Journal of the

National Academy OF Forensic Engineers®

http://www.nafe.org
ISSN: 2379-3252

Vol. XVII No. 2 December 2000

Deposition & Court: Quotes That Altered the Engineering Case

by Michael Kravitz, P.E. (NAFE 451S)

Introduction

Previous speakers at NAFE seminars have discussed matters regarding testimony at depositions and court, how to approach various types of questions, and above all to be unbiased in our opinions even if the opinions are of limited or negative value to our clients. However, we have rarely referred to the importance at the reading of depositions, which in simple terms is just the reading of a transcript. However, in the reading of a transcript it is easy to overlook a short statement or a simple question that is only asked once and may occupy only a few lines in a transcript. This paper will deal with quotations from several depositions and a cross examination in court where the full facts of a case were not revealed to the expert.

The paper will first discuss a steel plate on a highway pavement where the engineer for the owner of the plate made a statement that opened the door to the engineering analysis that eventually cost the owner the case. The second case discussed, a slip and fall case on a grape in a supermarket, was selected because of the questions that were asked by the opposing attorney. The third case, water damage in a basement, was selected because of one short sentence spoken by the plaintiff in the case, where the plaintiff had been deposed on three different occasions resulting in over one thousand pages of testimony. Finally, the fourth case took place in the courtroom when the expert was being cross examined by an attorney. The expert was presented evidence that he had not been shown by his attorney client before coming to court. The evidence was obviously discoverable and in fact had been exchanged by both sides before the trial.

Case #1 – Steel Plate:

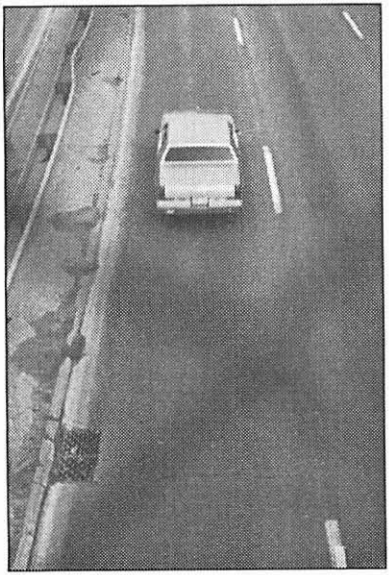
The history of this case is that a catch basin was in the process of being repaired. The casting and grate were removed and temporarily replaced with a steel plate of dimensions such that the plate overlapped the concrete pavement by approximately six inches (6") on three sides (excepting the curb side.) The catch basin was located in the passing lane of an Interstate highway with a speed limit of fifty miles per hour (50 MPH). The plate was approximately three-quarters of an inch (3/4") thick, five feet (5') long and three feet (3') wide,

Michael Kravitz, P.E., 484 West 43rd Street, Suite 32S, New York, NY 10036

where the long side was in the direction of traffic. The plate had two (2) stiffening bars, one along one longitudinal edge and one longitudinally in the middle. The plate was placed and cold patch asphalt was placed around the edges to "ramp" the vehicle tires on to the plate. The maintenance crew's routine was based on the assumption that the asphalt placed around the edges of the plate was enough to secure the plate. It was not. Witnesses heard the plate slapping on the concrete pavement. Police officers responded to the scene and they slid the heavy plate back over the catch basin several hours after the maintenance crew had first placed the plate. When the police officers' tour of duty ended for that day they attempted to report the loose plate to the maintenance department but no one responded. The police left the scene after placing the plate back over the catch basin. Several hours later there was an eleven vehicle pile up as a result of the plate moving from its position covering the catch basin at the curb to the middle lane of the Interstate. A tractor trailer had rolled over the corner of the plate causing the plate to flip up and puncture the trucks fuel tank with the resultant spilling of approximately ninety (90) gallons of fuel on to the surface of the roadway. Examination of a photograph of the plate showed that the corners were bent up. The roadway authority's defense was that they accused vandals of moving the heavy plate out into the middle lane of the roadway and further that they had insufficient "notice". The plate weighed approximately five hundred and forty-one pounds (541 Lbs.). The defense also stated that they gave orders to the maintenance crews that when the corners of the plates bend, they should not use them. When the writer was examining the various documents accumulated by the plaintiff attorney, he found a letter written by a professional engineer who worked for the authority that stated, **"These plate incidents happen every four of five years."** The statement was written is such a way that the engineer inferred that he could do nothing about the movement of the plate. More importantly was the fact that the engineers for the Authority had "constructive notice" of the event. Constructive notice as defined by Black's Law Dictionary states;

