Wyman-Gordon, Inc. Response to Comments on Draft National Pollutant Discharge Elimination System (NPDES) Permit No. MA0004341

Introduction:

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit (MA0004341). The responses to comments (RTC) explain and support the EPA determinations that form the basis of the Final Permit. The Wyman-Gordon, Inc. draft permit public comment period began October 24, 2005 and ended on November 22, 2005. Comments were received from the permittee's counsel, Bowditch & Dewey, Attorneys, in a letter dated November 21, 2005 and Commonwealth of Massachusetts Riverways Program in a letter dated November 18, 2005. The comments raised concerns regarding the methodology and assumptions used to develop the permit and requested clarifications and further explanations of information in the fact sheet. Since the fact sheet is a final document, no changes were made. Instead, the comments were noted and a response to them is included in this document.

The Final Permit is substantially identical to the Draft Permit that was available for public comment. EPA's decision-making process has benefited from the various comments and additional information submitted, the information and arguments presented resulted in several minor changes to the final permit. A summary of the changes made in the Final Permit are listed below. The analyses underlying these changes are explained in the responses to individual comments that follow.

1. The cover page clarifies that the facility is authorized to discharge to receiving waters named "Wetlands adjacent to East Brook and Quinsigamond River; the Quinsigamond River (Segment MA51-09); and Bonny Brook (Basin Code MA851050) (Blackstone River Watershed). Part I.A.1 on page 2 clarifies that the permittee is authorized to discharge from outfall serial number 001 to "wetlands adjacent to East Brook and Quinsigamond River"; Part I.A.3 on page 4 clarifies that the permittee is authorized to discharge from outfall serial number 007 to "Bonny Brook"; Part I.A.4 on page 5 clarifies that the permittee is authorized to discharge from outfall serial number 008 to "Bonny Brook"; Part I.A.5 on page 6 clarifies that the permittee is authorized to discharge from serial outfall number 009 to "wetlands adjacent to East Brook and Quinsigamond River

2. The wording of footnote #6 in the permit has been amended to read, "If the permittee reports TSS results that exceed 100 mg/l, the permittee shall evaluate what caused such a level and review the permittee's SWPPP and revise it as necessary to minimize solids runoff."

3. A new Maximum Daily Effluent Limit of 0.760 for Total Aluminum as measured in mg/l, has been added for outfall # 008.

4. The wording of footnote # 7 shall be changed to read the following: "The permittee shall conduct an acceptable 24 hour static acute toxicity test once per year on outfalls 007, 008 and 009. This test shall be conducted during the period between April 1st and June 30th, and the

results shall be due by the 15th of August. The permittee shall test the daphnid, Ceriodaphnia dubia. See Permit Attachment B, Stormwater Toxicity Test Procedure and Protocol. After three consecutive toxicity tests for outfalls 007, 008 or 009 are conducted and acceptable, the permittee may request a reduction or elimination of the toxicity testing requirement for the outfalls. A determination on any such reduction or elimination will be made by the EPA and MA DEP after considering test results."

5. The pH discharge limits contained in the tables in Part I.A.1 (page 2), Part I.A.2 (page 3), Part I.A.3 (page 4), Part I.A.4 (page 5), and Part I.A.5 (page 6), has been changed from "see Part I.A.6" to "see Part I.A.7."

6. The requirement in Part I.A.7 that the pH of outfalls 001 and 010 be not more than 0.5 standard units outside of the naturally occurring range has been deleted. Part I.A.7 includes language clarifying the reporting of the instream pH monitoring. The pH requirements in Part I.A.7 on page 5 have been changed from "The pH of the effluent shall be monitored on a quarterly basis for outfalls 007, 008 and 009. Also, for the first year only, the permittee shall monitor and report the instream pH, immediately upstream and downstream of each of these three outfalls. This shall be done concurrently with the quarterly, effluent pH monitoring. For outfalls 001 and 010, the pH of the effluent shall not be less than 6.5 nor greater than 8.3 standard units and not more than 0.5 units outside of the naturally occurring range" to "The pH of the effluent shall be monitored on a quarterly basis for outfalls 007, 008 and 009. Also, for the first year only, the permittee shall monitor and report the instream pH, immediately upstream and downstream of each of these three outfalls. This shall be done concurrently with the quarterly, effluent pH monitoring. The results of this monitoring shall be included as an attachment with the DMR for that reporting period. For outfalls 001 and 010, the pH of the effluent shall not be less than 6.5 nor greater than 8.3 standard units."

Bowditch & Dewey, Counsel for Wyman-Gordon, comments:

General Comment 1 – Wyman-Gordon objects to the methodology and underlying assumptions used in deriving dilution and flow factors for each of the five (5) outfalls originating from the facility. EPA consistently undervalues and overlooks viable flow rates for the three receiving water bodies. These inaccurate flow rates become a critical component of the dilution calculation with respect to the discharge point and the receiving water. The incorrect dilution value subsequently has a substantial and direct impact on the final effluent limitations for all five Outfalls, particularly for each of the metals limits proposed by EPA. As a result, Wyman-Gordon is contesting all effluent limitations for metals proposed by EPA in the Draft Permit as well as Whole Effluent Testing ("WET") and pH monitoring and reporting.

Response to General Comment 1 - The permittee objected to the methodology and underlying assumptions used in deriving dilution and flow factors. The permittee maintains that EPA consistently "undervalues and overlooks viable flow rates …" Since this comment is general in nature and the permittee does not provide specific numerical data to support its argument here, EPA provides the following general response on the methodology and assumptions used to derive the dilution, flow factors, and subsequent final effluent limitations.

1. Dilution

In determining whether water-quality based effluent limits are needed in a permit, the permit writer is required to consider a number of factors, including the dilution of the effluent in the receiving water, where appropriate (See 40 CFR Section 122.44(d)(ii) and U.S. EPA NPDES Permit Writers' Manual, EPA-833-B-96-003, December 1996, pg. 101).

