RESPONSE TO PUBLIC COMMENTS

DRAFT NPDES PERMIT NO. MA 0003531 FOR BIRD INCORPORATED D/B/A/ CERTAINTEED LOCATED AT 1077 PLEASANT STREET, NORWOOD, MASSACHUSETTS, 02062

On April 19, 2004, the U.S. Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("MADEP") released for public notice and comment a draft National Pollutant Discharge Elimination System ("NPDES") permit for Bird Incorporated D/B/A/ CertainTeed, a Massachusetts facility. The public comment period for this draft permit expired May 18, 2004. This is a response to comments received during the comment period from the Riverways Program, MA Department of Fisheries, Wildlife and Environmental Law Enforcement.

COMMENT 1:

As the Fact Sheet states, the Massachusetts water quality standards prohibit an increase in ambient water temperature of greater than 2.8° C in warm water Class B rivers and streams. The draft permit does not require any instream temperature monitoring, a necessary piece of data to determine if there is likelihood for an increase in ambient temperature from the effluent discharge. The permit did provide a calculation for worst case conditions at the 7Q10 flow but this may not be the only situation where the effluent could cause an exceedance of 2.8°C maximum. There is the potential in cooler months for the effluent to be enough above the ambient water temperature to resulted in a larger than acceptable change. The fact sheet did not provide information on the size of the treatment tanks, the range of holding time of the flows, and the design of the tanks so it is not possible to determine if the effluent has time to cool to close to ambient air temperature or avoid being heated by the sun. It may not be the worse flow conditions that result in the greatest change in ambient receiving water temperatures due to the effluent discharge and fluxes have the potential to be deleterious to sensitive aquatic organisms.

RESPONSE 1:

The agencies believe that the permit limits are protective of the delta T criteria during all seasons. In order to determine whether the limitation is protective during the winter months, a calculation of the in-stream delta T was performed using the worse case summer dilution of 27:1 (it would be higher in the winter period), the worse case summer temperature of 95°F (it would be lowest in the winter) and an in-stream temperature of 32°F. The delta T under those conditions was calculated to be only 2.4 degrees F.

Regarding the need for in-stream temperature sampling, the agencies have generally not required in-stream sampling (on discharges of this nature) in circumstances where the limitations calculations give adequate assurance that the limits are protective. Therefore, the agencies have not included any in-stream sampling requirements in the final permit.

COMMENT 2:

The infrequency of the flow monitoring, only once per month, is also problematic along with the lack of criteria associated on when to sample for temperature- early morning temperature readings could result in a significant different reading than a reading taken at 1:00 PM on a sunny summer day if the treatment tanks are not covered or shaded and the depth of the effluent is relatively shallow. The permit should provide guidance on the sampling for temperature that would likely result in the most conservative (highest) temperature reading of the effluent. The frequency of the monitoring should also be increased so the variability in the effluent temperatures can be better capture and assessed as to the potential affect on receiving water. Temperature is an easy and inexpensive parameter to measure and daily reading would be protective of the resource.

RESPONSE 2:

Discharge records (1998- 2002) for pH and temperature monitoring, taken at various times of the day (5:30AM -8:50 PM) indicate no permit violations for temperature, and only three violations for pH. The data is based on monthly testing events. The agencies agree with the need for an increase in monitoring to obtain better information on the variability of effluent temperature. Therefore, the agencies have increased the flow and temperature monitoring frequency from monthly to weekly, and is requiring that flow be gaged instead of estimated.

COMMENT 3:

The calculation for the 7Q10 temperature variation provided in the Fact Sheet is not well explained.

a. *The Qe used is 1.547 cfs. Where this number come from? The dilution calculation in Attachment B contains different numbers for the effluent acute and chronic flows but the variability between the temperature and dilution calculations flows are not explained.*

b. *Also, the methodology used or source of the Tr, temperature of the receiving stream is not cited or explained. How was it determined that the 7Q10 receiving water ambient temperature is 83° F?*

c. *A related question is what is the source of the 7Q10 number used in both this calculation and in determining the dilution ratio? This facility has 4 outfalls, shouldn't the combined flows of at least 001 and 002(contact and noncontact cooling waters) be used to determined the dilution ratio? Figure #2 in the Fact Sheet shows these two outfalls to be less than 200 feet apart and it seems unlikely the first discharge would be totally assimilated before the second effluent discharge enters the receiving water so there is reason to consider these two as a combined flow when determining the dilution.*

RESPONSE 3a, 3b, 3c:

The change in stream temperature caused by the discharge was calculated using the following equation:

$$\Delta Tr = \frac{Qe}{Qr}(Te - Tr); \quad Tr = \frac{1.547 \text{ cfs}}{3.66 \text{ cfs}}(90°F - 83°F); \quad Tr = 2.96°F$$

where,

ΔT = Change in receiving water temperature; Qe = Effluent flow rate; Qr = Receiving water flow rate; Te = Temperature of effluent: Tr = Temperature of receiving water

a. 1.547 is a factor used to convert MGD to CFS. In the ΔT analysis, the effluent flow rate (Qe) was estimated at1 MGD based on the discharge history of critical low flow periods and, 1 MGD is equal to 1.547 cfs.