> Constructive notice is information or knowledge of a fact imputed by law to a person (although he may not actually have it), because he could have discovered the fact by proper diligence, and his situation was such as to cast upon him the duty of inquiring into it.[1]

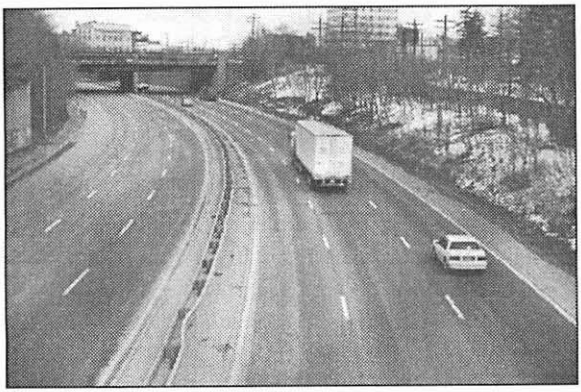
The writer was interested about the statement of the Authority's Engineer and wondered why none of the engineers at the Authority were curious enough to investigate why such plates moved and why they bent. When the writer was assigned to the case he analyzed the event on the thesis that the plate moved because of a spring action by the plate. It seemed apparent that the plate was bent because of the dynamic wheel loadings that had overloaded the steel plate

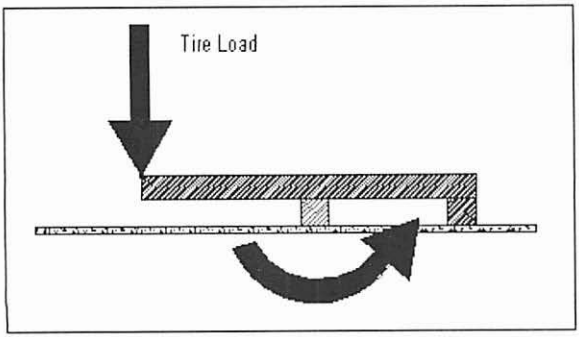


and brought it into the plastic range. The plate then flipped up to puncture the fuel tank of the tractor trailer truck because of the "tiddley-wink" effect of the tires striking the unsupported side of the plate.[2]

The photographs show where the catch basin was located in the left lane of the roadway. The second photograph shows the curve in the roadway ahead of the location of the catch basin. Because of the curvature of the roadway other vehicles then lost traction on the slippery fuel that had spread along the surface of the roadway.

The diagram shows the steel plate supported by the stiffening bars sitting on concrete pavement with the force of the tire acting on the unsupported end and rotating about the center stiffening bar.





The result of the engineering analysis and the fact that the defendants had notice disproved the defendant's claim that vandals dragged the steel plate out onto the middle lane of the Interstate. Therefore, the defendant's claim of insufficient notice was disproved and it was demonstrated that the defendants had actually created the defective condition that caused the accident and personal injury and property damage.

Case #2 – Slip on Grape:

The plaintiff while walking through the produce section of a supermarket slipped and fell on a grape that was on the floor at approximately noon on the day of the accident. The plaintiff incurred injuries and sued the supermarket store owners for damages. The defendant's position was that there was no "notice" given of the hazardous condition. The defendants also claimed that they took proper care of the floor by sweeping the floor on a regular basis. They stated that the produce aisle was swept at approximately 10:00 AM, 2:00 PM, and 4:00 PM daily, and as part of the entire store sweeping procedure the floors were swept between 9:00 AM and 4:00 PM daily, and again at approximately 5:00 PM daily. In addition, aisles were cleaned and items were picked up as needed twenty-four (24) hours per day. The defendant's position was that there was no "notice" of the event. During the deposition of the plaintiff by the defense attorney the following questions were asked and answered:

"Q. Had you been through produce departments before?