When conducting an effluent characterization to determine if water-quality based effluent limits are needed for specific chemicals, the permit writer projects the receiving water concentration of pollutants(s) contained in the effluent once that effluent enters the receiving water (U.S. EPA NPDES Permit Writers' Manual, EPA-833-B-96-003, December 1996, pg. 100). EPA may use a simple water-quality model when performing this analysis (See U.S. EPA NPDES Permit Writers' Manual, EPA-833-B-96-003, December 1996, pgs. 101-102). The water-quality model (or basic mass balance water-quality equation) is as follows:

$$Q_dC_d + Q_sC_s = Q_rC_r \qquad (1)$$

where:

Q_d = discharge flow
C_d = pollutant concentration in effluent
Q_s = background stream flow above point of discharge
C_s = background in-stream pollutant concentration
Q_r = resultant in-stream flow, after discharge = $Q_d + Q_s$
C_r = resultant in-stream pollutant concentration in the stream (after complete mixing)

For this permit, EPA assumed that the term representing background in-stream pollutant concentration (C_s) equals zero, so the product of the stream flow above the point of discharge and background pollutant concentration (Q_sC_s) also equals zero. Therefore, for this permit, the above equation can be rearranged algebraically as follows:

$$Q_dC_d = (Q_d + Q_s)Cr$$

$$C_r = Q_dC_d/(Q_d + Q_s) \qquad (2)$$

In the above equation, the term "$Q_d + Q_s$" represents the dilution provided by the receiving water. As can be seen from this equation, the term Q_s is inversely proportional to the term C_r. In other words, as the background stream flow increases, the resultant in-stream pollutant concentration decreases. Therefore, the background stream flow is an important factor in determining whether a discharge has a "reasonable potential" to violate water quality standards, and in establishing the appropriate effluent limit.

The term Q_s in the above equation is determined by using the lowest mean flow for seven consecutive days to be expected once in ten years (this is referred to as the receiving water "7Q10"). This value is selected in accordance with 314 CMR 4.03(3)(a), which states, in pertinent part, that "For rivers and streams, the lowest flow conditions at and above which

criteria must be met is the lowest mean flow for seven consecutive days to be expected once in ten years."

With regard to the permittee's comment concerning the methods used to determine (or calculate) the 7Q10 low flow for NPDES permits, the following information is provided. In general, EPA uses streamflow data collected and compiled by the U.S. Geological Survey. If other streamflow information is available for the site, EPA may consider using that data, depending on its accuracy.

Selecting the method to define the 7Q10 low flow for the site depends on the streamflow data available near the site. Streamflow data from the USGS's data collection network include daily flow records at gaging stations and discharge measurements at partial-record (or miscellaneous) stations. These daily flow data are compiled in the USGS National Water Information System (NWIS). See http://waterdata.usgs.gov/ma/nwis/sw . Data for the partial-record stations are available in separate reports by the USGS.

The following methods are commonly applied to determine the 7Q10 low flow and the following discussion provides a general overview. Responses to the derivation of the specific 7Q10 values used for this permit are addressed later in this response to comments.

A. Daily flow records: The 7Q10 low flow is calculated for a nearby gaging station located on the receiving water using several years of daily streamflow records. EPA's DFLOW program provides the 7Q10 flow using the daily flow data with a Log Pearson Type III distribution. These daily flow data are found in the NWIS data base. Information on DFLOW, including the program download, is available at http://epa.gov/waterscience/dflow . This 7Q10 low flow value is then translated upstream or downstream to the site using the drainage areas for each location.

Some drainage basins, where the site is located, contain multiple gaging stations. The computed 7Q10 values for each gage and all the drainage areas are used to determine the 7Q10 low flow at the site.

If adequate daily streamflow data are not available for that section of the receiving water, a "flow factor" is determined by using data selected from a nearby gaged stream with similar hydrologic characteristics. The method of using a flow factor is a simple process by which EPA first determines a value of the ratio of a known 7Q10 (as reported using a USGS gauge station) to its drainage area. After determining this "flow factor", one can compute an unknown 7Q10 by first determining the drainage area of the unknown 7Q10 and then applying the flow factor. EPA addresses the determination used in developing 7Q10 values using a "flow factor" later in this response to comments.

Where appropriate, adjustments may be made to the computed 7Q10 value for surface water alterations (impoundments) including water diversions and transfers, and other point source discharges from treatment facilities. For certain river systems, these adjusted annual low flow data are used to define a graphical low flow frequency curve to determine the 7Q10 value.

B. Partial-Record Stations: The 7Q10 low flow value for the nearby partial-record (or miscellaneous) station is used and transferred to the site using the drainage areas for each location.

C. Unavailable Streamflow Data: For sites without streamflow data available, EPA may use USGS's STREAMSTATS software to obtain the 7Q10 flow for rivers and streams in Massachusetts.

Finally, in some instances EPA may believe that the 7Q10 value used to develop the previous permit limits is still a valid value and therefore, EPA may simply use the same 7Q10 value to develop the new permit limits.

The commenter states that EPA "consistently undervalues and overlooks viable flow rates for the three receiving water bodies" and that the use of an incorrect dilution value "subsequently has a substantial and direct impact on the final effluent limitation for all five Outfalls, particularly for each of the metals …"

While EPA agrees generally, as demonstrated and stated above, that the use of incorrect dilution values may affect the permit's final effluent limits, in this case the dilution values were correct. The derivation of the actual flow values used in developing the permit's final effluent limits are discussed in response to the commenter's specific comments. See "Response to Specific Comment 1" below. Dilution is discussed in more detail per outfall in later responses to Specific Comments.

Additionally, the permittee has not provided alternative methods or calculations to support its statements. Therefore, based on the review of its methodology, EPA has not modified the assumptions used in the derivation of flows and dilution in the draft permit.

General Comment 2 - The hardness calculations utilized by EPA are entirely dependant upon the above analysis. Specifically, EPA indicated "it was reasonable to simply use the hardness of the effluent which was reported in the WET reports." *See* Fact Sheet Attachment "J." However, EPA in the Fact Sheet states that this conclusion assumes a "great disparity between the stream flow and the maximum daily flow." *See id.* As outlined above, Wyman-Gordon contests that such a disparity exists between the stream flow and maximum daily flow. The flow levels assumed by EPA are not reflective of actual conditions and underestimate the volume of water in the receiving body. These inaccuracies directly impact the final hardness calculation. As a result, it is Wyman-Gordon's position that the use of such a hardness factor is overly conservative and an unrealistic evaluation of water hardness.

With regards to calculating hardness, Wyman-Gordon contests various assumptions and calculation methodologies utilized by EPA with respect to final derivations. Particularly, Wyman-Gordon objects to the translator used in developing a total recoverable permit limit from dissolved criteria. Despite the absence of site specific data to derive a translator, given the nature of the receiving waters and effluent flows, the utilization of a translator equivalent to the criteria

conversion factor is not necessary. The utilization of such a translator represents a worst case scenario not indicative of the particular discharge to the specific receiving water body.

Response to General Comment 2 - In response to the permittee's comment, EPA has reviewed the guidance and regulations used to develop hardness dependent metal permit limits. EPA has also re-examined the translator(s) used to develop total recoverable metal permit limits. EPA offers the following general response to the commenter's general comments. Specific values used and their rationale are explained in response to specific comments.

