that this is a commendable record considering the tens of thousands of feet of utility lines which have been undermined.

In addition, the BMSLCA does not afford any specific protections to utilities other than those which may qualify as public facilities under section 9.1 of the BMSLCA. The term "public buildings and facilities" was defined to mean those which are owned by a government agency, such as a sewer or water authority. A utility owned by a government agency is covered by §§ 89.141(d)(3) and 89.142a(c).

The Board agrees that the matter of who should bear the costs for taking precautionary measures should be primarily based on which party owns the right of support. When the mine operator owns the right of support, the owner's responsibilities may be limited to providing timely notice to the investor-owned utility operator of imminent mining beneath the utility line. By providing notice to the utility operator, the mine operator may have satisfied § 89.142a(g)(1) and minimized damage, destruction or disruption of utility services. When the investor-owned utility possesses the right to support, a mine operator must provide support and bear the costs associated with providing support. The Board does, however, find that the BMSLCA provides sufficient authority for the Department to intervene in situations which could result in an imminent hazard to human safety without regard to the property rights of either party.

The Board believes that it is appropriate to require a mine operator to take measures to minimize breakage of customer-owned gas and water service connections, since this matter goes more toward protecting coal field residents than investor-owned utilities. The connecting lines are by definition "permanently affixed appurtenant structures." An operator who damages them by subsidence is required to repair them or compensate for the damage.

The Board also believes that it is appropriate to describe acceptable utility protection measures in the regulations and to require subsidence control plans to include information that can be used to assess the potential hazards associated with undermining individual utilities which are located above underground mines. The Board also believes that it is appropriate to provide notification to utility companies whose utility lines may be affected by underground mining.

As a result of its findings, the Board has made several changes to the final-form regulations. Section 89.141(d)(11) is revised to require additional information regarding the nature, use and construction of utilities. Section 89.142a(g) has been revised to restate the Federal regulation in 30 CFR 817.180 and to describe the measures a mine operator may use to minimize damage, destruction or disruption in services provided by a utility. Section 89.155 is revised to require notification of utility owners by certified mail.

Protecting perennial streams

Three comments were submitted in regard to § 89.142a(h) relating to perennial stream protection. This subsection was relocated under this rulemaking but was otherwise left unchanged.

Two commentators expressed concern that the existing requirements for protecting perennial streams were inadequate. The commentators suggested revising the subsection to requiring more intensive sampling and flow measurement. The Board made no change in response to this recommendation. The Board believes that the current regulation in combination with the Department's technical guidance on perennial stream protection (TGD 563-2000-655) provides sufficient protection for perennial streams located above and adjacent to underground mines. Since implementing the guidance in January 1994, the Department has not encountered any situations when perennial streams have been adversely affected by diminution due to underground mining. The Board notes that the subsection applies only to larger streams which flow continuously throughout the calendar year, and that there are interests who believe that its application should be expanded to include smaller streams.

One commentator believed that the subsection on perennial stream protection was in conflict with § 86.102 which prohibits mining within 100 feet (30.48 meters) of a perennial stream. The Board notes that § 86.102(12) provides for the distance between mining and perennial stream to be measured horizontally and not vertically. Section 86.102 pertains only to activities conducted at the land surface.

Prevention of hazards to human safety

Seven comments were received regarding proposed § 89.142a(i) relating to prevention of hazards to human safety.

Three commentators recommended revising subsection (i)(1) to more clearly track the Federal regulation in 30 CFR 817.121(f). Two of these commentators recommended deleting the language referring to the undermining of perennial streams, industrial and commercial buildings, solid waste facilities and hazardous waste facilities. These same two commentators also asserted that there should be no presumed need to suspend mining beneath all commercial structures.

