UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0003531

PUBLIC NOTICE START AND END DATES: May 30, 2014 – June 28, 2014

NAME AND MAILING ADDRESS OF APPLICANT:

Bird Incorporated d/b/a Certainteed Corporation
1077 Pleasant Street
Norwood, Massachusetts 02062

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Bird Incorporated d/b/a Certainteed Corporation
1077 Pleasant Street
Norwood, Massachusetts 02062

RECEIVING WATER(S): Neponset River (Segment MA73-01)
Boston Harbor Watershed

RECEIVING WATER CLASSIFICATION(S): B

SIC CODE(S): 2952 (Asphalt Felts and Coatings)
3295 (Minerals and Earths, Ground or Otherwise Treated)

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1. Proposed Action, Type of Facility, and Discharge Location

1.1 Proposed Action

The above applicant has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge treated contact cooling water, contact process water, noncontact cooling water, boiler condensate, boiler blowdown, and stormwater into the designated receiving water. Bird, Incorporated, which started business in papermaking in 1795 in Needham, Massachusetts, constructed the roofing plant located in Norwood, Massachusetts ("the Facility"), in 1904. Certainteed Corporation ("Certainteed") began operations at the Facility in 1998. The current permit ("2005 Permit"), issued on September 20, 2005, expired November 30, 2010. EPA received a completed permit renewal application from the facility dated May 20, 2010. Since the permit renewal application was deemed timely and complete by EPA, the permit has been administratively continued pursuant to 40 CFR §122.6.

On January 12, 2012, EPA sent a letter pursuant to Section 308 of the Clean Water Act ("308 letter") requesting more information related to discharges from the Facility to the Neponset River (Segment MA73-01). Certainteed submitted the information requested in the 308 letter and additional information in three responses dated September 13, 2012, October 25, 2012, and November 30, 2012. The Draft Permit is based on the information provided in the application, and the additional information provided to EPA through the above mentioned correspondence. This information is part of the administrative file (Permit No. MA0003531).

1.2 Type of Facility

Certainteed manufactures and distributes fiberglass/asphalt roofing materials. Raw materials used at the Facility include fiberglass rolls, asphalt, rock granules, rock dust filler, sand, Mylar tape, latex paint, and biocide coating. The Facility produces its own ceramic-coated granules and solar-reflective granules. Raw materials used to produce granules include quarry rock, kaolin clay, inorganic pigments, and mineral oil. The Facility uses municipal water supplied by the Massachusetts Water Resources Authority ("MWRA").

1.3 Discharge Location

The Facility is located on an industrial site along Pleasant Street adjacent to the Neponset River in Norwood, Massachusetts (see Attachment 1). The portion of the Facility located on the north side of Pleasant Street consists of a roofing materials manufacturing building located in the central portion of the property (the "roofing plant"), covered storage and production buildings located roughly north and south of the roofing plant, an aboveground storage tank (AST) farm (the "tank farm"), an asphalt blow still AST farm (the "still yard"), and paved storage, parking and access areas. The portion of the Facility located on the south side of Pleasant Street consists of a granule processing plant (the "granule plant"), solar reflective granule manufacturing plant (the "Solaris plant"), a stone pile, an office building, a covered storage building, and paved parking and access areas. The Neponset River flows along the northern portion of the Facility property. The Facility is located downstream of Bird Pond and upstream of the confluence with Hawes Brook. The approximate latitude and longitude for each outfall is presented in Table 1. The site plan for the Facility is included in Attachment 2.

Table 1: Summary of Outfall Locations

Outfall Number	Latitude (degrees, minutes, seconds)	Longitude (degrees, minutes, seconds)
001	42° 10’ 10”	71° 12’ 22”
002	42° 10’ 7”	71° 12’ 20”
003	42° 10’ 8”	71° 12’ 26”
004	42° 10’ 7”	71° 12’ 23”

2. Description of Discharge

The 2005 permit authorized the discharge of process water, contact and noncontact cooling water, and stormwater runoff from Outfalls 001, 002, 003, and 004. The receiving water is the Neponset River, which flows from west to east along the northern edge of the Facility property. Outfall 001 consists of treated contact cooling water which overflows from a cooling water system used to cool asphalt-coated roofing shingles. Outfall 002 consists of treated contact process water (i.e., cleaning and dust control water), non-contact cooling water, boiler condensate, boiler blowdown, and stormwater from the granule plant which drains into the Facility’s stormwater system. Outfalls 003 and 004 consist of treated stormwater from the tank farm and still yard, respectively. Discharge monitoring data from January 1, 2009 through December 31, 2013 for Outfalls 001, 002, 003, and 004 are included in Attachment 3.

This permit does not address stormwater discharges from this site authorized under the Stormwater Multi-Sector General Permit for Industrial Activities (MSGP) with tracking number MAR05EA93.

3. Receiving Water Description

The Facility discharges to the Neponset River (Segment 73-01). This segment is 13.2 miles in length from the outlet of the Neponset Reservoir in Foxborough to the confluence with the East Branch of the Neponset River in Canton. The Facility is approximately one quarter mile upstream of the confluence between the Neponset River and Hawes Brook and just below the Bird Pond Dam. MassDEP classifies this segment of the Neponset River as Class B (warm water fishery)[1]. Class B waters are described in the Commonwealth of Massachusetts Water Quality Standards (314 CMR 4.05(3)(b)) as follows: *“designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment (Treated Water Supply). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.”* The Neponset River is part of the Boston Harbor watershed and flows into Dorchester Bay.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such require the development of total maximum daily loads (TMDL). The Neponset River segment MA73-01 is listed as a Category 5 “Waters Requiring a TMDL” on the

[1] http://www.mass.gov/dep/water/laws/tblfig.pdf

Massachusetts Year 2012 Integrated List of Waters (CWA Sections 303d and 305b)[2] for dichlorodiphenyltrichloroethane (DDT), *Escherichia coli* (*E. coli*), excess algal growth, dissolved oxygen (DO), polychlorinated biphenyls (PCBs) in fish tissue, phosphorus (total), sedimentation/siltation, total suspended solids (TSS), turbidity, and other (not specified). Former pond segments Crackrock Pond (MA73010) and Bird Pond (MA73002) are now included in this segment. The status of each designated use described in the Neponset River Watershed 2004 Quality Assessment Report (February 2010)[3] is presented in Table 2.

Table 2: Summary of Designated Uses for Neponset River Segment MA73-01

Designated Use	**Status**
Aquatic Life	Impaired
Aesthetics	Not Assessed
Primary Contact Recreation	Impaired
Secondary Contact Recreation	Support
Fish Consumption	Impaired

The Aquatic Life use is impaired in this segment based on eight of thirty samples collected at three sites in 2007 and 2008 which violated the dissolved oxygen criterion (5.0 mg/L). The violations ranged from 2.3 mg/L to 4.9 mg/L. The Primary Contact Recreation use is impaired in this segment based on samples collected at three sites during the primary contact season in 2007 and 2008 which violated the geometric mean criterion for primary contact for *E. coli*. *E. coli* is a newly listed impairment proposed for coverage under a previously approved TMDL[4] (CN121.0). The Fish Consumption use is impaired in this segment based on MA DPH fish consumption advisories for the Neponset River due to PCBs and DDT.[5] The source for PCBs is identified as sediment. The Secondary Contact Recreation use is supported in this segment based on samples collected at three sites in 2007 and 2008 which were below the geometric mean criterion for secondary contact for *E. coli*. The Aesthetics use has not been assessed in this segment based on a lack of sufficient data.

The facility does not engage in activities that would be expected to generate a significant source of DDT, *E. coli*, or PCBs, noted above, since the majority of effluent consists of contact cooling water. However, EPA has included effluent limitations and/or monitoring requirements necessary to address discharges of TSS (including impairments resulting from sedimentation/siltation, TSS, and turbidity), and nutrients (including impairments resulting from excess algal growth, DO, and phosphorus).

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[2] Massachusetts Year 2012 Integrated List of Waters, Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; January 2012, Report Number CN400.0. http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf

[3] Neponset River Watershed 2004 Water Quality Assessment Report. MassDEP Division of Watershed Management, Worcester, Massachusetts; February 2010, Report Number: CN170.4. http://mass.gov/eea/docs/dep/water/resources/71wqar09/73wqar10.pdf

[4] This TMDL can be viewed at: http://www.mass.gov/eea/docs/dep/water/resources/n-thru-y/neponset.pdf

[5] Freshwater Fish Consumption Advisory List. Massachusetts Department of Public Health Bureau of Environmental Health; October 11, 2011.

4. Limitations and Conditions

The effluent limitations, monitoring requirements, and any implementation schedule (if required) may be found in the Draft Permit (see Part 1, Effluent Limitations and Monitoring Requirements). The basis for the limits and other permit requirements are described below.

5. Permit Basis: Statutory and Regulatory Authority

5.1 General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. In this permit EPA considered (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit, when developing the permit limits.

5.2 Technology Based Requirements

Subpart A of the 40 CFR §125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (see 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically available (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must have been complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit.

EPA has promulgated technology-based National Effluent Limitations Guidelines (ELGs) for BPT in 40 CFR §443.32 and for BAT in 40 CFR §443.33 for process wastewater in the Paving and Roofing Materials Point Source Category, Subpart C., Asphalt Roofing Subcategory for existing sources. In the absence of technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using Best Professional Judgment (BPJ).

5.3 Water Quality-Based Requirements

Section 301(b)(1)(C) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when technology-based limitations would interfere with the attainment or maintenance of water quality in the receiving water.

Under Section 301(b)(1)(C) of the CWA and EPA regulations, NPDES permits must contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water quality standards. Water quality standards consist of three parts: (1) beneficial designated uses for a water-body or a segment of a water-body; (2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards, found at 314 CMR 4.00, include these elements. The state will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless site specific criteria are established.

The draft permit must limit any pollutant or pollutant parameter (conventional, non-conventional, and toxic) that is or may be discharged at a level that causes or has the "reasonable potential" to cause or contribute to an excursion above any water quality standard (40 CFR §122.44(d)). An excursion occurs if the projected or actual in-stream concentration exceeds an applicable water quality criterion. In determining "reasonable potential," EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from the permit's re-issuance application, monthly discharge monitoring reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the indicator species used in toxicity testing; (4) known water quality impacts of processes on waste waters; and (5) where appropriate, dilution of the effluent in the receiving water.

5.4 Anti-backsliding

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 anti-backsliding requirements of the CWA [see Sections 402(o) and 303(d)(4) of the CWA and 40 CFR §122.44(l)(1 and 2)]. EPA's anti-backsliding provisions prohibit the relaxation of permit limits, standards, and conditions except under certain circumstances. Effluent limits based on BPJ, water quality, and state certification requirements must also meet the anti-backsliding provisions found at Section 402(o) and 303(d)(4) of the CWA.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2005 Permit. Therefore, the Draft Permit complies with the anti-backsliding requirements of the CWA.

5.5 Anti-degradation

Federal regulations found at 40 CFR §131.12 require states to develop and adopt a statewide anti-degradation policy which maintains and protects existing instream water uses and the level of water quality necessary to protect the existing uses, and maintains the quality of waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water. The Massachusetts Anti-degradation Regulations are found at 314 CMR 4.04. There are no new or increased discharges being proposed with this permit reissuance. Therefore, EPA does not believe that the MassDEP is required to conduct an anti-degradation review regarding this permit reissuance.

5.6 State Certification

Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located that all water quality standards or other applicable requirements of state law, in accordance with Section 301(b)(1)(C) of the CWA, are satisfied. EPA permits are to include any conditions required in the state's certification as being necessary to ensure compliance with state water quality standards or other applicable requirements of state law. See CWA Section 401(a) and 40 CFR §124.53(e). Regulations governing state certification are set out at 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

6. Explanation of the Permit's Effluent Limitations

6.1 Facility Information

Certainteed manufactures fiberglass/asphalt roofing materials at the roofing plant by drawing fiberglass mat over a series of steel rollers. The fiberglass mat is heated, and hot asphalt mixed with limestone is applied to the front of the mat, followed by ceramic-coated, pigmented rock granules from the granule plant. Mylar tape and sand are applied to the back of the mat. The mat is then pressed through rolls, and cooled by closed loop non-contact cooling water inside the rolls and contact cooling water. Latex paint and/or biocide coating may be applied to select mats upon cooling.

After application, contact cooling water drains through metal grating beneath the production line to a 16" wide by 50' long by 9" to 18" deep pit, where a sand screw removes non-suspended sediment on a continuous basis to a hopper (approximately 50 ft^3 per day on average). The water, with suspended sediment, flows over a divider to a 3.08' by 4.167' by 2.54' pit. The water discharges from this pit by gravity overflow through a subsurface pipe to two rectangular 40' wide by 60' long by 12' deep concrete settling pools for treatment prior to discharge via Outfall 001. Each settling pool has a holding capacity of 215,000 gallons and a retention time of 5.3 days. The closed loop non-contact cooling water is cycled through four 6-foot fanned cooling towers, a baffle system, and pumped back to the roofing plant. Make up water is supplied by the MWRA.

Certainteed produces pigmented rock granules for use in its manufacturing process at the granule plant. The plant uses ¾ inch crushed stone from the Bird Quarry in Wrentham, Massachusetts. Crushed stone is processed through the plant via a conveyor system for drying, crushing, screening, pigmenting and firing. Finished granules are coated with mineral oil and transported via conveyor to

thirty eight storage silos at the roofing plant. When in operation, the average daily production at the granule plant is approximately 782,400 pounds of colored granules.

Contact process water is used at the granule plant for dust control and dust removal using potable water, without the use of abrasives or cleaning agents. This includes the use of seventeen sprinklers, a truck loading stall fitted with sprayers for stone dust wetting and hosing of equipment and buildings. This water comes in contact with stone dust in the air, on the ground, and on building surfaces. Non-contact cooling water used to cool compressors in the plant discharges intermittently when the equipment is in use. Boiler blowdown is generated during equipment safety testing and without use of boiler treatment chemicals. Boiler blowdown and boiler condensate from various steam lines and traps is drained onto the ground surface and sheet flows to catch basins adjacent to the granule plant. Stormwater runoff is collected in catch basins around the granule plant. Contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater from the granule plant drain to the Facility's storm drain system to a detention basin for treatment prior to discharge via Outfall 002. Contact cooling water and pigment mixing water used at the granule plant is recycled and does not discharge to Outfall 002.

Certainteed produces solar reflective granules at the Solaris plant by coating rock granules produced at the granule plant with solar-reflective material. When in operation, the maximum daily production at the Solaris plant is approximately 50,000 pounds of solar reflective granules. Certainteed indicated in its 308 letter response that there is no process wastewater discharged to waters of the United States from the Solaris plant.

A tank farm used to store asphalt products in aboveground storage tanks (ASTs) and still yard used to process and store asphalt products in ASTs are located adjacent to the roofing plant. Both the tank farm and still yard are out of doors and surrounded by water tight concrete dikes. The area inside the dikes of the tank farm and the still yard are pitched to sump pits containing manually-operated sump pumps. During a precipitation event, stormwater is pumped from the sump pits to oil/water separators (OWSs) for treatment.

6.2 Permitted Outfalls, Dilution Factor and Appropriate Measure of Production

6.2.1 Permitted Outfalls

The 2005 Permit allows discharges from Outfalls 001, 002, 003, and 004 to the Neponset River. The discharge from Outfall 001 consists of contact cooling water from the roofing fabrication process at the roofing plant. The discharge from Outfall 002 consists of contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater from the granule plant. The discharge from Outfall 003 consists of stormwater from the tank farm. The discharge from Outfall 004 consists of stormwater from the still yard.

