RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

August 10, 2012

CERTIFIED MAIL

Mr. William Barnes, EH&S Manager
Materion
5 Wellington Road
Lincoln, RI 02865

RE: Materion, 5 Wellington Road, Lincoln, RI 02865
RIPDES No. RI0023906

Dear Mr. Barnes:

Enclosed is your final Rhode Island Pollutant Discharge Elimination System (RIPDES) Permit issued pursuant to the referenced application. State regulations, promulgated under Chapter 46-12 of the Rhode Island General Laws of 1956, as amended, require this permit to become effective on the date specified on Page 1 of the permit.

Also enclosed is information relative to hearing requests and stays of RIPDES Permits.

Please be advised that the enclosed final permit supercedes the RIPDES Non-Contact Cooling Water General Permit (NCCW GP) Authorization No. RIG250014 issued on January 9, 2009. As a result, a NCCW GP termination associated with RIG250014 has been issued effective August 10, 2012 (see attached).

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning this permit, feel free to contact Brian Lafaille, PE of the State Permits Staff at (401) 222-4700, extension 7731.

Sincerely,

Joseph B. Haberek, PE
Principal Sanitary Engineer

JBH:bdl

Enclosures

ecc: William Barnes, Materion
Robert F. Ferrari, Northeast Water Solutions, Inc.
Annie McFarland, RIDEM-OWR
Traci Pena, RIDEM-OWR

RESPONSE TO COMMENTS

NO SIGNIFICANT COMMENTS WERE RECEIVED ON THE DRAFT PERMIT FOR THIS FACILITY; THEREFORE, NO RESPONSE WAS PREPARED.

HEARING REQUESTS

If you wish to contest any of the provisions of this permit, you may request a formal hearing within thirty (30) days of receipt of this letter. The request should be submitted to the Administrative Adjudication Division at the following address:

Bonnie Stewart, Clerk
Department of Environmental Management
Office of Administrative Adjudication
One Capitol Hill
Second Floor
Providence, RI 02903

Any request for a formal hearing must conform to the requirements of Rule 49 of the State Regulations.

STAYS OF RIPDES PERMITS

Should the Department receive and grant a request for a formal hearing, the contested conditions of the permit will not automatically be stayed. However, the permittee, in accordance with Rule 50, may request a temporary stay for the duration of adjudicatory hearing proceedings. Requests for stays of permit conditions should be submitted to the Office of Water Resources at the following address:

Angelo S. Liberti, P.E.
Chief of Surface Water Protection
Office of Water Resources
235 Promenade Street
Providence, Rhode Island 02908

All uncontested conditions of the permit will be effective and enforceable in accordance with the provisions of Rule 49.

AUTHORIZATION TO DISCHARGE UNDER THE
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended,

Materion
5 Wellington Road
Lincoln, RI 02865

is authorized to discharge from a facility located at

Materion
5 Wellington Road
Lincoln, RI 02865

to receiving waters named

Unnamed Stream Tributary to the Moshassuck River

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on date of signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit consists of eight (8) pages in Part I including effluent limitations, monitoring requirements, etc. and 10 pages in Part II including General Conditions.

Signed this 10th day of August, 2012.

Angelo S. Liberti

Angelo S. Liberti, P.E., Chief of Surface Water Protection
Office of Water Resources
Rhode Island Department of Environmental Management
Providence, Rhode Island

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001 (Non-contact cooling water). Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)	Measurement Frequency	Sample Type
Flow	--- GPD	50,000 GPD				2/Month	Calculated[1]
pH			(6.5 S.U.)		(9.0 S.U.)	2/Month	4 Grabs[2]
Temperature, Effluent					70°F	2/Month	4 Grabs[3]
Total Zinc[4]			--- ug/l		--- ug/l	1/Quarter	1 Grab

[1] Flow shall be either calculated using a flow totalizer or estimated using the cooling water pumping rate.

[2] Compliance with these limitations shall be determined by taking a minimum of four (4) grab samples equally spaced over the course of a normal operating day. The maximum value to be reported is the highest individual measurement obtained during the monitoring period. The minimum value to be reported is the lowest individual measurement obtained during the monitoring period.