1. Hardness:

Freshwater aquatic life criteria for certain metals are expressed as a function of hardness because hardness can affect the toxicities of these metals (See National Recommended Water Quality Criteria: 2002, November 2002, EPA-822-R-02-047). EPA determined that two hardness dependent metals, namely copper and zinc, were of concern when developing permit limits (based on past monitoring results from the facility's discharge, See Attachment D to the Fact Sheet). Therefore, EPA used the equation for the highest concentration of a pollutant in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect (CMC) as provided in Appendix B of the National Recommended Water Quality Criteria: 2002, November 2002, EPA-822-R-02-047 in order to determine the appropriate criteria to use in developing potential permit limits for copper and zinc (See pgs. 11,12, 15, 16, 18,19, 22, 26, and Attachment J of the Fact Sheet). This equation shows that a metals dissolved criteria is proportional to the exponent of the natural log of the hardness. This is expressed mathematically as follows:

$$\text{CMC (dissolved)} = \exp\{m_A[\ln(\text{hardness})] + b_A\}\ (CF) \qquad (3)$$

The permittee contends in its comments that the flow levels assumed by EPA are not reflective of actual conditions and underestimate the volume of water in the receiving body and that these "inaccuracies" directly impact the final hardness calculation.

EPA agrees that the value determined for hardness and used in the above equation impacts the dissolved criteria used in the development of permit limits for certain hardness dependant metals (copper and zinc). Increasing the hardness has the effect of decreasing the toxicity of metals (See pg. 7, National Recommended Water Quality Criteria: 2002, November 2002, EPA-822-R-02-047).

EPA's rationales for choosing the flow levels and specific hardness values for the receiving water are discussed in response to specific comments on this issue by the permittee.

2. Translator

40 CFR Section 122.45(c) states that: " All permit effluent limitations, standards, or prohibitions for a metal shall be expressed in terms of "total recoverable metal" as defined in 40 CFR part 136..." To determine the ""total recoverable metal" limits for this permit, EPA used The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from

a Dissolved Criterion, EPA Document # EPA-823-B-96-007, 1996. The metals translator is a tool for environmental scientists and permit writers to use in calculating the amount of a metal that may be discharged from a facility to a surface water body based on how the metal is distributed (partitioned) between water and sediments in the receiving stream.

The above referenced guidance document (the "Metals Translator") states that the translator may take three forms. (1) It may be assumed to be equivalent to the criteria conversion factors; (2) It may be developed directly as the ratio of dissolved to total recoverable metal; or (3) it may be developed through the use of a partition coefficient that is functionally related to the number of metal binding sites on the adsorbent in the water column (i.e., concentrations of TSS, TOC, or humic substances).

For this permit, EPA assumed the translator to be equivalent to the criteria conversion factors (as given in Appendix B of National Recommended Water Quality Criteria: 2002). This decision was based in part on the lack of site specific data that would be necessary to develop a translator based on either a direct ratio of dissolved to total recoverable metal or through the use of a partition coefficient. Therefore, EPA disagrees with the commenter that "despite the absence of site specific data to derive a translator … a translator equivalent to the criteria conversion factor is not necessary." No change to the method of choosing the appropriate translator has been made in response to this comment.

The permittee has the option of performing additional sampling of the effluent, receiving waters and effluent/receiving water mixtures in order to develop site-specific ratio and/or partition coefficients for any metal(s) using the procedures described in the guidance document cited above. If the permittee chooses to do so, it may seek a permit modification based on the results of such efforts in the future.

Regarding hardness, the concentration of available metal is dependent on the hardness of the water it is contained in. As mentioned in Attachment J, the permittee did not either perform or report a site control or chemical analysis for the receiving stream as required in the WET testing protocols. This would have given EPA a direct hardness number for the stream.

EPA determined that the hardness factor to be used in setting an effluent limit for hardness dependent metals would be the average hardness of the effluent (50 mg/l) reported in the WET reports. During rain events, Bonny Brook tends to be dominated by the facility's effluent. In fact, using the 7Q10 value (0.003 cubic feet per second equals approximately 1932 gallons per day) and the maximum daily storm water flow (356,500 gpd), one sees that Bonny Brook consists of approximately 99.5% effluent (356,500/358,435 = 0.995). Therefore, EPA believes that use of the hardness value of the effluent in lieu of the hardness of the stream is appropriate.

EPA finds that the procedures followed are correct and no changes relating to hardness based effluent limits have been made in the final permit relating to this comment.

The permittee contests EPA's use of "various assumptions and calculation methodologies" and disputes the hardness number used in the calculation of a total recoverable permit limit, but fails to specifically identify what assumptions and methodologies it disagrees with and why, nor did it provide alternative calculations or a hardness number which would allow EPA the opportunity to evaluate the permittee's contention.

General Comment 3 – Wyman-Gordon contests the dilution factors and respectfully requests inclusion of dilution factors more representative of actual flow conditions in the final permit and the replacement of numerical effluent limitations with "report only" requirements for all parameters. Wyman-Gordon contends that there is no reasonable potential for excursions over any relative water quality standard based upon the current pollution prevention controls in place and the nature of the specific receiving water bodies. As a result, Wyman-Gordon maintains that the effluent limitations and testing and monitoring requirements contained within the draft permit are excessive.

Response to General Comment 3 – The use of dilution to calculate permit limits is discussed in general terms above. Specific responses to the permittee's specific comments are provided below.

The permittee contends that "there is no reasonable potential for excursions over any relative water quality standard based upon the current pollution prevention controls in place and the nature of the specific receiving water bodies."

The permittee's statement is very general, but monitoring data reported by the permittee to EPA as required under the existing permit, clearly show "excursions" over water quality criteria. As an example, EPA's National Recommended Water Quality Criteria for Aluminum and Iron are 0.750 mg/l and 1.000 mg/l respectively. In June of 2001 the Discharge Monitoring Reports (DMRs) indicated an Aluminum level of 0.79 mg/l for outfall 007, and in December of 2003, the DMRs indicated an Iron level of 1.9 mg/l for outfall 009. Thus, both of these results exceed the recommended water quality criteria levels as well as the new effluent limits in the final permit. In these cases where the detected concentrations exceed the applicable numeric water quality criteria for these specific pollutants and receiving stream dilution is so small, EPA concludes that there is reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standards, and therefore EPA must develop effluent limitations. Therefore, EPA has included several new effluent limits in the final permit.

