose of complying with consent orders issued by the state department of environmental protection.

⁴ General Statutes § 48-17b provides: "The state court rendering a judgment for the plaintiff in an inverse condemnation proceeding brought against the state by the owner of real property, or the Attorney General effecting a settlement of any such proceeding, shall determine and award or allow to such plaintiff, as a part of such judgment or settlement, such sum as will in the opinion of the court or the Attorney General reimburse such plaintiff for his reasonable costs, disbursements and expenses, including reasonable attorney, appraisal and engineering fees, actually incurred because of such proceeding."

⁵ The trial court calculated the measure of damages for each claim as \$201,760, but limited the damages award to \$201,760 for both the inverse condemnation and trespass claims because they involved the same 19.85 acres of land.

⁶ The city's consulting engineer, Fuss and O'Neill, Inc., described the property as approximately 184.8 acres in size. The appraiser for Tilcon, however, described the property as approximately 187.459 acres in size.

⁷ Lane testified that approximately 140,000 to 150,000 cubic yards of sand and gravel remained on the property at the time of the trial.

⁸ Lane specifically testified that two such properties had been sold to investors for the development of an industrial park and a residential subdivision, respectively.

⁹ In his written report, the city's appraiser stated that the highest and best use of the property was as a staging area for sand and gravel mining operations rather than as a residential subdivision because the property's marketability for residential development was limited by: (1) minimal demand for residential parcels over fifty acres in size; (2) ongoing mining operations at the rear of the site, which he projected would continue for ten to twenty years; and (3) the site's proximity to two closed landfills. In his appraisal report and testimony at trial, however, the city's appraiser stated that most of the Tilcon property already had been mined, there being only a small amount of mining activity in a portion of the site unaffected by the takings. He also conceded in his report that rezoning of the property for industrial use reasonably could not be expected to occur and concluded that the long-term highest and best use of the site could not be determined until the sand and gravel operation had ceased and the results of the landfill remediation efforts were better understood.

¹⁰ Tilcon's appraiser, in his report, concluded that the highest and best use of the property was for the development of single-family homes because: (1) the site was zoned for residential use; (2) the mining operation had ceased three to five years prior to the taking; (3) the storage of mined material and the access roads to the Norton and Reynolds properties could be relocated so as not to interfere with residential development; (4) Southington had experienced substantial development of high priced and high

quality single-family homes during the past twenty-five to thirty years and (5) the development of single-family homes would provide Tilcon with the greatest financial return on the land. At trial, Tilcon's appraiser also testified that it was highly unlikely that the property would be rezoned for another use. Lane further testified that maintenance of Tilcon's mining permits was required to mine the Norton and Reynolds properties and to regrade the Tilcon site upon completion of the mining operation and that the mining of the Norton and Reynolds properties was expected to be completed by August, 2004.

¹¹ Lane testified that, at the time of the taking, Tilcon intended to continue using the property to support its mining operations on the Norton and Reynolds properties and had no immediate plans to use the property for a single-family subdivision.

¹² The subdivisions ranged in size from ten to thirty-five lots. Subdivisions on five of the properties had received town approval prior to the sale. Subdivision approval was granted for the sixth property approximately one month following its sale.

¹³ The report noted that only eight of the forty-eight comparable properties were over fifty acres in size and that demand was concentrated in smaller parcels that involved less investment and reduced "development/holding period risk."

¹⁴ The trial court in *Robinson* had concluded that there did not exist "any reasonable probability the residential zone subject property would in fact be subdivided in the reasonably near future into any number of lots, whether [forty-seven] or less," because there would be time delays of up to one year to obtain various town and state permits, no traffic studies had been done, no drainage and detention basins had been approved, no subdivision layout approvals had been granted by the town or state, the appraiser's estimate of how long it would take to sell the lots was based on speculation and there appeared to be a lack of objectivity in the appraiser's analysis of comparable sales. *Robinson v. Westport*, supra, 222 Conn. 411-12. The trial court also had concluded that the estimate for legal fees was too low and that it served "no useful purpose to discuss taxes, insurance, surety bonds, interest on construction financing based on further assumptions, interest on purchase mortgage, sales expenses, and profit and risk, roads, accessway[s], sewer and water mains, broker's commissions, clearing and improving the land, taxes on unsold lots extending over 3 3/4 years minimum (based on [the appraiser's] estimate), but likely to be considerably longer in the court's judgment. The reason such discussion would not be useful is simply that it is based on speculation, conjecture and assumptions . . . [that have not been] quantified with reasonable exactitude and accuracy." (Internal quotation marks omitted.) *Id.*, 411. The trial court rejected the report prepared by the plaintiffs' second appraiser for similar reasons. *Id.*, 412.

