RESPONSE TO PUBLIC COMMENT

From January 14, 2003 to February 12, 2003 the United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MA DEP) solicited Public Comments on a draft NPDES permit, for Specialty Minerals Incorporated (SMI), North Adams, Massachusetts. After a review of the comments received, EPA has made a final decision to issue the permit authorizing the discharge. The following response to comment describes the changes and briefly describes and responds to the comments on the draft permit. A copy of the final permit may be obtained by writing or calling Betsy Davis, United States Environmental Protection Agency, 1 Congress Street, Suite 1100 (CMA), Boston, Massachusetts 02114-2023; Telephone (617) 918-1576.

**A) Comments submitted by Dick Schlesinger on January 27, 2003**

Comment #1: Fact Sheet – I don't have figure 1, but if I understand the descriptions, outfall 001A is the
process wastewater and outfall 001B is a combination of non-contact cooling water, quarry water, and stormwater. However, on page 5 in the "current SMI discharge temperature" equation, the 001A temperature is 10 degrees warmer than the 001B. I would have expected the outfall with the non-contact cooling water to be the warmer of the two, except perhaps during storms. My initial thinking was that, since 001B was a combined flow including stormwater, it would be less than the permit limit during dry (and thus low flow) periods, and thus have less potential impact on the river. If the process water is the warmer of the two, such would not be the case. Also, if the temperatures for the outfalls were reversed, the combined temperature would increase slightly as 001B has the higher flow (assuming the flows were not reversed). Might be worth checking.

Response: A recent letter from Jeff Carleton confirms that outfall 001A is process wastewater and
outfall 001B is non-contact cooling water, quarry water and storm water. The temperature data submitted to EPA, from the permittee, indicates that the process wastewater is warmer than the combined discharge of 001B.

Comment #2: Page 4. Existing conditions. I have to quibble slightly with your statement as to the
highest short term upstream temperature from the 1999 data. I looked especially at the data stating on 7/29 through 8/13. During this period, the recorded flow at the Adams gauge was 13 cfs on the first 3 days, then 11 or 12 for the next 12 and 10 on the last before rising to 24 on 8/6. I plotted the 3 term (3 hour) running average for the data (see graphs below), and the data points were above 81 for 7/30, 7/31, and 8/1. The hourly data for 7/30 is below. Note that the "above SMI" and "below SMI" refers to the previous SMI discharge location, not the end of the canal currently being used.

On 7/30/99 with a flow of 13 cfs at the Adams gage, we recorded the following temperatures:

Lime St.

| Time | Below riprap | Above SMI | Below SMI |
|---|---|---|---|
| 2 pm | 80.99 | 78.17 | 81.88 |
| 3 pm | 82.93 | 80.06 | 82.86 |
| 4 pm | 83.59 | 81.02 | 83.19 |
| 5 pm | 83.26 | 81.66 | 83.19 |
| 6 pm | 81.31 | 81.34 | 82.86 |

This is the worst case from our data but does show one 3 hour period averaging 83 degrees at Lime St.

Although I am quibbling with your statement, the fact that some cooling occurs between Lime St. and the "above SMI" location allows your conclusions as to the downstream SMI temperatures to likely be fairly close. Our data in 1999 at the old SMI discharge point would indicate one period of 83 degrees, and our 2000 data from the canal showed about a 4 degree average cooling through passage down the canal and prior to mixing with the river. Also, the 3 hour averages for the other days during this low flow period are below 79 degrees at all three locations.

I also ran the various calculations to determine the allowable temperatures, just as a check of the computations, and they came out as advertised in the permit. I'm not a fisheries biologist and thus can not speak for the trout, but as long as the fisheries folks are comfortable with the 3 hour/79 degrees upper limit, the temperature limits appear to be appropriate.

**B). Comments submitted by Berkshire Regional Planning Commission on February 6, 2003.**

Comment #3: The water temperature of the discharge is one of the key items in this draft permit with a number of important considerations. The current designation of the Hoosic River at SMI's discharge point as a warm water fishery effectively requires the impact from the temperature of the SMI discharge to be no greater than 83° to the river. According to the calculations presented in the draft permit that target is met with a maximum SMI discharge volume of 5 mgd at a maximum discharge temperature of 84.7°. This scenario, while it does allow a minimum increase in flow, essentially maintains the status quo. With these conditions, SMI is allowed to minimally increase its discharge volume, and by using the open ditch canal currently being used, is generally able to meet that temperature requirement. While the resulting worse case instream temperature to the river is higher than is optimal for the survival of trout (82° vs. 79°,) the trout do seem to survive at the current level as evidenced by their current presence in the river. This scenario does not address SMI's request to substantially increase its discharge volume nor result in a net environmental improvement. The draft permit does not and should reference the current use of the open canal, or other passive cooling measure, as an acceptable discharge location and low-tech method to achieve temperature reduction. This is an extremely useful temperature reduction method. Without this being recognized in the permit as being legitimate there is the potential that SMI could not be allowed to use this method. This could result in greater treatment costs to meet the 84.7° maximum temperature.

Recommendation

The draft permit should reference the current use of the open canal, or other passive cooling measure, as an acceptable discharge location and low-tech method to achieve temperature reduction. This is an extremely useful temperature reduction method.

Response: At the request of SMI, the final permit specifies that the discharge location can be at

the end of the canal or approximately one mile upstream of the canal discharge. EPA and MA DEP agree that passive cooling contributes to lower discharge temperatures. However, the facility may choose to discharge upstream of the end of the canal, but must be able to comply with the temperature limits without the benefit of passive cooling.

Comment #4: The draft permit outlines two scenarios: one at a maximum 5mgd discharge at a maximum of 84.7°; the second scenario at a 6mgd discharge at 81.5°, provided the flood control chute restoration project occurs and provides a 4° temperature reduction.

This draft NPDES permit essentially ignores or negates what was originally proposed as an innovative Watershed-Based "Pollutant Trading" Initiative. Through the original proposal SMI would have been required to participate in efforts to reduce instream temperature impacts from non-point sources within the watershed. Specifically SMI would have been required to place money in an escrow account for funding or contribute in-kind services to the so-called Ecosystem Restoration Project, restoration of the flood control chutes in Adams. The goal of the restoration of the flood control chutes was to reduce the water temperature as it left the chutes. In return, and as part of the "pollutant trade" SMI would have been allowed to discharge at a slightly higher temperature than they would have had the flood control restoration not occurred. The net overall result was to have been an overall lower water temperature of the Hoosic River, an enhanced river as it passes through downtown Adams, and overall lower water treatment costs to SMI.

Tt best, the draft permit is silent about the original concept: allowing a slightly higher SMI discharge temperature provided that SMI participate in the flood control restoration project and a temperature reduction is realized from the effort. The 84.7° degree draft permit maximum at 5mgd (essentially current flow volumes) is based on existing conditions and does not factor in the potential temperature reduction from the flood control chute restoration.

At worst, this permit creates a dis-incentive for SMI to participate in the flood control restoration effort. Instead of SMI's allowed discharge temperature to be higher with a successful flood control restoration it would, especially at the higher discharge volume of 6 mgd, be significantly lower. This would likely increase SMI's water treatment costs and create a disincentive for SMI to participate in the restoration effort either through a cash match or in kind services. The Town of Adams still has some approvals related to the flood control restoration project. There is a risk that the town would not enter into those approvals if the restoration project contributed to higher water treatment costs to SMI, a large and important employer in the Town.

It is disappointing that the concept of watershed – wide pollution trading could not have been incorporated into this permit. Not incorporating this concept jeopardizes a potential widespread restoration effort that arguably would have a greater and broader benefit to Hoosic River. Not including this concept also appears to be contrary to the intent of a relatively new EPA policy statement "Watershed-Based NPDES

Permitting Policy Statement. That policy states: "EPA will build on the existing NPDES Watershed Strategy and previous activities to actively promote and support watershed-based NPDES permitting. Further, EPA will work to provide greater incentives and mechanisms necessary to undertake a more wholistic and integrated approach to assessing water quality conditions, identifying and quantifying pollutant sources, developing and implementing efficient control practices, and working with stakeholders to the extent authorized by the Clean Water Act and implementing regulations. EPA will educate stakeholders about the benefits of watershed-based permitting, facilitate stakeholder involvement, and move watershed-based permitting from concept to implementation."