Specific Comment 1 – Wyman-Gordon disputes EPA's classification regarding flow rates for Bonny Brook as they relate to Outfalls 007 and 008. EPA notes a critical flow of approximately .003 cfs for the Brook. However, the environment immediately upstream of Bonny Brook consists of neighborhoods and roadways, including Route 122. As documented on the relevant United States Geological Survey ("USGS") topographic maps, Bonny Brook extends several thousand feet upstream of the Facility to its ponded headwaters. *See* Exhibit "A," USGS Topographic Map. The actual flow to Bonny Brook is greater than the worst case scenario imposed by EPA's alleged flow and proposed dilution factor of 1.01. Wyman-Gordon contests the dilution factors and respectfully requests inclusion of dilution factors more representative of

actual flow conditions in the final permit and the replacement of numerical effluent limitations with "report only" requirements for all parameters.

Response to Specific Comment 1 – EPA agrees that the "actual flow to Bonny Brook" may be greater than "the worst case scenario imposed by EPA's alleged flow and proposed dilution factor of 1.01." However, as explained in response to general comment 1 above, EPA determines permit limits based on a 7Q10 value in accordance with 314 CMR 4.03(3)(a), which states, in pertinent part, that "For rivers and streams, the lowest flow conditions at and above which criteria must be met is the lowest mean flow for seven consecutive days to be expected once in ten years." While EPA agrees that the "actual flow" may in fact be greater than the 7Q10 at certain times, it is inappropriate for EPA to use the "actual flow" when developing permit limits.

In response to this comment, EPA has re-examined the methodology used to calculate the 7Q10 for Bonny Brook and offers the following response:

As stated on page 6 of the Fact Sheet, the 7Q10 flow for Bonny Brook was taken from data used to develop the previous ("existing") permit. This value was derived using a "flow factor" (see Attachment E to the Fact Sheet) and was calculated to be 0.0034 (rounded to 0.003) cubic feet per second (cfs).

As stated in response to general comment one above, estimating a 7Q10 value using a "flow factor" is a technique in which the ratio of a river or stream's known 7Q10 to its drainage area is applied to an unknown river or stream's 7Q10 to its known drainage area. Mathematically, this is expressed as follows:

$$7Q10_{known}/\text{Drainage Area}_A = 7Q10_{unknown}/\text{Drainage Area}_B \qquad (4)$$

where:

$7Q10_{known}$ = Value determined from USGS gauge station on river in proximity of receiving water
Drainage Area_A = Drainage area for river with known 7Q10 as determined from USGS quadrangular map
$7Q10_{unknown}$ = Receiving water low flow value at point of discharge
Draingage Area_B = Drainage area for receiving water as determined from USGS quadrangular map

As stated in response to general comment one above, an assumption used in equation 4 above is that the hydrological low flow value of Drainage Area_A is similar to Drainage Area_B. Although the commenter seems to dispute this assumption by stating that the environment above Bonny Brook consists "… of neighborhoods and roadways, including Route 122," EPA maintains that this is a valid assumption since both areas consist of similar land uses and would result in similar flow factors. The drainage area for Bonny Brook is included in the drainage area for the known 7Q10 and includes land uses consistent with what uses are found in the drainage area for the known 7Q10.

EPA has determined that an appropriate nearby gage station to use to determine a known 7Q10 is located on the Quinsigamond River (USGS Gazeteer of Hydrologic Characteristics of Streams in Massachusetts – Blackstone River Basin, U.S. Geological Survey Water Resources Investigation Report 84.4286 (Gazeteer), See Table 4, Page 20). The gage station is located approximately 800 feet downstream of Hovey Pond. The known 7Q10 for this location is 0.48 cfs. The drainage area for this gauge station river location is estimated to be 25.6 sq mi. Per the Gazeteer mentioned above, drainage area is defined as the area, in square miles, as measured on the most recent 1:24,000 scale topographic quadrangle maps. Drainage area as defined by the "National Handbook of Recommended Methods for Water Data Acquisition" (U.S. Geological Survey, 1977) is "…the area of a river basin, measured in a horizontal plane, that is enclosed by a topographic divide such that direct surface runoff from precipitation normally would drain by gravity into the river basin." Drainage area boundary lines are traced on topographic maps along divides indicated by contour elevations, starting at the point on the stream for which the drainage area is desired. These lines are drawn to cross a contour at right angles.

An estimate of the sub-basin drainage area for Bonny Brook was calculated utilizing two measurement methods. In the first method, transparent grids were laid over the topographical maps of the area. The number of squares and partial squares were then counted to estimate the area for Bonny Brook. The estimated drainage area for Bonny Brook using this method was 0.38 square miles versus 0.17 square miles as calculated in the current permit's fact sheet. The second method involved plotting points on a GIS system, which in turn calculates the area of the watershed. The GIS method enlarges the topographic map of the watershed area allowing for a more accurate placement of the points used to measure the drainage area. This method calculated a drainage area for Bonny Brook of 0.77 square miles. EPA believes this to be the more accurate of the values calculated for the drainage area.

Using the equation 4 above with the values determined above results in the following:

$$0.48 \text{ cfs}/25.6 \text{ sq. mi.} = 7Q10_{unknown}/0.77 \text{ sq. mi.}$$

$$7Q10_{unknown} = (0.48 \text{ cfs})(0.77 \text{ sq. mi.})/25.6 \text{ sq. mi.}$$

$$7Q10_{unknown} = 0.014 \text{ cfs}$$

Therefore, EPA agrees that the newly calculated 7Q10 for Bonny Brook be used in the development of a dilution factor in the final permit (recalculated 7Q10 of 0.014 cfs versus the 7Q10 of 0.003 cfs used for the draft permit).

Using the new value in equation 2 (see also pg. 6 of the fact sheet) above results in:

$$C_r = Q_d C_d/(Q_d + Q_s) \text{ or}$$

$$C_d = C_r(Q_d + Q_s)/Q_d$$

where:

$(Q_d + Q_s)/Q_d$ = Dilution Factor (see also pg. 7, Massachusetts Water Quality Standards, Implementation Policy for the Control of Toxic Pollutants in Surface Waters, February 23, 1990)
Q_d = discharge flow = 0.552 cfs
Q_s = 7Q10 stream flow = 0.014 cfs
therefore:

Dilution Factor = (0.552 cfs + 0.014 cfs)/0.552 cfs

Dilution Factor = 1.025 rounded up to 1.02; therefore

$$C_d = C_r(1.02)$$

As can be seen from above, using the updated value that includes the larger drainage area does not result in any appreciable change in the dilution factor. Therefore, no changes have been made to the permit limits based on this recalculated dilution factor.

Specific Comment 2 – Wyman-Gordon respectfully disagrees with EPA's determination regarding dilution factors for Outfalls 001 and 009. Further, Wyman-Gordon disagrees with the assertion in the Fact Sheet that Outfalls 001 and 009 discharge to wetlands.