[3] In no case shall the discharge raise the temperature above 68°F outside an established thermal mixing zone. In no case shall the temperature of the receiving water be raised more than 4.0 °F.

[4] The influent and effluent shall be monitored for Total Zinc at a minimum of 1/Quarter.

--- signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

* Values in parentheses ( ) are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

**Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfall 001 (Discharge from Non-contact cooling water system)

PART I

A. **EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

2. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 002 (well water treatment system filter backwash). Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)	Measurement Frequency	Sample Type
Flow	--- GPD	570 GPD				Monthly	Estimate
TSS			30 mg/l		50 mg/l	2/Month	Grab
Turbidity			--- NTU		--- NTU	2/Month	Grab
pH			(6.5 S.U.)		(9.0 S.U.)	2/Month	Grab[1]

[1] Compliance with these limitations shall be determined by taking a minimum of one (1) grab sample. The grab sample must be analyzed for pH immediately (<15 minutes after sample collection). The maximum value to be reported is the highest individual measurement obtained during the monitoring period. The minimum value to be reported is the lowest individual measurement obtained during the monitoring period.

--- signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

* Values in parentheses ( ) are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

**Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: Outfall 002 (Well water treatment system filter backwash)

3. The pH of the effluent shall not be less than 6.5 - 9.0 standard units.

4. The discharge shall not cause visible discoloration of the receiving waters.

5. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

6. The turbidity of the receiving water shall not exceed 10 NTU over natural background.

7. Solids, sludges, or biosolids removed in the course of treatment or control of wastewaters, shall be properly disposed of in compliance with applicable state laws, regulations, and permit requirements, and in a manner such as to prevent any pollutant from such materials from entering the waters of the state.

8. This permit only authorizes the use of "Hi-Cycle 110" as a non-contact cooling water treatment chemical at a concentration not to exceed 20 ppm in the discharge. The permittee must notify the DEM and obtain written approval prior to introducing any other non-contact cooling water treatment chemical or prior to increasing the concentration of this chemical in the non-contact cooling water system. The permittee must keep sufficient documentation on-site to show that the above requirements are being met. The following information shall be made available for on-site review by DEM personnel during normal working hours:

    a. Material Safety Data Sheets (MSDS) for "Hi-Cycle 110".

    b. A bound logbook that documents the concentration of "Hi-Cycle 110" in the non-contact cooling water system through the frequency and duration of additive applications.

9. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

    a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

        (1) One hundred micrograms per liter (100 ug/l);

        (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitro-phenol; and one milligram per liter (1 mg/l) for antimony;

        (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or

        (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.

    b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 ug/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R.s122.21(g)(7); or

(4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant which was not reported in the permit application.

10. This permit serves as the State's Water Quality Certificate for the discharges described herein.

B. DETECTION LIMITS

The permittee shall assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits listed below. In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall documented and maintained onsite.

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed". Documentation supporting this claim shall be maintained onsite. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit (MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;

2. results reported as less than the MDL shall be reported as zero in accordance with the DEM's DMR Instructions, provided that all appropriate EPA approved methods were followed.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", or zero. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

LIST OF TOXIC POLLUTANTS

The following list of toxic pollutants has been designated pursuant to Section 307(a)(1) of the Clean Water Act. The Method Detection Limits (MDLs) represent the required Rhode Island MDLs.

Volatiles - EPA Method 624		MDL ug/l (ppb)
1V	acrolein	10.0
2V	acrylonitrile	5.0
3V	benzene	1.0
5V	bromoform	1.0
6V	carbon tetrachloride	1.0
7V	chlorobenzene	1.0
8V	chlorodibromomethane	1.0
9V	chloroethane	1.0
10V	2-chloroethylvinyl ether	5.0
11V	chloroform	1.0
12V	dichlorobromomethane	1.0
14V	1,1-dichloroethane	1.0
15V	1,2-dichloroethane	1.0
16V	1,1-dichloroethylene	1.0
17V	1,2-dichloropropane	1.0
18V	1,3-dichloropropylene	1.0
19V	ethylbenzene	1.0
20V	methyl bromide	1.0
21V	methyl chloride	1.0
22V	methylene chloride	1.0
23V	1,1,2,2-tetrachloroethane	1.0
24V	tetrachloroethylene	1.0
25V	toluene	1.0
26V	1,2-trans-dichloroethylene	1.0
27V	1,1,1-trichloroethane	1.0
28V	1,1,2-trichloroethane	1.0
29V	trichloroethylene	1.0
31V	vinyl chloride	1.0