This draft permit could get back to the original pollution trading concept, as well as come closer to EPA's new, "wholistic" approach, under the following scenario: change the maximum discharge temperature at the 6 mgd discharge volume from the currently proposed 81.5 $^{o}$ to a temperature that will result in a worst case downstream temperature no greater than 82$^{o}$, the existing downstream temperature of the river. This is the target downstream temperature at a 5 mgd discharge volume as well and it results in a downstream temperature below the maximum 83$^{o}$ allowed in a warm water fisheries. This volume increase should be allowed **provided and only provided** that SMI materially and significantly participates in the restoration of the Hoosic River. Under this scenario it is estimated that SMI's maximum discharge temperature would be 84.2$^{o}$ rather than 81.5 $^{o}$.

In addition, in order to allow an increase in flow to 6mgd SMI's participation in the Hoosic River restoration should not be exclusively limited to participation in the flood control chute restoration effort. Rather it should be expanded to include other acceptable restoration efforts, such as the creation of trout friendly micro-habitats, **should and only should** the flood control chute restoration effort not be deemed feasible by the U.S. Corps of Engineers through their feasibility study.

This accomplishes the following objectives.

It requires SMI to actively participate in the restoration of the Hoosic River but in exchange for that participation it provides a strong incentive for SMI to actively participate in the restoration effort, that being it allows SMI to increase its discharge volume from its current 4.2 mgd to the desired 6mgd.

It reduces the absolute temperature of the discharge from the current temperature of $\pm$ 85 $^{o}$ - 86 $^{o}$ to + 84 $^{o}$.

It reduces the absolute temperature of the discharge in a manner that will most likely be able to be achieved by relatively cost effective passive cooling measures.

It results in a downstream temperature equal to existing conditions or conditions at a 5 mgd discharge volume. It results in a downstream temperature below the maximum allowable in a warm water fishery, 83$^{o}$.

It could result in an improved trout habitat by either contributing to the likelihood that the flood control chute restoration effort will continue to be advanced or increases the likelihood that other in-stream habitat improvements will be implemented.

<u>Recommendation</u>

The draft permit should change the maximum discharge temperature at the 6 mgd discharge volume from the currently proposed 81.5 $^{o}$ to a temperature that will result in a worst case downstream temperature no

greater than 82°, the existing downstream temperature of the river **provided and only provided** that SMI materially and significantly participates in the restoration of the Hoosic River Under this scenario it is estimated that the maximum discharge temperature would be 84.2° rather than 81.5 °.

The draft permit should state that in order to allow an increase in flow to 6 mgd, SMI's participation in the Hoosic River restoration should not be exclusively limited to participation in the flood control chute restoration effort. Rather it should be expanded to include other acceptable restoration efforts, such as the creation of trout friendly micro-habitats, **should and only should** the flood control chute restoration effort not be deemed feasible by the U.S.Corps of Engineers through their feasibility study.

Response: EPA and MA DEP disagree with this analysis. We believe that the requirements in the draft permit provides a significant incentive for SMI to participate in efforts to reduce the upstream temperature. SMI is not authorized to discharge at the higher flow rate of 6 MGD, unless modification to the flood control chutes, designed to lower upstream water temperatures are completed. Upon completion of the project, SMI must notify EPA and MA DEP 60 days prior to an increase in flow so that both Agencies will be aware of flow increases, compliance records can be updated, and any instream monitoring will be reflective of new flow conditions.

SMI has requested the flow increase in order to accommodate potential production increases. SMI has also vigorously opposed a direct link in the permit to participate in the flood control chute modification. If it is established that the flood control chute modification is infeasible, the permit will be reopened, as stipulated in Section D. of the draft, and at that time alternative restoration projects could be considered.

Comment#5: There are two key features of the Clean Water Act that affect this draft permit, especially related to SMI's request to increase its flow: the antibacksliding and antidegredation provisions. The antibacksliding provision prohibits the relaxations of permit limits, standards, and conditions from a previous permit. A new permit must at least be as stringent as the previous permit. The antidegredation provision requires that any new or increased discharge maintain the existing uses and level of water quality necessary to protect those uses. These provisions come into play with potential temperature reduction resulting from the flood control restoration and / or re-classification of the Hoosic River from a warm to cold water fishery. Essentially, according to the Clean Water Act, SMI's discharge temperature must continue to meet what is hoped to be improving water quality standards from the flood control restoration or those imposed by a change in stream classification from warm to cold water fishery.

The presence of a wild trout spawning area in the vicinity of SMI's discharge provides evidence that the Hoosic River could be re-classified as a cold-water fishery. There are current efforts to re-classify that segment of the Hoosic River from a warm water to cold water fishery. Under a best case scenario that re-classification could take 3 – 6 month. More likely a much longer time frame would be involved. If the Hoosic River were re-classified as a cold water fishery in the location of SMI's discharge, effective instream temperatures related to an increase in discharge volume would limited to 68°. SMI's discharge would have to be substantially lower than the proposed 84.7 °, probably closer to 70 ° . Under this scenario there would need to be significant changes to SMI's operation or water treatment. The changes to water treatment could involve the use of cooling towers or refrigeration. The cost of these additional measures would be significantly higher than the current treatment methods. A worst case change in SMI's operation could be a decision to close the facility.

It is not clear from the draft permit material what SMI's permit conditions would be if the river was re-

classified from warm to cold water fishery and SMI were allowed to discharge at a higher volume, either 5 mgd or 6 mgd. It is equally not clear from the draft permit material what SMI's permit conditions would be if the river was re-classified from warm to cold water fishery and at the same time there was no request by SMI to increase its volume from the permitted 4.2 mgd. With no volume increase would SMI be required to meet effective instream temperatures of 68 $^{o}$, or since there was no flow increase they would be allowed a higher temperature discharge? The draft permit should contain greater detail about the SMI's permitting requirements relating to the impending river re-classification, from a warm to cold water fishery, especially if the flow were increased. The flood control chute restoration effort could be threatened by the impending re-classification of the Hoosic River in this vicinity of the SMI discharge if it contributes to, or is perceived to contribute to the re-classification and the re-classification substantially increases SMI's treatment costs. There is a risk that Adams officials would decide not to participate in the flood control restoration effort.

Recommendation

The draft permit should contain greater detail about the permitting requirements to SMI relating to a stream re-classification from warm to cold water fishery, especially as it relates to an increase in the discharge flow above 4.2 mgd

Response: Upon reclassification the final permit requires that the permittee begin working on a comprehensive plan. A comprehensive plan will provide an evaluation of water use, treatment, and disposal alternatives that could be relevant in terms of achieving discharge limitations consistent with achieving water fishery criteria. It would be presumptuous for EPA and MA DEP to include specific permit conditions in the final permit due to reclassification when the process of reclassifying the river, which includes a public comment period, hasn't yet taken place. If the river is reclassified the ambient temperature criteria that future permit limits would be based on would not necessarily be 68 degrees F if natural ambient temperatures are greater than 68 degrees. This evaluation would have to be completed as part of a future permit reissuance.

**C). Comments submitted by Jerry Schoen on February 11, 2003**

Comment #6: My primary objection to the proposed permit is that it sets a target instream temperature for waters downstream of the SMI discharge at levels that will not protect, let alone restore, the health of the river. From the time the new permit is issued until a channel restoration project is completed by the Army Core of Engineers (ACOE) - an unknown number of years hence - a downstream temperature of 82 $^{0}$ F will be allowed. This level is just one degree below the upper limit a warm water fishery. This level seems to be at odds with EPA' statement that "Because of the unusual circumstances of the presence of spawning wild trout in a river currently classified as a warm water fishery, and with warmer water than the cold water fishery criteria, neither the warm water nor the cold water criterion will be strictly applied to the temperature limit in the draft permit."

From the time the channel restoration project is completed, the instream target will be 79 $^{0}$F. EPA, in its fact sheet on the permit, acknowledges that even at this lower temperature "mortality can occur with exposure durations as short as a few hours." Yet the permit allows river temperature to rise to or exceed either limit (depending on status of ACOE project) for periods of "not more than a few hours duration". In other words, EPA has set a target level that is likely to cause mortality in the existing wild trout population, and which will surely have sublethal effects on the population. These effects occur at temperatures between 68 $^{0}$F and 79 $^{0}$ F, according to EPA.

Response: The instream temperature limit is of 79 degrees F is based on worse case instream temperatures, with a duration of just a few hours. Five (5) MGD is not based on 83 degrees F criteria, but on monitoring current conditions. At 5 MGD, EPA is constrained from imposing a stricter temperature limit as a result of warm water fishery criteria. Although a portion of the receiving water downstream of the discharge will exceed 79 degrees F at times, trout mortality is unlikely to occur as a result of trout moving to cooler areas of the river. This is clearly not an ideal condition since portions of the river will be unsuitable trout habitat under worse case temperature conditions.