Pursuant to the Draft Permit, EPA categorizes the particular discharge region in East Brook as "a slow moving lowland stream that meanders through a wetland with little velocity and flow." *See* Fact Sheet, page 6. The particular outfalls, however, discharge into two separate manmade unnamed channels, rather than wetlands. These channels are discrete conveyances through the wetlands that discharge primarily into the East Brook. As EPA notes in the Fact Sheet at page 6, East Brook is in fact a stream with a consistent flow. As documented on the relevant USGS topographic maps, East Brook extends several thousand feet upstream of the Facility to its headwaters. *See* Exhibit "A". As a result, East Brook does in fact generate dilution which is not reflected in the dilution factor of 0.0 proposed by EPA for Outfalls 001 and 009 in the Draft Permit. Thus, Wyman-Gordon contests the dilution factors and respectfully requests inclusion of dilution factors more representative of actual flow conditions in the final permit and the replacement of numerical effluent limitations with "report only" requirements for all parameters.

Response to Specific Comment 2 - In response to the permittee's comment, EPA conducted a site visit to determine exactly where each outfall is located and what type of water body each outfall discharges its effluent into. Based on that site visit, as described below, EPA disagrees with the permittee's factual contentions. Rather, EPA has concluded that outfalls 001 and 009 discharge to the wetland (or, in the case of 009, into a small stream within the wetland) that is adjacent to East Brook and not directly into East Brook itself. EPA's observations are consistent with information obtained from the Commonwealth of Massachusetts, which indicates that the outfalls discharge into an area designated as a shrub swamp and a deciduous wooded swamp (see http://maps.massgis.state.ma.us).

On Wednesday, April 19, 2006, permit writer Stuart F. Gray visited the site and viewed the outfalls at the facility. It was clear from the site visit that outfall 001 did in fact discharge into a manmade channel that was created in an upland area and is approximately 150 to 200 feet in length. However, at the end of that channel, the effluent entered the wetland at a point several hundred yards from the East Brook streambed.

Outfall 009 discharged directly into a small meandering stream that is surrounded by the wetland and flows into East Brook several hundred yards downstream of the discharge point. The stream appears to be natural. Even if it were man-made, it would have been created by altering the wetland and could not be considered a man-made upland ditch. The stream is not simply a conveyance of effluent to East Brook, as the commenter contends, but rather is, itself, a receiving water within the wetland.

Based on the permit writer's observations made during the site visit in response to the permittee's comments, no changes have been made to the dilution determination or the subsequently derived permit limits.

Additionally, as a practical matter, it makes little difference in regard to deriving permit limits if one uses the potential dilution of East Brook rather than the zero dilution afforded by the wetland. This is demonstrated below.

EPA agrees with the permittee's comment that East Brook is a stream with a consistent flow. EPA also agrees that the relevant USGS maps show East Brook extends several thousand feet upstream to its headwaters. EPA notes here that this is demonstrated both in Exhibit A as submitted by the commenter as well as on the 1982 USGS Milford, MA quadrant map. Using the methodology and nearby gage station located on the Quinsigamond River explained in the Response to Specific Comment 1, the 7Q10 for East Brook is calculated as follows:

The drainage area of East Brook is calculated to be 0.69 square miles based on the GIS method explained in the Response to Specific Comment 1. As in the Response to Specific Comment 1, the nearby gage station on the Quinsigamond River is used to calculate the 7Q10 for East Brook, using a flow factor, as follows:

7Q10 Known/Drainage Area Known = 7Q10, East Brook/Drainage Area, East Brook

0.48 cfs/25.6 sq. miles = 7Q10 East Brook/ (0.69 sq. miles)

$$7Q10 \text{ of East Brook} = \frac{(0.48)\,(0.69)}{(25.6)} = 0.013 \text{ cfs}$$

As in Response to Specific Comment 1 and on page 7 of the Massachusetts Water Quality Standards, and the Implementation Policy for the Control of Toxic Pollutants in Surface Waters (February 23, 1990), the dilution factor is derived from the formula:

Dilution Factor = DF = (Qd + Qs)/ Qd

Where Qd = the discharge flow = 5.98 cfs, and
Qs = the 7Q10 for East Brook = 0.013 cfs, calculated above.

DF = (Qd + Qs)/ Qd = (5.98 + 0.013) / 5.98 = 1.002

As can be seen from above, factoring in the flow from East Brook does not result in an appreciable change in the dilution factor, even though EPA maintains that for this receiving water, the fact sheet's calculation of effluent limits for Outfall 001 and 009 were correct in assuming no dilution (a dilution factor of 1.0). Therefore, no changes have been made to the permit limits for Outfall 001 and 009.

Specific Comment 3 - In arriving at a flow rate and dilution factor for Outfall 010, EPA erroneously relied upon USGS flow data from a gage station located downstream from Hovey Pond. Said data indicate a flow rate for the Quinsigamond River equal to .48 cfs. However, the discharge into the River from outfall 010 occurs several hundred feet upstream of this station and Hovey Pond. As acknowledged by EPA in the Draft Permit, Hovey Pond is a man-made impoundment utilizing a dam at its downstream end. As a result, the flow out of the Pond does not accurately represent the upstream conditions present at Outfall 010. These upstream conditions involve a considerable increase in flow and correspondingly a far greater rate of dilution at Outfall 010. In order to properly reflect actual conditions and flow patterns, the flow at the point of discharge of Outfall 010 is the accurate measure. *See* Exhibit "B," USGS Topographic Map and Stream Gauging Station Information. As the dilution factor and the final effluent limitations are directly proportional to this derivation, they too should be adequately adjusted. Wyman-Gordon contests the dilution factor and respectfully requests inclusion of a dilution factor more representative of actual flow conditions in the final permit and the replacement of numerical effluent limitations with "report only" requirements for all parameters.

Response to Specific Comment 3 – EPA disagrees with the permittee's contentions that: 1) "… the flow out of the Pond does not accurately represent the upstream conditions …", and; 2) "These upstream conditions involve a *considerable increase* (emphasis added) in flow and correspondingly a far greater rate of dilution …" EPA believes the downstream gage station represents an appropriate flow value to use in calculating the dilution factor and therefore disagrees that it erred by relying upon the downstream USGS gage station.

Hovey Pond is a manmade impoundment with a dam at its outlet. The dam is not "operated," or regulated, meaning that outlet water is free to flow uninterrupted over "spillway," the height of which controls the water level in the impoundment. A dam which functions in this way is commonly referred to as a "run-of-river" dam, meaning that the flow into the impoundment equals the flow out of the impoundment, assuming that there are not any significant water withdrawals. EPA has found no evidence of any water withdrawals from Hovey Pond nor has the commenter provided any information supporting such an activity.

