## NPDES PERMIT

**issued to**

Algonquin Industries, Inc.
129 Soundview Road
Guilford, CT 06437

**Location Address**

129 Soundview Road
Guilford, CT 06437

**Facility ID:** 060-082 **Permit ID:** CT0028100

**Receiving Stream:** **East Creek** **Permit Expires:** March 8, 2011

### SECTION 1: GENERAL PROVISIONS

(A) This permit is reissued in accordance with section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and section 402(b) of the Clean Water Act, as amended, 33 USC 1251, et. seq., and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer an N.P.D.E.S. permit program.

(B) Algonquin Industries, Inc., ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(10)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of section 22a-430-3.

section 22a-430-3 General Conditions

(a)Definitions
(b)General
(c)Inspection and Entry
(d)Effect of a Permit
(e)Duty
(f)Proper Operation and Maintenance
(g)Sludge Disposal
(h)Duty to Mitigate
(i)Facility Modifications; Notification
(j)Monitoring, Records and Reporting Requirements
(k)Bypass
(l)Conditions Applicable to POTWs
(m)Effluent Limitation Violations (Upsets)
(n)Enforcement
(o)Resource Conservation
(p)Spill Prevention and Control
(q)Instrumentation, Alarms, Flow Recorders
(r)Equalization

section 22a-430-4 Procedures and Criteria

(a)Duty to Apply
(b)Duty to Reapply
(c)Application Requirements
(d)Preliminary Review
(e)Tentative Determination
(f)Draft Permits, Fact Sheets
(g)Public Notice, Notice of Hearing
(h)Public Comments
(i)Final Determination
(j)Public Hearings
(k)Submission of Plans and Specifications. Approval.
(l)Establishing Effluent Limitations and Conditions
(m)Case by Case Determinations
(n)Permit issuance or renewal
(o)Permit Transfer
(p)Permit revocation, denial or modification
(q)Variances
(r)Secondary Treatment Requirements
(s)Treatment Requirements for Metals and Cyanide
(t)Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the permittee to enforcement action including, but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.

(D) Any false statement in any information submitted pursuant to this section of the permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157b of the CGS.

(E) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner. To request such approval, the permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.

(F) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the permittee pursuant to this permit will result in compliance, prevent, or abate pollution.

(G) Nothing in this permit shall relieve the permittee of other obligations under applicable federal, state and local law.

(H) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the Regulations of Connecticut State Agencies.

(I) This permitted discharge is consistent with the applicable goals and policies of the Connecticut Coastal Management Act (section 22a-92 of the Connecticut General Statutes).

**SECTION 2: DEFINITIONS**

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and section 22a-430-3(a) and 22a-430-6 of the RCSA, except for "No observable acute effect level (NOAEL)" which is redefined below.

(B) In addition to the above, the following definitions shall apply to this permit:

"-----" in the limits column on the monitoring table means a limit is not specified but a value must be reported on the DMR.

"Critical Test Concentration (CTC)" means the specified effluent dilution at which the permittee is to conduct a single-concentration Aquatic Toxicity test.

"Instantaneous Limit" means the highest allowable concentration of a substance as measured by a grab sample, or the highest allowable measurement of a parameter as obtained through instantaneous monitoring.

"In stream Waste Concentration (IWC)" means the concentration of a discharge in the receiving water after mixing has occurred in the allocated zone of influence.

"Maximum Daily Limit", means the maximum allowable "Daily Concentration" (defined above) when expressed as a concentration (e.g. mg/l); otherwise, it means the maximum allowable "Daily Quantity" as defined above, unless it is expressed as a flow quantity. If expressed as a flow quantity it means "Maximum Daily Flow" as defined in section 22a-430-3(a) of the RCSA.

"No Observable Acute Effect Level (NOAEL)" means any concentration equal to or less than the critical test concentration in a single concentration (pass/fail) toxicity test conducted pursuant to section 22a-430-3(j)(7)(A)(i) RCSA demonstrating greater than 50% survival of test organisms in 100% (undiluted) effluent and 90% or greater survival of test organisms at the CTC.

"Quarterly", in the context of a sampling frequency, means sampling is required in the months of January, April, July and October.

"ug/l" means micrograms per liter.

**SECTION 3: COMMISSIONER'S DECISION**

(A) The Commissioner of Environmental Protection ("Commissioner") has issued a final decision and found that continuance of the existing system to treat the discharge will protect the waters of the state from pollution. The Commissioner's decision is based on **application #200203749** for permit reissuance, received on September 26, 2002 and the administrative record established in the processing of that application.

(B) The Commissioner hereby authorizes the Permittee to discharge in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with, this permit.

