STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

December 2, 2013

Ms. Jody Stobbe
Regulatory Compliance Manager
e-copy: jlstobbe@buckman.com
Buckman Laboratories Incorporated
1256 N. McLean Blvd.
Memphis, TN 38108

Subject: **NPDES Permit No. TN0040606**
Buckman Laboratories Incorporated
Memphis, Shelby County, Tennessee

Dear Ms. Stobbe:

In accordance with the provisions of the Tennessee Water Quality Control Act, Tennessee Code Annotated (T.C.A.), Sections 69-3-101 through 69-3-120, the Division of Water Resources hereby issues the enclosed NPDES Permit. The continuance and/or reissuance of this NPDES Permit is contingent upon your meeting the conditions and requirements as stated therein.

Please be advised that a petition for permit appeal may be filed, pursuant to T.C.A. Section 69-3-105, subsection (i), by the permit applicant or by any aggrieved person who participated in the public comment period or gave testimony at a formal public hearing whose appeal is based upon any of the issues that were provided to the commissioner in writing during the public comment period or in testimony at a formal public hearing on the permit application. Additionally, for those permits for which the department gives public notice of a draft permit, any permit applicant or aggrieved person may base a permit appeal on any material change to conditions in the final permit from those in the draft, unless the material change has been subject to additional opportunity for public comment. Any petition for permit appeal under this subsection (i) shall be filed with the Technical Secretary of the Water Quality, Oil and Gas Board within thirty (30) days after public notice of the commissioner's decision to issue or deny the permit. A copy of the filing should also be sent to TDEC's Office of General Counsel.

If you have questions, please contact the Memphis Environmental Field Office at 1-888-891-TDEC; or, at this office, please contact Mr. Paul Higgins at (615) 532-1178 or by E-mail at *Paul.Higgins@tn.gov*.

Sincerely,

Vojin Janjić
Manager, Water-Based Systems

Enclosure

cc: Permit File
Memphis Environmental Field Office
Mr. Jeffery Thorne, Director of Compliance, Buckman Laboratories Incorporated, jmthorne@buckman.com

STATE OF TENNESSEE

NPDES PERMIT

No. TN0040606

Authorization to discharge under the
National Pollutant Discharge Elimination System (NPDES)

Issued By

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

Under authority of the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.) and the delegation of authority from the United States Environmental Protection Agency under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (33 U.S.C. 1251, et seq.)

Discharger:	**Buckman Laboratories Incorporated**
is authorized to discharge:	**stormwater runoff from Outfalls SW1, SW2, SW3 and SW4**
from a facility located:	**in Memphis, Shelby County, Tennessee**
to receiving waters named:	**Cypress Creek at miles 1.1 and 2.2 via city storm sewer**

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

This permit shall become effective on:	**January 1, 2014**
This permit shall expire on:	**December 31, 2018**
Issuance date:	**December 2, 2013**

for Sandra K. Dudley, Ph.D., P.E.
Director

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PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Buckman Laboratories Incorporated is authorized to discharge stormwater runoff from Outfalls SW1, SW2, SW3 and SW4 to Cypress Creek at miles 1.1 and 2.2 via city storm sewer.

These discharges shall be limited and monitored by the permittee as specified below:

External Outfall SW1
Monitoring: Effluent Gross
Season : All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Flow	Report	-	Mgal/d	Estimate	Semiannual	Daily Maximum
Carbon, Total Organic (TOC)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
LC50 Static 48Hr Acute Ceriodaphnia (in 100% effluent) *	Report	-	%	Grab	Semiannual	Minimum
LC50 Static 48Hr Acute Pimephales (in 100% effluent) *	Report	-	%	Grab	Semiannual	Minimum
Nitrite plus nitrate total (as N)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Total Suspended Solids (TSS)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Zinc, total (as Zn)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
pH	Report	-	SU	Grab	Semiannual	Minimum
pH	Report	-	SU	Grab	Semiannual	Maximum

* See Permit sub-part III E for sampling and analytical protocol.

External Outfall SW2
Monitoring: Effluent Gross
Season : All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Flow	Report	-	Mgal/d	Estimate	Semiannual	Daily Maximum
LC50 Static 48Hr Acute Ceriodaphnia (in 100% effluent) *	Report	-	%	Grab	Semiannual	Minimum
LC50 Static 48Hr Acute Pimephales (in 100% effluent) *	Report	-	%	Grab	Semiannual	Minimum
Nitrite plus nitrate total (as N)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Total Suspended Solids (TSS)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Zinc, total (as Zn)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
pH	Report	-	SU	Grab	Semiannual	Minimum
pH	Report	-	SU	Grab	Semiannual	Maximum

External Outfall: SW3
Monitoring: Effluent Gross
Season: All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Flow	Report	-	Mgal/d	Estimate	Semiannual	Daily Maximum
LC50 Static 48Hr Acute Ceriodaphnia (in 100% effluent) *	Report	-	%	Grab	Annual	Minimum
LC50 Static 48Hr Acute Pimephales (in 100% effluent) *	Report	-	%	Grab	Annual	Minimum
Nitrite plus nitrate total (as N)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Total Suspended Solids (TSS)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Zinc, total (as Zn)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
pH	Report	-	SU	Estimate	Semiannual	Minimum
pH	Report	-	SU	Estimate	Semiannual	Maximum

* See Permit sub-part III E for sampling and analytical protocol.

External Outfall: SW4
Monitoring: Effluent Gross
Season: All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Bromide (as Br)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Flow	Report	-	Mgal/d	Estimate	Semiannual	Daily Maximum
LC50 Static 48Hr Acute Ceriodaphnia (in 100% effluent) *	Report	-	%	Grab	See Permit	Minimum
LC50 Static 48Hr Acute Pimephales (in 100% effluent) *	Report	-	%	Grab	See Permit	Minimum
Nitrite plus nitrate total (as N)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Zinc, total (as Zn)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
pH	Report	-	SU	Grab	Semiannual	Maximum
pH	Report	-	SU	Grab	Semiannual	Minimum

* See Permit sub-part III E for sampling and analytical protocol.

Note: Toxicity sampling and testing for SW4 should be conducted during the first sampling period. If no toxicity results from the test, monitoring may be discontinued. If toxicity is indicated (<100%), monitoring must be conducted semi-annually for the remainder of the permit term.

Additional monitoring requirements and conditions applicable to Outfalls SW1, SW2, SW3, and SW4 include:

There shall be no distinctly visible floating solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life.

The wastewater discharge shall not contain pollutants in quantities that will be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.

Sludge or any other material removed by any treatment works must be disposed of in a manner, which prevents its entrance into or pollution of any surface or subsurface waters. Additionally, the disposal of such sludge or other material must be in compliance with the Tennessee Solid Waste Disposal Act, TCA 68-31-101 et seq. and the Tennessee Hazardous Waste Management Act, TCA 68-46-101 et seq.

The permittee shall evaluate the results of semi-annual monitoring to determine whether the facility is below, meets, or exceeds the EPA monitoring benchmarks as shown in Table I-A below. If the results of semi-annual stormwater runoff monitoring demonstrate that the facility has exceeded the benchmark(s), the permittee must evaluate the facility's Stormwater Pollution Prevention Plan according to permit Part IV 1. (E).

Table I, Applicable Pollutant Benchmark and Sector Median Values

Pollutants of Concern	EPA Benchmark [mg/L]	Sector Median Value * [mg/L]
Nitrate plus Nitrite Nitrogen, as N	0.68	0.46
Total Recoverable Zinc	0.395	0.126
Total Suspended Solids (TSS)	150	20.0
pH	5.0 to 9.0, S.U.	7.3, S.U.
Total Phosphorus, as P	2.0 (ecoregion reference value 0.10)	0.755

* Sector Median Value is a pollutant concentration calculated from sampling results provided from similar facilities. By definition, a median is a statistical term identifying a number that divides numerically ordered data into two equal halves. In other words, when all data is placed in numerical order, the median is the middle piece of data or the average of the middle two if there is an even number of data points. Therefore, the median concentrations listed above represent a concentration value typical for and achieved by similar industries.

Ecoregion reference values are goal setting values developed in the document *Development of Regionally-Based Interpretations of Tennessee's Narrative Nutrient Criterion*. This value is not a limit but should be used in the same manner as a benchmark applicable to the pollutant level in the receiving stream.