Contact cooling water is treated through sedimentation in two concrete settling pools. The influent water travels down a channel between the pools and enters each pool at the end furthest from the Outfall 001 sampling location. Water passes through a turbidity curtain and beneath a surface skimmer in each pool. The overflow from each pool combines at the sampling location for Outfall 001 and discharges via the outfall pipe to the Neponset River. The sediment, consisting primarily of

granules, filler, and sand, is mechanically removed using a front end loader or similar equipment approximately once annually. The sediment removed from the settling pools is disposed of offsite. The trench and pit is cleaned approximately once per month and the material removed is dried prior to disposal offsite (approximately 107 ft^3 per month on average).

Contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater is treated through sedimentation in the detention basin associated with Outfall 002, located on the north side of Pleasant Street. The discharge waters enter the detention basin through a pipe at the end furthest from the cylindrical outlet structure and sampling location for Outfall 002. When the water level in the pond exceeds the elevation of the top of the outlet structure, it drains to a subsurface pipe and combines with municipal stormwater prior to discharging to the Neponset River. The facility reports that discharges to Outfall 002 are infrequent due to groundwater infiltration and evaporation. The sediment, consisting primarily of granule rock dust is mechanically removed using a front end loader or similar equipment when maintenance is completed. The sediment removed from the detention basin is transported as a solid waste and disposed of offsite.

Stormwater that accumulates inside the concrete dikes of the tank farm and still yard is treated through OWSs. The OWS in the tank farm is 5'7" long, 2'2" wide and 4' high and the transfer pump has a design flow capacity of 20 gallons per minute (gpm). The OWS in the still yard is 10' long, 2' wide and 6' high. Two transfer pumps are used for the still yard OWS with a total design flow capacity of 80 gpm. One pump with a design flow capacity of 20 gpm is used during normal precipitation events. The second pump has a design flow capacity of 60 gpm and is used if the design flow capacity of the first pump is exceeded. The treated stormwater from the tank farm and still yard comingles with additional stormwater prior to reaching the Neponset River via one or more outfalls in the Facility's storm drain system, which are covered by EPA's MSGP.

Attachment 4 includes flow diagrams of the processes contributing to the outfalls at the Facility. The Facility uses water supplied by the MWRA in the roofing plant closed loop non-contact cooling water system noted on the diagram. Water is not taken from the Neponset River for this use.

6.2.2 Dilution Factor

EPA calculates available dilution to determine water quality based limitations in a NPDES permit. 314 CMR 4.03(3)(a) requires that effluent dilution be calculated based on the receiving water's lowest observed mean river flow for seven consecutive days, recorded over a 10-year recurrence interval, or the 7-day 10-year low flow (7Q10). EPA calculated the 7Q10 for the Neponset River at Outfall 001 based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gauging station to the Facility along the Neponset River (station number 01105000 at Norwood, MA[6]) and the estimated drainage area for the Facility using the USGS StreamStats for Massachusetts watershed delineation tool.[7] The 7Q10 flow obtained from the USGS was adjusted for the drainage area contributing to Outfall 001 (see Attachment 5). EPA used the maximum allowable discharge to calculate available effluent dilution.

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[6] USGS StreamStats National Data Collection Station Report for Station 01105000: http://streamstatsags.cr.usgs.gov/gagepages/html/01105000.htm

[7] USGS StreamStats for Massachusetts Interactive Map: http://water.usgs.gov/osw/streamstats/massachusetts.html

The average flow for Outfall 002 was not included in this calculation because from December 1, 2005 through September 30, 2012, this discharge occurred with low frequency (five discharge sample events were reported). Additionally, it is unclear at this time if discharges from Outfall 002 occur during dry weather or wet weather events, or if discharges may occur during both dry weather and wet weather. In the case of wet weather, this would indicate discharges from Outfall 002 consist primarily of stormwater with highly variable flows expected to occur with low frequency, small magnitude and short duration. The average flows for Outfalls 003 and 004 were also not combined for this calculation because discharges from these outfalls consist of stormwater runoff expected to occur with low frequency, small magnitude and short duration prior to entering the Neponset River.

The calculated dilution factor for the Facility is 55:1 (see Attachment 5).

6.2.3 Appropriate Measure of Production

In order to calculate technology-based effluent limitations using National ELGs for BPT in 40 CFR §443.32 and for BAT in 40 CFR §443.33 for process wastewater generated at the Facility, EPA determined the appropriate measure of production in accordance with 40 CFR §122.45(b)(2). Certainteed provided the total product produced per month and the number of production days each month from January 2006 through September 2012. EPA determined that the appropriate measure of production is the average pounds of product produced per day, calculated as follows:

$$\frac{\text{3,147,564,800 pounds produced}}{\text{1,300 production days}} = \text{2,421,204 pounds per day}$$

7. Derivation of Effluent Limits under the Federal CWA and the Commonwealth of Massachusetts' Water Quality Standards

7.1 Outfall 001

7.1.1 Flow

The 2005 Permit authorized a monthly average limit of 0.04 MGD and required reporting the daily maximum flow of treated contact cooling water through Outfall 001. From January 1, 2009 through December 31, 2013, the reported monthly average discharge from Outfall 001 ranged from 0 to 0.14 million gallons per day (MGD). The maximum daily flow reported was 0.19 MGD (190,000 gallons per day). The 2005 Permit average monthly flow limit was based on the design retention time in the settling pools of approximately 5.3 days. In order to maintain the associated level of treatment, the Draft Permit maintains the monthly average flow limit of 0.04 MGD (40,000 gallons per day) and continues to require reporting of the daily maximum flow.

7.1.2 Total Suspended Solids (TSS)

TSS discharged to receiving waters may contribute to turbidity, oxygen depletion, or loading of nutrients and other pollutants. From January 1, 2009 through December 31, 2013, daily maximum TSS concentrations reported ranged from 0.4 to 190 mg/L, and monthly average TSS concentrations reported range from 0.8 to 63.2 mg/L.

The 2005 Permit contained a maximum daily limit of 70 mg/L and a monthly limit of 40 mg/L for TSS. These limits were maintained to meet anti-backsliding requirements for limits established in the previous permit, issued September 30, 1997. The permit issued September 30, 1997 contained these limits, also based on meeting anti-backsliding requirements for limits established in the previous permit, issued June 24, 1975, and modified July 26, 1976 and January 9, 1979. The June 24, 1975 permit contained both production-normalized limits based on National ELGs in the Paving and Roofing Materials Point Source Category, Subpart C, Asphalt Roofing Subcategory and concentration-based maximum daily and monthly average limits of 70 mg/L and 40 mg/L, respectively, based on the treatment technology applied to the effluent. The permit modification of July 26, 1976 updated the production-normalized limits to account for increased production at the Facility. Therefore, EPA believes the carry-over of *only* concentration-based limits for TSS from the June 24, 1975 permit has been in error. EPA must establish technology-based limits for TSS under the ELGs based on the appropriate measure of production for the Facility. These limits are calculated using the appropriate measure of production in pounds produced per day and the applicable factor in pounds per 1,000 pounds produced as follows:

BPT:

Maximum Daily TSS:	2,421,204 pounds produced / day = 136 lbs/day	x	0.056 pounds / 1,000 pounds produced
Average Monthly TSS:	2,421,204 pounds produced / day = 92 lbs/day	x	0.038 pounds / 1,000 pounds produced

BAT:

Maximum Daily TSS:	2,421,204 pounds produced / day = 68 lbs/day	x	0.028 pounds / 1,000 pounds produced
Average Monthly TSS:	2,421,204pounds produced / day = 46 lbs/day	x	0.019 pounds / 1,000 pounds produced

Because the TSS limits calculated for BAT are more protective than BPT, the Draft Permit includes a maximum daily limit of 68 lbs/day and an average monthly limit of 46 lbs/day for TSS based on BAT limitations. The TSS limits included in the Draft Permit meet anti-backsliding requirements under the exception described in 40 CFR §122.44(l)(2)(i) since the omission of the mass-based limits were a technical mistake according to 402(a)(1)(b).

As described in Section 3 above, the Neponset River is impaired and requires a TMDL for sedimentation/siltation, TSS, and turbidity. There are no quantitative criteria for TSS in the Massachusetts WQSs; however, Massachusetts WQSs for Class B waters include a narrative criterion for solids which states "*These waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this Class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom*" (see 315 CMR 4.05(3)(b)5). Accepting the support

determinations employed by MassDEP during the Neponset River Resource Assessment and Boston Harbor Hydrologic and Water Quality Investigation,[8] TSS levels greater than 80 mg/L have reasonable potential to cause or contribute to an excursion above the narrative WQC for Class B waters.

Given the impairment to the Neponset River and the concentrations of TSS measured in effluent from the Facility, the Draft Permit maintains the concentration-based limits for maximum daily and monthly average TSS of 70 mg/L and 40 mg/L, respectively. In addition, the Facility must incorporate solids minimization best management practices (BMPs) into its stormwater pollution prevention plan (SWPPP) for this outfall. Given that the concentration-based TSS limits are more restrictive than the concentration noted in the Neponset River Resource Assessment as an interpretation of the narrative criterion for solids, and in accordance with the exception to anti-backsliding under §402(a)(1)(b) for the mass-based TSS limits, EPA has concluded that concentrations of TSS in discharges from the Facility will not violate Massachusetts' WQSs. Further, these limits are sufficient to comply with the anti-degradation provisions in the Massachusetts WQSs and policy implementing these provisions.

7.1.3 pH

From January 1, 2009 through December 31, 2013, the pH values reported for Outfall 001 ranged from 6.5 SU to 8.0 standard units (SU). National ELGs for process water from asphalt roofing point sources (40 CFR §443.32 and §443.33) require effluent pH to be between 6.0 and 9.0 SU at all times. However, the Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)3, for Class B waters require pH to be within the range of 6.5 to 8.3 SU and prohibit discharges that cause the in-stream pH to change more than 0.5 SU outside of the background range. The Draft Permit maintains a pH range of 6.5 to 8.3 SU, and specifies that the pH cannot change the naturally occurring pH range by more than 0.5 SU, consistent with Massachusetts WQSs.

7.1.4 Oil and Grease (O&G)

Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)(7), state "*These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life."* A concentration of 15 mg/L is recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish (EPA Water Quality Criteria, 1972).

From January 1, 2009 through December 31, 2013, O&G levels have ranged from below the laboratory Practical Quantitation Limits (PQLs) to 4.8 mg/L at Outfall 001. The 2005 Permit included a daily maximum limit of 15 mg/L for O&G for this outfall. The Draft Permit maintains a maximum daily limit for O&G of 15 mg/L at this outfall to ensure compliance with Massachusetts WQSs. The monitoring frequency has been increased to monthly, to be consistent with other outfalls.

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[8] See *The Neponset River Watershed 1994 Resource Assessment Report*, Massachusetts Department of Environmental Protection office of Watershed Management (October 1995): 149 pp. and *Boston Harbor Hydrologic and Water Quality Investigation: Neponset Results*, Neponset River Watershed Association/DEP Project Number 00-07/MWI (June 2001): 107 pp.

7.1.5 Temperature

As described above, cooling water is used to spray asphalt coated roofing shingles and cool steel rollers during the manufacturing process. The portion used in the steel rollers re-circulates through two closed-cycle cooling fans at the Facility. The water sprayed on the asphalt shingles is discharged to the Neponset River through Outfall 001 after treatment in the settling pools. The 2005 Permit temperature limit was based on Massachusetts WQSs for class B waters (314 CMR 4.05(3)(b)) pertaining to warm water fisheries which states:

a. *"Temperature shall not exceed 83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed…5°F (2.8°C) in rivers and streams designated as warm water fisheries (based on the minimum expected flow for the month);*" and
b. "*natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms."*

The 2005 Permit contained a daily maximum temperature limit of 90°F (32.2° C), and an average monthly temperature limit of 83°F (28.3° C). From January 1, 2009 through December 31, 2013, the maximum daily and average monthly temperature of the effluent has ranged from 36.5 to 85.5ºF and 31.7 to 79.5ºF, respectively.

EPA used a standard mixing equation to determine the instantaneous mixing expected in the Neponset River as a result of the discharge from Outfall 001 to verify that the discharge does not cause a temperature rise of greater than 5º F as required by Massachusetts WQSs (see Attachment 6). Based on this analysis, the temperature limit of 90º F included in the Draft Permit is not expected to cause or contribute to an increase in temperature of greater than 5º F in the Neponset River. In addition, the maximum proposed temperature of the discharge of 90º F is not expected to cause or contribute to a downstream temperature in the Neponset River greater than 83º F. Therefore, the Draft Permit maintains a daily maximum temperature limit of 90°F (32.2° C), and an average monthly temperature limit of 83°F (28.3° C). In the event that temperature monitoring data indicate conditions which violate Massachusetts WQS, the permit may be modified pursuant to 40 CFR §122.62.

7.1.6 Metals

Many types of metals are present in ground and surface waters around New England. Certain metals like copper, lead, and zinc can be toxic to aquatic life and are potentially harmful to plant and other animal species. Sources of metals in the contact cooling water discharge include process materials, the municipal water supply, and process piping. EPA reviewed Material Safety Data Sheets (MSDSs) for the most widely used process materials at the Facility, and generally, several metals were identified.

The 2005 Permit required monitoring of aluminum on a monthly basis. In addition, the Whole Effluent Toxicity (WET) test includes metals analysis for aluminum, calcium, cadmium, chromium,

copper, magnesium, nickel, lead, and zinc. EPA's January 12, 2012 308 letter requested additional analyses for antimony, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver, and zinc. A summary of metals monitoring completed at the Facility between 2005 and 2012 is included in Attachment 3.

There are no technology-based ELGs for metals in process wastewater in the Paving and Roofing Materials Point Source Category, Subpart C., Asphalt Roofing Subcategory. The Commonwealth of Massachusetts requires that effluent limitations for metals be based upon the criteria published in the *National Recommended Water Quality Criteria* (WQC): EPA-822-R-02-047, 2002, unless site-specific criteria are established or MassDEP determines that natural background concentrations are higher than the criteria (see 314 CMR 4.05(5)(e)).

EPA has evaluated the reasonable potential of metals concentrations to cause or contribute to downstream concentrations that exceed the applicable WQC. Pursuant to 314 CMR 4.03, EPA considered available background concentrations of metals when evaluating effluent limitations. EPA used ambient concentration data for the receiving water immediately upstream of the discharge from the Facility's WET tests for 2011 through 2013. EPA considered the median concentration most representative for the receiving water in the vicinity of the Facility's discharge. The reasonable potential analysis for metals is included in Attachment 7 and summarized below.

Aluminum, Antimony, Iron, and Manganese

These metals were identified in process materials used at the Facility but are not hardness-dependent. The 2005 Permit included a reporting requirement for total recoverable aluminum on a monthly basis. From January 1, 2009 through December 31, 2013 the aluminum concentrations reported for Outfall 001 ranged from 0.1 to 8.4 mg/L. EPA determined that there is no reasonable potential for the Facility's discharges of aluminum to cause or contribute to concentrations that exceed the instream acute WQC. However, because concentrations of aluminum are above the acute exposure limit for freshwater organisms in the effluent discharge, the Draft Permit maintains weekly aluminum monitoring requirements. EPA determined that there is reasonable potential for the Facility's discharges of aluminum to cause or contribute to concentrations that exceed chronic WQC. The calculated water quality-based effluent limit for average monthly discharges of aluminum established in the Draft Permit is 2.6 mg/L.

Based on available data from May 1, 2010 through August 31, 2013, the discharge from Outfall 001 did not contain concentrations of antimony above the laboratory practical quantitation limits (PQLs), which are less than the applicable criteria. Therefore, there is no reasonable potential for the Facility's discharges of antimony from Outfall 001 to cause or contribute to concentrations that exceed WQC. Concentrations of iron in the discharge from Outfall 001 ranged from 0.97 to 1.9 mg/L. EPA determined that there is no reasonable potential for the Facility's discharges of iron to cause or contribute to concentrations that exceed the chronic WQC. However, because concentrations of iron are above the chronic exposure limit for freshwater organisms in the effluent discharge, the Draft Permit establishes iron monitoring requirements. There are currently no fresh water chronic or acute WQC for manganese. The EPA "organism only" human health WQC for manganese is 0.1 mg/L. However, EPA does not have information to determine if manganese is present in the discharge from Outfall 001.