At 6 MGD, due to the potential for an increased thermal loading to the river, antidegradation provisions of the water quality standards, allow for establishing a more aggressive ambient temperature target to fully protect all trout habitat and the exisiting trout population.

The instream temperature limit of 79 degrees F is based on worse case instream temperatures, with a duration of just a few hours. These temperatures are not the temperatures the trout will typically encounter in this stretch of the river.

Comment#7: EPA has conducted information sessions in which representatives of the agency outlined the salient points of the permit and explained why certain decisions were made. In those sessions, representatives of the agency stated that they are obliged to allow these unhealthy thermal conditions because they cannot require a discharger to comply with stricter limits than are already in force. I contest this interpretation of the Clean Water Act (CWA) on several grounds:

1) The existing discharge limits were granted when the agency was unaware that a self-sustaining population of trout existed in the river. The new permit should take this new knowledge into account and provide adequate protection for the river's wildlife. EPA seems to acknowledge this with its statement about applying neither a warm water nor a cold water criterion. However, its actions go in the opposite direction, by setting a limit that nearly exceeds the warm water criterion.

2) EPA seems to have arrived at instream target temperatures by using data provided by HooRWA and others over the last dozen years or so, taking the very highest readings recorded over this period, and considering those the existing conditions which must be preserved. However, I believe these conditions occurred during a time when SMI's actual discharge was considerably higher in flow (as high as approximately 4.2 MGD) than the allowable flow of 1.5 MGD written into the original 1975 permit. EPA explains this discrepancy by stating that SMI (and/or its predecessors) were given "verbal approval" to increase the discharge flow to 4.2 MGD. I question the agency's determination that a verbally approved limit, rather than the written permit, is the legally appropriate one from which to base a determination of existing conditions. I would argue that the only legally appropriate standard would be that which is recorded in a legal document. Compared to such a document (i.e. the 1975 permit), it would appear that the new permit is in violation of the CWA's antibacksliding provision., EPA has not demonstrated, either in the draft permit itself or the accompanying fact sheet that this standard has been met: "A permit may not be renewed, reissued, or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the antibacksliding requirement of the CWA."

3) In any case, EPA's position that the agency cannot require stricter limits than what currently exist seems to be at odds with the anti-degradation clause of the CWA. As EPA states in the fact sheet: "Any new or increased discharge is subject to antidegradation provisions of MA WQS which, among other things, require the protection of all existing uses and the level of water quality necessary to protect existing uses."

When two different sections of the CWA seem to be in conflict with one another and a decision must be made between them, I would argue that the appropriate course is the one that best supports the overarching goals of the CWA -to protect and restore the nation's waters.

I request that the EPA modify the proposed permit by reducing the target instream temperature below the point of discharge to a level that is known to be sublethal to trout, and requiring SMI to reduce its discharge volume and/or temperature to a level that maintains such an instream temperature. Furthermore, I request that such a sublethal temperature limit be in place from the day the permit is issued. I do not believe that an interim period (before the ACOE project is completed) of higher temperatures should be granted. This period may be some years in duration; the consequent damage to the fishery may be irreparable.

Response: EPA and MA DEP have taken the existence of the trout population into consideration and we believe the permit limits are protective of water quality and are consistent with the water quality standards.

Correspondence in the file indicates that the permittee made several request for a flow increase after the last permit was issued. The Agency never formally responded or never reissued or modified the permit. However, there is a record in the administrative file indicating that EPA verbally approved an increase in the facility's flow in 1981. We acknowledge that verbally approving a flow increase and not formally modifying or reissuing the permit is an error on our part . However, the permittee has been operating with the understanding that their request for a flow increase was granted.

The MADEP's Antidegradation Implementation Policy establishes statewide procedures for implementing the Antidegradation regulations. An application for a new or increased discharge triggers an antidegradation review. However, that procedure was not developed and approved by EPA until October 1993, so it is likely that the modification requested in 1981would have been made as the permittee requested.

Therefore, as EPA began the permit reissuance process, we decided it was reasonable to base the draft permit limits on a flow that was representative of the current discharge rather than the outdated limits in the 1975 permit. We reviewed the discharge monitoring reports, and decided 4.2 MGD was representative of the facility's current flow. As stated in the fact sheet, we have calculated the worse case current instream temperature using a 4.2 MGD flow rather than 1.5 MGD.

While the temperature limit of 5.0 MGD is consistent with the temperature standard, we acknowledge that at times, a portion of the receiving water will exceed sublethal levels for trout to the same extent that it occurs under current conditions. During these periods it is expected that trout will move to deeper cooler sections of the river. EPA and MA DEP have applied the antidegradation requirements to the flow increase request from 5.0 to 6.0 MGD. In accordance with antidegradation requirements relating to protecting existing uses, the temperature limit at 6.0 MGD is lower and the worse case instream temperature is improved. This should effectively reduce the frequency and duration as well as the size of the downstream area that has less than optimal temperatures for trout. The reclassification to a cold water fishery will result in temperature controls that further minimizes the effect on trout habitat. It is important to point out that upstream temperatures often exceed levels that are considered optimal for trout.

**D). Comments submitted by the Hoosic River Watershed Association on February 12, 2003.**

Comment #8: Data gathered by HooRWA and others clearly indicates that the flood control chutes in Adams raise in-stream temperatures to a much greater extent than the SMI effluent. As it travels through 2.2 miles of exposed concrete, the river runs shallow, and the water emerges from the chutes up to 9.8° F hotter than when it entered (HooRWA, 1999). A project currently under study by the Army Corps of Engineers would rehabilitate these chutes and restore a natural river channel within the concrete banks. When complete, the modifications will provide habitat for trout and other species, become a recreational resource and scenic asset for the Town of Adams, and play a key role in the redevelopment of downtown Adams. Most important, the project will reduce in-stream temperatures an estimated 4° F.

As originally conceived, SMI would support this restoration project with a cash contribution or in-kind match. The incentive for this support was that lower in-stream temperatures would enable SMI to discharge slightly warmer water than would be permitted otherwise. This "pollution trading" scenario would have resulted in a net improvement in trout habitat and in-stream temperatures, while acknowledging the economic significance of SMI as a cornerstone employer in the region.

The current draft permit, however, provides little, if any incentive for SMI to participate in the ecosystem restoration project. Upon the successful completion of the project, SMI can increase discharge from 5 MGD to 6 MGD, yet upon doing so the permitted temperature limits drop from 84.7° to 81.5° F. While this allows the higher flows requested by SMI, it requires a significant temperature reduction in the effluent, which would be achieved at a significant cost. The advantage to SMI of increased flow may be effectively offset by the lower temperatures it would require.

While the cost to SMI of protecting our rivers is not a matter of special concern to HooRWA, we believe that lower in-stream temperatures are more likely to be achieved through chute restoration than through the NPDES permit process. Money spent to finance cooling infrastructure at SMI would be better invested in rehabilitating the greatest threat to cold water habitat—the flood control chutes.

Although the permit apparently seems to set the stage for lower in-stream temperatures, the actual outcome might be less positive. We worry that the permit could threaten SMI's ongoing participation in the chute restoration--if the successful completion of the project triggers a lower temperature limit that would require major investments in cooling infrastructure, the permit could create a major *disincentive* for the support of restoration. It is unfortunate that the concept of watershed-wide pollution trading has not been incorporated into this permit. Because the permit effectively ignores this pollution trading scenario, it may jeopardize a project that would, in the long run, do more to benefit cold water habitat than stricter temperature limits alone.

The first scenario in the draft permit is designed to maintain the status quo, while allowing SMI to increase flow from 4.2 MGD to 5.0 MGD. Thus, a discharge of 5 MGD at 84.7° F would result in identical downstream temperatures (82° F) as the current 4.2 MGD at 86° F during 7Q10 conditions. A second scenario will come into play upon successful restoration of the flood chutes, this one built around the biological needs of trout for instream temperatures that do not exceed mortal limits (79° F) for more than three hours at a stretch. Under this scenario, 6 MGD is allowed, at 81.5°F.

HooRWA is more concerned with lower in-stream temperatures and better trout habitat than how these objectives are achieved. By itself, increased flow is not a matter of concern for us. We believe a third scenario should be allowed that would re-align the permit with the pollution trading concept. 6 MGD

should be allowed at a temperature (84.2° F) that results in a downstream temperature of 82° F, at 7Q10 conditions, the current level. In other words, temperature loading would remain at the status quo, with an increase in flow as requested by the applicant. This increase in volume should be allowed only provided that SMI materially and significantly participate in the restoration of the Hoosic River. This participation should be confined to participation in the flood control chute restoration, unless the project is deemed infeasible by the Army Corps of Engineers. Should that occur, an acceptable substitute could include other instream temperature remediation efforts, or the creation of trout micro-habitats or refugia.