B. MONITORING PROCEDURES

1. Representative Sampling

A minimum of one grab sample shall be taken. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The required 72-hour storm event interval is waived where the preceding measurable storm event did not result in a measurable discharge from the facility. The required 72-hour storm event interval may also be waived where the permittee documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted. The grab sample shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is impracticable, a grab sample can be taken during the first hour of the discharge, and the discharger shall submit with the monitoring report a description of why a grab sample during the first 30 minutes was impracticable. If stormwater discharges associated with industrial activity commingle with process or nonprocess water, then, where practicable, permittees must sample the stormwater discharge before it mixes with the non-stormwater discharge.

2. Sampling Frequency

During the term of this permit, the permittee must monitor stormwater discharges associated with industrial activity at least twice per calendar year (semi-annually). The monitoring periods are defined as follows. The first six-month monitoring period begins on the Effective Date of this permit with the second six-month monitoring period commencing on the first day of the seventh month from the Effective Date of the permit.

3. Test Procedures

a. Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304 (h) of the Clean Water Act (the "Act"), as amended, under which such procedures may be required.

b. Unless otherwise noted in the permit, all pollutant parameters shall be determined according to methods prescribed in Title 40, CFR Part 136, as amended, promulgated pursuant to Section 304 (h) of the Act.

In instances where permit limits established through implementation of applicable water criteria are below analytical capabilities, compliance with those limits will be determined using the detection limits described in the TN Rules, Chapter 1200-4-3-.05(8).

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date and time of sampling;

b. The exact person(s) collecting samples;

c. The dates and times the analyses were performed;

d. The person(s) or laboratory who performed the analyses;

e. The analytical techniques or methods used, and;

f. The results of all required analyses.

g. In addition to the sampling and analytical records, the permittee shall maintain a record of the date and duration (in hours) of the storm event(s) sampled; total rainfall measurements or estimates (in inches) of the storm event that generated the sampled runoff; the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and an estimate of the total volume (in gallons) of the discharge sampled.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation shall be retained for a minimum of three (3) years, or longer, if requested by the Division of Water Resources.

C. DEFINITIONS

For the purpose of this permit, ***Annually*** is defined as a monitoring frequency of once every twelve (12) months beginning with the date of issuance of this permit so long as the following set of measurements for a given 12 month period are made approximately 12 months subsequent to that time.

A ***bypass*** is defined as the intentional diversion of waste streams from any portion of a treatment facility.

A ***calendar day*** is defined as the 24-hour period from midnight to midnight or any other 24-hour period that reasonably approximates the midnight to midnight time period.

The ***Daily Maximum Amount***, is a limitation measured in pounds per day (lb/day), on the total amount of any pollutant in the discharge by weight during any calendar day.

The ***Daily Maximum Concentration*** is a limitation on the average concentration, in milligrams per liter (mg/L), of the discharge during any calendar day. When a proportional-to-flow composite sampling device is used, the daily concentration is the concentration of that 24-hour composite; when other sampling means are used, the daily concentration is the arithmetic mean of the concentrations of equal volume samples collected during any calendar day or sampling period.

Degradation means the alteration of the properties of waters by the addition of pollutants or removal of habitat.

De Minimis – Alterations, other than those resulting in the condition of pollution or new domestic wastewater discharges, that represent either a small magnitude or a short duration shall be considered a *de minimis* impact and will not be considered degradation for purposes of implementing the antidegradation policy. Discharges other than domestic wastewater will be considered *de minimis* if they are temporary or use less than five percent of the available assimilative capacity for the substance being discharged. If more than one activity has been authorized in a segment and the total of the impacts uses no more than ten percent of the assimilative capacity, available habitat, or 7Q10 low flow, they are presumed to be *de minimis*. Where total impacts use more than ten percent of the assimilative capacity, available habitat, or 7Q10 low flow they may be treated as *de minimis* provided that the division finds on a scientific basis that the additional degradation has an insignificant effect on the resource and that no single activity is allowed to consume more than five percent of the assimilative capacity, available habitat or 7Q10 low flow.

Discharge or "discharge of a pollutant" refers to the addition of pollutants to waters from a source.

Dry Weather Flow shall be construed to represent discharges consisting of process and/or non-process wastewater only.

An ***ecoregion*** is a relatively homogeneous area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.

The ***geometric mean*** of any set of values is the n^{th} root of the product of the individual values where "n" is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For the purposes of calculating the geometric mean, values of zero (0) shall be considered to be one (1).

A ***Grab Sample***, for the purposes of this permit, is defined as a single effluent sample of at least 100 milliliters (sample volumes <100 milliliters are allowed when specified per standard methods, latest edition) collected at a randomly selected time over a period not exceeding 15 minutes. The sample(s) shall be collected at the period(s) most representative of the total discharge.

The ***Instantaneous Concentration*** is a limitation on the concentration, in milligrams per liter (mg/L), of any pollutant contained in the discharge determined from a grab sample taken at any point in time.

The ***monthly average amount***, shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

The ***monthly average concentration***, other than for *E. coli* bacteria, is the arithmetic mean of all the composite or grab samples collected in a one-calendar month period.

A ***one week period*** (or ***calendar-week***) is defined as the period from Sunday through Saturday. For reporting purposes, a calendar week that contains a change of month shall be considered part of the latter month.

Pollutant means sewage, industrial wastes, or other wastes.

A **Qualifying Storm Event** is one which is greater than 0.1 inches and that occurs after a period of at least 72 hours after any previous storm event with rainfall of 0.1 inches or greater.

For the purpose of this permit, a ***Quarter*** is defined as any one of the following three month periods: January 1 through March 31, April 1 through June 30, July 1 through September 30, or October 1 through December 31.

A ***rainfall event*** is defined as any occurrence of rain, preceded by 10 hours without precipitation that results in an accumulation of 0.01 inches or more. Instances of rainfall occurring within 10 hours of each other will be considered a single rainfall event.

A ***rationale*** (or “fact sheet”) is a document that is prepared when drafting an NPDES permit or permit action. It provides the technical, regulatory and administrative basis for an agency’s permit decision.

A ***reference site*** means least impacted waters within an ecoregion that have been monitored to establish a baseline to which alterations of other waters can be compared.

A ***reference condition*** is a parameter-specific set of data from regional reference sites that establish the statistical range of values for that particular substance at least-impacted streams.

For the purpose of this permit, ***Semi-annually*** means the same as "once every six months." Measurements of the effluent characteristics concentrations may be made anytime during a 6 month period beginning from the issuance date of this permit so long as the second set of measurements for a given 12 month period are made approximately 6 months subsequent to that time, if feasible.

A ***subecoregion*** is a smaller, more homogenous area that has been delineated within an ecoregion.

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

The term, ***washout*** is applicable to activated sludge plants and is defined as loss of mixed liquor suspended solids (MLSS) of 30.00% or more from the aeration basin(s).

Waters means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private

property in single ownership which do not combine or effect a junction with natural surface or underground waters.

The ***weekly average amount***, shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar week when the measurements were made.

The ***weekly average concentration***, is the arithmetic mean of all the composite samples collected in a one-week period. The permittee must report the highest weekly average in the one-month period.

Wet Weather Flow shall be construed to represent stormwater runoff which, in combination with all process and/or non-process wastewater discharges, as applicable, is discharged during a qualifying storm event.

D. ACRONYMS AND ABBREVIATIONS

1Q10 – 1-day minimum, 10-year recurrence interval
30Q5 – 30-day minimum, 5-year recurrence interval
7Q10 – 7-day minimum, 10-year recurrence interval
BAT – best available technology economically achievable
BCT – best conventional pollutant control technology
BDL – below detection level
BOD_5 – five day biochemical oxygen demand
BPT – best practicable control technology currently available
$CBOD_5$ – five day carbonaceous biochemical oxygen demand
CEI – compliance evaluation inspection
CFR – code of federal regulations
CFS – cubic feet per second
CFU – colony forming units
CIU – categorical industrial user
CSO – combined sewer overflow
DMR – discharge monitoring report
D.O. – dissolved oxygen
E. coli – Escherichia coli
EFO – environmental field office
LB(lb) - pound
IC_{25} – inhibition concentration causing 25% reduction in survival, reproduction and growth of the test organisms
IU – industrial user
IWS – industrial waste survey
LC_{50} – acute test causing 50% lethality
MDL – method detection level
MGD – million gallons per day
MG/L(mg/l) – milligrams per liter
ML – minimum level of quantification
ml – milliliter

MLSS – mixed liquor suspended solids
MOR – monthly operating report
NODI – no discharge
NOEC – no observed effect concentration
NPDES – national pollutant discharge elimination system
PL – permit limit
POTW – publicly owned treatment works
RDL – required detection limit
SAR – semi-annual [pretreatment program] report
SIU – significant industrial user
SSO – sanitary sewer overflow
STP – sewage treatment plant
TCA – Tennessee code annotated
TDEC – Tennessee Department of Environment and Conservation
TIE/TRE – toxicity identification evaluation/toxicity reduction evaluation
TMDL – total maximum daily load
TRC – total residual chlorine
TSS – total suspended solids
WQBEL – water quality based effluent limit

E. REPORTING

1. Monitoring Results

Monitoring results shall be recorded semi-annually and submitted semi-annually using Discharge Monitoring Report (DMR) forms supplied by the Division of Water Resources. Submittals shall be postmarked no later than 15 days after the completion of the reporting period. A completed DMR with an original signature shall be submitted to the following address:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
COMPLIANCE & ENFORCEMENT SECTION
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

A copy of the completed and signed DMR shall be mailed to the Memphis Environmental Field Office (EFO) at the following address:

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Memphis Environmental Field Office
8383 Wolf Lake Drive
Bartlett, Tennessee 38133

A copy should be retained for the permittee's files. In addition, any communication regarding compliance with the conditions of this permit must be sent to the two offices listed above.