Monitoring for certain metals is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Based on the presence of these metals in process materials but the unknown effect on the discharge from Outfall 001, EPA is adding monitoring requirements for antimony, iron, and manganese and maintaining monitoring requirements for aluminum under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing.

Chromium, Copper, Lead, Nickel, and Zinc

These metals were identified in process materials used at the Facility and are hardness-dependent. Based on available data from May 1, 2010 through August 31, 2013, the discharge from Outfall 001 contained chromium, nickel and zinc at concentrations below acute and chronic criteria. EPA determined there is no reasonable potential for discharges of chromium, nickel or zinc from Outfall 001 to cause or contribute to concentrations that exceed WQC. Therefore, the Draft Permit does not include effluent limitations for these metals. Monitoring for nickel and zinc is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Based on the presence of chromium in process materials but the unknown effect on the discharge from Outfall 001, EPA is adding monitoring requirements for chromium under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing.

Concentrations of copper and lead were present in the discharge at concentrations occasionally above acute and/or chronic criteria. EPA determined that there is no reasonable potential for the Facility's discharges of copper or lead to cause or contribute to concentrations that exceed the chronic WQC. However, because concentrations of copper and lead are occasionally above the acute and/or chronic exposure limits for freshwater organisms the effluent discharge, the Draft Permit establishes copper and lead monitoring requirements.

Arsenic, Cadmium, Mercury, Selenium, and Silver

These metals were not identified in process materials used at the Facility. Based on available data from May 1, 2010 through August 31, 2013, the discharge from Outfall 001 did not contain concentrations of these metals above the PQLs. For this reason, there is no reasonable potential for discharges of arsenic, cadmium, mercury, selenium, or silver from Outfall 001 to cause or contribute to concentrations that exceed WQC. Therefore, the Draft Permit does not include effluent limitations for these metals. However, monitoring for cadmium is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis.

Calcium and Magnesium

Calcium and magnesium do not have acute or chronic aquatic life criteria or human health criteria in the *National Recommended WQC* nor has Massachusetts established WQC for these metals in 314 CMR 4.00. Nevertheless, these metals have been monitored at the Facility in conjunction with WET testing. EPA's revised Freshwater Acute Toxicity Test Procedure and Protocol (2011) no longer requires the monitoring of these metals. However, because these metals are present in the discharge

and may affect the hardness of the effluent, which may affect the toxicity/bioavailability of metals such as copper and aluminum, monitoring for calcium and magnesium will continue twice per year in conjunction with WET testing.

7.1.7 Total Residual Chlorine (TRC)

Chlorine and chlorine compounds can be extremely toxic to aquatic life. As described above, the Facility uses municipal water supplied by the MWRA for the source of its contact cooling water. Potable water sources receive chlorine treatment to minimize or eliminate pathogens. 40 CFR §141.72 stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/l for more than 4 hours. The Massachusetts Water Quality Standards *Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, dated February 23, 1990, states that waters shall be protected from unnecessary discharges of excess chlorine.

Massachusetts WQSs require the use of federal WQC where a specific pollutant could reasonably be expected to adversely affect existing or designated uses (314 CMR 4.05 (5)(e)). The National Recommended freshwater acute and chronic WQC for TRC are 19 µg/L (0.019 mg/L), and 11 µg/L (0.011 mg/L), respectively. Using the calculated available dilution in the Neponset River (55:1), EPA calculated the TRC effluent limits as follows:

Acute TRC limit = 19 µg/L * 55 = 1.0 mg/L
Chronic TRC limit = 11 µg/L * 55 = 0.6 mg/L

In order to determine if discharges of contact cooling water from the Facility contain residual chlorine levels which have reasonable potential to cause or contribute to an excursion above WQC, the Draft Permit requires monthly monitoring for TRC. Monitoring for TRC will also continue twice per year in conjunction with WET testing.

EPA notes that the WQC are below the current analytical detection limit for TRC. In these situations, EPA Region 1 is following guidance set forth in the *Technical Support Document for Water Quality Based Toxics Control* (EPA 505/2-90-001, March 1991), page 111, which recommends that the limit at which compliance determinations will be based is the minimum level (ML). The ML is not the minimum level of detection, but rather the lowest point on the curve used to calibrate the test equipment for the pollutant of concern. For this Draft Permit, the ML for TRC is defined as 20 µg/L. If EPA approves a more sensitive method of analysis for TRC, the permit may be modified to require the use of the new method with a corresponding lower ML.

7.1.8 Nutrients

Ammonia and phosphorus may stimulate algal blooms which can impact the receiving water's dissolved oxygen level. Nutrients can also be toxic at elevated levels. Based on information provided in the Permittee's application and data from the Facility's WET testing, concentrations of ammonia range from below laboratory PQLs to 0.032 mg/L in discharges from Outfall 001. Effluent data is not available for total phosphorus for Outfall 001.

EPA's recommended chronic criteria for ammonia are based on temperature, pH and the presence of salmonids in the Genus *Oncorhynchus* are present in the receiving water. Available temperature data for the Neponset River collected by MassDEP, the USGS and the Neponset River Watershed Association between 2000 and 2011 indicate that surface water temperatures in the Neponset River range from approximately 34ºF in the winter to as much as 80°F in the summer. The maximum allowable instream water temperature under Massachusetts WQSs is 83ºF. The Draft Permit limits the pH of the effluent to a maximum of 8.3 SU. According to the 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater, the ammonia limits decrease as pH and temperature increase. Therefore, EPA considered ammonia under worst case conditions, that is, the maximum allowable pH, 8.3 SU, and the maximum allowable temperature, 83ºF, for the presence and absence of salmonids in the Genus *Oncorhynchus*.

Based on the 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater, when salmonids are present, the pH of the receiving water is 8.3 SU and the maximum receiving water temperature is 28ºC (82.4ºF), the recommended acute criterion value is 1.1 mg/L. When salmonids are absent, the pH of the receiving water is 8.3 SU and the maximum receiving water temperature is 28ºC (82.4ºF), the recommended acute criterion value is also 1.1 mg/L. When the pH of the receiving water is 8.3 SU and the maximum receiving water temperature is 28ºC (82.4ºF), the recommended chronic criterion value is 0.29 mg/L.

As described above, the Neponset River in the vicinity of the discharge is impaired for excess algal growth, and DO. Therefore, to determine the applicable ammonia criteria and to fully evaluate if discharges of contact cooling water from the Facility contain ammonia levels which have reasonable potential to cause or contribute to an excursion above WQC, the Draft Permit includes monitoring requirements for daily maximum ammonia under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing. The Draft Permit also requires the Permittee to identify and implement BMPs designed to reduce nutrient discharges, including nitrogen, in conjunction with the solids minimization (see Section 7.4).

Given the impairments to the Neponset River for excess algal growth, DO, and phosphorus (total) and the lack of information regarding total phosphorus in discharges from Outfall 001, additional requirements are included in the Draft Permit to determine if the direct or indirect discharge of phosphorus is causing or contributing to an exceedance of Massachusetts' WQSs. EPA has added monitoring requirements for daily maximum and monthly average total phosphorus under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing. The Draft Permit also requires the Permittee to identify and implement BMPs designed to reduce nutrient discharges, including phosphorus, in conjunction with the solids minimization requirement (see Section 7.4). Inclusion of monitoring for a pollutant (or indicator) for which the receiving water is impaired is consistent with EPA's MSGP.

7.1.9 Whole Effluent Toxicity Testing (LC_{50})

The 2005 Permit included a Whole Effluent Toxicity (WET) acute LC_{50} limit of ≥100% for Outfall 001. A LC_{50} limit of ≥100% means that a sample of 100 % effluent shall cause no greater than or equal to a 50% mortality rate to the test organisms in that effluent sample during an exposure of 48 hours. Testing was required two times a year (May and August) for the daphnid *Ceriodaphnia dubia*.

From January 1, 2009 through December 31, 2013, the reported LC50 was ≥100% in each of the 14 tests completed.

Sections 402(a)(2) and 308(a) of the CWA provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Under certain State narrative WQSs, and Sections 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limits to implement the narrative "no toxics in toxic amounts". Massachusetts has narrative criteria in their water quality regulations (see Massachusetts 314 CMR 4.05(5)(e)) that prohibit toxic discharges in toxic amounts. The Draft Permit prohibits the addition of toxic materials or chemicals to the discharges and prohibits the discharge of pollutants in amounts that would be toxic to aquatic life.

To meet Massachusetts' narrative criteria found at 314 CMR 4.05(5)(e), the Draft Permit prohibits the discharge of pollutants in amounts that would be toxic to aquatic life. WET testing is conducted to determine whether certain effluents, often containing potentially toxic pollutants, are discharged in a combination that produces a toxic amount of pollutants in the receiving water. Therefore, toxicity testing is used in conjunction with pollutant-specific control procedures to minimize the discharge of toxic pollutants.

The regulations at 40 CFR Part 122.44(d)(ii) state, "*When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution...(including) the sensitivity of the species to toxicity testing...*" MassDEP in its "Implementation Policy for the Control of Toxic Pollutants in Surface Waters" (February 23, 1990) ("Toxics Policy") sets forth toxicity limits according to dilution factors based on perceived risk. The dilution factor determined for the facility is 55:1. For dilution in the moderate risk category (>20:1 but ≤100:1), the effluent limits established in the Toxics Policy for acute effects in the mixing zone (i.e., given available dilution) are 0.3 toxic units (T.U.), and an end-of-pipe limit of 1.0 T.U. (i.e., an LC_{50} of 100%). Massachusetts' Toxics Policy requires acute testing four times per year for two species when there is reasonable potential for discharges to exceed applicable criteria.

As described above, the regulations at 40 CFR §122.44(l)(1) require reissued NPDES permits to contain limits as stringent or more stringent than the previous permit. Since the 2005 Permit contained a limit for LC_{50}, the Draft Permit maintains a limit of $LC_{50} \geq 100$ in accordance with anti-backsliding requirements. The Draft Permit further clarifies that testing is required for **effluent** and chemical analysis requirements for **receiving water**. The Permittee must collect the required receiving water sample (i.e., diluent) from the Neponset River at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. A receiving water control (0% effluent) must be tested twice per year for the chemical parameters in Attachment A, Freshwater Acute Toxicity Test Procedure and Protocol (2011). If toxicity is indicated, the Permittee is allowed use of alternate dilution water in accordance with the provisions in the Draft Permit. To clarify the requirements for effluent and receiving water for this testing, EPA has included WET parameters on the DMRs. Results of these toxicity tests will demonstrate compliance with the Massachusetts WQSs.

As described above, Massachusetts' toxicity implementation policy requires quarterly testing. However, the 2005 Permit reduced the frequency of WET from quarterly to twice per year because the Facility has maintained WET results ≥100%. The reporting requirement in the Draft Permit is twice per year for one species, which is based on the frequency required in the 2005 Permit. Samples taken in accordance with the WET testing requirements may be used to satisfy other sampling requirements required at weekly or monthly monitoring frequency in the Draft Permit (i.e., TRC, ammonia, copper, lead, nickel, and zinc) may also be used to satisfy the weekly or monthly sampling requirements for those parameters as long as the timing of sampling for the remaining parameters in Part I.A.1. coincides with the 2/year sampling for WET.

Monitoring for certain chemical parameters is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Based on the presence of additional metals in process materials at the granule plant used at the roofing plant, the presence of nutrients at elevated concentrations in discharges from the Facility, and impairments to the Neponset River, EPA is adding monitoring requirements to Part VI. Chemical Analysis for total phosphorus, antimony, iron, manganese, chromium, calcium, and magnesium to be conducted twice per year in conjunction with WET testing.

7.2 Outfall 002

7.2.1 Flow

The 2005 Permit required reporting the daily maximum and average monthly flow of treated cleaning, dust control, and non-contact cooling water through Outfall 002. The characterization of this discharge has been clarified to include contact process water, non-contact cooling water, boiler condensate, boiler blowdown, and stormwater. From January 1, 2009 through December 31, 2013, the minimum flow reported was 0.00288 MGD (2,880 gallons per day) and the maximum flow reported was 0.144 MGD (144,000 gallons per day). No discharge was reported from Outfall 002 for 57 of the 60 months of monitoring. One flow measurement was recorded for each monitoring period, as allowed by the 2005 Permit. As a result, the daily maximum and monthly average values are the same.

In March and early April 2012, the Facility completed significant maintenance on the detention pond for Outfall 002. As a result, it is unclear if the data from the previous permit cycle are representative of the conditions resulting from discharge. In order to collect information representative of discharges from this outfall, EPA is establishing requirements for Outfall 002 when discharging, rather than in connection with certain-sized precipitation events. The Draft Permit continues to require reporting of the daily maximum and monthly average flow. In addition, the Draft Permit requires that the number of discharge events be reported monthly.

7.2.2 TSS

The 2005 Permit included a monthly average TSS limit of 20 mg/L and maximum daily limit of 30 mg/L continued on the basis of requirements under anti-backsliding regulations and are based on the treatment of the effluent by sedimentation. These limits were established in the permit issued September 31, 1997. From January 1, 2009 through December 31, 2013 TSS concentrations ranged

from below laboratory PQLs to 130 mg/L. The samples for these measurements were collected from the surface of the detention pond when no discharge occurred during a monitoring period.

As discussed in Section 3 and 7.1.3 above, the Neponset River is impaired for sedimentation/siltation, TSS, and turbidity. Given the impairment to the Neponset River and the concentrations of TSS measured in effluent from the Facility, the Draft Permit maintains the concentration-based limits for maximum daily and monthly average TSS of 30 mg/L and 20 mg/L, respectively. In addition, the Facility must incorporate solids minimization BMPs into its SWPPP for this outfall. Given that the concentration-based TSS limits are more restrictive than the concentration noted in the Neponset River Resource Assessment as an interpretation of the narrative criterion for solids, 80 mg/L, the low frequency of discharge from Outfall 002, and in accordance with anti-backsliding requirements, EPA has concluded that concentrations of TSS in discharges from the Facility will not violate Massachusetts' WQSs.

7.2.3 pH

From January 1, 2009 through December 31, 2013 the pH values reported for Outfall 002 range from 6.5 SU to 7.1 SU. The samples for these measurements were collected from the surface of the detention pond when no discharge occurred during a monitoring period. Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)(3), for Class B waters require pH to be within the range of 6.5 to 8.3 SU and prohibit discharges that cause the in-stream pH to change more than 0.5 SU outside of the background range. The Draft Permit maintains a pH range of 6.5 to 8.3 SU, and specifies that the pH cannot change the naturally occurring pH range by more than 0.5 SU, consistent with Massachusetts WQSs. Based on the frequency of discharge expected from Outfall 002 and the sample results collected from the detention pond, the monitoring frequency for pH has been reduced to monthly.

7.2.4 Nutrients

Monitoring for ammonia is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Given the impairments to the Neponset River for excess algal growth, DO, and phosphorus (total) and the lack of information regarding phosphorus and ammonia in discharges from Outfall 002, additional requirements are included in the Draft Permit to determine if the direct or indirect discharge of phosphorus or ammonia are causing or contributing to an exceedance of Massachusetts' WQSs. EPA has added monitoring requirements for daily maximum phosphorus under Part VI. Chemical Analysis conducted twice per year in conjunction with WET testing. The Draft Permit also requires the Permittee to identify and implement BMPs designed to reduce nutrient discharges, including phosphorus, in conjunction with the solids minimization requirement (see Section 7.4). Inclusion of monitoring for a pollutant (or indicator) for which the receiving water is impaired is consistent with EPA's MSGP.

7.2.5 Whole Effluent Toxicity

Certainteed uses inorganic pigments, petroleum distillates and other bulk raw materials in processes at the granule plant. As described above, EPA reviewed MSDSs for the most widely used process materials at the Facility, and generally, several toxic pollutants were identified. In addition, ecotoxicology data available for several of these materials indicates the potential for adverse effects to aquatic life. Finally, the Facility provided sample results for the waters contributing to Outfall 002

in response to EPA's 308 letter which indicated several metals present in the water treated in the detention basin.