   In the Attachment B, the estimated effluent flow rate was based on historic permit data while the acute and chronic flow (Qr) were taken from a Neponset River gaging station in Canton, MA near the Bird's facility.

b. The Te and Tr were assumed at 90° F and 83° F, in retrospect, the temperatures selected are higher than its corresponding value by 18° F and 10° F respectively. The Tr for that section of the Neponset River was reported in the State Water Quality Assessment (1999-2001) to be less than 83° F.

c. The 7Q10 flow (3.66 cfs) values are from a USGS gaging station at Canton MA.

   With regards to the dilution ratio the flow used is primarily from Outfall 001. The flows from Outfall #2 are very small and infrequent (120gallons per month 2 to3 times per year); these are too small and not frequent enough to significantly affect a change in the dilution factor.

COMMENT 4:

a. The frequency of TSS and flow monitoring required of outfall 001and to a lesser extent 002 and the lack of criteria for when to monitor is inadequate to characterize the effluent flows accurately to allow reasonable assessment to be made about the potential of the discharges to degrade the receiving waters. This is well illustrated by the variability seen in the DMR provided in Attachment C. The range of 0.0115 to 0.1087 MGD effluent discharged clearly shows there is enough variability to warrant increase flow reporting.

b. Also, the Fact Sheet did not detail how the flows through this outfall were estimated so it is not possible to determine if the method used to estimate the flow are accurate enough

for the purpose of protecting the water quality of the Neponset River. The timing of the flow monitoring is also a question with some pertinence. Does the operator try to capture the maximum flow of the month? Choose a set of day each month to estimate flow? Estimate flow for an instant in time or over a specific time period such an hour, a work day or a 24 hour period? The permit should be specific about the entire flow monitoring methodology beyond specifying a monitoring location.

RESPONSE 4a, & 4b:

a. See response to comment 2 on the flow and temperature requirements. EPA has also required that temperature measurements be taken weekly at noon time.

b. Outfall 002 discharges on an infrequent basis as previously mentioned due to ground filtration and evaporation. EPA does not typically specify how flow is to be estimated, however, the permit is requiring this outfall be closely monitored during storm events and to report results on a monthly basis rather than on a quarterly basis.

COMMENT 5:

Outfall 002 discharges, treated "cleaning, dust control and noncontact cooling water". More specificity would be appreciated about the nature of ' treated cleaning'. Does treated cleaning mean the residuals from chemicals used for machine cleaning and /or maintenance? The 002 effluent should have a toxicity requirement if there are any chemicals with the potential to be found in the effluent stream.

RESPONSE 5:

According to company officials, the word "cleaning" used in the permit application, means hosing of equipment, using potable water, without the use of abrasives or cleaning agents. The flow from Outfall 002 is from non- contact cooling water, storm water, and sprinkler water from the "Granule Plant" and not from the making of asphalt shingles, which is a different component of the manufacturing process.

COMMENT 6:

The effluent from 001 had concentrations of aluminum of sufficient levels to require on going monitoring. Given 002 has residuals from dust control, presumable from the asphalt shingles and other manufacturing processes, might 002 also have elevated aluminum levels? Has 002 ever been tested for metals, priority organics, (the receiving water is impaired by priority organics) or other toxic chemicals associated with the testing undertaken during toxicity testing such LC50? Some testing may be warranted is the source of the priority organics impairing downstream waters can not be determined.

RESPONSE 6:

Aluminum is a constituent of the ingredients (talk powder) used in the manufacturing process therefore, it is required that the effluent from Outfall 001 be monitored for this pollutant. The residual dust from the asphalt shingles does not reach areas discharging through Outfall 002. Outfall 002 dust is mainly from the rock crushing operations located in an opposite direction to the production area. As indicated previously, discharge 002 is the resultant of dust control and rain water. The agencies believe there is no need for additional metal monitoring or toxicity testing requirements.

COMMENT 7:

The Fact Sheet states the application for the permit renewal listed a range of flows associated with outfall 002 from 35,000 to 100,000 gpd. This inconsistence is not explained. This raises questions about the adequacy of quarterly flow monitoring for outfall 002. How well does the detention basin work during spring high water and ground water situations? Are the basins receiving any rain or run off? These conditions might mean there is a large discharge under certain conditions when infiltration is hampered and this is not being capture in the infrequent monitoring. As mentioned already, there is a lack of details as to the requirements of how and when low measurements will be made for 002.