(C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or CGS or regulations adopted thereunder which are then applicable.

**SECTION 4: GENERAL EFFLUENT LIMITATIONS**

(A) No discharge shall contain, or cause in the receiving stream, a visible oil sheen or floating solids; or, cause visible discoloration or foaming in the receiving stream.

(B) No discharge shall cause acute or chronic toxicity in the receiving water body beyond any zone of influence specifically allocated to that discharge in this permit.

(C) The temperature of any discharge shall not increase the temperature of the receiving stream above 85°F, or, in any case, raise the normal temperature of the receiving stream more than 4°F. The incremental temperature increase in coastal and marine waters is limited to 1.5°F during the period including July, August and September.

**SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

(A) The discharge shall not exceed and shall otherwise conform to the specific terms and conditions listed below. The discharge is restricted by, and shall be monitored in accordance with, the table below:

## Table A

| | |
|---|---|
| Discharge Serial Number (DSN): 001 | Monitoring Location: 1 |
| Wastewater Description: Treated contaminated groundwater. | |
| Monitoring Location Description: Outlet from treatment system following carbon filtration | |
| Allocated Zone of Influence (ZOI): 5,385 gph | In stream Waste Concentration (IWC): 25.0 % |

| PARAMETER | UNITS | FLOW/TIME BASED MONITORING | | | | INSTANTANEOUS MONITORING | | | Minimum Level Test[3] |
|---|---|---|---|---|---|---|---|---|---|
| | | Average Monthly Limit | Maximum Daily Limit | Sample/Reporting Frequency [2] | Sample Type or Measurement to be reported [5] | Instantaneous limit or required range | Sample// Reporting Frequency | Sample Type or measurement to be reported | |
| Aquatic Toxicity, M. bahia [4] | % | NA | NA | NR | NA | NOAEL>100% | Quarterly | Grab | |
| Aquatic Toxicity, M. beryllina [4] | % | NA | NA | NR | NA | NOAEL>100% | Quarterly | Grab | |
| Benzene | ug/l | NA | NA | NR | NA | 1.0 | Monthly | Grab | * |
| Copper | ug/l | NA | NA | NR | NA | --- | Quarterly | Grab | * |
| Flow, Day of Sampling | gpd | NA | 43,200 | Monthly | Daily Flow | NA | NR | NA | |
| Flow, Average and Maximum [1] | gpd | 33,230 | 43,200 | Daily/Monthly | See remarks | NA | NR | NA | |
| 1,1 Dichloroethylene | ug/l | NA | NA | NR | NA | 2.0 | Monthly | Grab | * |
| Methylene Chloride | ug/l | NA | NA | NR | NA | 5.0 | Monthly | Grab | * |
| pH, Day of Sampling | S.U. | NA | NA | NR | NA | 6.0-9.0 | Monthly | Grab | |
| Temperature ($^{o}$F) | | NA | NA | NR | NA | See Section 4: (C) | Monthly | Grab | |
| Tetrachloroethylene | ug/l | NA | NA | NR | NA | 5.0 | Monthly | Grab | * |
| 1,1,1- Trichloroethane | ug/l | NA | NA | NR | NA | 36.0 | Monthly | Grab | * |
| Trichloroethylene | ug/l | NA | NA | NR | NA | 5.0 | Monthly | Grab | * |

Table Footnotes and Remarks:
Footnotes:
1 For this parameter the permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the Average Daily Flow and Maximum Daily Flow for each sample month.

2 The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'

3 Minimum Level Test refers to Section 6:(A)(3) of this permit.

4 The results of the Toxicity Tests are recorded in % survival, however, the permittee shall report pass/fail on the DMR based on criteria in Section 6(B) of this permit.

(1) All samples shall be comprised of only the wastewater described in this table. Samples shall be collected prior to combination with receiving waters or wastewater of any other type, and after all approved treatment units, if applicable. All samples collected shall be representative of the discharge during standard operating conditions.

(2) In cases where limits and sample type are specified but sampling is not required by this permit, the limits specified shall apply to all samples, which may be collected and analyzed by the Department of Environmental Protection personnel, the permittee, or other parties.

(3) The limits imposed on the discharges listed in this permit take effect on the issuance date of this permit, hence any sample taken after this date which, upon analysis, shows an exceedance of permit limits will be considered non-compliance.

The monitoring requirements begin on the date of issuance of this permit if the issuance date is on or before the 12th day of a month. For permits issued on or after the 13th day of a month, monitoring requirements begin the 1st day of the following month.