The benefits of this plan are threefold. First, it provides a strong incentive for SMI to actively participate in a project that will greatly improve the overall cold-water habitat in the river, since the higher flows requested are contingent upon active cooperation. Second, it results in a worst-case downstream temperature that is no worse than existing conditions, or the 5 MGD scenario proposed by the permit, which is compatible with the existing use for propagating trout. Most important, it increases the likelihood that the flood chute restoration project will come to pass, or that overall improvements in trout habitat will occur due to the creation of micro-habitats.

This pollution trading scenario fits neatly with the Environmental Protection Agency's "Watershed-Based NPDES Permitting Policy Statement", which pledges to "actively promote and support watershed-based NPDES permitting. Further, EPA will work to provide greater incentives and mechanisms necessary to undertake a more holistic and integrated approach to assessing water quality conditions, identifying and quantifying pollutant sources, developing and implementing efficient control practices, and working with stakeholders….EPA will…move watershed-based permitting from concept to implementation." We believe that the common-sense, watershed-based solution proposed above would better serve *all* stakeholders best in the long run. A scenario that allows higher flows, contingent upon active participation in a larger restoration effort will benefit industry and trout alike.

Response: The overriding concern in issuing the permit is to provide as much protection to the fishery as possible within the constraints of the Massachusetts Water Quality Standards. To the extent this goal can be more effectively achieved through "trading" we have attempted to incorporate it into the permit. We believe we have done that here.

SMI has also vigorously opposed a direct link in the permit to participate in the flood control chute modification. See response to comment #4. We agree that reclassification to cold water fishery may result in a disincentive for SMI to participate in the flood control chute project. However, if upstream temperatures are lowered, the impact from the SMI discharge becomes more pronounced and this can not be ignored.

Whether or not the river is reclassified is a decision to be made by MA DEP. If and when it is reclassified, EPA will work with all parties to ensure that a modified or reissued permit incorporates all possible trading scenarios that will achieve the greatest benefit for the trout fishery, within the constraints of the MA WQS, SMI will not be required to discharge at a level that will achieve 68 degrees F instream if natural conditions result in higher instream temperatures.

The permit already restricts access to the increased flow until the flood control chute is done. Under this scenario, the downstream temperature at 6.0 MGD would be a daily average of slightly higher than 79 degrees F verses a short term, duration of 79 degrees F required in the draft permit.

As pointed out by the HRWA and others during the development of this permit, the lethal limit of 79 degrees F should not be exceeded for more than a few hours.

**E). Comments submitted by Jeffrey Carlton, Environmental Manager, Minerals Technology Inc., on February 12, 2003.**

Comment #9: SMI's Proposed Discharge Complies with Applicable Requirements of the CWA and there is No Basis to Incorporate Permit Requirements Based On the ACOE Project As stated in comments submitted in 1999, SMI's proposed discharge complies with all applicable CWA "effluent limitations" for temperature and, therefore, there is no basis to impose ancillary requirements linked to the Army Corps of Engineers Flood Control Project. "Effluent limitations" under the CWA may be technology-based, 33 U.S.C. 1311(b), 1314(b), or water quality-based, 33 U.S.C. 1312, 1313.

The parameter addressed by the requirements of Part 1, Conditions C and D, is temperature. No technology-based restrictions are applicable to the Facility for this parameter. Rather, the effluent limitation for temperature is water quality-based. As discussed below, the proposed discharge meets all water quality-based requirements for temperature. Therefore, there is no basis for making SMI's permit contingent on the success or viability of the ACOE Project.

Water quality-based restrictions derive from two sources: (i) the use designated by a state for a water body, and (ii) the antidegradation policy of that state. 40 C.F.R. 122.44(d). The Hoosic River in the area of the Facility's discharge has been designated as a "Class B" water and a "warm water fishery." 314 C.M.R. 4.06. For Class B" waters which are a "warm water fishery", the applicable water quality standard for temperature is that the temperature "[s]hall not exceed . . . 83 degrees F . . ., and the rise in temperature due to a discharge shall not exceed . . . 5 degrees F." 314 C.M.R. 4.05(b)2.

EPA states in the Fact Sheet that SMI's existing discharge results in a worst-case downstream river temperature of 82 degrees F. (Fact Sheet, p. 5.) Note that the worst case situation is based on EPA's estimate of the 7Q10 flow (the lowest consecutive 7 day stream flow that is likely to occur in a ten year period). The draft NPDES permit contains discharge limits based upon two situations; the current situation, with the flood control chutes in their current, unmodified condition; and an anticipated future situation, after implementation of the ACOE project which is expected to reduce the thermal impact of the flood control chutes.

The permit limits for the first case (no change to the flood control chutes) have been developed to maintain the current worst case downstream temperature of 82 degrees F. The NPDES permit proposed for SMI contains an effluent limitation which prohibits the discharge of waters whose temperature exceeds 84.7 degrees F at a maximum flow of 5.0 million gallons per day (mgd, measured as a monthly average). Part 1, Condition A. Effluent Limitations and Monitoring (p. 2). EPA estimates that these worst case conditions result in a temperature increase of only 1 degree F, well within the delta allowed under 314 CMR 4.05(b)2. (Fact Sheet, p. 5).

The permit limits for the second case (after implementation of the ACOE Project) were developed to ensure that the river temperature does not exceed 79 degrees F, under worst case conditions, for more than a few hours per day (Fact Sheet, p. 6). This provision of the NPDES proposed permit limits temperature of the discharge to 81.5 degrees F at a maximum flow of 6.0 mgd (measured as a monthly average). Part 1, Condition A. Effluent Limitations and Monitoring (p. 3).

(Please note that SMI has proposed accepting both limits effective upon permit issuance – that is, the discharge temperature will not exceed 84.7 degrees F at flows up to 5.0 mgd and will not exceed 81.5 degrees F if the flows increase to 6.0 mgd; both flows measured as a monthly average of daily flow. See Comment 3, below.)

Thus, under the proposed NPDES permit and as explained in EPA's Fact Sheet, the temperature limits have been set to ensure the discharge will not result in an exceedance of the water quality criteria designated by Massachusetts for this segment of the Hoosic River under either the 5.0 mgd or 6.0 mgd flow rate.

The antidegradation policies of both Massachusetts and EPA provide for the protection of "existing uses." 314 C.M.R. 4.04(1), 40 C.F.R. 131.12. Thus, the "antidegradation policy does not address nor can it be used to foster potential uses." EPA, Questions and Answers on: Antidegradation (August, 1985) ("Q&A Antidegradation Guidance"), at p. 5, Question 12. EPA has asserted that, even though the Hoosic River is designated as a "warm water fishery", trout, a cold water fish, are present in the river downstream of the discharge.

SMI agrees that trout are present in the Hoosic River, but disagrees that the proposed discharge will eliminate or adversely affect the "existing use" trout fishery. In particular, the thermal loading from the Facility's discharge in the proposed permit is less than the thermal loading from the current discharge.

As stated above, the proposed NPDES permit provides for two different maximum daily average temperature limits; 84.7 degrees F at a maximum flow rate of 5.0 mgd (measured as a monthly average) and 81.5 degrees F at a maximum flow rate of 6.0 mgd (also measured as a monthly average) In the second case, while the permissible volume of discharge is increased by 1.8 mgd, the resultant discharge would introduce a lesser temperature load into the Hoosic River because the increased discharge would be limited to a lower temperature.

This lesser impact has been recognized by EPA. In particular, EPA has estimated that the worst-case impact from the current discharge is a downstream temperature of 82 degrees F; whereas the proposed NPDES permit results in a worst case downstream short term temperature of 79 degrees F. Fact Sheet, p. 6. Thus, rather than resulting in the degradation of the existing uses of the Hoosic River, the proposed permit results in an improvement over existing conditions because the worst case discharge results in lower temperature in the Hoosic River.[1]

Of particular note in this matter is that EPA has directly addressed the factual situation presented by SMI's proposed discharge in the Q&A Antidegradation Guidance and has stated that the presence of trout "should not be employed to mandate" more stringent cold water fishery discharge limitations. Specifically, the Q&A Antidegradation Guidance provides:

16. A stream, designated as a warm water fishery, has been found to contain a small, apparently naturally occurring population of a cold water gamefish. These fish appear to have adapted to the natural warm water temperatures of the stream which would not normally

[1] At a public meeting in Adams, Massachusetts, on March 3, 1998, David Pincumbe of EPA similarly stated that the proposed NPDES permit would improve river conditions by decreasing temperature loadings.

allow their growth and reproduction. What is the existing use which must be protected under Section 131.12(a)(1)?