A. Certainly.

Q. Do you know that grapes sometimes are dropped by customers or otherwise fall on the floor in the produce department?

A. Probably I did, it probably happens.

Q. That's not a unique situation with this supermarket, is it?

A. I don't know, I don't, I don't take care of this supermarket's floor."

The defendant's attorney as quoted above had actually stated in his question that grapes sometime fall on the floor either by customers or otherwise. Therefore, it was fair and accurate to state that the defendant knew that customers do drop grapes and other items on the floor and that those items might fall to the floor at any time or at random. This established "notice" to the defendant. The randomness of fruit and vegetables dropping on the floor, and the assertion by defense counsel that the defendant knew that fruit and vegetables dropped to the floor, became plaintiff's basis to assert that the defendant should have placed appropriate mats on the floor even though they did sweep the floor on a regular basis. Because the defendant knew that items would fall to the floor on a random basis and that these items would cause a slippery condition to exist, they had "implied notice" of the cause of the accident. "Implied notice" as defined by Black's Law Dictionary states as follows:

> Implied Notice. Implied notice is one of the varieties of actual notice (not_constructive) and distinguished from "express" actual notice. It is notice inferred or imputed to a party by rea-

> son of his knowledge of facts or circumstances collateral to the main fact, of such a character as to put him upon inquiry, and which, if the inquiry were followed up with due diligence, would lead him definitely to the knowledge of the main fact. "Implied notice" is a presumption of fact, relating to what one can learn by reasonable inquiry, and arised from actual notice of circumstances, and not from constructive notice. Or as otherwise defined, implied notice may be said to exist where the fact in question lies open to the knowledge of the party, so that the exercise of reasonable observation and watchfulness would not fail to apprise him of it, although no one has told him of it in so many words.

In this case, it was the question that defense counsel asked in the deposition, not the answer by plaintiff that aided the plaintiff in the settlement of the case. The question pinpointed that the defendant had "actual notice" and "implied notice" of the condition.

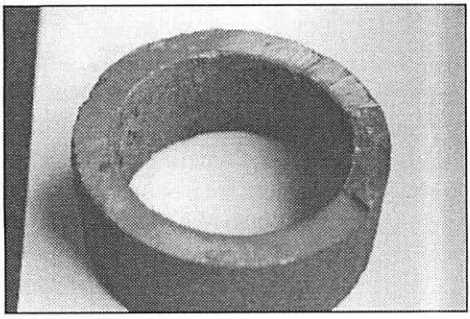
Case #3 – Water Damage:

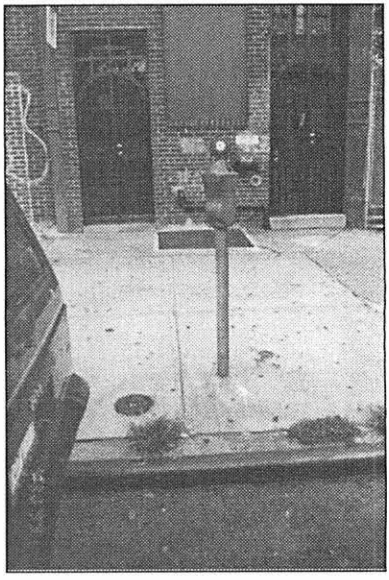
On August 19, 1991, the cellar of a two story building became filled with water. As a result of the inflow of water the plaintiff incurred a loss of equipment due to water damage. The plaintiff's claim was that the sidewalk and curb contractor that was installing a new sidewalk and curb in front of his building caused an exterior sprinkler pipe that feeds from the water main adjacent to the curb into the building to be broken. The plaintiff claimed that water was "gushing" into the basement from the sidewalk cellar vault doors. The damage occurred over a weekend when a major hurricane happened to strike the city. The sidewalk/curb contractor had worked on the Friday before that weekend. The flooded basement was noticed on the following Monday. There were several defendants involved in the case: A general contractor who had constructed a combined sewer line adjacent to the curb, the sidewalk/curb subcontractor, and the City that owned the sewer. Because the sidewalk/curb contractor was the closest to the event, all parties were attempting to place blame on him. The plaintiff was deposed on three separate occasions resulting in over one thousand pages of deposition. The plaintiff had retained an inspection firm soon after the event. The plaintiff's inspection firm stated the water level in the basement had reached a maximum level of two feet above the floor slab and that there were signs that water had entered from the sidewalk cellar vault doors. The writer was brought into the case approximately eight years after the event by the defense counsel for the sidewalk/curb contractor.