The first DMR is due on the 15th of the month following the end of the first semi-annual permit period, July 15, 2014.

DMRs and any other information or report must be signed and certified by a responsible corporate officer as defined in 40 CFR 122.22, a general partner or proprietor, or a principal municipal executive officer or ranking elected official, or his duly authorized representative. Such authorization must be submitted in writing and must explain the duties and responsibilities of the authorized representative.

The electronic submission of DMR data will be accepted only if formally approved beforehand by the division. For purposes of determining compliance with this permit, data approved by the division to be submitted electronically is legally equivalent to data submitted on signed and certified DMR forms.

2. Additional Monitoring by Permittee

If the permittee monitors any pollutant specifically limited by this permit more frequently than required at the location(s) designated, using approved analytical methods as specified herein, the results of such monitoring shall be included in the calculation and reporting of the values required in the DMR form. Such increased frequency shall also be indicated on the form.

3. Falsifying Results and/or Reports

Knowingly making any false statement on any report required by this permit or falsifying any result may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Water Pollution Control Act, as amended, and in Section 69-3-115 of the Tennessee Water Quality Control Act.

4. Outlier Data

Outlier data include analytical results that are probably false. The validity of results is based on operational knowledge and a properly implemented quality assurance program. False results may include laboratory artifacts, potential sample tampering, broken or suspect sample containers, sample contamination or similar demonstrated quality control flaw.

Outlier data are identified through a properly implemented quality assurance program, and according to ASTM standards (e.g. Grubbs Test, 'h' and 'k' statistics). Furthermore, outliers should be verified, corrected, or removed, based on further inquiries into the matter. If an outlier was verified (through repeated testing and/or analysis), it should remain in the preliminary data set. If an outlier resulted from a transcription or similar clerical error, it should be corrected and subsequently reported.

Therefore, only if an outlier was associated with problems in the collection or analysis of the samples and as such does not conform with the Guidelines Establishing Test Procedures for the Analysis of Pollutants (40 CFR §136), it can be removed from the data set and not reported on the Discharge Monitoring Report forms (DMRs). Otherwise, all results (including monitoring of pollutants more frequently than required at the location(s) designated, using

approved analytical methods as specified in the permit) should be included in the calculation and reporting of the values required in the DMR form. You are encouraged to use “comment” section of the DMR form (or attach additional pages), in order to explain any potential outliers or dubious results.

F. SCHEDULE OF COMPLIANCE

Full compliance and operational levels shall be attained from the effective date of this permit.

PART II

A. GENERAL PROVISIONS

1. Duty to Reapply

Permittee is not authorized to discharge after the expiration date of this permit. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information and forms as are required to the Director of the Division of Water Resources (the "Director") no later than 180 days prior to the expiration date. Such applications must be properly signed and certified.

2. Right of Entry

The permittee shall allow the Director, the Regional Administrator of the U.S. Environmental Protection Agency, or their authorized representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or where records are required to be kept under the terms and conditions of this permit, and at reasonable times to copy these records;

b. To inspect at reasonable times any monitoring equipment or method or any collection, treatment, pollution management, or discharge facilities required under this permit; and

c. To sample at reasonable times any discharge of pollutants.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Water Pollution Control Act, as amended, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Water Resources. As required by the Federal Act, effluent data shall not be considered confidential.

4. Proper Operation and Maintenance

a. The permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory and process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems, which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. Backup continuous pH and flow monitoring equipment are not required.

b. Dilution water shall not be added to comply with effluent requirements to achieve BCT, BPT, BAT and/or other technology-based effluent limitations such as those in State of Tennessee Rule 1200-4-5-.09.

5. Treatment Facility Failure

The permittee, in order to maintain compliance with this permit, shall control production, all discharges, or both, upon reduction, loss, or failure of the treatment facility, until the facility is restored or an alternative method of treatment is provided. This requirement applies in such situations as the reduction, loss, or failure of the primary source of power.

6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

7. Severability

The provisions of this permit are severable. If any provision of this permit due to any circumstance, is held invalid, then the application of such provision to other circumstances and to the remainder of this permit shall not be affected thereby.

8. Other Information

If the permittee becomes aware that he failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, then he shall promptly submit such facts or information.

B. CHANGES AFFECTING THE PERMIT

1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

2. Permit Modification, Revocation, or Termination

a. This permit may be modified, revoked and reissued, or terminated for cause as described in 40 CFR 122.62 and 122.64, Federal Register, Volume 49, No. 188 (Wednesday, September 26, 1984), as amended.

b. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

c. If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established for any toxic pollutant under Section 307(a) of the Federal Water Pollution Control Act, as amended, the Director shall modify or revoke and reissue the permit to conform to the prohibition or to the effluent standard, providing that the effluent standard is more stringent than the limitation in the permit on the toxic pollutant. The permittee shall comply with these effluent standards or prohibitions within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified or revoked and reissued to incorporate the requirement.

d. The filing of a request by the permittee for a modification, revocation, reissuance, termination, or notification of planned changes or anticipated noncompliance does not halt any permit condition.

3. Change of Ownership

This permit may be transferred to another party (provided there are neither modifications to the facility or its operations, nor any other changes which might affect the permit limits and conditions contained in the permit) by the permittee if:

a. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;

b. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and liability between them; and

c. The Director, within 30 days, does not notify the current permittee and the new permittee of his intent to modify, revoke or reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

Pursuant to the requirements of 40 CFR 122.61, concerning transfer of ownership, the permittee must provide the following information to the division in their formal notice of intent to transfer ownership: 1) the NPDES permit number of the subject permit; 2) the effective date of the proposed transfer; 3) the name and address of the transferor; 4) the name and address of the transferee; 5) the names of the responsible parties for both the transferor and transferee; 6) a statement that the transferee assumes responsibility for the subject NPDES permit; 7) a statement that the transferor relinquishes responsibility for the subject NPDES permit; 8) the signatures of the responsible parties for both the transferor and transferee pursuant to the requirements of 40 CFR 122.22(a), "Signatories to permit applications"; and, 9) a statement regarding any proposed modifications to the facility, its operations, or any other changes which might affect the permit limits and conditions contained in the permit.

4. Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

C. NONCOMPLIANCE

1. Effect of Noncompliance

All discharges shall be consistent with the terms and conditions of this permit. Any permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

2. Reporting of Noncompliance

a. 24-Hour Reporting

In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Resources in the appropriate regional Field Office within 24-hours from the time the permittee becomes aware of the circumstances. (The regional Field Office should be contacted for names and phone numbers of environmental response personnel).