Section 131.12(a)(1) states that "Existing instream water uses and level of water quality necessary to protect the existing uses shall be maintained and protected." While sustaining a small cold-water fish population, the stream does not support an existing use of a "cold-water fishery." The existing stream temperatures are unsuitable for a thriving cold-water fishery. The small marginal population is an artifact and should not be employed to mandate a more stringent use (true cold water fishery) where natural conditions are not suitable for that use. . . .

Q&A Antidegradation Guidance, at p. 6 (emphasis supplied).

Here, a small population of trout (a cold water fish) exists downstream of the Facility. The Hoosic River is a "warm water fishery" from upstream of the Facility to the Massachusetts border. Thus, the presence of trout in the areas downstream of the Facility is an "artifact" or an anomaly because the trout are present in an area which is a "warm water fishery".[2]

Pursuant to the Q&A Antidegradation Guidance, the trout cannot be used as a basis for "mandat[ing] a more stringent use." Here, EPA is attempting to link SMI's permit to the viability of a third party's stream temperature improvement project. SMI supports the ACOE Project, but objects to any formal linkage of the ACOE Project to the discharge permit. With or without the implementation of the ACOE Project, SMI's discharge under the new permit -- by EPA's own admission – will meet state water quality standards, and will have a lesser impact on in-stream temperatures than is the case under the existing permit. The CWA provides no authority to impose additional temperature conditions when the discharge not only complies with applicable water quality standards, but also improves rather than degrades water quality in the Hoosic River.

Response: The permit limit established for the discharge flow increase in excess of 5 MGD achieves water quality standards only if worse case upstream temperature is reduced to 77 degrees F. Thus the permit restricts the flow to 5 MGD until the flood control project is completed. If SMI would like to increase the flow prior to improvements to the upstream temperature, they can request a permit modification. The modified permit would establish a new effluent temperature limit that would result in achieving the short term 79 degrees F worse case downstream temperature given worse case upstream temperature.

We disagree that the trout population in the river is an anomaly. The study submitted by Ken Simmons, dated December 13, 2000, Status of the Brown Trout (*Salmo salar*) Population in the Hoosic River in the Vicinity of the Minerals Technologies, Inc. Discharge, confirms that the trout population is abundant. The study

[2] It would appear that the trout in this portion of the stream either: (i) have "adapted" to the temperature regime of the Hoosic River; or (ii) are able to find refugia within the river which maintain viable environments such shaded areas or areas of groundwater seepage. With respect to adaption, scientific studies have shown that acclimated brown trout (*i.e.*, those raised in higher temperature environments) can withstand brief periods of exposure to temperatures as high as 86 degrees F. Elliot, J.M., *Quantitative Ecology and the Brown Trout* (1994).

confirmed that this stretch of the river includes, longnose suckers (Catastomus catastomus), and slimy sculpin (Cottus cognatus) which are also good indicators of coldwater fisheries according to the Division of Fisheries and Wildlife. See Comment #29.

Comment #10: 7Q10 Data.
The 7Q10 data used by EPA to develop the temperature limits is an estimate of the lowest consecutive 7 day streamflow that is likely to occur in a ten year period at a point immediately upstream of SMI's discharge. However, it appears that EPA developed this estimate of the 7Q10 data assuming that SMI's flow would enter the Hoosic River at the former discharge location; approximately one mile upstream of the canal discharge. However, as indicated in the permit, SMI will relocate its discharge point to the end of the canal. In order to ensure that the temperature limits are developed properly, EPA should re-evaluate the 7Q10 equation and determine the impact of SMI's flow upon the river at the end of the canal. However, SMI suggests that EPA allow SMI to discharge at either location, keeping in place all proposed temperature and flow limits. This would allow SMI to discharge above the canal in the event of some unforeseen issue within the canal.

Response: Footnote 4 in the final permit specifies that the discharge location can be either at the former discharge location, one mile upstream of the canal discharge, or at the end of the canal.

The 7Q10 will remain the same for both discharge locations. The drainage area difference used in the 7Q10 calculation at the end of the canal compared with the analysis in the fact sheet is not significant enough to change it.

Comment#11: Timing for Implementation of 6.0 Million GPD Requirements.
The proposed temperature limit for Outfall 001 is 84.7 degrees F at 5 mgd and will be 81.5 degrees F for 6 mgd after the ACOE Ecosystem Restoration Project is installed. The permit forbids SMI from increasing flow above 5 mgd until the Ecosystem Restoration Project has been installed. SMI proposes that both permit flow limits become effective immediately upon permit issuance. SMI requests that EPA allow SMI to discharge up to 5 mgd with a temperature limit of 84.7 degrees F. If SMI's monthly average flow increases above 5 mgd, SMI proposes that the temperature limit be reduced to 81.5 degrees F. In this way, the responsibility to decrease the temperature of the effluent if business conditions require an increase of flow above 5 mgd falls upon SMI immediately.

As noted in SMI's Comment 1, discharging 6 MGD at a temperature of 81.5 degrees F results in a REDUCED thermal load to the river and thus, does not violate the antidegradation policy. Further, as discussed in Comment 1 and as shown below (using the calculations provided in the Fact Sheet), this limit actually IMPROVES the conditions in the river at this time:

A target instream temperature of 82 degrees F downstream of the SMI discharge was used to establish the SMI temperature limit at a discharge flow of 5 MGD. This target represents the existing worst case temperature resulting from the existing discharge at a receiving water flow of 13.4 MGD.

Given existing upstream flow and temperature conditions and limits of 6 MGD and 81.5 degrees F for SMI, the calculated monthly average temperature limit is as follows;

$$\frac{(\text{Upstream Temperature} * \text{Upstream 7Q10}) + (\text{SMI flow} * \text{SMI temperature})}{\text{Upstream 7Q10} + \text{SMI flow}}$$

$$\frac{13.4 \text{ MGD } (82 \text{ degrees F}) + 6.0 \text{ MGD } (81.5\text{F})}{(13.4 + 6.0)} = 81.8 \text{ degrees F}$$

Response: The increased flow from 5 MGD to 6 MGD triggers an antidegradation review for under MA WQS. The antidegradation review requires that existing uses be fully protected. EPA has determined that a worse case downstream temperature of 79 degrees F for a few hours duration more than fully protects the exisiting use.

Comment #12: Clarification of "Maximum Daily Temperature" Value.

The permit states that the temperature limits for Outfall 001 are Maximum Daily values (please refer to the tables on pages 2 and 3 of the permit). It is clear from the discussion of the temperature limits in the Fact Sheet that this limit is the highest daily average temperature experienced during the reporting period. On page 6 of the Fact Sheet, EPA uses this fact to justify a reduction of the maximum daily average temperature from 83.5 degrees F to 81.5 degrees F. However, the term "Maximum Daily" in the tables on pages 2 and 3 could be interpreted to mean the maximum temperature that occurs at any time during the day. This limit could be considered to be an instantaneous maximum limit. Obviously, this is not what EPA intends. Therefore, SMI suggests that the temperature headings on the tables on pages 2 and 3 be labeled "Maximum Daily Average" and that a footnote be added to clearly explain this limit.

Response: The final permit includes a footnote clarifying that the maximum daily limit is the highest daily

average temperature recorded, and not an instantaneous maximum limit.

Comment #13: Clarification of Sampling Location.

Footnote 5 on page 6 of the permit states that "All required effluent samples shall be collected at the outfall, except temperature." SMI suggests a slight wording change as follows: "All required effluent samples shall be collected at SMI's Outfall 001, except temperature." This more clearly shows that the sampling location and reduces possible confusion.

Response: This change has been made to the final permit.

Comment #14: Location of SMI Discharge Relative to Lime Street Bridge.

Footnote 7 on page 6 of the permit contains a typographical error. This should read as follows:
"From June 1 through August 31, between 2:30 and 5:30 p.m., one instream temperature sample per week shall be taken upstream ~~at the~~ ***of SMI's*** discharge, at the Lime Street Bridge." SMI's discharge is downstream of the Lime Street Bridge.

Response: This change has been made to the final permit.

Comment #15: Chemical Additives.