The first piece of evidence that was shown to the writer was a two inch (2") section of 4" diameter steel pipe that was cut from the sprinkler feed leading into

the building. The pipe was cut on both sides. On one side the cut was continuous which indicated that it was done with a pipe cutter in one continuous cut. The other side was not a continuous cut and at one section approximately one-eighth of the circumference was jagged which indicated that the pipe was probably snapped at that point. (See photograph.) The pipe showed no sign of fracture in bending, nor did it show any sign of fracture in shear. The next photograph showed the exterior of the building including the water valve within the sidewalk and the vault cellar doors flush with the sidewalk. It was claimed that water was gushing through the vault door. At the time of the event there was no sidewalk in place. The sidewalk was being constructed and that the subgrade was exposed.

There were four possible scenarios on how the water entered the cellar. The first was that the water pipe was caused to be broken. However, that would have allowed very large amounts of water to enter the cellar and probably would have filled the cellar beyond the two foot level that had been measured by the plaintiff's inspector. The second possibility was that because of the hurricane large volumes of water might have filled the sidewalk subgrade area in front of the building and then entered the cellar through the sidewalk cellar doors as indicated by the inspection firm. The third possibility was that the cellar floor slab was cracked by age or hydrostatic uplift and that ground water entered through the slab. Finally, the fourth possibility was that water entered through the sewer trap in the cellar floor. It should be noted at this point, that this section of the City had a combined sewer system. Storm water and sewerage are collected through the same pipe.





In the first deposition of the plaintiff the following questions were asked and answered;

"Q. How did the water leave the basement?

A. It drained out.

Q. How long did it take for it to drain out?

A. I don't remember."

This question and answer told us that the water was not pumped out. The water drained out by itself. This was an indication to the author that the major part of water had not entered through the sidewalk vault doors, although some water probably might have entered through the vault doors as indicated by the earth stains that were on the wall near the cellar vault doors. We also concluded that the sprinkler pipe was not the cause of the flooding since if the sprinkler pipe had broken then the water would have probably filled the entire cellar. The cellar slab could have been cracked and ground water certainly could have entered through the cracked slab because the hurricane probably contributed to the rise of the ground water table. The ground water table obtained from United States Geological Survey (USGS)[4] indicated the elevation of ground water in that area as approximately five feet (5') in this area of the city. In the end, we concluded that the most probable explanation of the infiltration of water was that the combined sewer had backed up due to the large volume of storm water and sewerage that then entered the cellar through the sewer trap as indicated by the diagram of a typical sewer connection.[5] The chart in the appendix of the paper showed the calculations at various pressures and the time it would have taken to fill

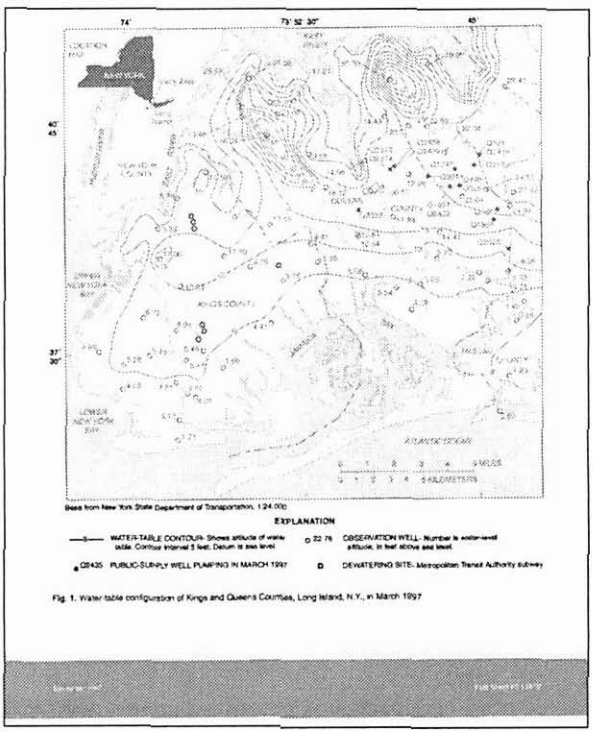


Fig. 1. Water table configuration of Kings and Queens Counties, Long Island, N.Y., in March 1997