## SECTION 6: SAMPLE COLLECTION, HANDLING and ANALYTICAL TECHNIQUES

(A) Chemical Analysis

(1) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall be performed using the methods approved pursuant to the Code of Federal Regulations, Part 136 of title 40 (40 CFR 136) unless an alternative method has been approved in writing pursuant to 40 CFR 136.4 or as provided in section 22a-430-3(j)(7) of the RCSA. Chemicals which do not have methods of analysis defined in 40 CFR 136 shall be analyzed in accordance with methods specified in this permit.

(2) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40 CFR 136 unless otherwise specified.

(3) The Minimum Levels specified below represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the parameters identified in Section 5 Table A. Analyses for these parameters must include check standards within ten percent of the specified Minimum Level or calibration points equal to or less than the specified Minimum Level.

| Parameter | Minimum Level |
|---|---|
| Benzene | 1.0 ug/L |
| Copper | 5.0 ug/L |
| 1,1 Dichloroethylene | 1.0 ug/L |
| Methylene Chloride | 1.0 ug/L |
| Tetrachloroethylene | 1.0 ug/L |
| 1,1,1- Trichloroethane | 1.0 ug/L |
| Trichloroethylene | 1.0 ug/L |

(4) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible consistent with the requirements of this section of the permit.

(5) Effluent analyses for which quantification was verified during the analysis at or below the minimum levels specified in this section and which indicate that a parameter was not detected

shall be reported as "less than x" where 'x' is the numerical value equivalent to the analytical method detection limit for that analysis.

(6) Results of effluent analyses which indicate that a parameter was not present at a concentration greater than or equal to the Minimum Level specified for that analysis shall be considered equivalent to zero (0.0) for purposes of determining compliance with effluent limitations or conditions specified in this permit.

(7) The analytical method used to determine the concentration of volatile organic compounds (VOCs) shall be EPA method 624.

(B) Aquatic Toxicity Test

(1) Samples for monitoring of Aquatic Toxicity shall be collected and handled as prescribed in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012).

(a) Composite samples shall be chilled, as they are collected. Grab samples shall be chilled immediately following collection. Samples shall be held at 4 degrees Centigrade until Aquatic Toxicity testing is initiated.

(b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for Aquatic Toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility.

(c) Chemical analyses of the parameters identified in Section 5 Table A shall be conducted on an aliquot of the same sample tested for Aquatic Toxicity.

(i) At a minimum, pH, specific conductance, salinity, total alkalinity, total hardness, and total residual Oxidants shall be measured in the effluent sample and, during Aquatic Toxicity tests, in the highest concentration of test solution and in the dilution (control) water at the beginning of the test and at test termination. If Total Residual Oxidants is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, salinity, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination.

(d) Tests for Aquatic Toxicity shall be initiated within 24 hours of sample collection.

(2) Monitoring for Aquatic Toxicity to determine compliance with the permit limit on Aquatic Toxicity (invertebrate) in Table A above shall be conducted for 48-hours utilizing neonatal Mysidopsis bahia (1-5 days old with no more than 24- hours range in age).

(3) Monitoring for Aquatic Toxicity to determine compliance with the permit limit on Aquatic Toxicity (vertebrate) in Table A above shall be conducted for 48-hours utilizing larval Menidia beryllina (9-14 days old with no more than 24-hours range in age).

(4) Tests for Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below.

(a) For Aquatic Toxicity Limit, expressed as an NOAEL value, Pass/Fail (single-concentration) tests shall be conducted at a specified Critical Test Concentration (CTC) equal to the Aquatic

Toxicity Limit or 100% as prescribed in section 22A-430-3(j)(7)(A)(i) of the Regulations of Connecticut State Agencies.

(b) Mysidopsis bahia be fed during the tests.

(c) Aquatic toxicity tests with saltwater organisms shall be conducted at a salinity of 20 parts per thousand, plus or minus 2 parts per thousand.

(i) Sodium lauryl sulfate or sodium dodecyl sulfate shall be used as the reference toxicant.

(ii) Synthetic seawater for use as dilution water or controls shall be prepared with deionized water and artificial sea salts as described in EPA/821-R-02-012.

(iii) If the salinity of the source water is more that 5 parts per thousand higher, or lower than the culture water used for rearing the organisms, a second set of controls matching the salinity of the culture water shall be added to the test series. Test validity shall be determined using the controls adjusted to match the source water salinity.

(5) Compliance with limits on Aquatic Toxicity shall be determined as follows:

(a) For limits expressed as an NOAEL value, compliance shall be demonstrated when the results of a valid pass/fail Aquatic Toxicity test indicates there is greater or equal than 90% or equal to survival in the undiluted effluent.

(C) The Permittee shall monitor the chronic toxicity of discharge DSN001-1 in accordance with the following specifications.