Part I.A.1.e on page 8 of the permit states that "The use of a disinfecting agent or chemical additive shall not

be added to the collection and treatment system without prior approval by EPA and MA DEP." SMI has informed EPA and MA DEP that the current wastewater treatment system includes the use of a flocculant to remove suspended solids and of lime kiln gas, which is injected in the neutralizing system. The carbon dioxide in the kiln gas is used to neutralize the alkalinity of the effluent. SMI will notify both EPA and MA DEP before any new chemicals are added to the collection and treatment system. We suggest that the cited language be revised to clarify the current use of flocculant and lime kiln gas to treat the effluent.

Response: We have changed the language in the final permit to reflect that flocculant and lime kiln gas are already used to treat the final effluent. Our primary concern for this including this language in the final permit is to eliminate disinfecting agents or chemical additives with the potential to cause toxicity in the receiving water.

Comment #16: Comprehensive Plan.

Part I. C. of the permit (Comprehensive Plan) states that "The completion of the comprehensive plan is a requirement of State certification". In discussions with US EPA, SMI understands that this plan must be completed to satisfy state certification of a future modified permit which would be issued in the event of the reclassification of the Hoosic River as a cold water fishery. As indicated below, SMI strongly objects to the requirements proposed under Part I.D (Permit Reopener). Further, SMI does not agree that the requirement for a Comprehensive Plan should be included in this NPDES permit. SMI would agree to complete the Comprehensive Plan following reclassification of the river on a voluntary basis, but does not agree that this requirement is appropriate for an NPDES permit. Therefore, SMI requests that this section be eliminated.

Similarly, Part VI of the Fact Sheet also discusses the Comprehensive Plan. SMI requests that this paragraph be deleted from the Fact Sheet.

Response: This final permit requires State review and certification under Section 401 of the CWA. The State's certification ensures that the final permit will comply with the applicable State water quality standards. EPA and MA DEP believe that initiating a comprehensive planning process within six months of reclassification is a reasonable first step toward meeting the more stringent temperature criteria of cold water fisheries.

Comment #17: Permit Reopener.

SMI objects to the Permit Reopener provision, included as Condition I.D, which purports to authorize a reopening of the permit if the agencies determine that the ACOE Project is infeasible, or if the MA DEP reclassifies the stream. EPA's regulations spell out the circumstances in which permits may be reopened, and neither of the circumstance specified in this proposed permit condition meets the regulatory criteria. Therefore, SMI requests that this section be eliminated or reworded to comport with the regulations.

Under 40 CFR 124.5(a), permits may ***only*** be modified, or revoked and reissued, for the reasons stated in 40 CFR 122.62. Section 122.62 allows permit modification ***only*** for the reasons listed in that section, and states explicitly that "if cause does not exist under this section or 122.63, the Director shall not modify or revoke and reissue the permit." It is improper for EPA to attempt to bypass this clear regulatory limitation through the use of reopener language in the permit on the basis of reasons not included in the Section 122.62 list of allowed reasons.

As discussed earlier in this comment letter, the temperature parameters specified in this draft permit satisfy state water quality standards, as well as the requirements of antidegradation. A determination that the ACOE Project is infeasible would not change this analysis, and cannot serve as a basis for imposing more stringent requirements on SMI.

Similarly, reclassification of the stream by the MA DEP as a cold water fishery does not provide a basis under Section 122.62 for modification, unless SMI requests a modification. Stream reclassification would constitute a revision of the relevant state water quality standards. Under Section 122.62(3), a permit may be modified on the basis of a change to the standards or regulations on which the permit was based, including a change to state water quality standards which have been approved by EPA, but only if the permittee requests modification within ninety days of the Federal Register notice of the changed standard.

Under 40 CFR 122.62(3)(iii), changes to permits based on modified State certifications must be made pursuant to 40 CFR 124.55(b). Section 124.55(b) provides that if the change to state standards occurs prior to final agency action on the permit, "the permit shall be consistent with the more stringent conditions which are based upon State law identified in such certification." However, if the modified state certification is received after final agency action on the permit, "the Regional Administrator may modify the permit **on request of the permittee** only to the extent necessary to delete any conditions based on a condition in a certification invalidated . . . by an appropriate State board or agency." (emphasis added).

Response: Part II of the permit, General Requirements, Section A.2. Reopener Clause states that, "the Regional Administer reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

The 2002 edition of 40 CFR 124.5(a) states that permits may be modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's

initiative. However, permits may only be modified, revoked and reissued or terminated for the reasons specified in Sections122.62 or 122.64.

According to 40 CFR 122.64(a)(3), a permit may be terminated during its term, if it is determined that the permittted activity endangers the environment and can only be regulated to acceptable levels by permit modification.

Upon stream reclassification, the ambient temperature requirements will become more stringent and the permit may need to be reopened. Section D. in the final permit provides the necessary language needed for EPA or MA DEP to reopen the permit to modify, or revoke and reissue the permit as necessary.

Comment #18: Minor Typos.

Condition E ("State Permit Conditions") should be Condition F.

The description of SMI's discharge for Outfall 001A refers to "limestone processing, lime production, and precipitated calcium carbonate to the Hoosic River." It should read: "limestone processing, lime production, and precipitated calcium carbonate production to the Hoosic River."

Response: These changes have been made to the final permit.

**F). Comments submitted by Russ Cohen, Rivers Advocate, Riverways Program, Department of Fisheries Wildlife and Environmental Law Enforcement on February 12, 2003.**

Comment#19: I want to state that my main interest in commenting on this draft permit is to let you know

that I am most interested in a permit that will maximize the likelihood of the proposed ecological restoration project (i.e., the modification of the flood control project along the Hoosic River South Branch in downtown Adams) going forward. As you (may) know, naturally reproducing (although not native) brown trout have been documented to occur in the vicinity of SMI's discharge. You also know that this is occurring in spite of the documented temperatures in this segment of the river on hot summer/low flow days of around 80 degrees F, considerably above the upper limit tolerable for trout and other coldwater species. I have been told that the reason the brown trout are able to persist in the river despite these intolerably high temperatures are the presence of microhabitats in the river with lower temperatures where the trout are able to seek refuge from the hotter water. (It is also my understanding that brown trout are somewhat more tolerant of elevated water temperatures than are brook trout.)

In my view, one of the most significant factors (if not the most significant factor) limiting the productivity (i.e., a thriving brown trout fishery) of this segment of the South Branch is the poor habitat, thermal loading and movement barriers presented by the U.S. Army Corps of Engineers (ACOE) flood control project in downtown Adams constructed during the middle of the last century. As you (may) know, the concrete flood chutes and the riprapped, channelized section downstream provide negligible shading, cover, structure or substrate to support trout and associated life forms such as benthic macroinvertebrates. The few plunge pools located below the roll dams situated within the flood control project are among the only trout-friendly spots in this over two mile section of river. (I suspect these plunge pools are the microhabitats that serve as refugia for the trout when the rest of this segment of the river is intolerably hot.)

The pending Hoosic River South Branch Ecosystem Restoration Project by the ACOE offers an exciting

proposal to substantially modify the ACOE flood control project in Adams and greatly increase its function and value for trout and other aquatic organisms. One of the modifications I expect the ecosystem restoration project to include is the creation of many more trout-friendly microhabitats that (among other things) will provide many more spots for the trout to comfortably wait out intolerably high temperature conditions in the rest of the river. Many people have observed that the proposed modification has the potential for transforming this section of the Hoosic into a "world-class" trout fishery.

You may know that the ACOE's ecological restoration project requires a local sponsor to contribute a cash and/or in-kind match toward the overall cost of the project. One of the reasons the ACOE got interested in this project was a letter it received from the Town of Adams requesting the Corps' assistance in a temperature reduction effort in the flood control project. The Town's letter to the Corps was prompted in turn by SMI asking the Town for help in reducing the elevated temperature levels in the river so that the company could continue its Adams operations at a high level.

It is my understanding that the Town of Adams has indicated its interest to the Corps in serving as a local sponsor for the South Branch Ecosystem Restoration Project. I also understand that SMI has repeatedly indicated its support for the project (this support goes back at least as far as the plant's former environmental compliance manager, Jerry Lewis (now deceased), but has been carried on by Jeff Carlton and Tim Brown of the SMI staff). Hoosic (Hudson) EOEA Watershed Initiative team leader Tom O'Brien was also able to get some sort of a commitment from the Mass. Executive Office of Environmental Affairs to pledge $300,000 toward the cost of the project.