Absent any significant water withdrawals, EPA believes that the gauge located downstream of the pond outlet actually reflects a higher flow than exists in the river at the point of discharge from outfall 010. This is due to the fact that the downstream gauge station measures a small amount of additional flow due to the increased watershed area.

EPA understands that, as a general matter, it may be possible for certain anomalous conditions to exist which would allow the inflow to Hovey Pond to exceed the outflow. If the inflow to Hovey Pond was ceased and the volume of water in Hovey Pond was reduced, though evaporation for example, then the water level in the pond could fall below the spillway and discharge into the Quinasigmond River would cease. In this case, the downstream gauge station would not measure any contribution from Hovey Pond. Next, water would have to begin flowing into Hovey Pond again. There would be a certain "lag" time until the pond water level returned to the height of the spillway and once again began flowing out of the pond into the Quinsigamond River. During this lag time, the flow, if measured at the inlet to Hovey Pond could exceed the downstream flow as measured at the Quinsigamond River gauge station. The permittee has not provided any information indicating that the above hypothetical situation has occurred.

The only information the permittee submitted in support of its comments is "Exhibit B." Exhibit B appears to be nothing more than data obtained from the downstream gauge that EPA in fact used (see Exhibit B, "Location … on right bank 800 ft downstream from dam at outlet of Hovey Pond at North Grafton …"). This data only shows that the flow of the river as recorded at the downstream gauge station was above the median daily stream flow (based on 65 years of record) for the dates of November 6, 2005 through November 13, 2005. EPA fails to understand the logic of submitting downstream flow data (unrepresentative of 7Q10 conditions) in support of a contention that the flow upstream is greater**.**

In conclusion, for the reasons discussed above, EPA maintains that the gauge station flow used in the fact sheet is a reasonable representation 7Q10 value used to derive permit limits at outfall 010. If an adjustment due to the different locations were made, it would be to allow less dilution, not more dilution, at the location upstream at outfall 010.

Specific Comment 4 - Pursuant to its prior monitoring efforts, Wyman-Gordon contends that metals from Outfall 009 discussed by EPA in the Draft Permit originate in the neighborhoods and roads upstream of the discharge point in East Brook. Drainage systems for the neighborhood and Route 122 tie into the system located at Wyman-Gordon draining into Outfall 009. Likely catalysts for elevated metals and contaminants thus include oil and other materials from motor vehicles, and sand and salt used to treat roadway surfaces. As these elements migrate onto the Wyman-Gordon property, it is impossible for Wyman-Gordon to curtail their generation and Wyman-Gordon would be unable to satisfy the effluent limitations proposed in the Draft Permit. Additionally, the storm water system could not be separated without considerable expense to both the Commonwealth of Massachusetts and the local community. As stated in Section C:2., Wyman-Gordon contests the dilution factor and respectfully requests inclusion of a dilution factor more representative of actual flow conditions in the final permit and the replacement of numerical effluent limitations with "report only" requirements for all parameters.

Response to Specific Comment 4 - The permittee contends that metals originate in the neighborhoods and roads upstream of the discharge point in East Brook.

However, DMR data indicate that the same metals found in the effluent at outfall 009 are also present in the facility's other outfalls' discharges. These discharges are absent any additional flow from the neighborhood or Route 122.

Furthermore, the permittee's monitoring efforts do not support its theory that metals and other pollutants can or may originate from sources "off-site" of the Wyman property. Because it sampled only at the end of the outfall and not at a point before the storm water from Wyman Gordon's property converges with the storm water from any off-site sources, the permittee has not demonstrated whether or to what degree off-site sources of pollution may contribute to the final effluent's metal concentration(s). In any event, since the permit limits are water-quality based,, the permittee must meet these limits at its outfall, regardless of where the pollutants originate from (see 40 CFR 122.44(d) and 40 CFR 122.44(d)(1)).

The permittee states that the storm water systems could not be separated "without considerable expense." Water quality based effluent limits are set irrespective of issues such as cost, logistics or available technology. While such issues may justify the establishment of a compliance schedule, the permittee failed to provide any support for its contention and has not requested or demonstrated the need for such a schedule.

Specific Comment 5 - Pursuant to the Draft Permit, Wyman-Gordon is obligated to conduct periodic pH testing. The draft Permit allows "for the pH limits to be exceeded when the ambient pH in rainwater exceeds the mandated range with the pH of discharge not altered by the facilities activities by more than 0.5 S.U." As past Facility discharge data indicate, any variation from acceptable pH limitations at the Facility results from naturally occurring low storm water pH. As such, Wyman-Gordon requests the removal of pH testing from the final permit for all Outfalls.

Response to Specific Comment 5 - No change in pH testing has been made in the final permit based on the permittee's comment. However, EPA has made minor clarifications on the pH requirements for outfalls 001 and 010 as well as the permit's pH reporting requirements.

Part I.A.7 of the final permit specifies the pH requirements (EPA notes here that the draft permit incorrectly referenced the pH requirements in the tables on pages 2-6 as "see PART I.A.6" when in fact it should have referenced the requirements as "see Part I.A.7." This typographically error is corrected in the final permit).

For outfalls 007, 008, and 009, (storm water only) Part I.A.7 requires that the permittee monitor the effluent's pH on a quarterly basis. The sample shall be a "grab" and shall be collected as specified in footnote 1 on page 7 of the final permit. The permittee shall report this value in the monthly DMR following the quarter in which the sample was taken. If no sample is taken during the quarter, the permittee shall follow the reporting procedures specified in footnote 1 on page 7 of the final permit ("no discharge"). Additionally, Part I.A.7 of the permit requires the permittee to collect concurrently one in-stream pH sample "upstream" and another in-stream sample "downstream" during the first year of the permit. These are monitoring requirements only and are for the purpose of verifying that the runoff from WG is not altering the naturally occurring background pH. The final permit is clarified with regard to the reporting of this information.

Part I.A.7 now specifically specifies that the results of the measurements shall be reported as an attachment to the monthly DMR for that reporting period.

For outfalls 001 and 010, which contain a mixture of process water and storm water, the final permit requires that the effluent meet a pH range of between 6.5 and 8.3. Part I.A.7 of the final permit has been changed from the draft permit such that it no longer includes the "and not be more than 0.5 units outside of the naturally occurring range" requirement. This is done in recognition that the natural background conditions may drop below 6.0 and that this occurrence is out of the permittee's control.