After considering these comments, the Board made several changes to the language of the proposed rulemaking. Paragraph (1) has been modified to clarify that restrictions do not apply unless the Department first determines that there is an imminent hazard to human safety. The list in paragraph (1) remains largely unchanged because it tracks the Federal requirement in 30 CFR 817.121(f) except for its reference to solid and hazardous waste disposal facilities. The Board has decided to retain the reference to solid and hazardous waste disposal facilities but has added language to clarify that considerations will generally focus on those facilities which are lined. Lined facilities are designed to contain contaminants and it is important for the Department to consider the effects of leakage resulting from subsidence damage. Although subsidence to unlined waste disposal facilities is unlikely to cause an imminent hazard, the provisions of subsection (i)(2) will allow the Department to restrict mining beneath an unlined facility if an imminent hazard is identified.

One commentator questioned how perennial streams would pose an imminent hazard to human safety. The Board believes that there could be situations wherein the undermining of a large stream in a populated area would endanger persons residing in the vicinity of the stream. In these situations, subsidence could cause flooding by altering the profile of the stream.

One commentator recommended revising § 89.142a(i)(2) to include an imminent hazard to an individual as opposed to an entire community. The Board believes that § 89.142a(i) applies to situations when there is an imminent hazard to an individual.

Two commentators recommended revising § 89.142a(i)(2) to track the language of section 9.1 of the BMSLCA and to substitute the word "hazard" for the word "danger." The Board has revised § 89.142a(i)(2) to track the lan-

guage of section 9.1 of the BMSLCA. This change involved incorporating the word "hazard" in place of "danger."

IRRC recommended revising § 89.142a(i) to add the undermining of utilities to the list of conditions which could result in imminent hazards to human safety. The Board accepted this recommendation but opted to incorporate it in § 89.142a(g) which is specific to the undermining of utilities. The Board believes that this approach focuses more attention on the matter.

Procedure for resolution of subsidence damage claims

Seven comments were received regarding proposed § 89.143a.

One commentator pointed out that the Federal regulations require prompt actions by the mine operator and regulatory authority while § 89.143a does not provide for the Department to become involved until 6 months after the claim is filed. The commentator also pointed out that in the worst-case scenario, damage repairs could be postponed for up to 21.5 months. The commentator further noted that under the Federal program the bond must be increased if subsidence damage is not repaired or compensated within 90 days.

The Board acknowledges the commentator's concern, but finds that the BMSLCA does not provide for the Department to intervene in subsidence damage claims for 6 months. The Board does, however, note that the Department has taken steps to encourage landowners to report subsidence damage to the Department as soon as the damage is discovered. This will enable the Department to obtain the facts surrounding the case early in the process. It will reduce the time needed for investigations following the 6-month negotiation period.

The Board also notes that the BMSLCA provides for an escrow program rather than relying on bonding to ensure the satisfaction of subsidence damage claims. An operator is required to deposit sufficient escrow to guarantee satisfaction of the claim to perfect his appeal of a Department order to repair or compensate for subsidence damage. The amount of escrow is established in the Department's order and is payable directly to the landowner if the operator does not prevail in its appeal.

One commentator recommended revising subsection (c) to require the Department to forward any claims it receives from structure owners to the mine operator. The Board agrees that that this is a reasonable request and has revised § 89.143a(c) to require the Department to forward claims to the mine operator.

One commentator recommended that § 89.143a be revised to require the Department to issue an order in the when it does not find a mine operator responsible for causing subsidence damage. The commentator believes that this provision is necessary to ensure that a structure owner can protect his rights by filing an appeal.

The Board does not agree that it is necessary to insert a provision of this nature in § 89.143a. The Department's standard practice is to notify all concerned parties of the results of its findings in regard to a subsidence damage claim. The notification includes the right of a landowner to appeal the Department's determination.

One commentator thought that § 89.143a should be revised to require an affected structure owner to notify the Department as well as the mine operator upon discovering subsidence damage.

The Board did not adopt this recommendation. While the Board believes it is beneficial for the Department to be notified early in the process, it does not wish to imply that this action is mandatory. A requirement of this nature could be interpreted as requiring a structure owner to notify both the Department and the mine operator to perfect his claim.