Acid Compounds - EPA Method 625		MDL ug/l (ppb)
1A	2-chlorophenol	1.0
2A	2,4-dichlorophenol	1.0
3A	2,4-dimethylphenol	1.0
4A	4,6-dinitro-o-cresol	1.0
5A	2,4-dinitrophenol	2.0
6A	2-nitrophenol	1.0
7A	4-nitrophenol	1.0
8A	p-chloro-m-cresol	2.0
9A	pentachlorophenol	1.0
10A	phenol	1.0
11A	2,4,6-trichlorophenol	1.0

Pesticides - EPA Method 608		MDL ug/l (ppb)
1P	aldrin	0.059
2P	alpha-BHC	0.058
3P	beta-BHC	0.043
4P	gamma-BHC	0.048
5P	delta-BHC	0.034
6P	chlordane	0.211
7P	4,4 ' -DDT	0.251
8P	4,4 ' -DDE	0.049
9P	4,4 ' -DDD	0.139
10P	dieldrin	0.082
11P	alpha-endosulfan	0.031
12P	beta-endosulfan	0.036
13P	endosulfan sulfate	0.109
14P	endrin	0.050
15P	endrin aldehyde	0.062
16P	heptachlor	0.029
17P	heptachlor epoxide	0.040

Pesticides - EPA Method 608		MDL ug/l (ppb)
18P	PCB-1242	0.289
19P	PCB-1254	0.298
20P	PCB-1221	0.723
21P	PCB-1232	0.387
22P	PCB-1248	0.283
23P	PCB-1260	0.222
24P	PCB-1016	0.494
25P	toxaphene	1.670

Base/Neutral - EPA Method 625		MDL ug/l (ppb)
1B	acenaphthene *	1.0
2B	acenaphthylene *	1.0
3B	anthracene *	1.0
4B	benzidine	4.0
5B	benzo(a)anthracene *	2.0
6B	benzo(a)pyrene *	2.0
7B	3,4-benzofluoranthene *	1.0
8B	benzo(ghi)perylene *	2.0
9B	benzo(k)fluoranthene *	2.0
10B	bis(2-chloroethoxy)methane	2.0
11B	bis(2-chloroethyl)ether	1.0
12B	bis(2-chloroisopropyl)ether	1.0
13B	bis(2-ethylhexyl)phthalate	1.0
14B	4-bromophenyl phenyl ether	1.0
15B	butylbenzyl phthalate	1.0
16B	2-chloronaphthalene	1.0
17B	4-chlorophenyl phenyl ether	1.0
18B	chrysene *	1.0
19B	dibenzo (a,h)anthracene *	2.0
20B	1,2-dichlorobenzene	1.0
21B	1,3-dichlorobenzene	1.0
22B	1,4-dichlorobenzene	1.0
23B	3,3 ' -dichlorobenzidine	2.0
24B	diethyl phthalate	1.0
25B	dimethyl phthalate	1.0
26B	di-n-butyl phthalate	1.0
27B	2,4-dinitrotoluene	2.0
28B	2,6-dinitrotoluene	2.0
29B	di-n-octyl phthalate	1.0
30B	1,2-diphenylhydrazine (as azobenzene)	1.0
31B	fluoranthene *	1.0
32B	fluorene *	1.0
33B	hexachlorobenzene	1.0
34B	hexachlorobutadiene	1.0
35B	hexachlorocyclopentadiene	2.0
36B	hexachloroethane	1.0
37B	indeno(1,2,3-cd)pyrene *	2.0
38B	isophorone	1.0
39B	naphthalene *	1.0
40B	nitrobenzene	1.0
41B	N-nitrosodimethylamine	1.0
42B	N-nitrosodi-n-propylamine	1.0
43B	N-nitrosodiphenylamine	1.0
44B	phenanthrene *	1.0
45B	pyrene *	1.0
46B	1,2,4-trichlorobenzene	1.0