Unfortunately, you may have heard that, due to the state's fiscal crisis and the reorganization of the state environmental programs under the incoming Romney Administration, the plug was pulled on the Watershed Initiative late last week, and Tom O'Brien position as team leader will end March 1. I am also concerned that with the state's budgetary woes (some of which it has passed on to cities and towns), the likelihood of EOEA and the Town of Adams coming up with their share of the required local match is increasingly remote. This makes SMI the best remaining candidate for putting up the required local matching funds and/or in-kind contribution for the Corps' ecological restoration project. Without a local project sponsor and local match this ecological restoration project cannot go forward.

In the meantime, I have heard that the EPA and the Mass. Department of Environmental Protection (DEP) are actively considering (at DFW's suggestion I believe) the possibility of reclassifying the segment of the South Branch Hoosic River (in the vicinity of SMI's discharge) under the state water quality standards from a Class B warmwater stream to a Class B coldwater stream with a maximum summer temperature of 68'F. Were this reclassification to occur it may require SMI to make a major change in its current operation to substantially reduce the temperature of its discharge in order to comply with the new classification. The needed changes (such as the construction and operation of a cooling tower) are likely to involve considerable expense, perhaps a million dollars or more (if I correctly recall statements to that effect made by SMI staff). The company has also said that it may be forced to withdraw its support from the ACOE ecological restoration project were the coldwater reclassification to go forward, as they would most likely need to reallocate the funds going to modifying the flood control chutes to paying for modification of plant operations to ensure their discharge complies with the new classification. I also believe there's a good possibility that the Town of Adams would also withdraw its support for the ecological restoration project if SMI goes that route.

I should note at this point that the current summer water temperatures in the section of the South Branch Hoosic River above the Adams wastewater treatment plant outfall, where the concrete flood control chutes

are located, often far exceed the 68'F maximum temperature established for Class B coldwater streams, even though this section is currently designated a Class B coldwater stream under the state water quality standards. SMI's discharge has nothing whatever to do with creating these excessively high temperatures in this segment, as its discharge is downstream from the Adams WWTP. Also, as noted above, some trout persist in the flood chutes in spite of the warmwater conditions (though I would expect the segment to support a much higher trout density if the proposed ecological restoration project were to go forward).

I am not particularly concerned about the cost to the company of complying with state water quality standards. I do, however, think it would be an unfortunate misallocation of SMI's resources to see them go toward a cooling tower rather than toward the ecological restoration project. In my view, the ecological integrity of the Hoosic River South Branch and its brown trout fishery stand to benefit considerably more from a fish-friendly modification of the structure of the flood control chutes than it does from a reduction in temperature of SMI's discharge. The elevated temperature conditions in this section of the Hoosic River South Branch are largely due to excessive stream heating occurring in the sun-baked concrete chutes of the ACOE flood control project in downtown Adams, located upstream of SMI's discharge. Unless the flood control project is modified to reduce this excessive thermal loading, these undesirably high temperatures will continue to occur in that section of the river regardless of the temperature of SMI's discharge downstream.

In other words, this section of the South Branch Hoosic River is likely to continue to experience excessively high temperatures even if SMI were to erect a cooling tower or take other measures to cool its discharge. Wouldn't SMI's money be far better spent on the ecological restoration project rather than on an expensive "end-of-pipe" device that does little to improve the river over existing conditions? SMI is likely to lose any incentive to support the ACOE's ecological restoration project if they are forced to retool their operations to comply with a NPDES permit based on a 68' maximum temperature standard incorporated into a Class B coldwater water quality classification.

Nevertheless, I understand and am sympathetic to the viewpoint that all streams with naturally reproducing trout and/or other "coldwater" fisheries species should be designated as coldwater streams under the state water quality standards regardless of actual stream temperatures. If and when the segment of the Hoosic River South Branch at the vicinity of SMI's discharge is to be reclassified from Class B warmwater to a Class B coldwater water quality classification, however, I would like to request that such a reclassification take note of and be keyed to the existing temperatures in the segment and not to a 68'F maximum temperature of the receiving water standard. In my view, a maximum temperature of 68'F is not achievable in this segment regardless of the temperature of SMI's discharge or even if the ecological restoration of the ACOE flood control project is successfully implemented.

My understanding is that some flexibility is built into the water quality standards so that they can be keyed to reflect "natural conditions" rather than rigid numerical criteria. I believe that the natural temperature maximum in the Hoosic River South Branch in the vicinity of SMI's discharge is probably more around 77'F than 68'F. I arrive at this figure by starting with the current 8 PF maximum temperature as recorded by the Hoosic River Watershed Association (HooRWA), minus the four degree F drop in temperature expected to be achieved through the ecological restoration of the flood control chutes. I therefore suggest that, if and when the segment is reclassified as a coldwater stream, that SMI's NPDES permit reflect a "natural conditions" receiving water temperature maximum of 77'F or thereabouts rather than the rigid application of the 68'F coldwater standard.

This suggestion is expressly conditioned on SMI making a substantial and material cash and/or in-kind contribution toward the ecological restoration project. Some may be concerned that SMI could and would take advantage of a 770F or higher maximum receiving water temperature in its NPDES permit to expand its discharge of heated process water without supporting the ACOE's ecological restoration project. The company

could respond to that concern by making a more formal expression of support for that project, such as placing funds in an escrow account.

In the meantime, I would like the company to take another look at opportunities for modifying its operations to minimize the necessity of discharging heated process water to the Hoosic River during the times when the receiving water temperature is already elevated and trout and other coldwater-dependent aquatic species are already under increased stress. Most of these species have evolved to withstand a certain level of stress resulting from naturally-occurring high temperature episodes. The discharge of heated process water from SMI's operations during the times when the receiving water temperature is already elevated can significantly increase the duration, frequency and severity of temperature-related stressful conditions. This artificially - induced additional stream heating may lead to a marked decline in the quality and quantity of habitat for trout and other coldwater-dependent species. Such an impact is likely to result in the demise of sensitive (and often the most ecologically significant) species and a drop in overall species diversity, a key indicator of ecological health.

At the very least, I hope the reissued NPDES permit for SMI does not allow its discharge to increase the frequency, duration or severity of high-temperature conditions in the receiving water above current levels. Fortunately, most of the time the receiving water is cool enough so that SMI's discharge of heated process water does not raise its temperature to a level stressful to coldwater species. It is only during the summer and during low flow periods where SNE's thermal loading is particularly problematic. Perhaps there is a way for SMI to modify its operations so it can reduce the temperature and/or volume of its heated process water discharge on the hottest days when the receiving water temperature is at or near its peak. One possible way this could be accomplished is to shift more of the daily process water discharge to the middle of the night to reduce the adverse synergistic effect of discharging hot water into a stream already excessively heated by the sun during the daytime. I know that other beneficial uses of SMI's heated process water, such as to heat greenhouses, has been proposed; I would ask that these possibilities be looked at one more time.

Response: We agree with the comment and appreciate the suggestions on how SMI can be effective

stewards of an important cold water fishery resource. Establishing an appropriate instream temperature that reflects natural conditions, however will require a more extensive analysis if and when the river is reclassified.

Comment#20: My final comment is of marginal relevance to the NPDES permit at hand but I thought I

would raise the issue anyway so that it may be considered in an appropriate fashion elsewhere if necessary. The location of the SMI's limestone mining operation is several hundred feet above the valley floor of the Hoosic River floodplain. Current and past mining operations have removed the forest cover, exposed the bright white limestone in the actively-mined area, and have left an artificially-looking "stepped" grade (ostensibly to maintain stability) of the slope of the formerly mined area. As such, SMI's mining operation is readily visible throughout much of the valley, most notably from the scenic vantage points of the Mohawk Trail (Route 2) as it descends from the West Summit at the North Adams/Florida town line.

I feel that the current appearance of SMI's mining operations significantly detract from the scenic view of the valley and the surrounding hills and mountains, most notably Mount Greylock, Massachusetts' highest peak, which lies directly behind SMI's mine. Although I realize there is limited opportunity to reduce any adverse aesthetic impact of ongoing limestone mining operations, I would like to ask the company to consider taking action to reclaim the areas it has finished with by naturalizing the slope and replanting with woody vegetation similar to that existing on the site prior to the mining operation. Although this would not be their intended purpose, such reclamation and reforestation actions could also help to cool the temperature of water running off the site and discharged into the Hoosic River.

I recognize that mine reclamation is not the subject of this permit, but I raise the issue anyway in the hope that it is taken up at an appropriate time and manner.