The permittee contends that the draft permit allows "for the pH limits to be exceeded when the ambient pH in rainwater exceeds the mandated range with the pH of discharge not altered by the facilities activities by more than 0.5 S.U." The above quoted language is not found in the draft permit or the fact sheet. However, similar language is found is several places in the fact sheet (see pages 10 (outfall 007), 14 (outfall 008), 18 (outfall 009), 21 (outfall 001) and 25 (outfall outfall 010)). This fact sheet pH language states "The Draft Permit allows for the pH limits to be exceeded when the ambient pH in the rainwater is outside of the required range and the pH of the discharge is not altered by the facility's activities by more than 0.5 S.U." However, EPA notes here that the fact sheet was in error and that this language was not included in the draft permit as an enforceable condition.

In summary, EPA has not removed pH testing from the permit for any outfalls. EPA has clarified the monitoring and reporting requirements and has changed the pH limit for outfalls 001 and 010 such that the requirement that the range be between 6.5 – 8.3 S.U. The condition in the draft permit that the pH not be more than 0.5 units outside the naturally occurring range has been deleted in the final permit.

Specific Comment 6 - The imposition of WET testing on Outfalls conveying solely storm water (Outfalls 007, 008 and 009) is over burdensome and is no longer warranted at the Facility. Outfall 008 data from June 1999-June 2003 showed five (5) consecutive results satisfying the criteria to remove WET testing under the existing permit. Unfortunately, subsequent data from June 04-June 05 indicated toxicity. As discussed with the permit writer, Mr. Stuart Gray, Wyman-Gordon investigated these subsequent exceedences and attributed the toxicity to off-site contaminants since there was no discharge from Outfall 008 due to flooding caused by beaver damming. The beaver damming has since ceased and the receiving water is again free flowing. Wyman-Gordon respectfully requests the removal of WET testing for Outfalls 007, 008 and 009 from the final permit.

Response to Specific Comment 6 - EPA reviewed the permittee's WET testing data and found that the 2003 Bio-Toxicity test report for outfall 008 failed to include a test for the fathead minnow (Pimephales promelas) as required under the current permit. The 2005 WET Report for outfall 008 exhibited some acute toxicity, but the permittee claims that the test results were not representative of the facility's discharge. During a site visit on May 10, 2005 by Stuart F. Gray, US EPA, the permittee stated that the lack of a representative sample available for WET testing was due to the presence of a downstream beaver dam which had submerged the entire drainage

system for outfall 008, thereby creating a situation in which the sample contained impounded backwater and "off-site" contamination. During the visit, the presence of a beaver dam at this location was confirmed by Stuart F. Gray, USEPA.

EPA has confirmed that the dam has since been breached and the receiving water is again free flowing. However, due to the type of discharge, the low flow of the receiving stream and the inability to determine whether the "off site" contamination contributed to the toxicity levels in the sample taken in 2005, EPA finds that continuation of WET testing at outfall 008 is necessary. The permittee shall only have to test for the daphnid, Ceriodaphnia dubia for outfalls 007, 008 and 009.

Following issuance of this permit, if the permittee can provide 3 consecutive tests showing no toxicity from outfalls 007, 008, and 009, the permittee may request in writing the elimination of the WET testing requirement for these storm water-only outfalls.

Specific Comment 7 - The Cooling Water Intake Structure ("CWIS") Requirements issued in the Draft Permit are unnecessary and overbroad. Pursuant to the Clean Water Act ("CWA") § 316 (b), EPA must consider, among others, the cost of implementing CWIS technology options, legal issues, engineering issues, economic issues, and policy issues with respect to regulatory implementation. As noted in the Draft Permit, Wyman-Gordon has taken considerable steps towards minimizing environmental impacts from the CWIS withdrawing water from the Quinsigamond River, particularly the EPA's primary concern regarding entrainment and impingement of aquatic life. Within the Draft Permit, EPA acknowledges the following particular actions implemented by Wyman-Gordon in minimizing impacts: use of a large wetted cross section reducing velocity through screen; effective intake structure design; intermittent and infrequent utilization of pumps; and a continuing trend towards minimizing the utilization of water from the Quinsigamond River through recycling and reuse of water. Moreover, as noted by EPA, the CWIS is located in an unnamed "low energy backwater" of the Quinsigamond River, an unlikely viable habitat for the species in question.

As EPA states in the Draft Permit, the compliance requirements of the CWA, particularly Phase I and II rules, are inapplicable to Wyman-Gordon based on the facility size and nature. As EPA further states, the proposed Phase III rules are not in effect at this time and irrelevant for current permitting purposes. Thus, EPA is left with an individual site-specific analysis based on best professional judgment ("BPJ"). Nevertheless, EPA seeks to impose unnecessary monitoring requirements after each utilization of the intake pumps. These pumps are unmanned automated pumps triggered by RMF storage tank levels, and as a result, can turn on at any time. In fact, the only justification offered by EPA related to the conclusion is that the "design components of BTA do not directly prevent fish eggs and larvae from being entrained in the facility's CWIS." This statement is contrary to the numerous additional statements by EPA in the Fact Sheet directly linking Wyman-Gordon's current efforts and reduction in the possibility of entrainment and impingement of aquatic species. As a result, Wyman-Gordon is requesting the removal of CWIS requirements and limitations from the final permit.

Response to Specific Comment 7 - In prior discussions with Mary Cushner, Assistant Environmental Engineer for Wyman-Gordon, Inc. and reiterated in a phone conversation with

same on December 7, 2005, EPA learned that the pumps used to withdraw water from Quinsigamond River are, in fact, manually switched on and off. Although the capability currently exists to turn on the pumps automatically, the current practice is to turn them on manually and, in any event, they still must be shut off manually. Therefore, under current practice, the permittee should readily be able to monitor after each use of the intake pumps. If the permittee decides to end its current practice of manually switching the pumps on and instead does so automatically, the permittee may fulfill the monitoring requirement by recording observations when turning off the pump.

EPA acknowledges that the permittee has taken steps to address adverse impacts of the CWIS but no data exists on the actual effects. It is reasonable for EPA to require monitoring to determine the extent of impingement effects, if any. Such data could form the basis for revised permit conditions in future permit issuance and/or modification(s). Therefore, no change has been made in the permit.