OTHER TOXIC POLLUTANTS

	MDL ug/l (ppb)
Antimony, Total	3.0
Arsenic, Total	1.0
Beryllium, Total	0.2
Cadmium, Total	0.1
Chromium, Total	1.0
Chromium, Hexavalent	20.0
Copper, Total	1.0
Lead, Total	1.0
Mercury, Total	0.2
Nickel, Total	1.0
Selenium, Total	2.0
Silver, Total	0.5
Thallium, Total	1.0
Zinc, Total	5.0
Asbestos	**
Cyanide, Total	10.0
Phenols, Total	50.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0

* Polynuclear Aromatic Hydrocarbons
** No Rhode Island Department of Environmental Management (RIDEM) MDL

NOTE:

The MDL for a given analyte may vary with the type of sample. MDLs which are determined in reagent water may be lower than those determined in wastewater due to fewer matrix interferences. Wastewater is variable in composition and may therefore contain substances (interferents) that could affect MDLs for some analytes of interest. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).

C. MONITORING AND REPORTING

1. Monitoring

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in Federal Regulations (40 CFR Part 136). Special attention should be put towards following the sampling techniques, preservation, and holding times listed in Table II of 40 CFR Part 136.

2. Reporting

Monitoring results obtained during the previous calendar quarter shall be summarized and reported on Discharge Monitoring Report (DMR) Forms, postmarked no later than the 15th day of the month following the completed reporting period. The first report is due for the calendar quarter during which the facility obtained coverage under this general permit. Testing shall be reported as follows:

Quarter Testing to be Performed	Report Due No Later Than
January1 – March 31	April 15
April 1 – June 30	July 15
July 1 – September 30	October 15
October 1 – December 31	January 15

Signed copies of these, and all other reports required herein, shall be submitted to:

RIPDES Program
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 PROMENADE STREET
PROVIDENCE, RHODE ISLAND 02908-5767

STATEMENT OF BASIS

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

RIPDES PERMIT NO.

RI0023906

NAME AND ADDRESS OF APPLICANT:

Materion
5 Wellington Road
Lincoln, RI 02865

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Materion
5 Wellington Road
Lincoln, RI 02865

RECEIVING WATER:

Unnamed stream – tributary to the Moshassuck River

CLASSIFICATION:

B

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

The above named applicant has applied to the Rhode Island Department of Environmental Management (DEM) for issuance of an individual RIPDES Permit to discharge into the designated receiving water.

II. Permit Limitations and Conditions

The effluent limitations, monitoring requirements, and any implementation schedule (if required) may be found in the draft permit. A quantitative description of the discharge in terms of significant effluent parameters based on discharge monitoring report (DMR) data is shown in Attachment A.

III. Permit Basis and Explanation of Effluent Limitation Derivation

The Facility

The facility is involved in the manufacturing of electronic connectors. The proposed discharges are designated by outfall numbers 001 and 002. Outfall 001 consists of Non-Contact Cooling Water (NCCW) which is used to cool a variety of equipment throughout the facility. Outfall 002 consists of filter backwash from a groundwater filtration system which is used to pretreat well water prior to use in the NCCW system. The facility is currently permitted to discharge NCCW under a RIPDES Non-Contact Cooling Water General Permit Authorization No. RIG250014. The facility is seeking coverage under an individual RIPDES permit due to the fact that it wishes to add a treatment chemical to the NCCW wastestream to reduce corrosion in the

system and such additives are prohibited under the NCCW General Permit. In addition, a NCCW multimedia filtration system has been proposed for the pretreatment of incoming groundwater used in the NCCW system and this filtration system will require periodic backwashing via outfall 002. A process flow diagram of the discharges associated with outfalls 001 and 002 is shown in Attachment C.