The above referenced ecotoxicology data reflect the toxicity of a single chemical, but provide no indication of the potential toxic impacts resulting from the suite of pollutants combined in the effluent at Outfall 002. WET testing monitors the cumulative impacts of a number of potential toxicants. In addition, the nature of the discharge has not been fully characterized, as discharges from this Outfall occur with limited frequency, and no toxicity testing has been conducted. While analytical data provided in response to EPA's 308 letter indicated the presence of metals in the detention pond water, it is not known to what extent these metals are present when a discharge via Outfall 002 occurs.

Given the unknown cumulative toxicity of pollutants potentially present in the discharge to Outfall 002 and the possibility that the cumulative toxicity may be greater than the toxicity of any one constituent, the Draft Permit requires two acute WET tests per year to determine whether the discharge has the reasonable potential to cause or contribute to an excursion above state water quality criteria for toxicity at 314 CMR 4.05(5)(e). In addition, this toxicity monitoring requirement supports the narrative requirement at Part I.A.12 of the Draft Permit that prohibits the discharge of "materials in concentrations or in combinations which are hazardous or toxic to aquatic life or which would impair the uses designated by the classification of the receiving water." Given the low frequency of discharge via Outfall 002, the Draft Permit specifies that sampling occur during a specified monitoring period in the first year of the permit, or the next discharge event, if no discharge occurs. Once the permittee submits two test results, no additional testing is required.

Monitoring for certain chemical parameters is required twice per year in conjunction with WET testing in accordance with Attachment A to the Draft Permit, Freshwater Acute Toxicity Test Procedure and Protocol (2011), Part VI. Chemical Analysis. Based on the presence of additional metals in process materials at the granule plant, the presence of nutrients at elevated concentrations in discharges from the Facility, and impairments to the Neponset River, EPA is adding monitoring requirements to Part VI. Chemical Analysis for total phosphorus, antimony, iron, manganese, chromium, calcium, and magnesium to be conducted twice per year in conjunction with WET testing.

7.3 Outfalls 003 and 004

7.3.1 Flow

These discharges are intermittent and occur only during precipitation events. The 2005 Permit required that flow be reported for the discharge events associated with the sampling of the outfall, but contained no flow limits. From January 1, 2009 through December 31, 2013 the flow reported per batch discharge was 20 gallons for Outfall 003 and 22 gallons for Outfall 004.

The Permittee uses OWSs for treatment of stormwater runoff which employ gravity to separate lower-density oils from water, resulting in an oil phase above the oil/water interface and a heavier particulate phase on the bottom of the separator. The sizing of an OWS is based upon the flow rate, density of oil to be separated, desired percent removal of oil, and the operating temperature range. The OWS in the tank farm has a design flow capacity of 20 gpm and the OWS in the still yard has a design flow capacity of 100 gpm.

To ensure that the flow through the OWSs be maintained at or below the maximum design flow rate, such that the oil and/or particulate phases potentially present in the OWSs are not entrained to the waterway, the Draft Permit has added a daily maximum flow rate limit of 20 gpm for Outfall 003 and a daily maximum flow rate limit of 100 gpm for Outfall 004. The Draft Permit also requires that the Permittee report the number of discharge events for these outfalls, and employ the use of a flow meter to record the total flow and flow rate through the OWSs to control the intake and discharge of stormwater through the OWSs such that the design flow capacity is not exceeded.

7.3.2 TSS

The 2005 Permit included a monthly average TSS limit of 10 mg/L and maximum daily limit of 15 mg/L for both outfalls. These limits were established in the permit issued September 31, 1997 as technology-based limits based on BPJ. From January 1, 2009 through December 31, 2013 TSS concentrations ranged from below laboratory PQLs to 99 mg/L for Outfall 003 and from below laboratory PQLs to 36 mg/L for Outfall 004.

As discussed in Section 3 and 7.1.3 above, the Neponset River is impaired for sedimentation/siltation, TSS, and turbidity. Given the impairment to the Neponset River and the concentrations of TSS measured in effluent from the Facility, the Draft Permit maintains the concentration-based limits for maximum daily and monthly average TSS of 15 mg/L and 10 mg/L, respectively. In addition, the Facility must incorporate solids minimization BMPs into its SWPPP for these outfalls. Given that the concentration-based TSS limits are more restrictive than the concentration noted in the Neponset River Resource Assessment as an interpretation of the narrative criterion for solids, 80 mg/L, and in accordance with anti-backsliding requirements, EPA has concluded that concentrations of TSS in discharges from the Facility will not violate Massachusetts' WQSs.

7.3.3 pH

From January 1, 2009 through December 31, 2013 the pH values reported for Outfall 003 at the O/W separator discharge ranged from 6.0 SU to 7.2 SU and the pH values reported for Outfall 004 at the O/W separator discharge ranged from 6.0 SU to 8.0 SU. These discharges are infrequent and are expected to occur only during precipitation events. Massachusetts Surface WQSs, 314 CMR 4.05(3)(b)(3), for Class B waters require pH to be within the range of 6.5 to 8.3 standard units (SU) and prohibit discharges that cause the in-stream pH to change more than 0.5 SU outside of the background range. The Draft Permit maintains a pH range of 6.5 to 8.3 SU for these Outfalls, and specifies that the pH cannot change the naturally occurring pH range by more than 0.5 SU, consistent with Massachusetts WQSs.

7.3.4 Oil and Grease

From January 1, 2009 through December 31, 2013, Oil and Grease levels have ranged from below the laboratory PQLs to 35.6 mg/L at Outfall 003 and from below the laboratory PQLs to 19.1 mg/L at Outfall 004. The 2005 Permit included a daily maximum limit of 15 mg/L for oil and grease for these outfalls. The drainage areas contributing to these outfalls are also subject to the Spill Prevention, Control, and Countermeasure (SPCC) Rule in 40 CFR Part 112, which require facilities that store certain quantities of oil to prepare, amend, and implement an SPCC Plan to prevent, prepare for and respond to oil discharges to waters of the United States.

The Draft Permit maintains a maximum daily limit for oil and grease of 15 mg/L at these Outfalls, monitored quarterly, to ensure compliance with Massachusetts WQSs at 314 CMR 4.05(3)(b)(7), at the level recognized at which many oils produce a visible sheen and/or cause an undesirable taste in fish (EPA Water Quality Criteria, 1972). These limits satisfy anti-backsliding requirements.

7.3.5 Nutrients

Based on information provided in the Permittee's application, the concentration of ammonia in discharges at Outfalls 003 and 004 were 1.8 mg/L and ranged from 3.2 mg/L to 5.1 mg/L, respectively, in limited confirmatory samples. Information also provided in the Permittee's application indicated that the concentration of total phosphorus in discharges from Outfalls 003 and 004 were 0.99 mg/L and 1.1 mg/L, respectively. Given the impairments to the Neponset River for excess algal growth, DO, and phosphorus (total) and the limited information regarding phosphorus and ammonia in discharges from Outfalls 003 and 004, additional requirements are included in the Draft Permit to determine if the direct or indirect discharge of phosphorus or ammonia are causing or contributing to an exceedance of Massachusetts' WQSs. EPA has added monitoring requirements for daily maximum ammonia and phosphorus conducted twice per year. The Draft Permit also requires the Permittee to identify and implement BMPs designed to reduce nutrient discharges, including nitrogen and phosphorus, in conjunction with the solids minimization requirement (see Section 7.4). Inclusion of monitoring for a pollutant (or indicator) for which the receiving water is impaired is consistent with EPA's MSGP.

7.4 Stormwater Pollution Prevention Plan (SWPPP)

The Facility engages in activities that could result in the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff. These operations include at least one of the following in an area potentially exposed to precipitation or stormwater: material storage, in-facility transfer, material processing, material handling, or loading and unloading. Specifically, at the Facility, routine transfer and storage of raw, intermediate and finished materials between production areas at the Facility, and maintenance and cleaning of the treatment systems for solids and/or oil are examples of material storage, processing and handling operations that shall continue to be included in the SWPPP. To control activities/operations that could contribute pollutants to waters of the United States and potentially violate Massachusetts WQSs, the Draft Permit requires the facility to continue to implement, and maintain a SWPPP documenting the application of BMPs appropriate for this specific facility (See Sections 304(e) and 402(a)(1) of the CWA and 40 CFR §122.44(k)).

The goal of the SWPPP is to reduce or prevent the discharge of pollutants through the stormwater system. The SWPPP requirements in the Draft Permit are intended to facilitate a systematic approach for the Permittee to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of this permit. The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants, which may reasonably be expected to affect the quality of stormwater discharges associated with industrial activity from the Facility. The SWPPP documents the appropriate BMPs implemented or to be implemented at the Facility to satisfy the non-numeric technology-based effluent limitations included in the Draft Permit.

This process involves the following four main steps:

1. Forming a team of qualified facility personnel who will be responsible for developing and updating the SWPPP and assisting the Facility manager in its implementation;
2. Assessing the potential stormwater pollution sources;
3. Selecting and implementing appropriate management practices and controls for these potential pollution sources; and
4. Reevaluating, periodically, the effectiveness of the SWPPP in preventing stormwater contamination and in complying with the various terms and conditions of the Draft Permit.

Pursuant to Section 304(e) of the CWA and 40 CFR §125.103(b), BMPs may be expressly incorporated into a permit on a case-by-case basis where necessary to carry out Section 402(a)(1) of the CWA. Generally, BMPs should include processes, procedures, schedules of activities, prohibitions on practices, and other management practices that prevent or reduce the discharge of pollutants. To control activities or operations, which could contribute pollutants to waters of the United States via stormwater discharges at the Facility, the Draft Permit requires the Facility to continue to update and implement its SWPPP by selection, design, installation, and implementation of control measures (including BMPs) to meet the non-numeric requirements and meet the other limits which apply to the outfalls. The permittee is required to incorporate BMPs described in EPA's MSGP that can be used to minimize contact between stormwater and potential pollutants for the industrial sectors relevant to the Facility.[9] In addition, the Draft Permit requires the Facility to implement several specific BMP requirements. These BMPs include the following:

1. Sampling Procedure
2. Material Management
3. Inspections

The SWPPP requirement also includes specific BMPs for solids minimization. The purpose of the solids minimization BMP is to address loading of solids, including settleable and/or suspended sediment, silt, solids, and/or organic matter to the Neponset River, which is impaired for sedimentation/siltation, TSS, turbidity, excess algal growth, DO, and total phosphorus. The requirements include evaluating and minimizing sources of solids, including nutrients (i.e., nitrogen and phosphorus), quantifying solids and nutrient loading, designing and implementing control measures or alterations needed in the current treatment systems at the Facility to address the removal of solids and nutrients, and adopting practices that will maintain such removal.

The BMPs noted must detail proper sampling locations and procedures consistent with the Draft Permit for each outfall, describe the standard operating procedures for handling water and/or solids removed from the treatment and control systems (or related appurtenances), and establish a minimum assessment and maintenance schedule for the outfalls and treatment systems consistent with requirements in Parts I.A. and Part II of the Draft Permit. A copy of the most recent SWPPP must be kept at the Facility and be available for inspection by EPA and MassDEP. The SWPPP is a

[9] The MSGP can be found at http://www.epa.gov/npdes/pubs/msgp2008_finalpermit.pdf

supporting element to any numerical effluent limitation which minimizes the discharge of pollutants through the proper operation of the Facility. Consequently, the SWPPP is as equally enforceable as the numerical limits and other requirements of the Draft Permit.

The SWPPP requirements for outfalls authorized by this permit may be incorporated into any existing SWPPP for the facility (i.e., a SWPPP prepared for MSGP permit coverage for discharges of stormwater associated with industrial activity). However, where any provision that applies to outfalls authorized under this permit differs from the requirements of a SWPPP prepared to meet the requirements of the MSGP, the requirements in this permit will apply to these outfalls. See **Part I.D.1.** of the Draft Permit for specific SWPPP requirements.

8. Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's actions or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat, such as waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity (16 U.S.C. §1802(10)). "Adversely impact" means any impact which reduces the quality and/or quantity of EFH (50 CFR §600.910(a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. §1855(b)(1)(A)) EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

EPA has determined that "No Habitat Areas of Particular Concern" as defined under Section 600.815(a)(9) of the Magnuson-Stevens Act are identified for the Neponset River at the Facility (Latitude 42° 10' 08" Longitude 71° 12' 23").[10] However, the Neponset River drains to the EFH area which encompasses Boston Harbor and affects the Neponset River and Old Harbor. Attachment 8 shows the designated EFH species believed to be present during one or more life stages within the Boston Harbor EFH area.

EPA has concluded that the limits and conditions contained in this Draft Permit minimize adverse effects to EFH or associated species, if present, for the following reasons:

- The Facility withdraws no water from the Neponset River; therefore no life stages of aquatic species are vulnerable to impingement or entrainment from this facility;
- Effluent limits have been established for TSS, pH, temperature, oil & grease, and aluminum to be protective of aquatic organisms and address the Neponset River impairment for siltation;
- The combined long term average discharge from the Facility is low (0.045 MGD);
- The dilution factor for process water outfall 001 is high (55); and
- The permit prohibits any violation of Massachusetts WQSs.

[10] NOAA EFH Mapper available at http://www.nero.noaa.gov/hcd/index2a.htm

EPA believes that the conditions and limitations contained within the Draft Permit adequately protect all aquatic life, including those species with EFH designation in the Boston Harbor system. Impacts associated with issuance of this permit to the EFH species, their habitat and forage, have been minimized to the extent that no significant adverse impacts are expected. Further mitigation is not warranted. If adverse impacts to EFH are detected because of this permit action, or if new information is received that changes the basis for EPA's conclusion, NMFS will be notified and an EFH consultation will be initiated.

9. Endangered Species Act

Under Section 7(a) of the Endangered Species Act, every federal agency is required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize federally listed endangered or threatened species of fish, wildlife, or plants, or result in the adverse modification of critical habitat of such species. EPA initiates consultation concerning listed species under their purviews with the United States Fish and Wildlife Service (USFWS) for freshwater species, and the National Marine Fisheries Service (NMFS) for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in Norfolk County to determine if the issuance of this NPDES permit could potentially impact any such listed species. According to the USFWS, there are no species or critical habitats listed within Norfolk County. [11] According to available Massachusetts Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program Priority and Estimated Habitat maps,[12] no federally listed endangered or threatened species are known to occur in the vicinity of the discharge. Based on this assessment, it is highly unlikely federally listed endangered or threatened species would be present in the vicinity of this discharge. Therefore, consultation with NMFS under Section 7 of the ESA is not required. During the public comment period, both NMFS and USFWS receive a copy of the Draft Permit and Fact Sheet for review.

10. Monitoring

The permit limitations and conditions have been established to yield data representative of the discharges under the authority of Section 308(a) of the CWA, according to regulations set forth at 40 CFR §122.41(j), 122.44(i) and 122.48. The monitoring program in the permit specifies routine sampling and analysis, which will provide continuous information on the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit. Timely reporting is essential for the regulatory agencies to expeditiously assess compliance with permit conditions.

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[11] No listing for Norfolk County in *Federally Listed Endangered and Threatened Species in Massachusetts* at http://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm

[12] Access available at http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/regulatory-maps-priority-and-estimated-habitats/

The Draft Permit includes new provisions related to DMR submittals to EPA and the State. The Draft Permit requires that, **no later than six months after the effective date of the permit**, the Permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the Permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request"). In the interim (until six months from the effective date of the permit), the Permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated CWA permittees to submit DMRs electronically via a secure Internet application to EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR §122.41 and §403.12. EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. NetDMR can be accessed at http://www.epa.gov/netdmr. Further information about NetDMR, including contacts for EPA Region 1, information on upcoming trainings, and contact information for Massachusetts, is provided on this website.