A written submission must be provided within five calendar days of the time the permittee becomes aware of the circumstances, unless this requirement is waived by the Director on a case-by-case basis. The permittee shall provide the Director with the following information:

i. A description of the discharge and cause of noncompliance;

ii. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and

iii. The steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

b. Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph 2.a. above, the permittee shall report the noncompliance on the Discharge Monitoring Report. The report shall contain all information concerning the steps taken, or planned, to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

3. Sanitary Sewer Overflow

a. "***Sanitary Sewer Overflow***" means the discharge to land or water of wastes from any portion of the collection, transmission, or treatment system other than through permitted outfalls.

b. Sanitary Sewer Overflows are prohibited.

c. The permittee shall operate the collection system so as to avoid sanitary sewer overflows. No new or additional flows shall be added upstream of any point in the collection system, which experiences chronic sanitary sewer overflows (greater than 5 events per year) or would otherwise overload any portion of the system.

d. Unless there is specific enforcement action to the contrary, the permittee is relieved of this requirement after: 1) an authorized representative of the Commissioner of the Department of Environment and Conservation has approved an engineering report and construction plans and specifications prepared in accordance with accepted engineering practices for correction of the problem; 2) the correction work is underway; and 3) the cumulative, peak-design, flows potentially added from new connections and line extensions upstream of any chronic overflow point are less than or proportional to the amount of inflow and infiltration removal documented upstream of that point. The inflow and infiltration reduction must be measured by the permittee using practices that are customary in the environmental engineering field and reported in an attachment to a Monthly Operating Report submitted to the regional TDEC Field Office. The data measurement period shall be sufficient to account for seasonal rainfall patterns and seasonal groundwater table elevations.

e. In the event that more than five (5) sanitary sewer overflows have occurred from a single point in the collection system for reasons that may not warrant the self-imposed moratorium or completion of the actions identified in this paragraph, the permittee may request a meeting with the Division of Water Resources field office staff to petition for a waiver based on mitigating evidence.

4. Upset

a. "***Upset***" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly

designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:

i. An upset occurred and that the permittee can identify the cause(s) of the upset;

ii. The permitted facility was at the time being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;

iii. The permittee submitted information required under "Reporting of Noncompliance" within 24-hours of becoming aware of the upset (if this information is provided orally, a written submission must be provided within five days); and

iv. The permittee complied with any remedial measures required under "Adverse Impact."

5. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. Bypass

a. "***Bypass***" is the intentional diversion of wastewater away from any portion of a treatment facility. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypasses are prohibited unless the following 3 conditions are met:

i. The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

ii. There are not feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down-time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass, which occurred

during normal periods of equipment down-time or preventative maintenance;

iii. The permittee submits notice of an unanticipated bypass to the Division of Water Resources in the appropriate environmental assistance center within 24-hours of becoming aware of the bypass (if this information is provided orally, a written submission must be provided within five days). When the need for the bypass is foreseeable, prior notification shall be submitted to the Director, if possible, at least 10 days before the date of the bypass.

c. Bypasses not exceeding limitations are allowed **only** if the bypass is necessary for essential maintenance to assure efficient operation. All other bypasses are prohibited. Allowable bypasses not exceeding limitations are not subject to the reporting requirements of 6.b.iii, above.

7. Washout

a. For domestic wastewater plants only, a "washout" shall be defined as loss of Mixed Liquor Suspended Solids (MLSS) of 30.00% or more. This refers to the MLSS in the aeration basin(s) only. This does not include MLSS decrease due to solids wasting to the sludge disposal system. A washout can be caused by improper operation or from peak flows due to infiltration and inflow.

b. A washout is prohibited. If a washout occurs the permittee must report the incident to the Division of Water Resources in the appropriate regional Field Office within 24-hours by telephone. A written submission must be provided within 5 days. The washout must be noted on the discharge monitoring report. Each day of a washout is a separate violation.

D. LIABILITIES

1. Civil and Criminal Liability

Except as provided in permit conditions for "**Bypass,**" "**Overflow,**" and "**Upset,**" nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of wastewater to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its wastewater treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

2. Liability Under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

PART III

OTHER REQUIREMENTS

A. TOXIC POLLUTANTS

The permittee shall notify the Division of Water Resources as soon as it knows or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis, of any toxic substance(s) (listed at 40 CFR 122, Appendix D, Table II and III) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

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

    b. 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-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

    c. Five (5) times the maximum concentration value reported for that pollutant(s) in the permit application in accordance with 122.21(g)(7); or

    d. The level established by the Director in accordance with 122.44(f).

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

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

    b. One milligram per liter (1 mg/L) for antimony;

    c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 122.21(g)(7); or

    d. The level established by the Director in accordance with 122.44(f).

B. REOPENER CLAUSE

If an applicable standard or limitation is promulgated under Sections 301(b)(2)(C) and (D), 304(B)(2), and 307(a)(2) and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the permit, the permit shall be promptly modified or revoked and reissued to conform to that effluent standard or limitation.

C. PLACEMENT OF SIGNS

Within sixty (60) days of the effective date of this permit, the permittee shall place and maintain a sign(s) at each outfall and any. The sign(s) should be clearly visible to the public from the bank and the receiving stream or from the nearest public property/right-of-way, if applicable. The minimum sign size should be two feet by two feet (2' x 2') with one inch (1") letters. The sign should be made of durable material and have a white background with black letters.

The sign(s) are to provide notice to the public as to the nature of the discharge and, in the case of the permitted outfalls, that the discharge is regulated by the Tennessee Department of Environment and Conservation, Division of Water Resources. The following is given as an example of the minimal amount of information that must be included on the sign:

INDUSTRIAL STORMWATER RUNOFF
Buckman Laboratories Incorporated
(Permittee's Phone Number)
NPDES Permit NO. TN0040606
TENNESSEE DIVISION OF WATER RESOURCES
1-888-891-8332 ENVIRONMENTAL FIELD OFFICE - Memphis

D. ANTIDEGRADATION

Pursuant to the Rules of the Tennessee Department of Environment and Conservation, Chapter 1200-4-3-.06, titled “Tennessee Antidegradation Statement,” which prohibits the degradation of high quality surface waters and the increased discharges of substances that cause or contribute to impairment, the permittee shall further be required, pursuant to the terms and conditions of this permit, to comply with the effluent limitations and schedules of compliance required to implement applicable water quality standards, to comply with a State Water Quality Plan or other state or federal laws or regulations, or where practicable, to comply with a standard permitting no discharge of pollutants.

E. BIOMONITORING REQUIREMENTS, ACUTE (STORMWATER)

The permittee shall conduct a 48-hour static acute, definitive, toxicity test on two test species on the same samples of final effluent from all stormwater outfalls as indicated in Part I A. The test species to be used are Water Fleas (*Ceriodaphnia dubia)* and Fathead Minnows

(Pimephales promelas). **Three (3) separate grab samples shall be taken at evenly spaced 6-hour intervals during the first 24-hours of a storm event, as practicable, then recombined and tested as a single composite sample. The first sample should be obtained within the first thirty (30) minutes of the initiation of flow, or as soon thereafter as practicable. Tests should be conducted using serial dilutions and a control as indicated below.** If in any control, more than 10% of the test organisms die in 48 hours, the test (control and effluent) is considered invalid and the test shall be repeated within 30 days of the date the initial test is invalidated, or as soon thereafter as practicable during a qualifying storm event. The toxicity tests specified herein shall be conducted as specified in Part I and begin no later than ninety (90) days from the effective date of this permit, or as soon thereafter as practicable during a qualifying storm event.

Test shall be conducted and its results reported based on appropriate replicates of a total of five serial dilutions and a control, using the percent effluent dilutions as presented in the following table:

Serial Dilutions for Whole Effluent Toxicity (WET) Testing					
Permit Limit (PL)	**0.50 X PL**	**0.25 X PL**	**0.125 X PL**	**0.0625 X PL**	**Control**
% effluent					
100	**50**	**25**	**12.5**	**6.25**	**0**

Test procedures, quality assurance practices and determination of effluent lethality values will be made in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012, or the most current edition.

Results of all tests, reference toxicant information, copies of raw data sheets, statistical analysis and chemical analysis shall be compiled in a report. The report shall be written in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012, or the most current edition. The analysis of multi-concentration test shall include review of the concentration-response relationship to ensure that calculated test results are interpreted appropriately.

Two copies of biomonitoring reports (including follow-up reports) shall be submitted to the division. One copy of the report shall be submitted along with the discharge monitoring report (DMR). The second copy shall be submitted to the local Division of Water Resources office address:

Environmental Field Office - Memphis
Division of Water Resources
8383 Wolf Lake Drive
Bartlett, Tennessee 38133

The reasonable potential to cause toxicity in the receiving stream will be evaluated based on the results of the WET testing. Toxicity at a given outfall will be indicated by any one result of <100%. At that time, should the results so dictate, the division maintains the authority to institute specific numeric biomonitoring limitations.