Receiving Water

The ultimate receiving water is an unnamed perennial stream which is tributary to the Moshassuck River which is considered the headwaters to the inlet of Barney Pond. This unnamed stream is designated as Water Use Classification "B" and is designated as a coldwater fishery. Class B waters shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value. The Moshassuck River headwaters including tributaries to the inlet of Barney Pond in Lincoln, RI are currently not meeting Rhode Island Water Quality Standards and are listed as impaired for Enterococcus according to the State of Rhode Island 2010 303(d) List, List of Impaired Waters dated July 2011.

General Requirements

Development of RIPDES permit limitations is a multi-step process consisting of the following steps: identifying applicable technology-based limits; calculating allowable water-quality based discharge levels based on instream criteria, background data and available dilution; establishing Best Professional Judgement (BPJ) limits in accordance with Section 402 of the CWA; and assigning the most stringent as the final discharge limitations.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or States for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal. A technology-based limit is a numeric limit, which is determined by examining the capability of a treatment process to reduce or eliminate pollutants.

Appendix B of the Water Quality Regulations describes the flows used to determine compliance with the aquatic life criteria, specifying that the design flow to be utilized for aquatic life criteria shall not be exceeded at or above the lowest average seven (7) consecutive day low flow with an average recurrence frequency of once in ten (10) years (7Q10). According to a November 2003 report prepared by the Superfund Technical Assessment and Response Team (START) conducted under EPA Contract 68-W-00-097 the southern branch of the North Central Industrial Park stormwater drainage system discharges through a pipe into the unnamed stream immediately east of the intersection of Wellington Road and Carol Drive. This is the same location where the NCCW and filter backwash discharges that originate from Materion exit the North Central Industrial Park storm water drainage system and enter the receiving water. The drainage basin area of the unnamed stream at the location where the storm water drainage system discharges from the North Central Industrial Park was calculated to be approximately 0.2 square miles. Using the U.S. Geological Survey (USGS) conversion factor of 1.8 cubic feet per second (cfs)/mi^2 (an estimate and average of the intensity, rate, and frequency of overland flow in New England), the unnamed perennial stream was estimated by START to have a flow rate of 0.4 cfs at the point where the storm drain system enters. By comparing flow rates within the subject watershed at various locations using the START average flow values versus known 7Q10 flow values, a 7Q10 flow value of 0.03 cfs was estimated for the point of discharge into the unnamed perennial stream. Using the combined discharge flow from outfalls 001 and 002 of 50,570 gallons per day and a 7Q10 flow estimate of 0.03 cfs a dilution factor of 1.383 was generated at the point of discharge. In addition a site specific hardness value of 77.3 was utilized in the development of water quality based permit limitations. This hardness value was based on the average of three hardness values collected at DEM Station Number MSK09 which is located on the Moshassuck River at Sherman Avenue in Lincoln, RI.

Water Quality Based Permit Limitations

The allowable effluent limitations were established based on the non-class AA freshwater acute and chronic aquatic life criteria and human health criteria specified in Appendix B of the Rhode Island Water Quality Regulations, as amended, using 80% allocation when no background data was available and 90% allocation when background data is available. Since there is no background data available the allowable water quality-based discharge levels are set equal to 80% of the water quality criteria for Class B waters as listed in Appendix B of the Rhode Island Water Quality Regulations using the following equation:

Limit = (Dilution Factor)(Criteria)*(80%)*

In accordance with 40 CFR 122.44(d)(1)(iii), water quality based effluent limitations are only required for those pollutants in the discharge that have the reasonable potential to cause or contribute to the exceedence of instream criteria. In order to evaluate the need for permit limits, the allowable monthly average (chronic) and allowable maximum daily (acute) discharge concentrations are compared to the Discharge Monitoring Report (DMR) data or other monitoring data.

pH

The effluent limitations for pH were established in accordance with the Rhode Island Water Quality Regulations Table 1.8.D.(2) Class Specific Criteria –Class B Fresh Waters. Table 1.8.D.(2) Class Specific Criteria – Class B Fresh Waters specifies that the pH must be in the range of 6.5-9.0 s.u. or as naturally occurs.