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month using NetDMR, no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees must continue to send hard copies of reports other than DMRs to MassDEP until further written notice from MassDEP.

The Draft Permit also includes an "opt-out" request process. Permittees who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing to EPA, at least 60 days prior to the date the Terminal would have otherwise been required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for 12 months. The opt-outs expire at the end of this 12 month period. Upon expiration, the permittee Permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee Permittee submits a renewed opt-out request 60 days prior to expiration of its opt-out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees with written approval from EPA to continue to submit hard copies of DMRs, the Draft Permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

11. State Certification Requirements

EPA may not issue a permit unless the MassDEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Surface Water Quality Standards or unless state certification is waived. The staff of the MassDEP has staff have reviewed the draft permit and advised EPA that the limitations are adequate

to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR §124.53 and expects that the draft permit will be certified.

12. Comment Period, Hearing Requests, and Procedures for Final

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Shauna Little, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Section, 5 Post Office Square, OEP 06-1, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 CFR §124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office. Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 CFR §124.19.

13. EPA and MassDEP Contacts

Additional information concerning the Draft Permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA and MassDEP contacts below:

Shauna Little, EPA– Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1989
FAX: (617) 918-0989
Email: little.shauna@epa.gov

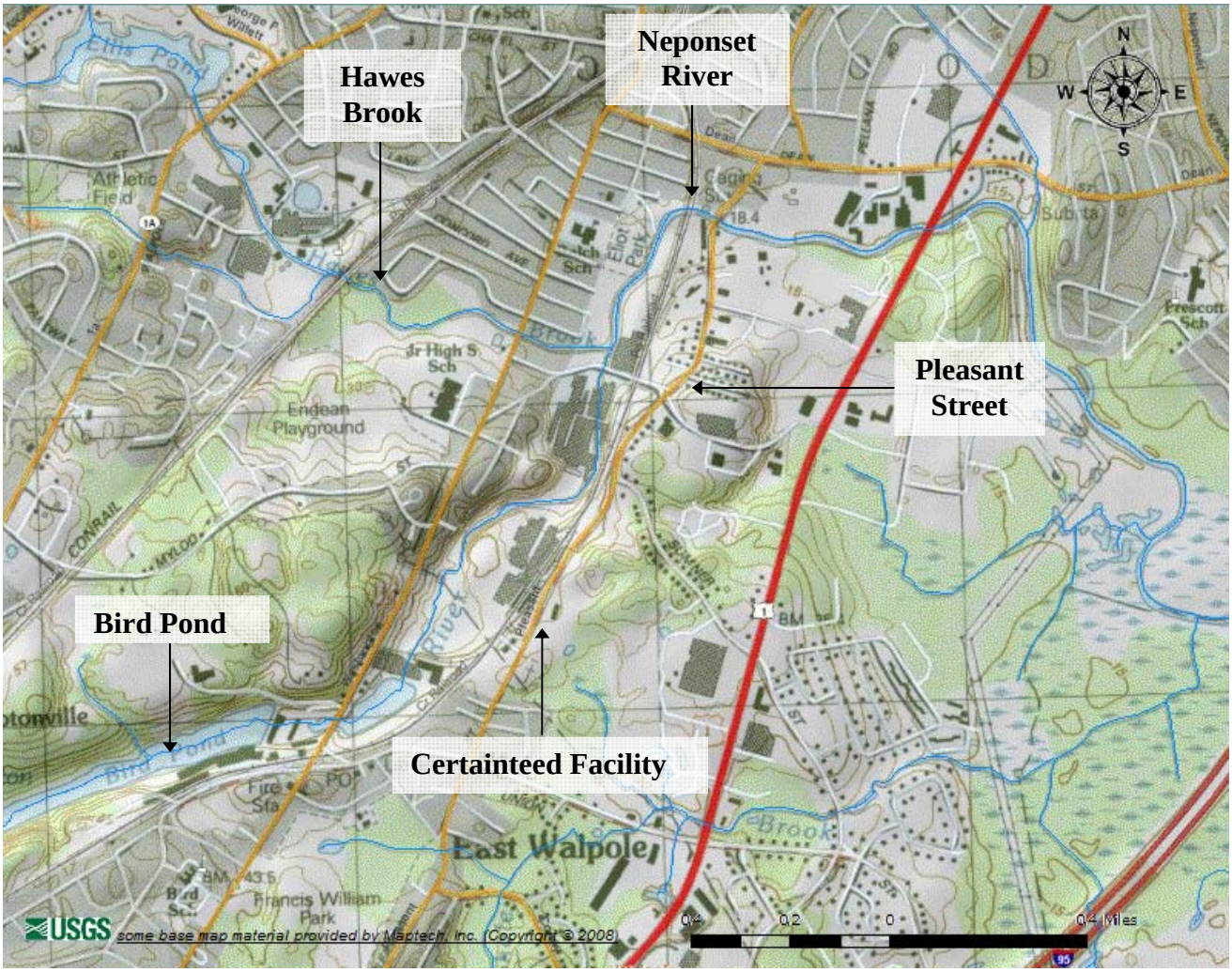
Cathy Vakalopoulos, MassDEP
Division of Wastewater Management
Surface Water Discharge Permit Program
1 Winter Street, 5th Floor
Boston, Massachusetts 02108
Telephone: (617) 348-4026
FAX: (617) 292-5696
Email: catherine.vakalopoulos@state.ma.us

5/27/2014

Ken Moraff, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

NPDES Permit No. MA0003531

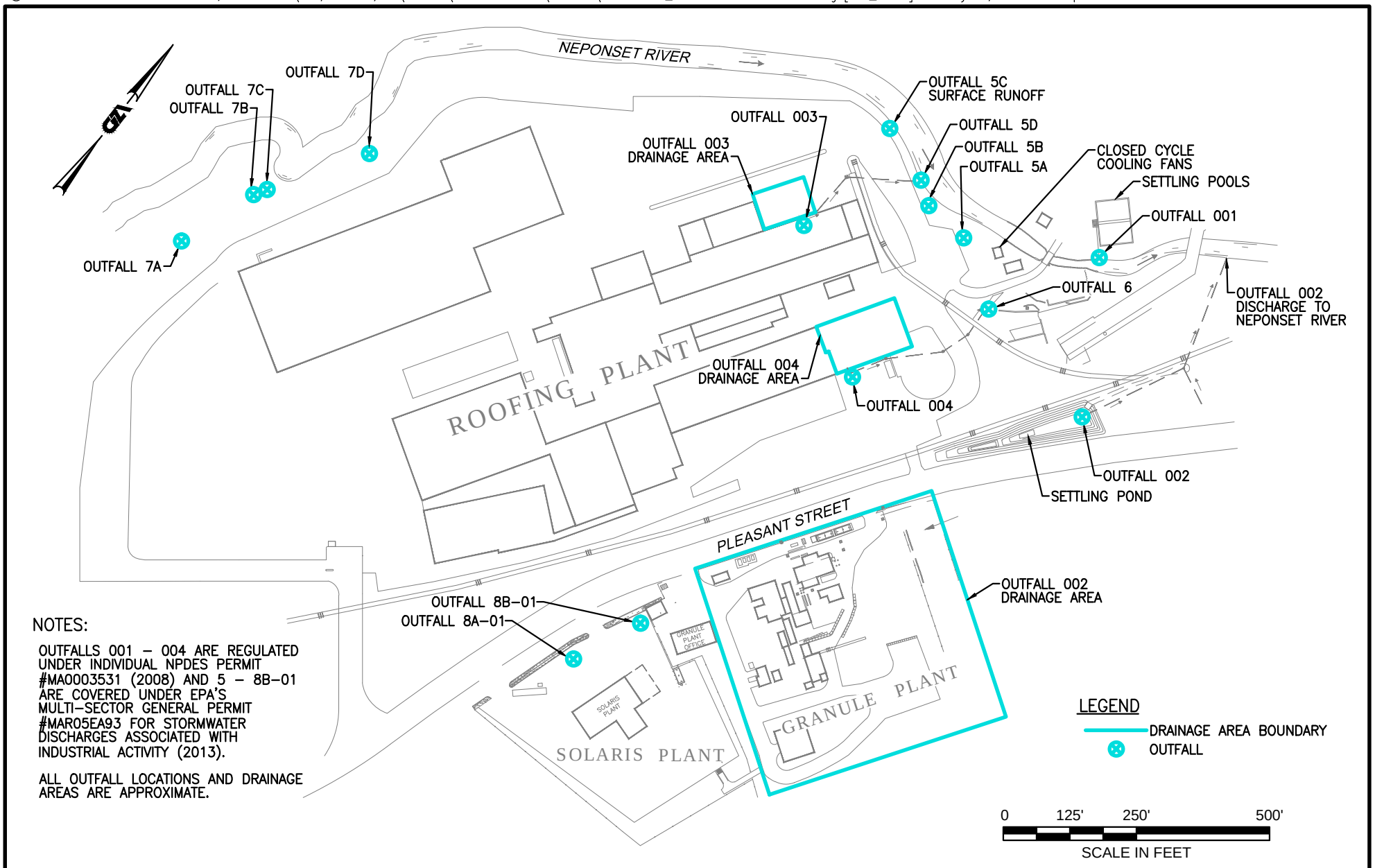
Attachment 1: Certainteed Location Map



Source: http://water.usgs.gov/osw/streamstats/massachusetts.html

Attachment 2: Certainteed Site Plan

EXHIBIT 1
AR.7



NOTES:

OUTFALLS 001 – 004 ARE REGULATED UNDER INDIVIDUAL NPDES PERMIT #MA0003531 (2008) AND 5 – 8B-01 ARE COVERED UNDER EPA'S MULTI-SECTOR GENERAL PERMIT #MAR05EA93 FOR STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY (2013).

ALL OUTFALL LOCATIONS AND DRAINAGE AREAS ARE APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

NDPES PERMIT - SITE PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 1
DESIGNED BY: RBP	DRAWN BY: EMD	SCALE: 1"=250'	
DATE: 02-07-2014	PROJECT NO. 01.0171200.15	REVISION NO.	

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Attachment 3: Discharge Monitoring Data

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 001
Monthly Reporting

Monitoring Period End Date	Flow (Mgal/day)		TSS (mg/L)		Oil & Grease (mg/L)	Temperature (deg F)		pH (SU)		Aluminum (mg/L)	
	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max	Mo Avg	Daily Max	Min	Max	Daily Max	Mo Avg
Jan-09	0.0035	0.0202	25.9	54	10	34	36.5	6.8	6.8	0.4	0.4
Feb-09	0.0096	0.036	63.2	190	<5	34	36.5	6.8	7.0	3.8	3.8
Mar-09	0.05	0.09	15.8	24	<5	39.1	44	6.8	7.8	2.6	2.6
Apr-09	0.0011	0.0028	19.6	27	<5	46.4	49	6.8	7.0	1.4	1.4
May-09	0.0024	0.0116	8.3	14	<5	57.1	61.7	6.8	7.0	1.3	1.3
Jun-09	0.01	0.0464	11.2	18	<5	65.8	68	6.8	7.5	3.3	3.3
Jul-09	0.0154	0.0456	12.8	19	<5	71.4	74	6.8	6.8	1.1	1.1
Aug-09	0.0033	0.0151	7.1	18	<5	75.1	78	6.7	6.8	0.3	0.3
Sep-09	0.0035	0.0156	10.4	15	<5	68	75	6.8	6.9	1.1	1.1
Oct-09	0.0048	0.0247	12.5	14	<5	54.4	60.5	6.5	6.8	2.0	2.0
Nov-09	0.0003	0.0011	17.8	23	---	52.7	56.9	6.7	6.8	2.4	2.4
Dec-09	0.004	0.0207	16.6	19	<5	43.9	53.4	6.5	6.8	2.0	2.0
Jan-10	0.0055	0.0197	18.3	24	<10	38.9	44.5	6.7	6.8	0.9	0.9
Feb-10	0.0034	0.0166	19.3	23	<5	38.8	42.3	6.7	7.0	3.9	3.9
Mar-10	0.0011	0.00202	6	8	<5	46.8	51	6.5	6.8	1.3	1.3
Apr-10	0.002	0.0021	16.5	25	<5	55.4	67	6.5	6.8	1.2	1.2
May-10	0.0053	0.0181	10.5	17	<5	64.5	70	6.7	6.8	1.3	1.3
Jun-10	0.0047	0.0197	8.2	12	<5	72	76.1	6.7	7.1	0.4	0.4
Jul-10	0.0114	0.0529	12.8	15	<5	77.5	80.8	6.5	7.0	1.9	1.9
Aug-10	0.0059	0.0267	8.9	20	<5	74.5	79.6	6.8	7.0	8.4	8.4
Sep-10	0.0029	0.0136	13.9	19	<5	69.8	77.5	6.8	7.0	1.7	1.7
Oct-10	0.0024	0.0091	37.2	110	<5	59.3	64.3	6.8	7.0	1.0	1.0
Nov-10	0.0019	0.0071	16.7	22	<5	49.4	55	6.5	7.0	1.6	1.6
Dec-10	0.0013	0.0066	7.4	14	<5	40.9	45	6.8	7.0	1.3	1.3
Jan-11	0.0071	0.0292	9.3	19	<5	38.7	42.1	6.8	7.0	1.4	1.4
Feb-11	0.0067	0.0257	15.6	24	<5	43.5	47	6.8	7.0	1.6	1.6
Mar-11	0.0022	0.0026	16.8	19	<5	51.1	57.5	6.5	7.0	0.7	0.7
Apr-11	0.0035	0.0106	13.1	15	<5	56.5	61.2	6.8	7.0	2.0	2.0
May-11	0.0038	0.0136	10.5	18	<5	63.9	73.1	6.5	6.8	1.1	1.1
Jun-11	0.0032	0.0058	12.6	16	<5	70.3	73.4	6.7	7.0	1.1	1.1
Jul-11	0.006	0.0232	6.9	10	<5	76.8	79	6.7	7.0	1.2	1.2
Aug-11	0.0049	0.0049	9.9	23	<5	76.5	81	6.8	7.0	1.4	1.4
Sep-11	0.0042	0.0176	7.4	13	<5	62.6	75.8	6.8	6.8	0.1	0.1
Oct-11	0.0006	0.0015	3.9	8.5	<5	61.7	70	6.8	7.1	0.2	0.2
Nov-11	0.0011	0.0021	5.7	9.5	<5	55.1	57.2	6.5	6.8	0.7	0.7
Dec-11	0.0045	0.0197	15.5	20	<5	51.5	55	6.8	7.0	1.9	1.9
Jan-12	0.00001	0.00001	4.3	5.5	<5	38.2	42.6	6.6	6.8	0.2	0.2
Feb-12	0.0049	0.0207	9.9	0.4	<5	42.5	46.2	6.8	7.5	0.5	0.5
Mar-12	0.0053	0.0212	15.2	20	<5	47.1	56.5	6.8	8.0	1.3	1.3