¹⁵ Because Tilcon did not allege a continuing trespass beyond thirty-one years, we do not consider whether the damages award for the statutory taking should have included compensation for possible contamination of the property following expiration of the easements, as alleged by Tilcon in its permanent trespass claim. See part IV of this opinion.

¹⁶ The term "[s]igma" may be defined as "the reduction in value caused by contamination resulting from the increased risk associated with the contaminated property." 7A P. Nichols, *Eminent Domain* (3d Ed. Rev. 2007) § 13B.04 [1], p. 13B-75 n.6.

¹⁷ The report of Tilcon's appraiser stated in relevant part: "The highest and best use of the [property] is for development of single-family homes. The land . . . cannot be utilized for this purpose since no reasonable banker would lend the money to build single-family homes on top of a polluted site, no builder would reasonably build single-family homes on a polluted site since there would not be any buyers at any reasonable price that would subject themselves and their families to the risks inherent to living near or on polluted land. The public is generally well versed regarding environmental risks, and is well informed of some of the effects of an unsafe environment to themselves With the national attention given to unsafe environmental matters and their effects on health . . . no [responsible] person is going to expose themselves and their family knowingly to such dangers. . . . The illegal polluting of the ground by [the city] and the leachate that is currently under the site makes the usage of the land for development total[ly] fruitless. With a [thirty-one] year easement for purposes of monitoring and testing the land for the leachate there is currently no market for this land for development. The land cannot be used for . . . any other purposes except to remain fallow. Tilcon does not need this land for any

of its operations and it is used out of convenience versus need. . . . The highest and best use of the land . . . is to develop the land for single-family homes in accordance with the zoning requirements. This cannot be done for at least [thirty-one] years.” Although the report implies that the soil also was contaminated, Lane testified that contamination from the landfill was found only in the groundwater flowing under the property, which had been tested, rather than the soil, which had not been tested. Lane also testified that an important concern was the high concentration of volatile hydrocarbons discovered in the contaminated groundwater, which might result in methane gases collecting in the basements of prospective homes, thus limiting development to homes built on slabs. In addition, engineers had found levels of methane gas in areas near the property line in the explosive limit range. The court, however, found evidence of the presence of methane gas on the property inconclusive.

¹⁸ A till ridge is a subsurface ridge in the land that prevents leachate from migrating into the area beyond the ridge.

¹⁹ The court stated: “An employee of Fuss and O’Neill, Inc., the consulting engineers hired by [the city], testified that the plume of leachate extended over about four-fifths of nineteen acres of land in dispute in this court . . . and an employee of EA Engineering, Science, and Technology, Inc., consulting engineers hired by Tilcon, testified that the leachate flowed under the entire nineteen acres. The court believes the latter testimony and finds the leachate impacted nineteen acres of Tilcon’s land, or sixteen lots on Tilcon’s subdivision plan.”

²⁰ Article first, § 11, of the constitution of Connecticut provides: “The property of no person shall be taken for public use, without just compensation therefor.”

The fifth amendment to the United States constitution provides in relevant part: “[P]rivate property [shall not] be taken for public use, without just compensation.” The takings clause of the fifth amendment is applicable to the states through the due process clause of the fourteenth amendment. See, e.g., *Palazzolo v. Rhode Island*, 533 U.S. 606, 617, 121 S. Ct. 2448, 150 L. Ed. 2d 592 (2001); *Darien v. Estate of D’Addario*, 258 Conn. 663, 665 n.3, 784 A.2d 337 (2001).

²¹ We therefore need not reach: (1) the city’s claim that the trial court improperly determined that the date of the de facto taking by inverse condemnation was the same date as the statutory taking; and (2) Tilcon’s claim in its cross appeal that the trial court improperly failed to grant its request for reasonable attorney’s, appraisal and engineering fees pursuant to § 48-17b after the court found in its favor on the inverse condemnation claim.