One commentator expressed general dissatisfaction with the basic provisions of § 89.143a. The Board acknowledges the commentator's concerns, but finds that § 89.143a is in keeping with the BMSLCA.

Relief from responsibility to repair or compensate for subsidence damage

Numerous comments were submitted in regard to § 89.144a relating to the conditions under which a mine operator may be relieved of repairing or compensating for subsidence damage.

Three commentators, including IRRC, recommended revising § 89.144a to include a list of landowners' rights under sections 5.4—5.6 of the BMSLCA. The commentators believe that this listing is necessary to ensure that a landowner can refer to his rights by reading the regulations rather than the statute.

The Board did not adopt this recommendation for the reasons stated with regard to comments on premining surveys. The Board believes that the best way to apprise landowners of their rights is for the Department to prepare and distribute fact sheets and information circulars relating to specific items of concern.

Two commentators noted that § 89.144a appears to be less effective than the Federal program by relieving a mine operator of the responsibility to repair or compensate for structural damage in the case where the operator is denied access to conduct a premining or postmining survey. The commentators note that the effect of denial in the Federal program is simply loss of the rebuttable presumption.

The Board acknowledges this difference between programs, but finds that the effects of denial of access are clearly specified in the BMSLCA. The Board observes, however, that even the OSM may have difficulty enforcing orders to repair subsidence damage when the rebuttable presumption does not apply and there is no premining survey data available to support the claim.

Three commentators expressed concern about the provision that relieves a mine operator of responsibility when a landowner fails to file a claim within 2 years of the date on which damage occurred. One commentator felt that this provision is contrary to requirements of the Federal program. Another believed that this provision could result in releasing an operator of liability for subsequent damage resulting from future subsidence. The third commentator observed that, based on statutory construction, the 2-year limit only pertains to the right to a Department investigation, not to release of liability to repair damage.

In reviewing this matter, the Board has found that the third commentator is correct in asserting that the 2-year limit only pertains to a structure owner's right to a Department investigation of his subsidence damage claim. It does not relieve an operator of the responsibility to repair or compensate for the subsidence damage. Accordingly, the Board has deleted the 2-year reporting limit from the list of conditions under which an operator may be relieved of the responsibility to repair or compensate

for subsidence damage. This change also addresses the concerns of the other commentators.

One commentator indicated that the provision for voluntary agreements in § 89.144a could render the Commonwealth's program less effective than the Federal program. The commentator also recommended that the Department should be required to review all voluntary agreements and claims settled in accordance with voluntary agreements.

The Board finds that the BMSLCA clearly provides for the use of voluntary agreements in settling structure damage claims. The Board also believes that it is inappropriate for the Department to become involved in the resolution of claims involving voluntary agreements unless specifically asked to do so by the landowner.

One commentator felt that the 10-day period for granting access to conduct a premining survey was too limiting. The commentator also recommended adding a right of cure for situations where access is not granted because a landowner is out of the country or legally incompetent.

The Board finds that the 10-day period for granting access is clearly stated in the BMSLCA. The Board also believes that a right of cure will be unnecessary in most cases because the notice of the intent to conduct a survey must actually be served upon the landowner. If the landowner is out of the country and does not physically receive the notice, the 10-day period does not begin. The 10-day period does not begin until the landowner receives the notice.

One commentator recommended that § 89.144a should be revised to clarify that the relief from responsibility to repair or compensate for subsidence damage is only applicable to mining that occurs after August 21, 1994.

The Board believes it is unnecessary to incorporate this qualification in § 89.144a. The performance standard in § 89.142a(f) clarifies that a mine operator is only responsible to repair or compensate for damage which results from underground mining on or after August 21, 1994.

One commentator noted that the term "operator" should be inserted following the word "thereafter" in § 89.144a(a)(1). The Board has incorporated this revision in the final-form regulation.