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Apr-12	0.0026	0.0081	0.8	21	<5	58.8	67.4	6.8	7.2	2.2	2.2
May-12	0.0043	0.0146	18.2	33	<5	67.9	72.8	6.9	7.2	1.1	1.1
Jun-12	0.0016	0.0017	9.8	20	<5	68.9	72.9	6.8	6.9	---	0.8
Jul-12	0.0049	0.0172	4.7	8.5	<5	79.5	85.5	6.8	7.0	0.5	0.5
Aug-12	0.0068	0.015	9.1	23	<5	75.2	79.6	6.6	7.0	1.0	1.0
Sep-12	0	0.01	6.3	9.5	<5	70.1	73.5	6.8	7	0.33	0.33
Oct-12	0	0.01	4.6	10	<5	63.2	69.4	6.8	6.9	0.66	0.66
Nov-12	0.01	0.02	10.7	15	<5	50.5	57	6.8	6.9	1	1
Dec-12	0.01	0.02	8.3	13	<4.9	44.5	45.8	6.7	6.9	1.1	1.1
Jan-13	0.01	0.01	10.4	13	<5	41.6	49.8	6.8	6.9	1.1	1.1
Feb-13	0.14	0.19	7	8.4	<5	40	43.3	6.8	6.9	1.8	1.8
Mar-13	0.02	0.02	15.3	26	<4.8	45.3	48.3	6.7	6.8	1	1
Apr-13	0.01	0.02	12.5	16	<5	53.1	59.1	6.8	7	1.8	1.8
May-13	0.01	0.01	8.4	14	<5	62.3	64.4	6.8	6.9	0.99	0.99
Jun-13	0.02	0.04	7.3	9.2	<5	70.6	78.1	6.8	7	0.2	0.2
Jul-13	0.01	0.02	6.6	12	<4.8	78.1	83.5	6.8	7	0.62	0.62
Aug-13	0.02	0.03	10.5	17	<5	73.2	75.4	6.8	7	1.6	1.6
Sep-13	0.01	0.02	12.4	21	<4.8	69	76.7	6.8	7	0.98	0.98
Oct-13	0	0.01	6.7	12	<4.8	61	68	6.8	6.9	0.37	0.37
Nov-13	0	0.01	11.2	24	4.8	50.9	57.5	6.9	6.9	2.2	2.2
Dec-13	0.01	0.03	7.3	12	<4.8	39.6	44.9	6.7	6.9	0.7	0.7
2005 Permit Limits	**0.04**	**Report**	**40**	**70**	**15**	**83**	**90**	**6.5**	**8.3**	**Report**	**Report**
Min	0	0.00001	0.8	0.4	4.8	34	36.5	6.5	6.8	0.1	0.1
Max	0.14	0.19	63.2	190	4.8	79.5	85.5	6.9	8	8.4	8.4
Avg	0.009	0.02082	12.4	22	4.8	57.2	62.3	6.73	6.99	1.41	1.40
# of measurements	20	20	20	20	1	20	20	20	20	19	20

--- = No value reported

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CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 001
Whole Effluent Toxicity Testing

Monitoring Period End Date	LC50 Static 48Hr Acute Ceriodaphnia (%)	Total Al (mg/L)	Total Ca (mg/L)	Total Cd (mg/L)	Total Cr (mg/L)	Total Cu (mg/L)	Total Mg (mg/L)	Total Ni (mg/L)	Total Pb (mg/L)	Total Zn (mg/L)	Ammonia (mg/L)
Effluent Sample	Daily Min										
May-07	>100	1.4	---	---	---	---	---	---	---	---	---
Aug-07	>100	1.2	---	---	---	---	---	---	---	---	---
May-08	>100	1.5	---	---	---	---	---	---	---	---	---
Aug-08	>100	1.1	---	---	---	---	---	---	---	---	---
May-09	>100	1.3	---	---	---	---	---	---	---	---	---
Aug-09	>100	0.27	---	---	---	---	---	---	---	---	---
May-10	>100	1.3	7.9	<0.001	0.014	0.016	1.4	<0.01	<0.005	<0.05	---
Aug-10	>100	0.84	6.4	<0.001	0.0092	0.013	1.1	<0.01	<0.005	<0.05	---
May-11	>100	1.1	6.1	<0.0005	0.012	0.01	1.0	<0.001	0.0012	0.015	<0.1
Aug-11	>100	1.4	7.1	<0.0005	0.0082	0.018	1.1	<0.001	0.0012	0.012	---
May-12	>100	1.1	6.8	<0.0005	0.012	0.011	1.2	<0.001	0.0018	0.013	<0.1
Aug-12	>100	0.76	7.3	<0.0005	0.0053	0.006	1.2	<0.001	0.00082	0.019	<0.1
May-13	>100	0.99	9.3	<0.001	0.011	0.011	1.5	<0.01	<0.005	0.017	<0.02
Aug-13	>100	1.60	8.8	<0.0005	0.009	0.0074	1.4	0.0014	0.0013	0.015	0.032
Diluent Sample											
May-11	---	0.039	15	---	---	0.0031	3.7	<0.001	0.0016	0.0066	<0.1
Aug-11	---	0.019	22	---	---	0.0018	6.1	<0.001	0.0012	<0.0025	<0.1
May-12	---	0.047	13	---	---	0.0027	3.5	<0.001	0.0024	0.0076	0.1
Aug-12	---	0.014	18	---	---	0.0024	4.9	<0.001	0.00066	0.004	0.014
May-13		<0.20	18	---	---	<0.010	4.8	<0.010	<0.005	<0.010	0.067
Aug-13		<0.20	15	---	---	0.0019	4.1	<0.001	0.0017	<0.010	0.048

--- = data not available or not validated.

NPDES Permit No. MA0003531

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 001
Response to Item #15 of EPA's Section 308 Information Request

Sample Date	Total Sb (mg/L)	Total As (mg/L)	Total Cd (mg/L)	Total Cr (mg/L)	Total Cu (mg/L)	Total Fe (mg/L)	Total Pb (mg/L)	Total Hg (mg/L)	Total Ni (mg/L)	Total Se (mg/L)	Total Ag (mg/L)	Total Zn (mg/L)
2/8/2012	<0.006	<0.01	<0.001	0.0058	0.012	1.1	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
2/15/2012	<0.006	<0.01	<0.001	0.017	0.017	1.7	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
2/22/2012	<0.006	<0.01	<0.001	0.0078	0.013	0.97	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
2/29/2012	<0.006	<0.01	<0.001	0.018	0.018	1.9	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
3/7/2012	<0.006	<0.01	<0.001	0.024	0.029	1.9	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05
3/14/2012	<0.006	<0.01	<0.001	0.013	0.021	1.3	<0.005	<0.0002	<0.01	<0.01	<0.005	<0.05

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 002
Response to Item #14 of EPA's Section 308 Information Request

Sample Date	Total Al (mg/L)	Total Sb (mg/L)	Total As (mg/L)	Total Cd (mg/L)	Total Cr (mg/L)	Total Cu (mg/L)	Total Fe (mg/L)	Total Pb (mg/L)	Total Hg (mg/L)	Total Ni (mg/L)	Total Se (mg/L)	Total Ag (mg/L)	Total Zn (mg/L)	TSS (mg/L)
Pre-Maintenance														
2/8/2012	2.6	<0.006	<0.01	<0.001	0.0057	0.01	1.8	0.0078	<0.0002	<0.01	<0.01	<0.005	0.12	26
2/15/2012	3.3	<0.006	<0.01	<0.001	0.0099	<0.01	1.6	0.0053	<0.0002	<0.01	<0.01	<0.005	0.1	15
2/22/2012	1.6	<0.006	<0.01	<0.001	<0.005	<0.01	1.4	0.008	<0.0002	<0.01	<0.01	<0.005	0.077	23
2/29/2012	6.4	<0.006	<0.01	<0.001	0.022	0.027	4.7	0.012	<0.0002	<0.01	<0.01	<0.005	0.18	79
Post-Maintenance														
4/25/2012	2.4	<0.006	<0.01	<0.001	<0.005	0.021	3.0	0.021	<0.0002	<0.010	<0.01	<0.005	0.160	170
5/2/2012	1.7	<0.006	<0.01	<0.001	<0.005	0.017	1.8	0.016	<0.0002	<0.001	<0.01	<0.005	0.130	150
5/9/2012	1.2	<0.006	<0.01	<0.001	<0.005	0.013	1.7	0.012	<0.0002	<0.001	<0.01	<0.005	0.087	62
5/16/2012	1.5	<0.006	<0.01	<0.001	<0.005	0.016	2.0	0.016	<0.0002	<0.001	<0.01	<0.005	0.120	78
5/23/2012	6.3	<0.006	<0.01	<0.001	0.0077	0.021	5.6	0.017	<0.0002	<0.002	<0.01	<0.005	0.170	730
5/30/2012	2.8	<0.006	<0.01	<0.001	<0.005	0.014	2.9	0.01	<0.0002	0.0076	<0.01	<0.005	0.110	45

NPDES Permit No. MA0003531

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 002
Monthly Reporting

Monitoring Period End Date	Flow (Mgal/day)		TSS (mg/L)		pH (SU)	
	Mo Avg	Daily Max	Mo Avg	Daily Max	Min	Max
Jan-09	No Discharge					
Feb-09	No Discharge					
Mar-09	No Discharge					
Apr-09	No Discharge					
May-09	No Discharge					
Jun-09	No Discharge					
Jul-09	No Discharge					
Aug-09	No Discharge					
Sep-09	No Discharge					
Oct-09	No Discharge					
Nov-09	No Discharge					
Dec-09	No Discharge					
Jan-10	No Discharge					
Feb-10	No Discharge					
Mar-10	No Discharge					
Apr-10	0.00288	0.00288	27	27	7.0	7.0
May-10	No Discharge					
Jun-10	0.0029	0.0029	27	27	7.0	7.0
Jul-10	No Discharge					
Aug-10	No Discharge					
Sep-10	No Discharge					
Oct-10	No Discharge					
Nov-10	No Discharge					
Dec-10	No Discharge					
Jan-11	No Discharge					
Feb-11	No Discharge					
Mar-11	No Discharge					
Apr-11	No Discharge					
May-11	No Discharge					
Jun-11	No Discharge					
Jul-11	No Discharge					
Aug-11	No Discharge					
Sep-11	No Discharge					
Oct-11	No Discharge					
Nov-11	No Discharge					
Dec-11	---	---	97	97	6.5	6.5
Jan-12	No Discharge		82	82	No Discharge	
Feb-12	No Discharge		26	26	7.0	7.0
Mar-12	No Discharge					
Apr-12	No Discharge					
May-12	No Discharge					

NPDES Permit No. MA0003531

Jun-12	No Discharge				7.0	7.0
Jul-12	No Discharge				7.1	7.1
Aug-12	No Discharge				7.0	7.0
Sep-12	No Discharge					
Oct-12	No Discharge		130	130	7	7
Nov-12	No Discharge				7	7
Dec-12	No Discharge				6.8	6.8
Jan-13	No Discharge				6.8	6.8
Feb-13	No Discharge				6.8	6.8
Mar-13	No Discharge				6.9	6.9
Apr-13	No Discharge				6.8	6.8
May-13	No Discharge				7	7
Jun-13	No Discharge				6.8	6.8
Jul-13	No Discharge				6.8	6.8
Aug-13	No Discharge				7	7
Sep-13	No Discharge				6.8	6.8
Oct-13	No Discharge				6.9	6.9
Nov-13	No Discharge				6.9	6.9
Dec-13	No Discharge				6.8	6.8
2007 Permit Limits	**Report**	**Report**	**20**	**30**	**6.5**	**8.3**
Min	0.00288	0.00288	26	26	6.5	6.5
Max	0.0029	0.0029	130	130	7.1	7.1
Avg	0.00289	0.00289	64.8	64.8	6.9	6.9
# of measurements	2	2	6	6	22	22

”No Discharge” = Where “No Discharge” shown and no flow is reported, TSS and/or pH values represent samples collected from surface of detention pond.
--- = No value reported

NPDES Permit No. MA0003531

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 003
Quarterly Reporting

Monitoring Period End Date	Flow (gal/batch)		TSS (mg/L)		Oil & Grease (mg/L)	pH (SU)	
	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max	Min	Max
Mar-09	20	20	3	3	<5	6.7	6.8
Jun-09	20	20	8	8	<5	6.5	6.8
Sep-09	20	20	6.7	6.7	<5	6.8	6.8
Dec-09	20	20	2.4	2.4	35.6	6.5	6.6
Mar-10	20	20	<15	26	<5	6.5	6.8
Jun-10	20	20	<23.5	42	7.9	6.5	6.7
Sep-10	20	20	<10	<10	<5	6.5	7.0
Dec-10	20	20	3.2	3.2	<5	6.5	7.0
Mar-11	20	20	99	99	6.27	6.5	7.0
Jun-11	20	20	32.5	83	5.4	6.5	6.5
Sep-11	20	20	3.3	3.3	<5	6.5	6.5
Dec-11	20	20	<2	<2	5.77	6.0	6.6
Mar-12	20	20	3	3	7.6	6.7	7.0
Jun-12	20	20	2.5	2.5	5	6.8	7.0
Sep-12	20	20	2.5	2.5	<5	6.8	6.9
Dec-12	20	20	<4	<4	<5	6.8	6.8
Mar-13	20	20	7.2	7.2	<4.9	6.7	6.8
Jun-13	20	20	<7.5	11	<5	6.8	7.2
Sep-13	20	20	4.4	4.4	<5	6.8	6.8
Dec-13	20	20	<4.8	<4.8	<4	6.7	7.1
2007 Permit Limits	**Report**	**Report**	**10**	**15**	**15**	**6.5**	**8.3**
Min	20	20	<2	<2	<4.9	6	6.5
Max	20	20	99	99	35.6	6.8	7.2
Avg	20	20	13.7	19.2	10.5	6.61	6.84
# of measurements	20	20	20	20	20	20	20

--- = No value reported

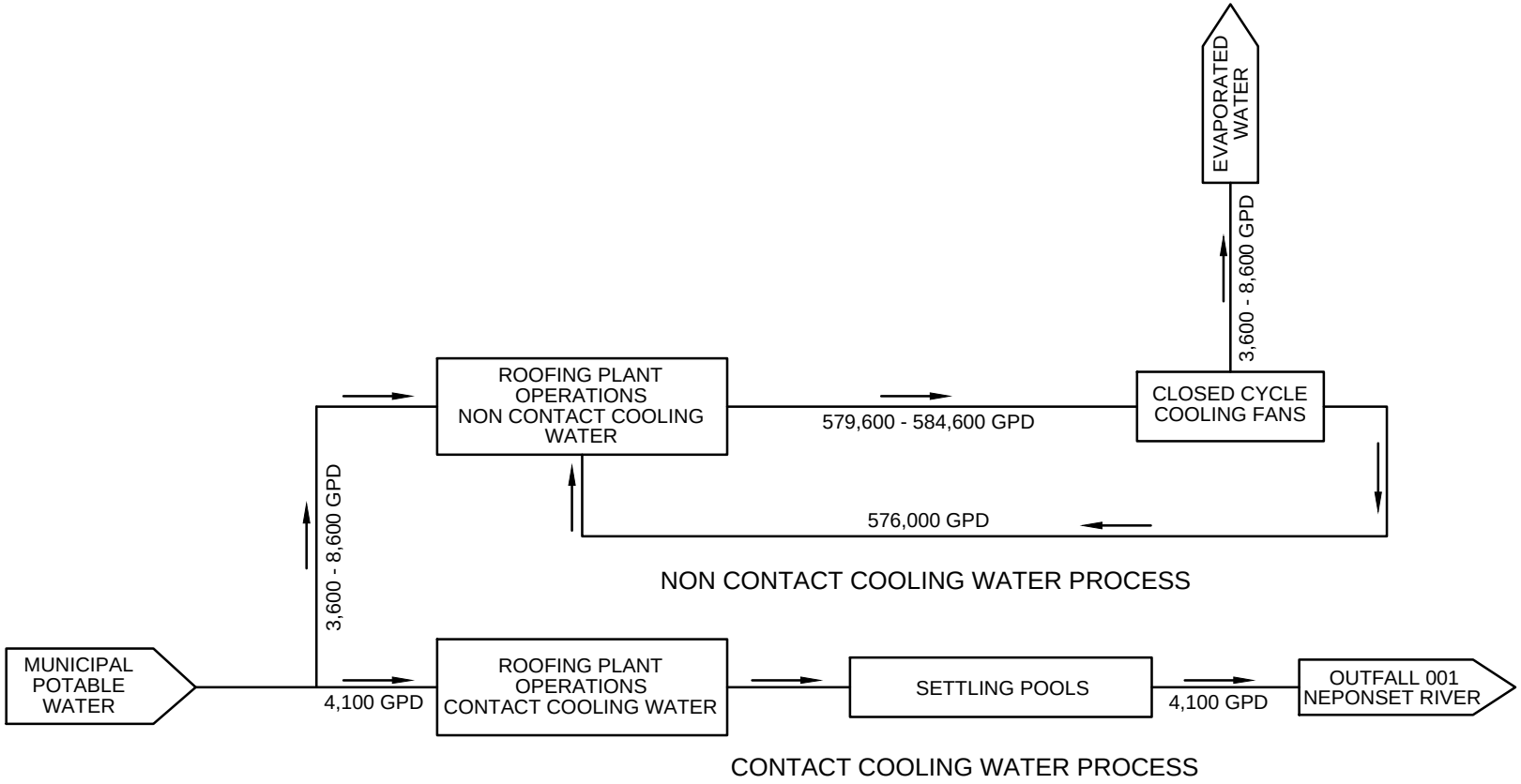
NPDES Permit No. MA0003531

CERTAINTEED CORPORATION - MA0003531
Outfall Serial Number 004
Quarterly Reporting