RESPONSE 7:

The permit application information did not reflect how flow from outfall 002 actually occurs. The flows in the application are much higher than those flows reported in the DMRs. The fact that the flows from outfall 002 are intermittent (very infrequent) and insignificant to have a measurable impact in the flow volume or flow characteristics of the Neponset River is a benefit.

COMMENT 8:

Outfall 003 and 004 receive runoff from tank farms but it is unclear if they receive runoff from other areas of the property including materials storage areas, waste storage bins or piles or truck loadings and unloading facilities. Aerial photographs available through MASS GIS show a a very few mark spots on the site that may be waste piles judging by their irregular shape. If there are waste piles of asphalt shingles or source materials, are these discharges receiving treatment?

RESPONSE 8:

The tank farms areas housing the oil water separators are enclosed by a cement berm which does not allow storm rain or any effluent from other parts of the property to mingle with these discharges while at the farms. The Company stores on-site (parking lots) cradles containing individually packed shingles wrapped in a water proof paper. No other piles of shingles were found inside the perimeter of the site during our site inspection.

The waste shingle piles need to be assessed by the permittee to ensure that the drainage from those piles does not contribute to pollutants levels in the Neponset River. The Storm Water Pollution Prevention Plan required by this permit should address the control of any runoff from that site.

The pile of shingles need to be in compliance with state solid waste regulations and/or state wetland regulations and are of themselves outside the jurisdiction of this NPDES permit.

COMMENT 9:

a. Figure 2 of the Fact Sheet appears to show outfall 003 and 004 discharging to an area adjacent to the river but not directly into the river. We assume this is merely a reflection of the limitations of the mapping program used and the storm outfall(s) do discharge into the river. The Fact Sheet does not indicate the volume of storm water the treatment system are able to accommodate.

b. Outfall 004 has a significant exceedances of its oil and grease limit which may indicate the treatment system is inadequately sized or not maintained adequately. Given the Neponset River is listed as impaired for priority organics a downstream reach, the adequacy of the treatment system the ability of the monitoring requirements to thoroughly capture the nature to the effluent from these facilities is important. The sampling requirements in the draft permit do not detail when the sampling should occur during a storm event. Every effort should be made to capture the first flush from the storm event and this should be reflected in the permit.

RESPONSE 9a, 9b:

a. The discharges emanating from the oil/water separator covered by outfall 003 flow first onto a paved channel between the tank farm containment area and the glass mat warehouse (FB-69). The water then runs north in this channel for approximately 36 feet and then northwest across a paved lot for approximately 90 feet to a storm water catch basin. It commingles with other storm water lines and discharges on the river bank. The discharge is located on the northwest side of the roofing facility.

   The treated discharges from the oil/water separator at the asphalt tank farm (outfall 004) flows first onto a paved lot, which is located on the east side of the still yard. The water runs approximately 20 feet east and then enters a storm water catch basin. From the catch basin it commingles with other storm water lines and then discharges onto the river bank. The discharge is located on the northeast side of the roofing facility.

b. The DMRs reported one effluent concentration exceedance of 40 mg/l; the rest of the reported data consistently reported less that the permit limit (15mg/l). The final permit will require additional monitoring to obtain in the future an accurate assessment of how much oil and grease has been discharged.

COMMENT 10:

Outfall 002-004 have quite conservative TSS concentration limits while outfall 001 has double or more allowable TSS concentrations. The difference is not explained but it may be a reflection of the difference in volume discharged. Given the variability in the flows from outfall 001 we would like to suggest a total maximum daily loading based on a flow of 0.04 mgd (23 lbs daily max and 13 lbs monthly average) should be considered to be protective of the receiving water given flows often exceed the monthly average flow limit by significant amounts.

RESPONSE 10:

Outfall 001 discharges are the resultant of the manufacturing process where residual dust (sand particles) and talc powder generates larger volumes of TSS more so for this outfall than for Outfall 002. The limit for TSS is consistent with the current permit and in keeping with anti-backsliding provisions.

Outfall 002 as well as 003 and 004 are storm discharges and as such are expected to contain less TSS, therefore, a lower TSS permit limit is required. EPA believes that the limits are protective. Even at peak discharge flow and 7Q10 conditions, in-stream concentrations would be less than 10 mg/l TSS with a discharge of 70 mg/l TSS.

COMMENT 11:

The draft permit adjusts the flow monitoring for outfall 003 and 004 to require flow volumes for the sampled storm and not an average or daily maximum for all the storms during the quarter. This storm specific flow information is indeed valuable and would allow some estimate of loadings from a given storm but the total discharge from these two outfalls during the quarter is also valuable. We suggest both flow figures be required: the storm specific flow and the average and maximum daily flow from all the storms that resulted in flows during the quarter.

RESPONSE 11:

The agencies have agreed to require in the permit a summary of (average and maximum daily) storm flows and have the information submitted to the agencies on request. See footnote # 2 in the final permit.