Temperature

In order to determine appropriate effluent limitations for temperature at outfall 001 a heat balance calculation was performed in accordance with the Rhode Island Water Quality Regulations Table 1.8.D.(2) Class Specific Criteria – Class B Fresh Waters. The heat balance calculation resulted in an effluent limitation of 70°F at outfall 001. The heat balance calculation is shown in Attachment B. It is anticipated that Materion will be able to comply with this permit limitation at outfall 001 given the fact that the average daily maximum reading shown in Attachment A is 69.8°F. Materion may need to increase the cooling water flow above it's average daily maximum flow of 0.02 MGD during certain months of the operating year in order to comply. An increase in the NCCW flow rate is allowable under this permit as long as the flow rate does not exceed 50,000 GPD as specified in Part I.A.1 of the permit.

Total Zinc

Monitoring for Total Zinc is required in order to gather additional information to determine if the NCCW discharge has reasonable potential to violate water quality criteria on a long term basis. Currently the permit application only provided the results from one grab sample which resulted in a zinc concentration of 122 ug/l. Based on this limited data set the DEM was unable to determine if the discharge has "reasonable potential" to cause or contribute to a water quality exceedance. The applicable permit limitation is 106.61 ug/l. Therefore, the DEM will require Materion to sample the influent and effluent of the NCCW in order to determine the source of the zinc (i.e., is the zinc present in groundwater or being added by the cooling process) and to establish a database of zinc data that will assist in determining whether or not future permit limitations will be required for this parameter (i.e., is there "reasonable potential").

Total Suspended Solids

TSS concentration based limitations of 30 mg/l monthly average and 50 mg/l daily maximum have been established for TSS based on Best Professional Judgement (BPJ) for the treatment capabilities of systems currently used for the treatment of potable water treatment waste streams throughout the country. The DEM has determined that the use of the Best Available Treatment

technologies are not cost prohibitive and that by using the Best Available Treatment technologies such as a settling lagoon or other devices whereby comparable control of suspended solids is possible, the 30 mg/l and 50 mg/l TSS limitations can be achieved.

Turbidity

Turbidity monitoring requirements have been included in this permit in order to establish a database of NTU data that can be used to determine compliance with water quality criteria. The permit also includes a narrative condition that the receiving water's turbidity not be increased more than 10 NTU over background.

Water Treatment Chemicals

As described in the treatment process section, Materion will be introducing a cooling water dispersant in order to keep heat exchange surfaces the non-contact cooling water systems within the facility clean and free of corrosion and deposits. The specific dispersant authorized for use in the NCCW system is specified in Part I.A.8 of the permit. The permittee is required to use the authorized dispersant at a concentration that is below the toxic concentration listed on the Material Safety Data Sheet included with the permit application. The permittee must obtain approval from the DEM prior to increasing the concentration of this additive in the discharge or prior to using any other treatment chemicals.

Stormwater

This permit does not authorize the discharge of stormwater from the Materion facility. Based on the RIPDES Program's review it has been determined that facilities that fall under SIC code 3499 – Fabricated Metal Products are required to obtain coverage under the NPDES Storm Water Multi-Sector General Permit and therefore the facility is required to apply for coverage under a separate permit. However, Materion is exempt from requiring coverage under the General Permit due to the fact that it has submitted a No Exposure Certification for Exclusion from RIPDES Industrial Storm Water Permitting on May 31, 2011. A condition of no exposure exists at an industrial facility when all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowfall, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. The RIPDES No Exposure Certification tracking number for Materion is RIRNE0201.

Antibacksliding/Antidegradation

The Anitbacksliding Provision of the Clean Water Act (found at Section 402(o) and repeated at 40 CFR 122.44(l)) prohibits reissuing a permit containing less stringent effluent limits than the comparable limits from the previous permit. Since none of the permit limits, both concentration and mass loadings, are less stringent than in the previous permit, antibacksliding regulations are being met. The draft permit is being reissued with limitations as stringent or more stringent than those in the existing permit with no change to the outfall locations.