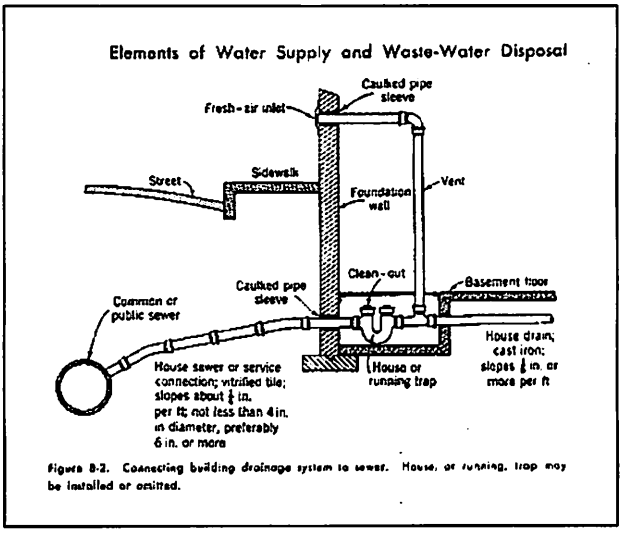


Figure 8-2. Connecting building drainage system to sewer. House, or running, trap may be installed or omitted.

the cellar floor to a level of two feet (2'). There was no explanation as to why the sprinkler pipe water might have stopped flowing after achieving a level of only two feet (2') above the floor.

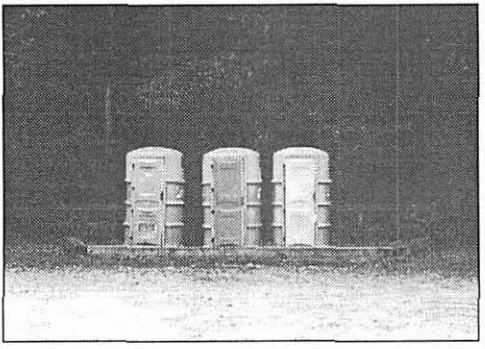
The National Oceanic and Atmospheric Administration (NOAA) Local Climatological Data showed the hourly rainfall from August 19, 1991, through August 21, 1991, as follows:

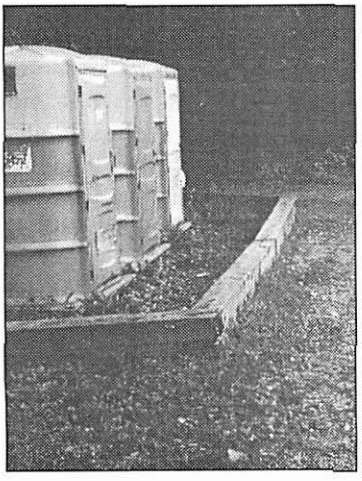
Date	Time	Rainfall-Inches
08-19-91	03:00	0.01
08-19-91	04:00	0.13
08-19-91	05:00	0.14
08-19-91	06:00	0.25
08-19-91	07:00	0.28
08-19-91	08:00	0.21
08-19-91	09:00	0.40
08-19-91	10:00	0.51
08-19-91	11:00	0.37
08-19-91	12:00	0.27
08-19-91	13:00	0.03
Total		2.60 Inches
08-20-91	14:00	0.03
08-20-91	15:00	0.15
08-20-91	16:00	1.84
08-20-91	17:00	0.78
Total		2.80 Inches

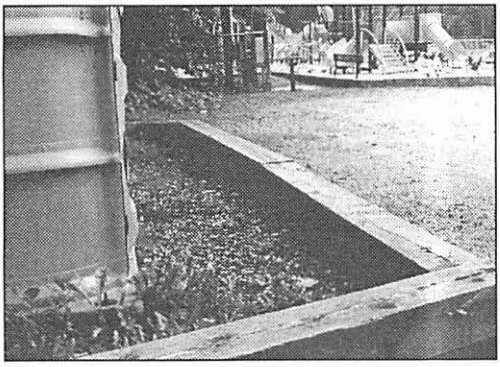
There was a total of two and six-tenths inches (2.6") of rain on August 19, 1991, that fell in ten (10) hours and a total of two and eight-tenths inches (2.8") of rain on August 20, 1991 that fell in three (3) hours. The Amount of rain on August 20, 1991, fell in a shorter period of time and probably accounted for greater flooding than on August 19, 1991. This volume of storm water would have caused a backup in the combined sewer system and in our opinion probably caused the flooding of the cellar. The volume of storm water deposited by the hurricane and which had entered the cellar through the sewer trap exited though the same sewer trap. This explanation of flooding could not have been made if the plaintiff had answered differently to the question, "How did the water leave the basement?". The case was settled and the costs of damages were reduced and shared.