PART IV

1. STORMWATER POLLUTION PREVENTION PLAN

The discharger will develop, document and maintain a stormwater pollution prevention plan (SWPPP) pursuant to the requirements as set forth in the Tennessee Multi-Sector General Permit for Industrial Activities, Sector C, "Stormwater Discharges Associated With Industrial Activity From Chemical and Allied Products Manufacturing Facilities," Part 11, "Stormwater Pollution Prevention Plan Requirements", applicable to Industrial Inorganic Chemical and Agricultural Chemical Facilities. Details of the requirements are appended to this permit as Attachment 1. The plan shall be signed by either a principal executive officer of a corporation, the owner or proprietor of a sole proprietorship, or a partner or general partner of a partnership, or a duly authorized representative.

A. Plan Implementation

The plan should be developed and available for review within 30 days after permit coverage. Facilities should implement the management practices as soon as possible, but not later than one year after permit coverage. Where new construction is necessary to implement the management plan, a construction schedule should be included. Construction should be completed as soon as possible.

B. Plan Availability

The plan will be maintained by the discharger on the site or at a nearby office. Copies of the plan will be submitted to the Division of Water Resources within ten business days of any request.

C. Plan Modification

The plan will be modified as required by the Director of the Division of Resources. Specifically, the plan must contain procedures that require that pesticides, herbicides and fertilizers be handled and applied at functional levels using the methods recommended by the manufacturer in order to prevent over application and excessive runoff into stormwater. If a contractor is used the contractor should be certified/licensed by the Tennessee Department of Agriculture.

D. Monitoring Plan

The stormwater discharges will be monitored as required in Part I. Section A., Effluent Limits and Monitoring Requirements, applicable to stormwater outfalls. For each outfall monitored, the surface area and type of cover, for example, roof, pavement, grassy areas, gravel, will be identified.

E. Plan Evaluation and Modification

The SWPPP must be evaluated and modified by qualified personnel in the event of any significant change at the facility or if inspection and/or monitoring indicate that the plan is ineffective at controlling pollutants from identified sources or otherwise achieving the general objectives of controlling pollutant levels in the stormwater discharge from the facility.

ATTACHMENT I
Buckman Laboratories Incorporated
NPDES Permit TN0040606

Stormwater Pollution Prevention Plan Requirements

The plan shall include, at a minimum, the following items:

1. Pollution Prevention Team

Each plan shall identify a specific individual or individuals within the facility organization as members of a stormwater Pollution Prevention Team that are responsible for developing the stormwater pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's stormwater pollution prevention plan.

2. Description of Potential Pollutant Sources

Each plan shall provide a description of potential sources that may reasonably be expected to add significant amounts of pollutants to stormwater discharges or that may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials that may potentially be significant pollutant sources.

3. Drainage

The plan shall include a site map indicating an outline of the portions of the drainage area of each stormwater outfall that are within the facility boundaries, each existing structural control measure to reduce pollutants in stormwater runoff, surface water bodies, locations where significant materials are exposed to precipitation, locations where major spills or leaks identified under Item 5 (spills and leaks) of this attachment have occurred, and the locations of the following activities where such activities are exposed to precipitation: fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, locations used for the treatment, storage or disposal of wastes, liquid storage tanks, processing areas and storage areas including areas where raw materials, finished products and drums are stored. The map must indicate the outfall locations and the types of discharges contained in the drainage areas of the outfalls.

For each area of the facility that generates stormwater discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow, and an identification of the types of pollutants that are likely to be present in stormwater discharges associated with industrial activity. Factors to consider include the toxicity of a chemical; quantity of chemicals used, produced or discharged; the likelihood of contact with stormwater; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

4. Inventory of Exposed Materials

The plan shall include an inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to stormwater between the time of 3 years prior to the effective date of the proposed permit; materials management practices employed to minimize contact of materials with stormwater runoff between the time of 3 years prior to the effective date of this proposed permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in stormwater runoff; and a description of any treatment the stormwater receives.

5. Spills and Leaks

The plan shall include a list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a stormwater conveyance at the facility after the date of 3 years prior to the effective date of this proposed permit. Such list shall be updated as appropriate during the term of the proposed permit.

6. Sampling Data

The plan shall include a summary of existing discharge sampling data describing pollutants in stormwater discharges from the facility, including a summary of sampling data collected during the term of this proposed permit.

7. Risk Identification and Summary of Potential Pollutant Sources

The plan shall include a narrative description of the potential pollutant sources from the following activities: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; significant dust or particulate generating processes; and onsite waste disposal practices. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter (e.g., biochemical oxygen demand, etc.) of concern shall be identified.

8. Measures and Controls

Each facility covered by this proposed permit shall develop a description of stormwater management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of stormwater management controls shall address the following minimum components, including a schedule for implementing such controls:

9. Good Housekeeping

Good housekeeping requires the maintenance of areas that may contribute pollutants to stormwater discharges in a clean, orderly manner. Particular attention should be paid to areas

where raw materials are stockpiled, material handling areas, storage areas, liquid storage tanks, material handling areas, and loading/unloading areas.

10. Preventive Maintenance

A preventive maintenance program shall involve timely inspection and maintenance of stormwater management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.

11. Spill Prevention and Response Procedures

Areas where potential spills that can contribute pollutants to stormwater discharges can occur, and their accompanying drainage points shall be identified clearly in the stormwater pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a cleanup should be available to personnel.

12. Inspections

In addition to or as part of the comprehensive site evaluation required under this section, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility at appropriate intervals specified in the plan. Material storage and handling areas, liquid storage tanks, hoppers or silos, vehicle and equipment maintenance, cleaning, and fueling areas, material handling vehicles, equipment and processing areas shall be inspected at least once per month as part of the maintenance program. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained.

13. Employee Training

Employee training programs shall inform personnel responsible for implementing activities identified in the stormwater pollution prevention plan or otherwise responsible for stormwater management at all levels of responsibility of the components and goals of the stormwater pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify periodic dates for such training.

14. Recordkeeping and Internal Reporting Procedures

A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of stormwater discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.

15. Non-stormwater Discharges

The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-stormwater discharges. The certification shall include the identification of potential significant sources of non-stormwater at the site, a description of the results of any test and/or evaluation for the presence of non-stormwater discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with Part V of this proposed permit. Such certification may not be feasible if the facility operating the stormwater discharge associated with industrial activity does not have access to an outfall, manhole, or other point of access to the ultimate conduit that receives the discharge. In such cases, the source identification section of the stormwater pollution prevention plan shall indicate why the certification required by this part was not feasible, along with the identification of potential significant sources of non-stormwater at the site. A discharger that is unable to provide the certification required by this paragraph must notify the Division of Resources in accordance with Item 16 “Failure to Certify” (below).

Sources of non-stormwater that are combined with stormwater discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Any non-stormwater discharges that are not permitted under an individual NPDES permit should be brought to the attention of the division’s local Environmental Field Office at:

Environmental Field Office - Memphis
Division of Water Resources
8383 Wolf Lake Drive
Bartlett, Tennessee 38133

16. Failure to Certify

Any facility that is unable to provide the certification required (testing for non-stormwater discharges), must notify the Division of Resources in writing not later than 180 days after the Effective Date of the permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-stormwater discharges; the results of such test or other relevant observations; potential sources of non-stormwater discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-stormwater discharges to waters of the State that are not authorized by an NPDES permit are unlawful, and must be terminated.

17. Sediment and Erosion Control

The plan shall identify areas that, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

18. Management of Runoff

The plan shall contain a narrative consideration of the appropriateness of traditional stormwater management practices (practices other than those that control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage stormwater runoff in a manner that reduces pollutants in stormwater discharges from the site. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to stormwater discharges associated with industrial activity [see Item 2 of this attachment (Description of Potential Pollutant Sources)] shall be considered when determining reasonable and appropriate measures. Appropriate measures may include: vegetated swales, reuse of collected stormwater (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), infiltration devices, and detention/retention basins or other equivalent measures.

19. Comprehensive Site Compliance Evaluation

Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Evaluations shall be conducted at least once at portable plant locations that are not in operation for a complete year. Such evaluations shall provide:

Areas contributing to a stormwater discharge associated with industrial activity including; material storage and handling areas, liquid storage tanks, hoppers or silos, vehicle and equipment maintenance, cleaning, and fueling areas, material handling vehicles, equipment and processing areas, and areas where aggregate is stockpiled outdoors shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the proposed permit or whether additional control measures are needed. Structural stormwater management measures, (e.g., oil/water separators, detention ponds, sedimentation basins or equivalent measures) sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as dust collection equipment and spill response equipment, shall be made.

Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with Item 2 of this attachment (description of potential pollutant sources) and pollution prevention measures and controls identified in the plan in accordance with Item 8 of this attachment (measures and controls) shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case later than 12 weeks after the evaluation.

A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the stormwater pollution prevention plan, and actions taken in accordance with Part V(E) of the proposed permit shall be made and retained as part of the stormwater pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification

that the facility is in compliance with the stormwater pollution prevention plan and this proposed permit. The report shall be signed in accordance with Part V of the proposed permit.

Where compliance evaluation schedules overlap with inspections, the compliance evaluation may be conducted in place of one such inspection.

ADDENDUM to RATIONALE

Buckman Laboratories Incorporated
NPDES PERMIT NO. TN0040606
Memphis, Shelby County, Tennessee

November 25, 2013

Ms. Jody Stobbe of Buckman Laboratories commented by letter dated November 18, 2013. Ms. Stobbe pointed out that Part I E of the permit erroneously referred to monthly monitoring and reporting periods when Part I of the permit established semi-annual monitoring and reporting. The monthly monitoring requirement was inadvertently not changed from the original template language. This typographical error has been corrected to correspond to the proper semi-annual monitoring period.

Ms. Stobbe also provided additional stormwater data for zinc, phosphorus and total nitrate and nitrite and information clarifying the details of site phosphorus storage and handling practices. The additional stormwater data indicates that zinc is an airborne pollutant, possibly from a neighboring facility, and neither phosphorus nor the nitrogen compounds are airborne pollutants. Additionally, areas of the facility that handle and process phosphorus compounds are within containment systems and discharge to the POTW. Also, Buckman is implementing Best Management Practices for storing and handling phosphorus containing pesticides, herbicides and fertilizers. These comments have been placed in the permit file.

RATIONALE

Buckman Laboratories Incorporated

NPDES PERMIT NO. TN0040606
Memphis, Shelby County, Tennessee

October 8, 2013

Permit Writer: Mr. Paul Higgins

I. DISCHARGER

Buckman Laboratories Incorporated
1256 North McLean Blvd.
Memphis, Shelby County, Tennessee
Site Longitude: -89.991667 Site Latitude: 35.175

Official Contact Person:
Ms. Jody Stobbe
Regulatory Compliance Manager
(901) 272-6717

Nature of Business:
Manufacturing of organic and inorganic agricultural and commercial water treatment chemicals.

SIC Code(s):	**2899**
Industrial Classification:	**Secondary w/o ELG**
Discharger Rating:	**Minor**

II. PERMIT STATUS

Issued December 31, 2008
Expired December 31, 2013
Application for renewal received June 17, 2013

Watershed Scheduling

Environmental Field Office: Memphis
Primary Outfall Longitude: -89.991667 Primary Outfall Latitude: 35.175
Hydrocode: 8010210 Watershed Group: 3
Watershed Identification: Wolf
Target Reissuance Year: 2013

III. FACILITY DISCHARGES AND RECEIVING WATERS

Buckman Laboratories Incorporated discharges stormwater runoff from Outfalls SW1, SW2, SW3 and SW4 to Cypress Creek at miles 1.1 and 2.2 via city storm sewer. *Appendix 1* summarizes facility discharges and receiving stream information.

IV. APPLICABLE EFFLUENT LIMITATIONS GUIDELINES

There are no EPA effluent guidelines for the stormwater discharges from this facility. Standards of performance are therefore established in accordance with existing state regulations using available treatability information.

V. PREVIOUS PERMIT LIMITS AND MONITORING REQUIREMENTS

Appendix 2 lists the permit limitations and monitoring requirements as defined in the previous permit.

VI. HISTORICAL MONITORING AND INSPECTION

The data reported on Discharge Monitoring Report forms during the previous permit term is summarized in *Appendix 3*. The permittee was in overall compliance with permit benchmarks except for total zinc and total phosphorus at Outfall SW4. Whole Effluent Toxicity (WET) testing, though indicating a general absence of toxicity, still indicated limited toxicity at some of the outfalls. Monitoring results are discussed on an individual parameter basis below.

During the previous permit term, the Division's personnel from the Memphis Environmental Field Office performed a Compliance Evaluation Inspection (CEI) of Buckman Laboratories Incorporated. The CEI was performed by Ms. Maylynne Wilbert on August 7, 2013. The inspection report described general compliance and noted only a relatively minor problem with monitoring procedures.

VII. NEW PERMIT LIMITS AND MONITORING REQUIREMENTS

Proposed provisions in this permit for stormwater discharges are taken from the Tennessee Stormwater Multi-Sector General Permit for Industrial Activities, which include a stormwater pollution prevention plan and, for some industries, stormwater monitoring for industry-specific pollutants. There are no EPA effluent standards applicable to the stormwater discharges from this facility. Furthermore, this facility does not have a reasonable potential to discharge any effluent parameters covered by an approved Total Maximum Daily Load (TMDL) study. *Appendix 4* lists all proposed effluent limitations and monitoring requirements to be included in the new permit. Note that in general, the term "anti-backsliding" refers to a statutory provision that prohibits the renewal, reissuance, or modification of an existing NPDES permit that contains effluents limits, permit conditions, or standards that are less stringent than those established in the previous permit.

Most of the monitoring requirements from the previous permit have been carried over into the proposed draft permit. Each parameter and its applicability to individual outfalls is discussed below.

Flow

Monitoring of flow allows quantification the load of pollutants to the stream. As in the past, flow monitoring is included for all outfalls and shall be reported in Million Gallons per Day (MGD) and estimated through storm event rainfall measurements and duration and outfall drainage area calculations.

Total Suspended Solids (TSS)

Total Suspended Solids is a general indicator of the quality of a wastewater because it is a commonly occurring pollutant associated with both industrial and non-industrial sites. Furthermore, the State of Tennessee Water Quality Standards for the protection of Fish & Aquatic Life [Chapter 1200-4-3-.03(3) (c)] state there shall be no distinctly visible solids, scum, foam, oily slick, or the formation of slimes, bottom deposits or sludge banks of such size or character that may be detrimental to fish and aquatic life in the receiving stream. The TSS parameter monitoring requirement was eliminated from SW4 on the previous permit because historical monitoring data was consistently below the benchmark. However, for outfalls SW1, SW2, and SW3, TSS monitoring continues to show spikes. Until monitoring data shows more consistency over a longer period of time, Best Professional Judgment (BPJ) indicates that monitoring for the parameter should be left in the permit for these outfalls.

pH

According to the State of Tennessee Water Quality Standards [Chapter 1200-4-3-.03(3) (b)], the pH for the protection of Fish and Aquatic Life shall lie within the range of 6.0 to 9.0 and shall not fluctuate more than 1.0 unit in this range over a period of 24-hours. The benchmark range for the pH of stormwater runoff is 5.0 to 9.0. Additionally, the sector average for chemical manufacturing facilities is 7.23 SU and the average of the historical monitoring results for all four outfalls is significantly above that sector average value. BPJ indicates that monitoring requirements for this parameter should remain for all outfalls.

Total Organic Carbon

Total Organic Carbon (TOC) is a general indicator of the quality of a wastewater. The permittee has historically monitored SW1 for this parameter due to unexplained spikes in the results. Even though the data for this permit cycle shows significant improvement, there were higher values during the last permit cycle and one very high spike. BPJ indicates that monitoring for this parameter should remain in the permit for SW1 as long as data is inconsistent and unexplained spikes occur.

Bromide

Bromide has historically been monitored at Outfall SW4. Buckman Laboratory's permit application indicates that bromide compounds are handled on site, but they are not expected to be present in the stormwater runoff. However, the monitoring data continues to have spikes of high bromide levels. Bromide compounds exist that are toxic and/or harmful to the environment, including some organo-bromides that are toxic at very low levels. The permittee should work toward identifying and eliminating the bromide contamination. Semiannual monitoring frequency will remain the same for this permit cycle.

Total Zinc, Total Phosphorus, and Nitrate Plus Nitrite Nitrogen

As indicated in the previous permit rationale, the TMSP contains monitoring requirements for total zinc, total phosphorus, and total nitrate plus nitrite (as N) for facilities similar to Buckman Laboratories (in Sector C). Monitoring for these parameters was included in the permit for all four outfalls. The monitoring results for these compounds varied among the parameters and the outfalls and are discussed separately below.