Selection of Final Permit Limits

The effluent monitoring requirements have been specified in accordance with RIPDES regulations as well as 40 CFR 122.41(j), 122.44(l), and 122.48 to yield data representative of the discharge. The Office has determined that all permit limitations are consistent with the Rhode Island Antidegradation Policy.

The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consist primarily of administrative and management

regulations as well as 40 CFR Parts 122 through 125 and consist primarily of administrative and management requirements common to all permits.

IV. Comment Period, Hearing Requests, and Procedures for Final Decisions

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 the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to the Rhode Island Department of Environmental Management. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Director finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit the Director will respond to all significant comments and make these responses available to the public at DEM's Providence Office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Director 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 thirty (30) days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of Rule 49 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

V. DEM Contact

Additional information concerning the permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays from:

Brian D. Lafaille, PE
Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-4700 ext. 7731; Email: brian.lafaille@dem.ri.gov

6/25/12
Date

for Joseph B. Haberek, PE
Principal Sanitary Engineer
RIPDES Permitting Section
Office of Water Resources
Department of Environmental Management

ATTACHMENT A

DESCRIPTION OF DISCHARGE: NCCW under General Permit Authorization No. RIG250014
DISCHARGE: 001

PARAMETER	MO AVG[1]	DAILY MAX[1]
Flow (MGD)	0.016	0.02
pH (S.U.)	6.6 (min)	7.0 (max)
Temperature (°F)	---	69.8

[1] All data represents the average of the monthly average DMR data or the average of the daily maximum DMR data submitted by the permittee for the period covering January 2009 to January 2012.

ATTACHMENT B

Flow:

Receiving Water – Unnamed Perrenial Stream - 7Q10 = 0.03 CFS or 0.019 MGD
Outfall 001 - Daily Maximum Limit = 0.05 MGD

Temperature:

Outfall 001 – Maximum Temperature Limit = T_{limit} ^{O}F

Assume Instream Temperature = 64 ^{O}F

Assume Maximum Temperature Change $\blacktriangle T = 4^{O}F$

Water Quality Limits:

Receiving Water Body: Unnamed Perrenial Stream, Class B Water Body, Cold Water Habitat. RIDEM Water Quality Regulations Table 1.8.D.(2). Class Specific Criteria for Class B Fresh Waters states the following regarding temperature:

No activity shall raise the temperature of the receiving waters above the recommended limit on the most sensitive receiving water use nor cause the growth of undesirable or nuisance species of biota. Heated discharges into designated coldwater habitats shall not raise the temperature above $68^{O}F$ outside an established thermal mixing zone. In no case shall the temperature of the receiving water be raised more than $4^{O}F$.

Heat Balance:

$$Q_{max}(T_{limit}) + Q_{7Q10}(T_{instream}) = (Q_{max} + Q_{7Q10})(T_{instream} + \blacktriangle T)$$