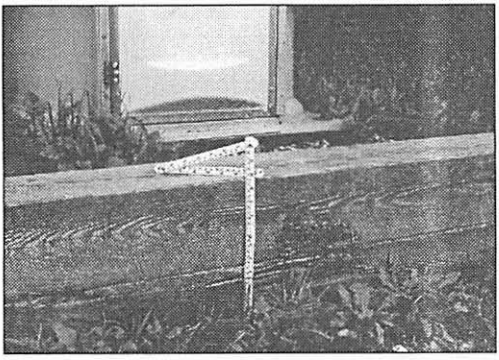
Case #4 – Trip and Fall:

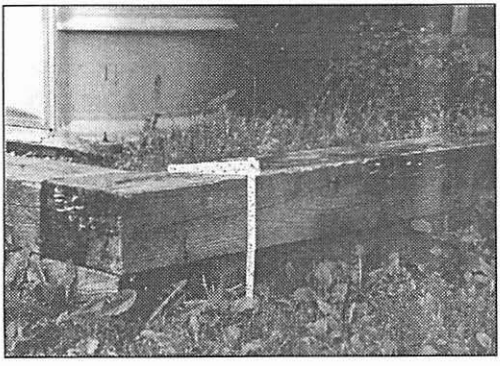
The defendant town had installed railroad ties around three (3) portable toilets in the town park because vandals had been driving their vehicles into the park and crashing into the toilets and knocking them over. The town installed railroad ties to act as a barrier to protect the portable toilets. The plaintiff tripped and fell while she attempted to step over the railroad ties that were surrounding the three (3) portable toilets. The plaintiff incurred injuries and entered suit against the town. The writer was retained on behalf of the plaintiff and reviewed five (5) color laser photographs of the configuration of the three (3) portable toilets, reviewed the deposition of the Director of Recreation for the town park and the deposition of the plaintiff. The writer was not authorized by the plaintiff's attorney to visit the site. The author reviewed regulations regarding amusement devices and temporary structures along with architectural standards and issued an opinion that the means of ingress and egress to and from the portable toilets was in violation of the standards. The defendant's position was that the means of ingress and egress was appropriate and safe. The photographs had been provided to us by the plaintiff's counsel. The first photograph showed the general area of the portable toilets.











The remaining photographs are closer views of the railroad ties surrounding the toilets. From all photographs supplied it was obvious that anyone who attempted to use the toilets would have to climb over the railroad ties. When the case went to trial the author on cross examination was presented by defense counsel with an additional photograph showing that the railroad ties did not go all the way around the toilets but left two (2) entrances and exits paths open and unobstructed next to the wooden boundary fence in back of the toilets. In addition, there was a light fixture and a sign. The photograph was a wider view of the area than which had been provided to us by the plaintiff's counsel. The plaintiff's attorney did not object to the defense's presentation of the photograph that clearly meant that the photograph had been exchanged but the plaintiff attorney had chosen not to give it to the expert. This was a gross mistake on the part of the plaintiff's attorney. On cross examination the writer had to admit that the pathway revealed in the photograph were adequate. The jury determined a verdict in favor of the defendant. In this case the writer's client, the plaintiff's attorney, had not provided all of the evidence to allow proper review of the case. Had the writer seen "the photograph" that the defense later brought to court, he would have arrived at a different opinion.

Conclusion

When reviewing depositions, read them thoroughly, including the questions. Strongly attempt to get all of the material from your client that pertains to the case. Sometimes clients may only give you the photographs they feel you need. Ask to see all of the photographs, including the photographs they think are unimportant. Inform your client of any negative opinions you may have. This will give him/her an opportunity to counter negative areas of the case.

References

1. "Small Steel Plates On Highway Pavement", by Michael Kravitz, P.E., Journal of the National Academy of Forensic Engineers, Volume VIII, Number 2, December 1991, page 95.
2. Black's Law Dictionary, Sixth Edition, West Publishing Company, St. Paul, Minnesota.
3. USGS, United State Geological Survey, 2045 Route 112, Bldg. 4, Coram, New York 11727, http://ny.usgs.gov, Fact Sheets, http://water.usgs.org, Earth Science Information.
4. Black's Law Dictionary, Ibid.
5. Elements of Water Supply and Waste-Water Disposal, Gordon Maskew Fair and John Charles Geyer, John Wiley & Sons, Inc., 4th printing, 1964, page 198, Figure 8-2.