Premining water supply surveys

Six comments were received regarding requirements for water supply surveys in proposed § 89.145a(a).

Several commentators questioned the basis for the 1,000-foot (304.80-meter) distance used for determining the timing of surveys. Two commentators indicated that they were aware of situations when water supplies were impacted at greater distances.

The Board has adopted the 1,000-foot criterion based on the Department's recommendation. According to the Department's experience, 1,000 feet is sufficiently conservative to serve as a default parameter for most operating mines. The Department notes that the 1,000-foot distance extends approximately 240 feet (73.15 meters) beyond the rebuttable presumption area for this Commonwealth's deepest mines. The Department acknowledges that mining related effects can extend to distances greater than 1,000 feet, but notes that most cases of this nature are due to peculiar geologic conditions such as fracture zones. The Board also notes that the regulation provides for Department technical staff to adjust this distance based on site-specific conditions.

One commentator questioned if a mine operator was obligated to pay the cost for a premining survey. The Board affirms that this is what the regulation requires.

One commentator also thought that mine operators might limit data collection to supplies which are located within the rebuttable presumption area. The Board notes that the regulation establishes a default distance of 1,000 feet for collecting premining survey data. This will extend beyond the rebuttable presumption area for all Commonwealth mines which are currently in operation.

One commentator questioned what a landowner could do if he disagreed with the results of the premining survey. The Board believes that a landowner would have several options if the landowner disagreed with the survey results. The landowner could arrange to have a certified laboratory conduct an independent survey at the landowner's expense. The landowner could also ask the Department to review the results of the mine operator's survey and conduct additional testing, if necessary.

One commentator recommended revising premining survey requirements to include 1 year of premining data collection. The commentator also thought that operators should be required to submit precipitation data.

While the Board agrees that a full year of sampling would provide a well-founded basis against which to measure impacts, it does not agree that this extensive testing is warranted. In the Department's surface mining program, water supply replacement provisions have been adequately enforced using two background samples and one quantity measurement. It is unnecessary to require operators to provide precipitation data because the Department has access to precipitation data for the entire State.

One commentator questioned the basis for selecting the premining survey parameters given that they represent only a portion of the regulated drinking water parameters.

The Board has adopted the prescribed series of parameters because they are reflective of mining-related impacts. Bacteriological testing has also been added because bacterial contamination is often found in rural areas with wells and septic systems.

One commentator recommended that water supply surveys limit data collection to that which can be readily obtained. The commentator noted that landowners sometimes object to having their wells opened to allow pump tests and water level measurements.

The Board has revised § 89.145a(a) to provide for the collection of information which can be collected without extraordinary efforts or the expenditure of excessive sums of money. The provision is also incorporated in the amendments to the Department's surface mining program published in the *Pennsylvania Bulletin* on May 7, 1998.

Water supply replacement

Numerous comments were received regarding proposed § 89.145a(b)—(f) which relates to the replacement of water supplies that are contaminated, diminished or interrupted by underground mining.

One commentator observed that the Commonwealth's regulations require water supplies to be replaced to quantity and quality needed to satisfy the current and reasonably foreseeable needs of the water user. The

Federal regulations require water supplies to be restored to the quality and quantity of the premining water supply.

The Board acknowledges that there is a difference between State and Federal standards in this regard. The guidelines for replacement, however, are clearly specified in the BMSLCA. In most cases, the Board does not believe that there will be a noticeable difference between a replacement supply meeting the Federal standards and a replacement supply meeting the State standards.

One commentator questioned whether a mine operator would be obligated to replace a water supply located outside the rebuttable presumption area.

The Board notes that § 89.145a(b) clearly provides for the replacement of all water supplies which are contaminated, diminished or interrupted as a consequence of underground mining activities conducted on or after August 21, 1994. This provision applies regardless of whether the affected water supply is inside or outside the rebuttable presumption area.