Response: We agree with your recommendation that naturalizing the slope with similar plants that

existed at the site prior to the mining operation would contribute to cooler run-off water leading into the Hoosic River.

**G). Comments submitted by Cindy Delpapa, Stream Ecologist, Riverways Programs, Department of Fisheries, Wildlife and Environmental Law Enforcement on February 12, 2003.**

Comment #21: Perhaps the most complicated issue associated with this permit is the change in effluent

volume as it relates to the temperature of the discharge. The SMI facility has already initiated at least one major remediation structure, a long, open channel, to help reduce the temperature of the discharge before it enters the river. The Town of Adams working with the Army Corps of Engineers and other partners hope to further reduce thermal degradation by enhancing the concrete flood chute that carries the river through the town. This reworking of a flood control structure to achieve temperature reductions is a new undertaking for the Corps. Given the untested nature of this sort of project, allowing an increase in flow from 5 mgd to 6 mgd upon the completion of the flood chute remediation may be premature. The effectiveness of the project is expected to be at least a 4 degrees reduction in ambient river temperatures but at the moment this is only a prediction. The efficacy and durability of the modifications is still unproven. The automatic increase to 6 mgd upon completion of the flood chute changes, provided for in the draft permit, could cause problems at the SMI facility if the remediation work does not produce the anticipated results.

The SMI facility would presumably make structural and other changes in its production line based on the allowed increase as the remdiation work on the flood chutes nears completion. Should the changes not produce the predicted results or the remediation fails, perhaps because the plantings or added structures are damaged or washed away by high flows, the facility would be operating at a higher effluent discharge rate and potentially have to take a step back and reduce either their flow or effluent temperature because of the loss of the temperature savings from the failed remediation. The permit should have some lag time built in between the completion of the flood chute changes and the allowed increase inflow volume that is based on an in stream temperature reduction.

Response: The temperature limit in the final permit for the flow increase to 6 MGD reflect the

assumption of a 4 degree F reduction from the restoration work done on the flood control chutes. See temperature calculation in the fact sheet. Therefore, if the temperature reductions are not 4 degrees F or are not greater than 4 degrees F once the work is completed, the permit may need to be modified.

Comment#22: The explanation provided in the Fact Sheet for a daily maximum temperature of 8 1.50 F to

accommodate the fluctuations in peak temperatures is a good compromise to work with the nature of the SMI flows. Was consideration given to using this rationale for the 5.0 mgd flow temperature daily limit?

Response: No, the maximum daily temperature when the flow is 5.0 MGD does not take in to

consideration the difference between daily average effluent temperatures and peak temperature. The goal of the 5 MGD limit is to mainatin current instream temperature conditions The goal of the 6 MGD limit is to ensure 79 degrees F is not exceeded for more than a few hours in duration.

Comment#23: The instrearn temperature monitoring requirements in the draft permit do not provide

sufficient specifics about the location and position of the grab sample. The intent of this sample is to have a reading that is representative of the ambient river conditions. A surface sample, bottom water sample, (if there are deep enough depth), a grab taken from an eddy or an area out of the main flow would not be representative. The grab should be taken below the surface but not from the very bottom, if depth of water allows, and in the main flow of the river.

Response: Additional language has been added to the final permit clarifying how the grab samples should be taken.

Comment#24: The draft permit does not specify if the testing is to be done regardless of weather conditions and how the ambient weather conditions will be incorporated into the monitoring aspect so the Hoosic River water temperatures can be correctly interpreted and help explain what might other wise be read as an anomaly or incorrect reading, (water temperature could be significantly affected by storm flows and wet weather).

Response: Language has been added to Footnote 7 in the final permit to include a description of the ambient weather conditions be recorded when instream temperature samples are taken.

Comment#25: The testing regime requires seasonal testing from June through August. For some southern New England rivers, the lowest flows and highest temperatures may occur in September and these seasonal worst case occurrences would be missed. Given the relative ease and low cost of a temperature grab sample, extending the ambient water temperature sampling through September would capture those years where the most stressed conditions occur in September. More frequent monitoring would also be a benefit since it would help quantify ambient conditions pre and post flood chute remediation.

Response: The seasonal testing requirement has been extended in the final permit to September 15, to cover potential 7Q10 conditions that could occur, although once per week sampling will remain in the final permit. We believe that the instream temperature reductions from the flood chute remediation will be evident from grab samples taken 1/week.

Comment #26: Whole effluent toxicity tests are important measures of the chronic and acute affects of an effluent discharge on the aquatic life in receiving waters. Unfortunately, while WET tests capture most of the synergistic chemical interactions within the effluent, the tests are carried out in a laboratory setting where temperature effects are nullified. WET tests are not able to uncover the influence temperature has on the constituents in the effluent or the possible chronic disruptions temperature may be inducing to aquatic life on its own. WET tests are standardized and have proven invaluable throughout the United States but it should be recognized they may not capture the true chronic and/or acute effects in cases where temperature's affect on the biota in the receiving water is a recognized issue and concern.

The draft permit will allow a reduction in WET test frequency after one year and four consecutive passing tests, (footnote #11). This is a reasonable provision except for one point. Under this time table, a reduction in the number of WET tests could occur before the increase in flow to 6.0 mgd allowed under the draft permit. EPA has been careful to adjust permit limitations so the 6.0 mgd flow will have the same loads as the 5.0 mgd discharge level but, as the premise for WET tests highlights, there can be unexpected synergistic affects on aquatic life that are not apparent. Having a set of WET tests through an entire year at the increased flow should be required. The permit could be reworked to have the four times a year testing schedule reinstated when the flow is increased, even if a reduction was/is granted to twice a year under the 5.0 mgd flow, until four consecutive passing WET tests are accomplished at the increased flow.

Response: It is EPA's policy that a permittee can request a reduction in the WET test requirements

after showing compliance with four consecutive test. The testing reductions are typically in the number of species and not the frequency. We anticipate that testing four times per year will still be required when the discharge increases over 5 MGD.

Comment #27: The oil and grease monitoring and concentration maximums have been eliminated in this draft permit but the Fact Sheet does not discuss this change nor the elimination of settable solids. The elimination of parameters or changes in limitations fall under the antidegradation clause that is applicable to NPDES permits. Neither of these constituents is commonly included in NPDES permits any longer and their elimination may be warranted but there should be some consideration of the conditions. The facility did not violate their O&G permit limits as set in the 1975 permit though there was some level of oil and grease detected in the effluent, (range from Fact Sheet: 1.9 to 3.4 mg/1). Maintaining oil and grease monitoring may be a judicious course if the stormwater draining from the SMI property includes vehicle or machinery fueling areas or fuel or other petroleum based storage areas or the process water comes into contact with oils, grease or solvents.

Response: Settleable solids are no longer included in NPDES permits. Low levels of this parameter do not represent a water quality concern, but are intended as a measure of operational control for the facility.

The permit application requires that the permittee submit effluent data on oil and grease believed present in the discharge. Both the data submitted in the permit application and existing DMR's indicate that the oil and grease level is not adversely impacting water quality in the river, so a sampling requirement has not been added to the final permit.

Comment #28: There is one slight inconsistency between the permit and the Fact Sheet narrative. The draft permit has a pH range appropriately reflecting Class B standards. The Fact Sheet, (page 7) lists the upper pH limit as 8.5 s.u. instead of 8.3 s.u.

Response: The final permit reflects an upper pH limit of 8.3 s.u

**H). Comment submitted by Richard Hartley, Aquatic Biologist, Division of Fisheries and Wildlife on February 19, 2003.**

Comment #29: Fisheries surveys on the Hoosic River have yielded twelve species: brown trout (Salmon trutta), brook trout (Salvelinusfontinalis), longnose dace (Rhinicthys calaractae), blacknose dace (Rhinichthys atratulus), common shiner (Notropis cornutus), slimy sculpin (Cottus cognatus), creek chub (Semotilus atromaculatus), bluegill (Lepomis macrochirus), pumpkinseed (Lepomis gibbosus), brown bullhead (Ameiurus nebulosus), white sucker (Catastomus commersoni) and longnose sucker (Catastomus calastomus).

Young of the year trout, longnose sucker and slimy sculpin are good indicator species of coldwater fisheries. The reach of the Hoosic River which will be affected by the proposed discharge is currently classified as warm water under the Department of Environmental Protection's Surface Water Quality Standards. It is our understanding that this classification is currently under review. Therefore we support the draft permit since language allows for it to be reopened in the event the river is reclassified. Likewise, we recognize the importance of the upstream flood control chute

restoration project and agree that the permit should be reopened if the project falls to materialize.