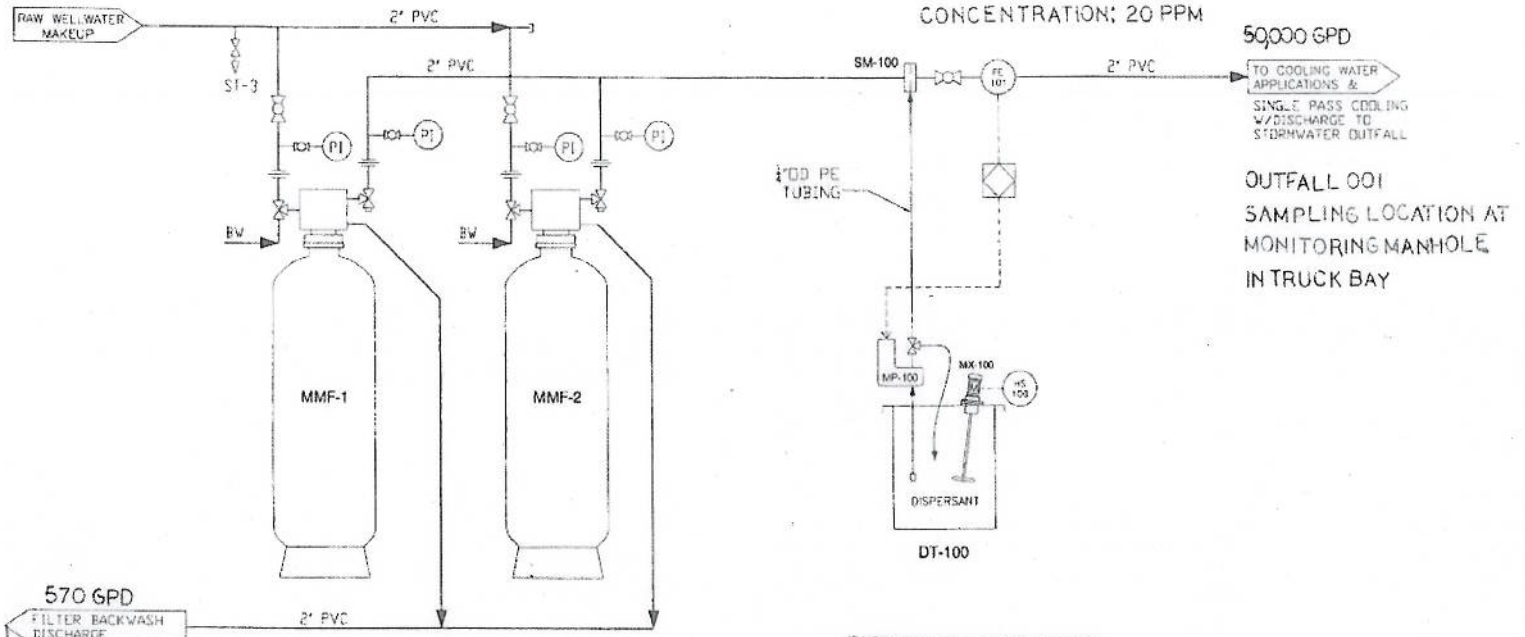
Where:
Q_{max} = 0.05 MGD
Q_{7Q10} = 0.019 MGD
T_{limit} = Daily Maximum Permit Limit in ^{O}F
$T_{instream} = 64^{O}F$
$\blacktriangle T = 4^{O}F$

$$(0.05\ MGD)(T_{limit}) + (0.019\ MGD)(64\ ^{O}F) = (0.05\ MGD + 0.019\ MGD)(64\ ^{O}F + 4^{O}F)$$

Solve for T_{limit}.

T_{limit} = **$70^{O}F$**

ATTACHMENT C



1	12/23/11	MODIFICATION TO BACKWASH DISCHARGE LOCATION	BJW	RFF

FERRARI ENGINEERING

587 SOUTH COUNTY TRAIL • SUITE 116 • EXETER • RHODE ISLAND • 02822 • (401)367-7480 • FAX (401)667-7455

MATERION

NON-CONTACT COOLING WATER
FILTRATION TREATMENT SYSTEM
PIPING & INSTRUMENTATION DIAGRAM

DRAWN BY: BJW
DESIGNED: RFF
CHECKED: RFF
APPROVED: RFF
SCALE: NONE
DRAWING NUMBER: P-1

DATE: 5/19/2011

TERMINATION

AUTHORIZATION TO DISCHARGE UNDER THE RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM
2008 General Permit for Non-Contact Cooling Water Discharges

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended,

Brush Wellman, Incorporated
17876 St. Claire Avenue
Cleveland, OH 44110

is no longer authorized to discharge NCCW under the RIPDES Non-Contact Cooling Water General Permit from a facility located at

Technical Materials, Incorporated
5 Wellington Road
Lincoln, RI 02865

to receiving waters named

Moshassuck River

All effluent limitations, monitoring requirements and other conditions in the original permit are no longer in effect.

This termination shall become effective on the date of signature.

This terminates the permit issued on January 9, 2009.

This termination consists of 1 page.

Signed this 10th day of August, 2012.

Eric A. Beck, P.E.
Supervising Sanitary Engineer
Office of Water Resources
Rhode Island Department of Environmental Management