Several commentators objected to the use of voluntary agreements as a means of resolving water supply problems. The commentators noted that all affected properties must be left with a useable source of water under the Federal program.

The Board acknowledges that there is a difference between State and Federal programs in this regard. However, the use of voluntary agreements is clearly provided for in the BMSLCA. Given the potential need to purchase a property for its fair market value prior to mining, the Board believes that there is sufficient incentive for operators to pursue replacement of water supplies rather than compensate landowners. The Board also notes that the BMSLCA allows the landowner to opt for compensation in lieu of water supply replacement if he chooses.

One commentator noted that the Federal regulations require prompt replacement of water supplies whereas the Commonwealth's regulations seem to allow permanent replacement to be delayed for up to 3 years. The Board acknowledges that according to the BMSLCA, an operator has up to 3 years to resolve a water supply replacement claim. However, this provision allows time for the water supply to recover on its own. The technical literature indicates that many water supplies may recover within 3 years of the impact.

One commentator questioned when a water supply has to be in place to qualify for replacement under § 89.145a(b). The Board interprets § 89.145a to apply to all water supplies that are in place at the time underground mining occurs, if mining occurs after August 21, 1994.

Several commentators expressed concern that an operator did not have to provide temporary water if a water supply was impacted outside the rebuttable presumption area or if a landowner or water user had another available source of water. One commentator asked if carrying water from a spring would constitute an available alternate source of water.

The Board acknowledges that § 89.145a(e) only requires temporary water when the affected water supply is within the rebuttable presumption area and the landowner or water user is without an alternate source of water. The Board notes, however, that the Department has authority to issue orders requiring temporary water in cases where it determines that mining outside the rebuttable presumption area is responsible for impacting a water supply. The Board views a readily available alternate source of water as one which can be quickly connected to deliver water to the point of use. The Board also notes that a temporary water supply must meet the same quality standard as a permanently installed replacement water supply and must provide a sufficient amount of water to satisfy the water user's current needs.

One commentator recommended that the regulation be revised to incorporate a definition for the term "diminution." The Board does not believe the term "diminution" needs to be defined. The diminution of a water supply is best determined on a case-by-case basis considering the premining performance of the water supply and the water user's needs.

Several commentators objected to allowing even a de minimis cost increase to go uncompensated. The Board notes that the concept of compensating for the increased operation and maintenance costs of replacement water supplies has been established through case law on surface coal mining. The BMSLCA uses the same statutory language as the Federal SMCRA. It is therefore appropriate to incorporate this concept in water supply replacement regulations.

One commentator objected to allowing mine operators to satisfy their water supply replacement liability by connecting an affected water user to a public water supply system. The commentator felt that water supplies should be replaced in kind. The Board does not agree with this recommendation. A connection to a public water supply system is a reasonable means of replacement if the public water system can satisfy the water user's existing and reasonably foreseeable needs and is adequate for the purposes served.

One commentator felt that a mine operator should not be required to compensate for the increased costs of public water service because of the inherent benefit to the landowner or water user. The Board does not agree with this assertion. Case law provides that compensation is necessary for any increased water supply costs which are greater than de minimis.

One commentator felt that the chlorine in a public water supply system would sicken dairy cattle based on his own experience. The Board has been unable to substantiate this assertion. Communication with animal science experts at the Pennsylvania State University indicate that there should be no adverse long-term effects on cattle.

Two commentators, including IRRC, recommended adding a special criterion to address the water quantity needs of agricultural water users. The commentators believe that many agricultural operations will have to expand in size and increase their water use to remain competitive. The Board has added a criterion to § 89.145a(f)(3) to address this concern.

One commentator noted that the Commonwealth's regulations do not require additional bond to cover water supply replacement like the Federal program. The Board acknowledges this point. The BMSLCA does not authorize requiring a bond to cover water supply replacement. The Board notes, however, that the BMSLCA gives the Department broad authority to issue orders requiring the replacement of affected water supplies and to impose penalties for failure to comply with those orders.