Commonwealth of Massachusetts Riverways Program Response to Comments

Comment 1: The draft NPDES permit requires the Permittee to monitor and report TSS values for both the average monthly and maximum daily value. The Permittee is also required, as outlined in footnote #6, to evaluate any TSS concentration measured in the effluent approaching or exceeding 100 mg/l. The draft permit does not specify what specific concentration is high enough to be considered approaching 100 mg/l- if approaching means a value of 90 mg/l or more? 80 mg/l or more? The wording in footnote #6 could be more precise to eliminate any confusion or contradicting interpretations. The Fact Sheet **states the TSS 'report only' requirement mirrors what is in the current permit. In reviewing the discharge monitoring report data submitted by the Permittee found in the EPA's Permit Compliance** System, the information in the data base indicates stormwater outfalls 007, 008 and 009 have a daily maximum TSS limitation of 100 mg/l in the existing permit. In fact outfall 008 had exceedances of the 100 mg/l limitation when the concentration of the effluent reached 116 mg/l in 1998. The information in the data base strongly infers there is an existing permit limit and the change to a report only requirement for daily maximum TSS concentration would be a step backward. If there is currently a TSS daily maximum limitation, it would be in the spirit of the anti-backsliding requirements of the Clean Water Act and protective of the receiving waters, which afford negligible dilution and assimilative capacity and the impaired status of Flint Pond and its known turbidity problem, if the daily maximum limitation remained at 100 mg/l and footnote #6 was amended to require the Permittee to evaluate possible TSS sources when the permit limit of 100 mg/l is exceeded or when TSS concentrations of 70 mg/l or greater were measured in the effluent.

Response to Comment 1 - The wording of footnote #6 has been amended to read, "If the permittee reports TSS results that exceed 100 mg/l, it shall evaluate what caused such a level and review its SWPPP and revise it as necessary to minimize solids runoff."

Additionally, the commenter indicated that the discharge monitoring report (DMR) data showed a limit for TSS of 100 mg/l. EPA has reviewed the current permit and found that the current permit has a "report only" requirement for TSS monitoring at outfalls 007, 008 and 009. Further,

EPA believes that continuing the "report only" requirements for TSS in the final permit for outfalls 007, 008 and 009 would not trigger the anti-backsliding requirements of the Clean Water Act. EPA maintains that the change to the wording of footnote #6 in the final permit which requires specific action by the permittee if TSS levels exceed 100 mg/l that will serve to clarify and strengthen the current permit's TSS related reporting requirements.

Comment 2: The Fact Sheet evaluated the different outfall to determine the reasonable potential for exceedances for a given pollutant based on the available discharge monitoring data. The draft permit added permit limitations for many pollutants to the stormwater and process water outfalls. These limitations are a welcome and important addition offering a level of protection for the receiving waters that will reduce the likelihood the receiving waters violating water quality standards and impacting aquatic resources. The addition of limitations was outfall-specific and dependent on available data. Outfall 008 was determined to not constitute a reasonable potential for its effluent aluminum concentrations to exceed state water quality standards. If slightly more current information is considered, available on the PCS data base, the data strongly infers the outfall does have the potential and has exceeded water quality goals. The reported concentration in September of 2004 was 1.4 mg/l which would be significantly above the 0.760 mg/l limitation assigned to outfall 007, (an outfall sharing the same receiving water, Bonny Brook). Given Bonny Brook has two separate by proximate discharges and both appear to have reasonable potential to exceed water quality standards, outfall 008 should have a aluminum standard comparable to outfall 007 added to the permit.

Response to Comment 2 - The reported concentration of Aluminum (Al) from Outfall 008 in September 2004 was 1.4 mg/l. This indicates a "reasonable potential" to exceed EPA's National Water Quality Criteria for Al (0.750 mg/l) in light of the dilution factor of 1.02. Therefore an effluent limit for Aluminum has been added to Outfall 008 in the final permit.

Comment 3: Many of the monitoring requirements in the existing permit have been eliminated based on calculations to determine the potential or lack of potential for water quality standard exceedances. The Fact Sheet does not provide the water quality standards and the calculations used to reach these conclusions so it is hard to assess the likelihood of exceedances without access to the water quality standards. The trichloroethylene concentrations in outfall 010 have been as high as 9 mg/l (5/98), 1.2 mg/l (4/05) and 2.5 mg/l (4/01) and tetrachloroethylene has been found as high as 1.5 mg/l (4/05) and 1.6 mg/l (4/01). What are the water quality standards for these two VOCs? How is reasonable potential defined- more specifically how close must a concentration be to the standard to pose a reasonable potential for an exceedance?

Response to Comment 3 - In a phone conversation of December 7, 2005 with Mary Cushner, Assistant Environmental Engineer of Wyman-Gordon, Inc., it was stated that the measurements for both chemicals are reported to EPA in μg/l on the DMRs for the dates in question. EPA examined copies of the submitted DMRs and verified this statement. In these cases, the DMRs were coded into the database incorrectly showing the units as mg/l. The reported Trichlorethylene (9.0 μg/l, 1.2 μg/l and 2.5 μg/l) and Tetrachloroethylene (1.5 μg/l, 1.6 μg/l) concentrations are well below EPA's National Recommended Criteria based on Human Health for Consumption of Organisms Only. The recommended levels for Trichloroethylene and

Tetrachloroethylene are 81 μg/l. and 8.85 μg/l respectively. Therefore, no change has been made in the final permit.

Comment 4: The pH of the stormwater outfalls from this facility frequently fall below the Massachusetts water quality minimum pH standard of 6.5 s.u. As noted, this excursion is often due to the acidic nature of the rain water and the permit makes the appropriate allowance for this situation. The Permittee is required to measure in stream pH values upstream and downstream of the outfalls during the first year this permit is in effect to determine the background pH of the waters. The Permittee is not required to measure the pH of the rain or melt water. What is interesting about the pH values recorded by the Permittee is the variability between the outfalls in a given month. Presumably the outfalls would have very similar pH values reflecting the pH of the rain fall during the storm(s) of that month. The data, however, shows some variability in the pH recorded between the three outfalls. For example during September of 2000 outfall 008 had very acidic average pH value or 4.4 S.U. while outfall 009 had a pH of 5.49 S.U. Given pH is measured on a logarithmic scale- this is a marked difference. Is there possible land uses within the different drainage areas that might account for the variability seen in the pHs of the different stormwater outfalls?

Response to Comment 4 - The discharge from outfalls 008 and 009 are storm water only. The drainage areas for outfalls 008 and 009 consist of building roofs, landscaping and parking areas. However, the permittee has pointed out in Specific Comment 4 that a portion of the discharge from outfall 009 includes storm water runoff from Route 122 and the neighborhood south of the facility. Therefore, there appear to be land use differences that may contribute to differences in the pH levels of the storm water discharged through outfall 008 and 009.

There may also be temporary or permanent changes in the facility's activities in these two drainage areas. In light of concerns such as this that may contribute to storm water pollution, and as part of the permit, EPA has required the implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP requires the use of Best Management Practices (BMPs) and requires the permittee to take steps adequate to address any exceedances of water quality standards in their storm water discharge.