Total Zinc

Monitoring indicated levels of zinc that exceeded the benchmark value at least once for all outfalls. Since the DMR for January, 2010, the benchmark was exceeded more than 50% of the time at SW1. Buckman Laboratories suspects that the elevated levels of zinc are coming from wind-born particulate from a sandblasting operation next door. Buckman had their sampling consultant perform a simple experimental sampling of one storm event which seemed to indicate that the high levels of zinc could very possibly be coming from off-site. EFO personnel have agreed to discuss the problem with the Department of Air Pollution Control. The permittee should also perform additional monitoring to positively identify the source of the pollutant so that it can be controlled. The monitoring requirement will remain in the permit.

Total Phosphorus

Total phosphorus monitoring resulted in only one instance of the benchmark being violated. However, the receiving stream, Cypress Creek, has been assessed as not meeting the designated use of Fish and Aquatic Life; and elevated levels of total phosphorus is one of the causes. Additionally, monitoring indicated that the ecoregion reference value for phosphorus (0.10 mg/l) was repeatedly exceeded at all of the outfalls. The ecoregion reference value for a parameter is a value that is used by the division for goal setting, much like a benchmark value for a pollutant level in a receiving stream. In this case, the critical low flow of Cypress Creek in this vicinity is zero, so discharges consistently above the ecoregion reference are of concern.

The permittee provided the division with a report concerning the sources phosphorus at the facility. Essentially, the report indicated that there are no phosphorus containing chemicals stored or handled outdoors at the facility, other than standard landscaping chemicals. Therefore, the division is requiring the permittee to establish applicable Best Management Practices (BMPs) to assure that phosphorus-containing pesticides, herbicides, and fertilizers be handled and applied in the proper manner. This requirement was included in Part IV 1. C of the permit.

Nitrate Plus Nitrite Nitrogen

Monitoring for nitrate and nitrite nitrogen indicated one result at SW2 that was above the benchmark value. Data at the other outfalls indicated some spikes which occurred inconsistently. Some of the higher numbers seemed to have aligned with higher phosphorus numbers, but this was not a consistent relationship, either. Since the data was inconsistent and this particular parameter is often linked with total phosphorus, monitoring requirements will be left in the permit. The BMPs for phosphorus may be applicable to controlling this pollutant, also.

Biomonitoring Requirements

As indicated in the permit *RATIONALE* in the last permit, this facility discharges through a storm sewer to a receiving stream with a zero critical low flow. As the calculations indicated, discharges of mixtures of pollutants such as those from this facility to a stream with no flow available for dilution constitute a reasonable potential for toxicity; and the division requires biomonitoring or Whole Effluent Toxicity (WET) testing in such cases.

During the last permit cycle, SW1 and SW2 both indicated toxicity on one sample. Semiannual biomonitoring will remain in the proposed permit for these two outfalls. For Outfall SW4, the permit required biomonitoring to be run once at the beginning of the permit. If toxicity was not indicated on the initial test, biomonitoring was waived for the rest of the permit. The initial test on SW4 did not demonstrate toxicity and no further biomonitoring was conducted. This requirement has been carried over into the proposed permit. Concerning Outfall SW3, WET testing indicated no toxicity on any of the monitoring results. Additionally, this outfall had the lowest average concentrations of the other pollutant parameters among all four outfalls. Because of the improved consistency at this outfall, the division has reduced the frequency of biomonitoring to annually.

The sampling protocol for biomonitoring remains the same. During the drafting of this permit, the permit writer was contacted to clarify the wording in the sampling protocol. The consultant responsible for sampling was concerned that it was difficult to obtain samples over the time frame specified (3 grab samples spaced 6 hour apart) in PART III E. of the permit. The sampler also was concerned over sampling in conditions that were unsafe or at night when there was no other personnel on site.

The protocol makes use of the term '*as practicable*' when defining the sampling protocol. The sampler was assured that the division understands that sampling stormwater is not an exact science and it is frequently necessary to use '*Best Professional Judgment*' when performing this task. Additionally, the division does not wish anyone to take unnecessary risks when sampling. If a situation presents itself where it may be necessary to extend the schedule required by the permit to perform a task safely, the permittee should not hesitate to contact the EFO.

VIII. STORMWATER POLLUTION PREVENTION PLAN REQUIREMENTS

As in the previous permit, a requirement to develop and maintain a Stormwater Pollution Prevention Plan (SWPPP) has been included in the proposed permit. If the permittee has already developed a SWPPP, special attention should be paid to Part IV(E) of the proposed permit (Plan Evaluation and Modification). The requirement to develop a BMP for the handling and application of lawn chemicals was also added to this section. *Attachment 1* contains an excerpt from the TMSP with the general minimum SWPPP requirements for Sector C.

VIII. ANTIDEGRADATION

Tennessee's Antidegradation Statement is found in the Rules of the Tennessee Department of Environment and Conservation, Chapter 1200-4-3-.06. This statement outlines the criteria for the two types of high quality waters. Outstanding National Resource Waters (ONRWs) are designated by the Water Quality Control Board. Other high quality waters, as identified by the division, are referred to as Exceptional Tennessee Waters. Other surface waters not specifically identified and/or designated as high quality are referred to as Available Conditions Waters. Some available conditions waters may be identified by the division as either not

meeting water quality criteria or needing additional water-quality based controls to prevent excursion of criteria for some parameters and conditions and are referred to as Unavailable Conditions Waters for those parameters or conditions.

Additionally, the division has determined that the receiving stream is not supportive of the Fish and Aquatic Life and Recreation designated uses due to dissolved oxygen, *E. coli,* phosphate, lead, polychlorinated biphenyls, chlordane, and physical substrate habitat alteration. The stormwater discharges from Outfalls SW1, SW2, SW3, and SW4 do not contain significant amounts of pollutants affecting these causes of impairments except for small quantities of phosphorus from lawn treatment chemicals. A requirement to develop appropriate BMPs to control phosphorus in the stormwater discharges was included in this draft permit. The division, therefore, considers the potential for degradation to the receiving stream from these discharges to be negligible.

IX. PERMIT DURATION

The proposed limitations meet the requirements of Section 301(b)(2)(A), (C), (D), (E), and (F) of the Clean Water Act as amended. It is the intent of the division to organize the future issuance and expiration of this particular permit such that other permits located in the same watershed and group within the State of Tennessee will be set for issuance and expiration at the same time. In order to meet the target reissuance date for the Wolf watershed and following the directives for the Watershed Management Program initiated in January, 1996, the permit will expire in calendar year 2018.

APPENDIX 1

FACILITY DISCHARGES AND RECEIVING WATERS

FACILITY DISCHARGES AND RECEIVING WATERS

OUTFALL 001	
LONGITUDE	LATITUDE
-89.991667	35.175

FLOW (MGD)	DISCHARGE SOURCE
Varies	Outfall SW1 - 6.04 acres drained
Varies	Outfall SW2 - 2.28 acres drained
Varies	Outfall SW3 - 0.035 acres drained
Varies	Outfall SW4 - 2.99 acres drained
Varies	TOTAL DISCHARGE

RECEIVING STREAM DISCHARGE ROUTE			
Cypress Creek at RMs 1.1 and 2.2 via MS4			
STREAM LOW FLOW (CFS) *	7Q10	1Q10	30Q5
		0.0	0.0
(MGD)		0.0	0.0

STREAM USE CLASSIFICATIONS (WATER QUALITY)				
AQUATIC LIFE	RECREATION	IRRIGATION	LIVESTOCK & WILDLIFE	DOMESTIC SUPPLY
X	X	X	X	
INDUSTRIAL	NAVIGATION			

Reference: Flow Duration and Low Flows of Tennessee Streams through 1992 by George S. Law and Jess D. Weaver. Water Resources Investigations Report 95-4293 prepared by the U.S. Geological Survey in Cooperation with the Tennessee Department of Environment and Conservation and the Tennessee Valley Authority. Nashville, Tennessee, 1996, p. 191

APPENDIX 2

PREVIOUS PERMIT LIMITS AND MONITORING REQUIREMENTS

PERMIT LIMITS

OUTFALL SW1, SW2, SW3, SW4
Storm Water Runoff

EFFLUENT CHARACTERISTIC	ICIS CODE	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
		MONTHLY		DAILY			
		AVG. CONC. (mg/l)	AVG. AMNT. (lb/day)	MAX. CONC. (mg/l)	MAX. AMNT. (lb/day)	MSRMNT. FRQNCY.	SAMPLE TYPE
FLOW	50050			Report (MGD) *		Semi-annual	Estimate
pH **	00400	Report				Semi-annual	Grab
TOTAL SUSPENDED SOLIDS (TSS)	00530	--	--	Report	--	Semi-annual	Grab
NITRATE PLUS NITRITE NITROGEN	00630	--	--	Report	--	Semi-annual	Grab
PHOSPHORUS, TOTAL	00665	--	--	Report	--	Semi-annual	Grab
ZINC, TOTAL	01092	--	--	Report	--	Semi-annual	Grab
TOTAL ORGANIC CARBON***	00680	--	--	Report	--	Semi-annual	Grab
BROMIDE****	71870	--	--	Report	--	Semi-annual	Grab
48-HR LC50	TAA3B, TAA6C	Report				Semi-annual	Grab

* Flow shall be reported in Million Gallons per Day (MGD). An estimate of the discharge flow shall be made using on-site rainfall measurements, the duration of the rainfall, and the drainage area of the outfall. See permit Part I(B)(4).
** pH analysis shall be performed within fifteen (15) minutes of sample collection.
*** Outfall SW1 only.
**** Outfall SW4 only

Note: Toxicity sampling and testing for SW4 should be conducted during the first sampling period. If no toxicity results from the test, monitoring may be discontinued. If toxicity is indicated (<100%), monitoring must be conducted semi-annually for the remainder of the permit term.