Monitoring Period End Date	Flow (gal/batch)		TSS (mg/L)		Oil & Grease (mg/L)	pH (SU)	
	Mo Avg	Daily Max	Mo Avg	Daily Max	Daily Max	Min	Max
Mar-09	22	22	<2	2	19.1	6.6	7.0
Jun-09	22	22	12	12	<5	6.5	6.8
Sep-09	22	22	5.4	6.8	<5	6.5	6.9
Dec-09	22	22	2.4	2.4	<5	6.5	6.6
Mar-10	22	22	<10.5	11	<5	6.5	6.8
Jun-10	22	22	<20.5	36	<5	6.5	6.8
Sep-10	22	22	<10	<10	5.38	7.0	7.0
Dec-10	22	22	2	2	<5	6.5	7.0
Mar-11	22	22	<2	2	<5	6.5	7.0
Jun-11	22	22	24.7	33	13.8	6.0	6.5
Sep-11	22	22	4	4	<5	6.5	6.5
Dec-11	22	22	<2	<2	<5	6.0	6.6
Mar-12	22	22	3.5	3.5	<5	6.7	7.0
Jun-12	22	22	16.4	26	<5	6.8	8.0
Sep-12	22	22	5	5	<5	6.8	6.8
Dec-12	22	22	<4	<4	<5	6.8	6.8
Mar-13	22	22	5.2	5.2	<4.9	6.8	6.8
Jun-13	22	22	10	10	11	6.8	6.8
Sep-13	22	22	10	10	<5	6.8	6.8
Dec-13	22	22	<4	<4	18	6.8	6.8
2005 Permit Limits	**Report**	**Report**	**10**	**15**	**15**	**6.5**	**8.3**
Min	22	22	<2	<2	<4.9	6	6.5
Max	22	22	24.7	36	19.1	7	8
Avg	22	22	8.4	10.7	13.5	6.60	6.87
# of measurements	20	20	20	20	20	20	20

--- = No value reported

Attachment 4: Certainteed Process Flow Diagrams



NOTES:

CONTACT COOLING WATER FLOW RATE SHOWN IS AVERAGE FLOW RATE PER DAY OF OPERATION FOR 2011.

NON CONTACT COOLING WATER POTABLE WATER FLOW RATE RANGE IS THE ESTIMATED COOLING TOWER MAKE UP WATER RATE BASED UPON 12 HOURS DAY COOLING WATER REQUIRED, AND APPROXIMATELY 25° F TEMPERATURE DELTA.

NO.	ISSUE/DESCRIPTION	BY	DATE

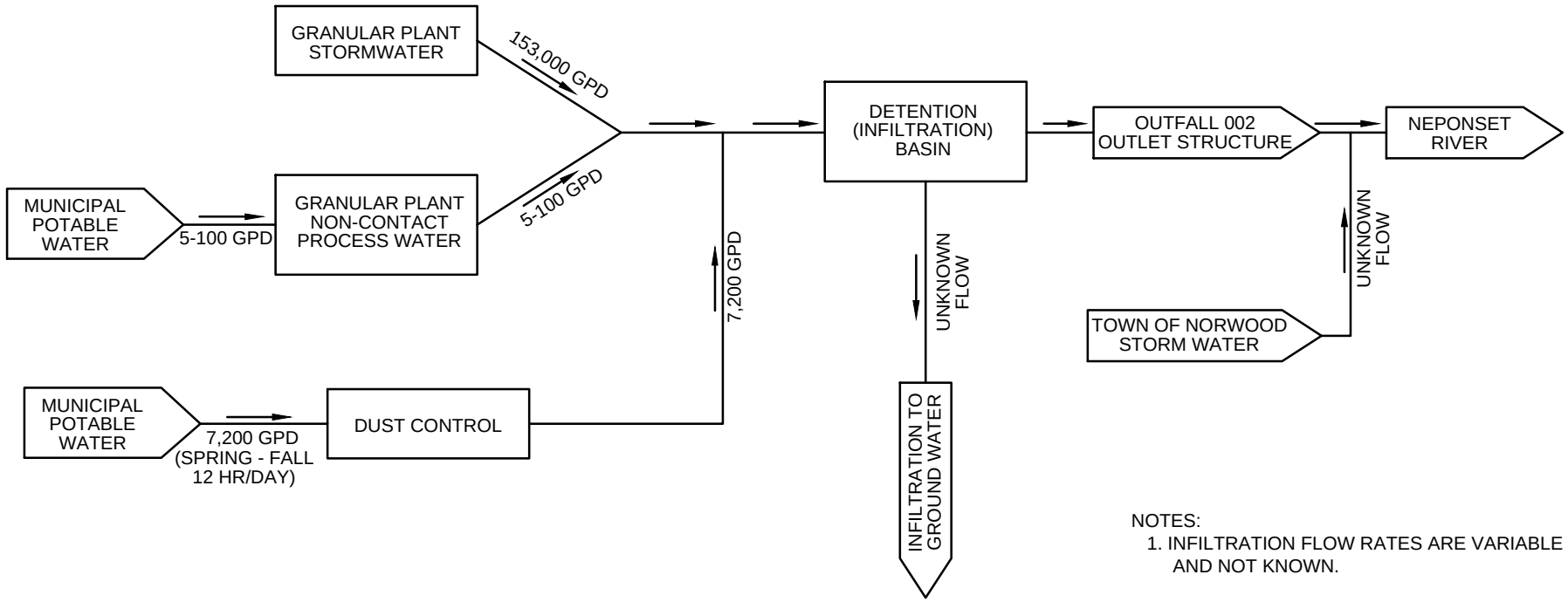
CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

ROOFING PLANT INDUSTRIAL PROCESS AND WASTEWATER
PROCESS FLOW DIAGRAM - OUTFALL 001

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 2
DESIGNED BY: RBP	DRAWN BY: VKGW	SCALE: NOT TO SCALE	
DATE: 12-12-2012	PROJECT NO. 01.0171200.15	REVISION NO.	



NOTES:

1. INFILTRATION FLOW RATES ARE VARIABLE AND NOT KNOWN.

2. GRANULAR PLANT STORMWATER FLOW IS BASED UPON JANUARY 12, 2012 PRECIPITATION DATA AND IS APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

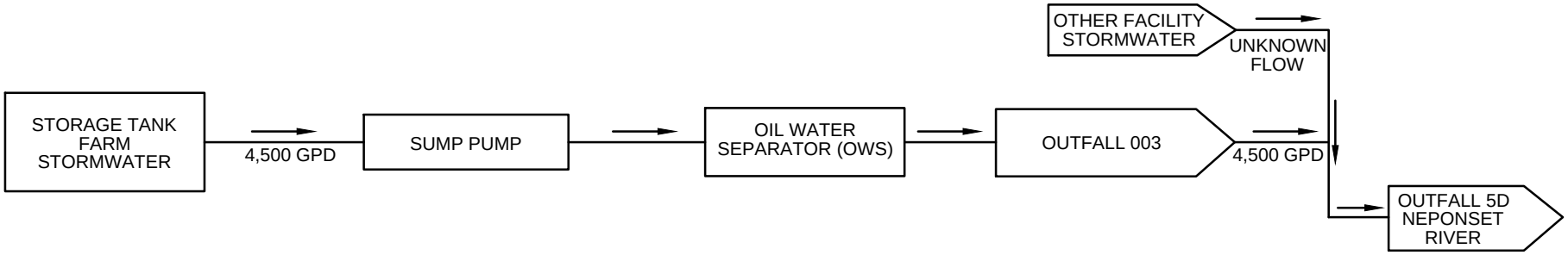
CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

GRANULAR PLANT
PROCESS FLOW DIAGRAM - OUTFALL 002

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 3
DESIGNED BY: RBP	DRAWN BY: VKGW	SCALE: NOT TO SCALE	
DATE: 12-12-2012	PROJECT NO. 01.0171200.15	REVISION NO.	



NOTE:
STORMWATER FLOW RATE IS BASE UPON AUGUST 1, 2012 EVENT AND IS APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

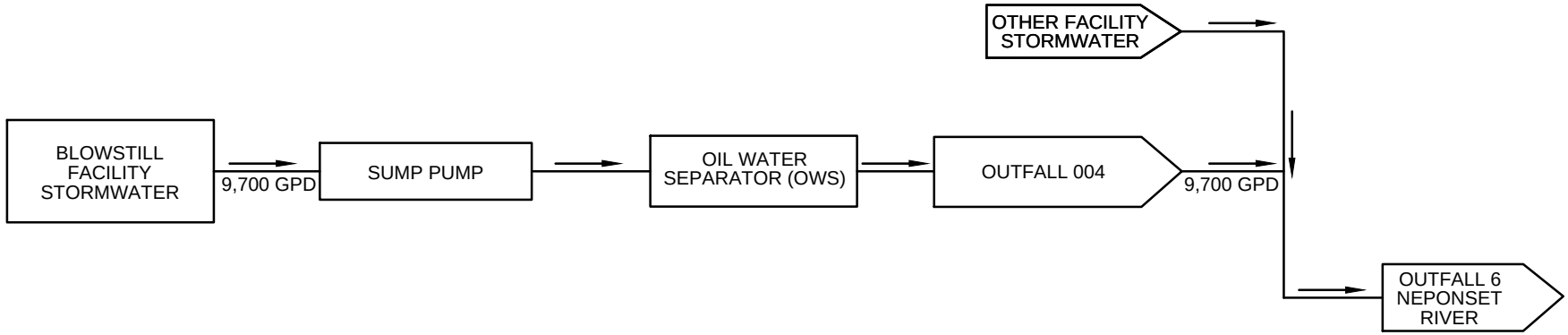
CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

OLD TANK FARM
PROCESS FLOW DIAGRAM - OUTFALL 5D

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 4
DESIGNED BY: RBP	DRAWN BY: VKGW	SCALE: NOT TO SCALE	
DATE: 02-07-2014	PROJECT NO. 01.0171200.15	REVISION NO.	



NOTE:
STORMWATER FLOW RATE IS BASED UPON AUGUST 1, 2012 EVENT AND IS APPROXIMATE.

NO.	ISSUE/DESCRIPTION	BY	DATE

CERTAINTEED CORPORATION
NORWOOD, MASSACHUSETTS

BLOWSTILL FACILITY
PROCESS FLOW DIAGRAM - OUTFALL 6

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
CERTAINTEED CORPORATION

PROJ MGR: RBP	REVIEWED BY: RJM	CHECKED BY: RBP	FIGURE 5
DESIGNED BY: RBP	DRAWN BY: VKGW	SCALE: NOT TO SCALE	
DATE: 02-07-2014	PROJECT NO. 01.0171200.15	REVISION NO.	

Attachment 5: Calculation of 7Q10 and Dilution Factor

Estimated 7Q10 at Outfall 001

Nearest U.S. Geological Gauging Station = 01105000 (@ Neponset River)

$7Q10\ Flow_{@Neponset} = 4.5$ cubic feet per second (cfs)

7Q10 Flow at Outfall 001 is given by the ratio of the drainage area to the known $7Q10_{@Neponset}$ such that:

$$\frac{7Q10_{@Neponset}}{Drainage\ Area_{@Neponset}} = \frac{7Q10_{@Outfall001}}{Drainage\ Area_{@Outfall001}}$$

$Drainage\ Area_{@Neponset} = 34.7$ square miles (mi^2)

$Drainage\ Area_{@Outfall001}$[1] $= 25.7\ mi^2$

$7Q10_{@Outfall001} = Q_R$

Therefore:

$$\frac{4.5\ cfs}{34.7\ mi^2} = \frac{Q_R}{25.7\ mi^2}$$

And:

$$Q_R = 4.5\ cfs * \frac{25.7\ mi^2}{34.7\ mi^2} = 3.33\ cfs\ (2.15\ MGD)$$

Dilution Factor

Dilution Factor $= [Q_R + (Q_P * 1.55)]/ (Q_P * 1.55)$
$= [3.33 + (0.04*1.55)]/ (0.04*1.55) = 55$

Where:

Q_R = Estimated 7Q10 for the receiving water at Outfall 001 = 3.33 cfs
Q_P = Maximum permitted flow rate for Outfall 001 = 0.04 MGD
1.55 = Factor to convert MGD to cfs.

[1] Estimated drainage area at Outfall 001 determined using USGS StreamStats in Massachusetts mapping tool at http://water.usgs.gov/osw/streamstats/massachusetts.html

Attachment 6: Temperature Analysis

EPA used the permitted maximum effluent temperature and flow rate and maximum alowable ambient temperature in a steady-state mixing equation to determine if the discharge has reasonable potential cause or contribute to a violation of WQC under critical conditions. EPA used the Massachusetts WQC for maximum temperature and one-third of the receiving water's 7Q10 to determine reasonable potential to be conservative.

$$T_r = [T_dQ_d + T_sQ_s] / Q_r$$

Where:

T_r	=	Downstream temperature (ºF)
T_d	=	Effluent temperature (ºF) = 90º F (permitted daily maximum)
Q_d	=	Effluent flow rate (cfs) = 0.062 cfs (maximum permitted flow rate, 0.04 MGD * 1.55 to convert to cfs)
T_s	=	Temperature of the receiving water (ºF) = 83º F (maximum allowable, which exceeds maximum recorded)[1]
Q_s	=	Receiving water flow rate (cfs) = 1.11 cfs (⅓ of 7Q10)
Q_r	=	Downstream flow rate (cfs) = Qp + Qr = 0.062 cfs + 1.11 cfs = 1.172 cfs

Therefore: $T_r = [(90 \times 0.062) + (83 \times 1.11)] / 1.172$
$T_r = 83.4º$ F

And: $\Delta T = T_r - T_s$
Therefore: $\Delta T = 83.4º - 83º$
$\Delta T = 0.4º$ F

The temperature limit of 90º F included in the Draft Permit is not expected to cause or contribute to an increase in temperature of greater than 5º F in the Neponset River.

EPA then determined the downstream temperature using the permitted discharge temperature and maximum recorded ambient temperature to ensure compliance with the Massachusetts WQS for Class B waters.

$$T_r = [T_dQ_d + T_sQ_s] / Q_r$$

Where:

T_r	=	Downstream temperature (ºF)
T_d	=	Effluent temperature (ºF) = 90º F (permitted daily maximum)
Q_d	=	Effluent flow rate (cfs) = 0.062 cfs (maximum permitted flow rate, 0.04 MGD * 1.55 to convert to cfs)
T_s	=	Upstream temperature (ºF) = 80.6º F (maximum recorded)[1]
Q_s	=	Receiving water flow rate (cfs) = 1.11 cfs (⅓ of 7Q10)
Q_r	=	Downstream flow rate (cfs) = Qe + Qr = 0.062 cfs + 1.11 cfs = 1.172 cfs

Therefore: $T_r = [(90 \times 0.062) + (80.6 \times 1.11)] / 1.172$
$T_r = 81.1º$ F

Therefore, the maximum proposed temperature of the discharge of 90º F is not expected to cause or contribute to a downstream temperature greater than 83º F in the Neponset River.