APPENDIX 3

HISTORICAL MONITORING AND INSPECTION

SW1									
DMR Date	pH SU	TSS mg/l	NO2 + NO3 mg/l	P, Tot mg/l	TOC mg/l	Zn, Tot mg/l	Flow MGD	LC50 Daphnia % Effl	LC50 Minnows % Effl
Reference	5.5 to 9	150	0.68	2	Report	0.161	Report	100	100
01/31/2010	7.2	34	0.356	***0.115***	3.87	**0.170**	0.102	100	100
07/31/2010	8.5	12	0.180	0.050	3.79	0.085	0.467	100	100
01/31/2011	7.2	47	0.285	0.072	7.80	**0.164**	0.041	100	100
07/31/2011	7.7	8	0.572	0.065	9.11	0.083	0.115	100	100
01/31/2012	7.2	110	0.247	***0.309***	9.00	**1.070**	0.066	100	100
07/31/2012	7.95	11	0.321	0.050	5.58	0.098	0.292	100	100
01/31/2013	6	34	0.176	***0.129***	2.59	**0.511**	0.182	50	100
Average		37	0.305	0.113	5.96	0.312	0.181		

SW2								
DMR Date	pH SU	TSS mg/l	NO2 + NO3 mg/l	P, Tot mg/l	Zn, Tot mg/l	Flow MGD	LC50 Daphnia % Effl	LC50 Minnows % Effl
Reference	5.5 to 9	250	0.68	2	0.161	Report	100	100
01/31/2010	7.2	38	0.255	0.079	0.119	0.038	100	100
07/31/2010	8.3	13	0.125	0.052	0.043	0.176	100	100
01/31/2011	6.93	35	0.633	***0.118***	**0.341**	0.015	40.6	100
07/31/2011	7.1	8	0.421	***0.286***	0.075	0.043	100	100
01/31/2012	7.6	76	0.103	0.096	**0.176**	0.025	100	100
07/31/2012	7.7	2	**0.851**	***0.142***	0.082	0.11	100	100
01/31/2013	6	6	0.136	0.051	0.048	0.069	100	100
Average		25	0.361	0.118	0.1263	0.068		

SW3								
DMR Date	pH SU	TSS mg/l	NO2 + NO3 mg/l	P, Tot mg/l	Zn, Tot mg/l	Flow MGD	LC50 Daphnia % Effl	LC50 Minnows % Effl
Reference	6 to 9	150	0.68	2	0.161	Report	100	100
01/31/2010	7.2	5	0.213	0.050	0.038	0.006	100	100
07/31/2010	7.8	35	0.150	0.089	0.057	0.027	100	100
01/31/2011	7.99	142	0.460	0.084	**0.171**	0.031	100	100
07/31/2011	7.1	77	0.431	***0.266***	0.114	0.007	100	100
01/31/2012	6.6	12	0.203	***0.242***	0.089	0.004	100	100
07/31/2012	7.77	6	0.356	0.086	0.059	0.017	100	100
01/31/2013	6	12	0.213	***0.148***	0.065	0.011	100	100
Average		41	0.289	0.138	0.085	0.015		

SW4						
DMR Date	pH SU	Bromide mg/l	NO2 + NO3 mg/l	P, Tot mg/l	Zn, Tot mg/l	Flow MGD
	6 to 9	Report	0.68	2	0.161	Report
01/31/2010	7.6	1.410	0.395	***0.380***	0.079	0.050
07/31/2010	7.6	0.247	0.178	***0.243***	0.078	0.231
01/31/2011	7.76	0.219	0.255	***0.167***	**0.168**	0.020
07/31/2011	7.2	0.200	0.529	***0.510***	0.052	0.057
01/31/2012	7.1	6.030	0.582	**2.940**	0.140	0.032
07/31/2012	7.51	0.645	0.234	***0.861***	0.042	0.145
01/31/2013	6	0.200	0.366	***0.427***	**0.179**	0.090
Average		1.279	0.363	0.790	0.105	0.089

APPENDIX 4

NEW PERMIT LIMITS

External Outfall SW1
Monitoring: Effluent Gross
Season : All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Carbon, Total Organic (TOC)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Flow	Report	-	Mgal/d	Estimate	Semiannual	Daily Maximum
LC50 Static 48Hr Acute Ceriodaphnia (in 100% effluent) *	Report	-	%	Grab	Semiannual	Minimum
LC50 Static 48Hr Acute Pimephales (in 100% effluent) *	Report	-	%	Grab	Semiannual	Minimum
Nitrite plus nitrate total 1 det. (as N)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Total Suspended Solids (TSS)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Zinc, total (as Zn)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
pH	Report	-	SU	Grab	Semiannual	Minimum
pH	Report	-	SU	Grab	Semiannual	Maximum

* See Permit sub-part III E for sampling and analytical protocol.

External Outfall SW2
Monitoring: Effluent Gross
Season : All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Flow	Report	-	Mgal/d	Estimate	Semiannual	Daily Maximum
LC50 Static 48Hr Acute Ceriodaphnia (in 100% effluent) *	Report	-	%	Grab	Semiannual	Minimum
LC50 Static 48Hr Acute Pimephales (in 100% effluent) *	Report	-	%	Grab	Semiannual	Minimum
Nitrite plus nitrate total 1 det. (as N)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Total Suspended Solids (TSS)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Zinc, total (as Zn)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
pH	Report	-	SU	Grab	Semiannual	Minimum
pH	Report	-	SU	Grab	Semiannual	Maximum

External Outfall: SW3
Monitoring: Effluent Gross
Season: All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Flow	Report	-	Mgal/d	Estimate	Semiannual	Daily Maximum
LC50 Static 48Hr Acute Ceriodaphnia (in 100% effluent) *	Report	-	%	Grab	Annual	Minimum
LC50 Static 48Hr Acute Pimephales (in 100% effluent) *	Report	-	%	Grab	Annual	Minimum
Nitrite plus nitrate total 1 det. (as N)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Total Suspended Solids (TSS)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Zinc, total (as Zn)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
pH	Report	-	SU	Estimate	Semiannual	Minimum
pH	Report	-	SU	Estimate	Semiannual	Maximum

* See Permit sub-part III E for sampling and analytical protocol.

External Outfall: SW4

Monitoring: Effluent Gross
Season: All Year

Parameter	Qualifier	Value	Unit	Sample Type	Frequency	Statistical Base
Bromide (as Br)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Flow	Report	-	Mgal/d	Estimate	Semiannual	Daily Maximum
LC50 Static 48Hr Acute Ceriodaphnia (in 100% effluent) *	Report	-	%	Grab	See Permit	Minimum
LC50 Static 48Hr Acute Pimephales (in 100% effluent) *	Report	-	%	Grab	See Permit	Minimum
Nitrite plus nitrate total 1 det. (as N)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Phosphorus, total (as P)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
Zinc, total (as Zn)	Report	-	mg/L	Grab	Semiannual	Daily Maximum
pH	Report	-	SU	Grab	Semiannual	Maximum
pH	Report	-	SU	Grab	Semiannual	Minimum

* See Permit sub-part III E for sampling and analytical protocol.

Note: Toxicity sampling and testing for SW4 should be conducted during the first sampling period. If no toxicity results from the test, monitoring may be discontinued. If toxicity is indicated (<100%), monitoring must be conducted semi-annually for the remainder of the permit term.

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