[1] EPA reviewed available ambient temperature data from the USGS (2000-2007) and Neponset River Watershed Association (2007-2013). The maximum temperature identified at the nearest upstream sampling location, the Holingsworth and Vose dam, Walpole, was 27.0º C (80.6º F) recorded August 11, 2010.

Attachment 7: Metals Analysis

Hardness Analysis[1]

Hardness data used to calculate hardness-dependent metals criteria are from the Facility's Whole Effluent Toxicity (WET) test reports from 2010 through 2013. The hardness values used in calculations below are the median hardness values measured in the Facility's discharge and the Neponset River immediately upstream of the discharge.

Summary of Hardness Data

Monitoring Period End Date	Effluent Hardness (mg/L)[2]	Upstream Hardness (mg/L)
May 31, 2010	25.5	
August 31, 2010	20.5	
May 31, 2011	19	52
August 31, 2011	23	79
May 31, 2012	22	48
August 31, 2012	23	65
May 31, 2013	29	65
August 31, 2013	28	55

EPA determined the estimated downstream hardness used to calculate the criteria as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:

C_r	=	Concentration below outfall
Q_d	=	Discharge flow
C_d	=	Discharge concentration
Q_s	=	Upstream flow (i.e., 7Q10)
C_s	=	Upstream concentration
Q_r	=	Streamflow below outfall (effluent + upstream)

Therefore:

$$C_r = \frac{(0.04 \text{ MGD} \times 23 \text{ mg/L}) + (2.15 \text{ MGD} \times 60 \text{ mg/L})}{2.19 \text{ MGD}}$$

$$= \mathbf{59.3 \text{ mg/L}}$$

Freshwater Metals Criteria[3,4]

Using the estimated downstream hardness value of 59.3 mg/L and a conversion factor to convert dissolved to total recoverable metals, EPA determined the chronic and acute criteria for metals as follows:

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[1] For the mixing equation used to determine estimated downstream concentrations, see *Technical Support Document for Water Quality-based Toxics Control:* EPA/505/2-90-001, 1991.

[2] Effluent hardness for 2010 estimated using the following calculation: mg/L $CaCo_3$ = 2.497 (Ca concentration in mg/L) + 4.118 (Mg concentration in mg/L).

[3] For hardness-dependent criteria, see *National Recommended Water Quality Criteria, Appendix B - Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent*: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm

[4] 314 CMR 4.05(5)(e) requires that "permit limits will be written in terms of total recoverable metals." Dissolved metal criteria have been converted to total recoverable metals, See *Appendix A - Conversion Factors for Dissolved Metals*: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#appendxa

$$\text{Chronic Criteria (Total Recoverable)} = \exp\{m_c [\ln(h)] + b_c\}$$

Where:

m_c = Pollutant-specific coefficient
b_c = Pollutant-specific coefficient
ln = Natural logarithm
h = Hardness of the receiving water

$$\text{Acute Criteria (Total Recoverable)} = \exp\{m_a [\ln(h)] + b_a\}$$

Where:

m_a = Pollutant-specific coefficient
b_a = Pollutant-specific coefficient
ln = Natural logarithm
h = hardness of the receiving water

Therefore:

Chromium(III): Chronic criteria e((0.8190*ln59.3) + (0.6848)) = 56 µg/L (0. 056 mg/L)
Acute criteria e((0.8190*ln59.3) + (3.7256)) = 1,175 µg/L (1.175 mg/L)

Copper: Chronic criteria e((0.8545*ln59.3) + (-1.702)) = 6 µg/L (0.006 mg/L)
Acute criteria e((0.9422*ln59.3) + (-1.700)) = 8.64 µg/L (0.0086 mg/L)

Lead: Chronic criteria e((1.2730*ln59.3) + (-4.7050)) = 1.6 µg/L (0.0016 mg/L)
Acute criteria e((1.2730*ln59.3) + (-1.4600)) = 42 µg/L (0. 042 mg/L)

Zinc: Chronic criteria e((0.8473*ln59.3) + (0.8840)) = 77 µg/L (0.077 mg/L)
Acute criteria e((0.8473*ln59.3) + (0.8840)) = 77 µg/L (0.077 mg/L)

Since aluminum and iron are not hardness-dependent metals, the criteria used in this analysis are the *National Recommended Water Quality Criteria* as follows:

Aluminum: Chronic criteria: 87 µg/L (0.087 mg/L)
Acute criteria: 750 µg/L (0.750 mg/L)

Iron: Chronic criteria: 1,000 µg/L (1.0 mg/L)

Projected Effluent Concentrations[5]

EPA used metals data from the monthly monitoring and WET tests to determine the potential for discharges of metals from the Facility to cause or contribute to a violation of water quality criteria (see Attachment 3). EPA projected the maximum effluent concentration by calculating the 99th percentile measurement of the effluent data from 2009 through 2013. EPA then calculated the 95th percentile concentration to characterize the maximum monthly average concentration. EPA calculated these projections without the available dilution in the receiving water, to be conservative.

Chromium(III): 95th percentile concentration = 23.62 µg/L
99th percentile concentration = 32.29 µg/L

Copper: 95th percentile concentration = 47.39 µg/L

[5]The procedure used to obtain the 95th and 99th percentile projections is the standard method described in EPA's *Technical Support Document for Water Quality-based Toxics Control:* EPA/505/2-90-001, 1991.

99th percentile concentration = 74.75 µg/L

Lead: 95th percentile concentration = 1.66 µg/L
99th percentile concentration = 2.09 µg/L

Zinc: 95th percentile concentration = 18.32 µg/L
99th percentile concentration = 20.95 µg/L

Aluminum: 95th percentile concentration = 3,904.46 µg/L
99th percentile concentration = 6,708.56 µg/L

Iron: 95th percentile concentration = 3,990 µg/L

Ambient Concentrations

EPA used ambient concentration data for the receiving water immediately upstream of the discharge from the Facility's WET tests for 2010 through 2013 for aluminum, copper, lead, and zinc. Ambient concentration data for the receiving water from 2009 were collected and validated by MassDEP. These data were collected from a MassDEP monitoring location upstream of the Facility in Walpole. They are expressed in dissolved form.

Summary of Neponset River Metals Concentrations

Sample Date	Total Al (µg/L)	Total Cr (µg/L)	Total Cu (µg/L)	Total Pb (µg/L)	Total Zn (µg/L)
June 2009	<40	0.25	0.98	0.42	3.3
July 2009	<40	0.29	1.4	0.68	4.9
August 2009	<40	0.28	3.4	0.27	3.6
September 2009	<50	0.24	1.6	0.31	2.0
May 2011	39	---	3.1	1.6	6.6
August 2011	19	---	1.8	1.2	<2.5
May 2012	47	---	2.7	2.4	7.6
August 2012	14	---	2.4	0.66	4.0
May 2013	<200	---	<10	<5	<10
August 2013	<200	---	1.9	1.7	<10
Median Value	39*	0.265	2.15	0.94	4.45

* The actual median value of the dataset is <40; therefore, EPA utilized the nearest detected value <40 to represent the ambient concentration for aluminum.

Reasonable Potential Analysis

EPA used the projected effluent concentrations and ambient concentrations of metals in a steady-state mixing equation to determine if the discharge has reasonable potential cause or contribute to a violation of WQC under critical conditions. The standard approach to determine reasonable potential is to consider ambient concentrations immediately upstream of the influence of the discharge. To be conservative, EPA used the median values of the total recoverable analysis for aluminum, copper, lead, and zinc shown above to determine reasonable potential for metals as follows:

Reasonable Potential Analysis for Acute Criteria: $C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$

Where:

C_r = Concentration below outfall
Q_d = Discharge flow

C_d	=	99th percentile effluent concentration
Q_s	=	Upstream flow
C_s	=	Upstream concentration
Q_r	=	Streamflow below outfall (effluent + upstream)

Reasonable Potential Analysis for Chronic Criteria: $C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$

Where:

C_r	=	Concentration below outfall
Q_d	=	Discharge flow
C_d	=	95th percentile effluent concentration
Q_s	=	Upstream flow
C_s	=	Upstream concentration
Q_r	=	Streamflow below outfall (effluent + upstream)

Therefore:

Aluminum: Chronic C_r = $\frac{(0.04\ \text{MGD} \times 3{,}904.46\ \mu g/l) + (2.15\ \text{MGD} \times 39\ \mu g/l)}{2.19\ \text{MGD}}$

= 110 µg/L > 87 µg/L (chronic criterion)

= Reasonable potential

Acute C_r = $\frac{(0.04\ \text{MGD} \times 6{,}708.56\ \mu g/L) + (2.15\ \text{MGD} \times 39\ \mu g/L)}{2.19\ \text{MGD}}$

= 161 µg/L < 750 µg/L (acute criterion)

= No reasonable potential

Copper: Chronic C_r = $\frac{(0.04\ \text{MGD} \times 47.39\ \mu g/l) + (2.15\ \text{MGD} \times 2.15\ \mu g/l)}{2.19\ \text{MGD}}$

= 2.98 µg/L < 6 µg/L (chronic criterion)

= No reasonable potential

Acute C_r = $\frac{(0.04\ \text{MGD} \times 74.75\ \mu g/L) + (2.15\ \text{MGD} \times 2.15\ \mu g/L)}{2.19\ \text{MGD}}$

= 3.48 µg/L < 8.64 µg/L (acute criterion)

= No reasonable potential

Lead: Chronic C_r = $\frac{(0.04\ \text{MGD} \times 1.66\ \mu g/l) + (2.15\ \text{MGD} \times 0.94\ \mu g/l)}{2.19\ \text{MGD}}$

= 0.95 µg/L < 1.6 µg/L (chronic criterion)

= No reasonable potential

Acute C_r = $\frac{(0.04\ \text{MGD} \times 2.09\ \mu g/L) + (2.15\ \text{MGD} \times 0.94\ \mu g/L)}{2.19\ \text{MGD}}$

= 0.96 µg/L < 42 µg/L (acute criterion)

= No reasonable potential

Zinc: Chronic C_r = $\frac{(0.04\ \text{MGD} \times 18.31\ \mu g/l) + (2.15\ \text{MGD} \times 4.45\ \mu g/l)}{2.19\ \text{MGD}}$

= 4.7 µg/L < 77 µg/L (chronic criterion)

= No reasonable potential

Acute C_r = $\frac{(0.04\ \text{MGD} \times 20.95\ \mu g/L) + (2.15\ \text{MGD} \times 4.45\ \mu g/L)}{2.19\ \text{MGD}}$

= 4.75 µg/L < 77 µg/L (acute criterion)

= No reasonable potential

Since the total recoverable analysis for chromium was not available, EPA used the dissolved metal concentration. These data are considered less conservative than total recoverable data, but more conservative than assuming the upstream ambient concentration is zero in the absence of data.

Therefore:

Chromium(III): Chronic C_r = $\frac{(0.04 \text{ MGD} \times 23.62 \text{ µg/l}) + (2.15 \text{ MGD} \times 0.265 \text{ µg/l})}{2.19 \text{ MGD}}$

= 0.69 µg/L < 56 µg/L (chronic criterion)

= No reasonable potential

Acute C_r = $\frac{(0.04 \text{ MGD} \times 32.29 \text{ µg/L}) + (2.15 \text{ MGD} \times 0.265 \text{ µg/L})}{2.19 \text{ MGD}}$

= 0.85 µg/L < 1,175 µg/L (acute criterion)

= No reasonable potential

Since upstream ambient concentrations of iron were unavailable, EPA did not include ambient concentrations of iron in the calculation to determine reasonable potential.

Therefore:

Iron: Chronic C_r = $\frac{(0.04 \text{ MGD} \times 3{,}990 \text{ µg/l}) + (2.15 \text{ MGD})}{2.19 \text{ MGD}}$

= 73.9 µg/L < 1,000 µg/L (chronic criterion)

= No reasonable potential

Calculation of Effluent Limits

As calculated above, chronic discharges of aluminum are expected to have reasonable potential to cause or contribute to a violation of WQC under critical conditions. EPA determined the applicable effluent limit using the steady-state mixing equation above by setting the maximum allowable downstream concentration as the water quality criterion and solving for effluent concentration. To be conservative, EPA used the median ambient aluminum concentration to determine the effluent limit for aluminum as follows:

$$\text{Effluent Limit: } C_d = \frac{Q_r C_r - Q_s C_s}{Q_d}$$

Where:

C_r	=	Applicable water quality criterion (WQC)
Q_d	=	Discharge flow
C_d	=	Effluent concentration which will meet WQC
Q_s	=	Upstream flow
C_s	=	Upstream concentration
Q_r	=	Streamflow below outfall (effluent + upstream)

Therefore:

Aluminum: Chronic C_d = $\frac{(2.19 \text{ MGD} \times 87 \text{ µg/l}) - (2.15 \text{ MGD} \times 39 \text{ µg/l})}{0.04 \text{ MGD}}$

= 2,667 µg/L (2.6 mg/L) (average monthly limit, total recoverable)

NPDES Permit No. MA0003531

Attachment 8: Summary of Essential Fish Habitat Designations

Name of Estuary/ Bay/ River: Boston Harbor, Massachusetts

10’ x 10’ Square Coordinates:

Boundary	North	East	South	West
Coordinate	42° 20.0’ N	71° 00.0’ W	42° 10.0’ N	71° 10.0’ W

Square Description (i.e. habitat, landmarks, coastline markers): Waters within the Atlantic Ocean within the square within Massachusetts Bay and within Boston Harbor affecting South Boston, MA., on the north, south to Quincy MA., including waters east of Dorchester, MA., Squantum Point, Thompson Island (up to its northwest tip), and within Dorchester Bay. Also affected are the Neponset River and Old Harbor.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod *(Gadus morhua)*	X	X	X	X
haddock *(Melanogrammus aeglefinus)*	X	X		
pollock *(Pollachius virens)*	X	X	X	X
whiting *(Merluccius bilinearis)*	X	X	X	X
offshore hake *(Merluccius albidus)*				
red hake *(Urophycis chuss)*	X	X	X	X
white hake *(Urophycis tenuis)*	X	X	X	X
redfish *(Sebastes fasciatus)*	n/a			
witch flounder *(Glyptocephalus cynoglossus)*				
winter flounder *(Pseudopleuronectes americanus)*	X	X	X	X
yellowtail flounder *(Limanda ferruginea)*	X	X	X	X
windowpane flounder *(Scophthalmus aquosus)*	X	X	X	X
American plaice *(Hippoglossoides platessoides)*	X	X	X	X
ocean pout *(Macrozoarces americanus)*	X	X	X	X
Atlantic halibut *(Hippoglossus hippoglossus)*	X	X	X	X
Atlantic sea scallop *(Placopecten magellanicus)*	X	X	X	X
Atlantic sea herring *(Clupea harengus)*		X	X	X
monkfish *(Lophius americanus)*				

bluefish *(Pomatomus saltatrix)*			X	X
long finned squid *(Loligo pealeii)*	n/a	n/a	X	X
short finned squid *(Illex illecebrosus)*	n/a	n/a	X	X
Atlantic butterfish *(Peprilus triacanthus)*	X	X	X	X
Atlantic mackerel *(Scomber scombrus)*	X	X	X	X
summer flounder *(Paralichthys dentatus)*				X
scup *(Stenotomus chrysops)*	n/a	n/a	X	X
black sea bass *(Centropristis striata)*	n/a		X	X
surf clam *(Spisula solidissima)*	n/a	n/a	X	X
ocean quahog *(Artica islandica)*	n/a	n/a		
spiny dogfish *(Squalus acanthias)*	n/a	n/a		
tilefish *(Lopholatilus chamaeleonticeps)*				
bluefin tuna *(Thunnus thynnus)*			X	X

n/a = The species does not have this lifestage in its life history (dogfish/ redfish), or has no EFH designation for this lifestage (squids, surf clam, ocean quahog). With regard to the squids, the surf clam and the ocean quahog, juvenile corresponds with pre-recruits, and adult corresponds with recruits in these species' life histories.

Source: http://www.nero.noaa.gov/hcd/index2a.htm