(1) Chronic toxicity testing of the discharge shall be conducted annually during July, August, or September of each year.

(2) Chronic toxicity testing shall be performed on the discharge in accordance with the test methodology established in "Short term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine" (EPA-821-R-02-014) as referenced in 40CFR 136 for Mysidopsis bahia survival growth and fecundity and Menidia beryllina survival growth.

(3) Chronic toxicity tests shall utilize a minimum of five effluent dilutions prepared using a dilution factor of 0.5 (100% effluent, 50% effluent, 25 % effluent, 12.5 % effluent, 6.25 % effluent, 0 % effluent).

(4) East Creek water collected immediately upstream of the area influenced by the discharge shall be used as site water control (0% effluent) and dilution water in the toxicity tests.

(5) A laboratory water control consisting of synthetic saltwater prepared in accordance with EPA-821-R- 02-014 at a salinity of 20 ± 2 ppt shall be included in the test protocol in addition to the site-water control.

(6) Grab samples of the effluent East Creek for use as site water control and dilution water shall be collected on: day 0, for test solution renewal on day 1 and day 2 of the test; day 2, for test solution renewal on day 3 and day 4 of the test; and day 4, for test solution renewal on day 5, 6, and 7 of

the test. Effluent samples may be adjusted to a salinity of 20 ± 2 ppt using artificial salts. Effluent samples shall not be dechlorinated, pH or hardness adjusted, or chemically altered in any other way.

(7) All samples of the discharge and the East Creek water used in the chronic toxicity test shall, at a minimum, be analyzed and results reported in accordance with the provisions listed in section 6(A) of this permit for the following parameters:

| | |
|---|---|
| Alkalinity | Nitrogen, Ammonia (total as N) |
| Benzene | Nitrogen, Nitrate (Total as N) |
| Oxidant, (Total residual) | pH |
| Conductivity | Solids, Total Suspended |
| Copper (Total recoverable and dissolved) | Tetrachloroethylene |
| 1,1 Dichloroethylene | 1,1,1- Trichloroethane |
| Hardness | Trichloroethylene |
| Methylene Chloride | Zinc, (Total recoverable and dissolved) |
| Nickel (Total recoverable and dissolved) | Salinity |

| **TABLE HH**<br>**Testing Protocol DSN 001-1 Mysidopsis bahia 7-day chronic tests.** | |
|---|---|
| Testing procedure | Chronic: EPA 821-R-02-014, except as modified below. |
| Test type | Static with daily renewal. |
| | |

| | |
|---|---|
| Salinity | Greater than or equal to 20 ± 2 ppt; Effluent (DSN001-1) water, dilution water (East Creek) and lab control water |
| Temperature | $26^{O}C \pm 1$ |
| Light | Ambient laboratory illumination |
| Photoperiod | 16-h light, 8-h dark |
| Test chamber type | Glass or plastic (250 – 400 mLs capacity) |
| Test solution volume | 200 mL per replicate |
| Test solution renewal | Daily |
| Age of test organism | 7 days old |
| No. of test organisms | 5 per replicate test chamber |
| Replicates | 8 per concentration (100 %, 50 %, 25 %, 12.5 %, 6.5%), 8- lab control water, 8-dilution water |
| Source of food | Newly hatched (less than 24-h old) brine shrimp nauplii. Concentrate brine shrimp nauplii with a ≤ 150 um sieve mesh and rinse with seawater. |
| Feeding regime | About 150 brine shrimp nauplii per mysid twice per day (about three drops). Feed after test solution renewal. |
| Cleaning test chambers | Siphon excess food prior to test solution renewal. |
| Aeration | None, unless DO falls below 4.0 mg/l, then gently aerate all chambers |
| Control/Dilution water | Laboratory control and East Creek water, grab samples, three separate collections: collected on day 0, day 2, and day 4. |
| Effluent | Grab sample collected at DSN001-1. Three separate grab collections. Samples must be collected on day 0, day 2, and day 4. |
| Test duration | Chronic: 7 days |
| Endpoint | Chronic: Survival, growth and egg development |
| Test acceptability criteria | 80% survival (averaged) in controls after 7 days. A minimum average dry weight of 0.2 mg per surviving mysid. Fecundity may be used if 50% of the females in controls produce eggs. |
| Mortality observations | Each test chamber is examined for mortality at 24-h intervals. Dead individuals are removed and if any individuals are missing (via cannibalism), they are noted. |
| Physical- chemical measurements of solutions in test chambers | DO, temperature, salinity and pH of the effluent and control test solutions are measured at the beginning, at 24-h intervals and at test termination. These parameters are measured prior to and after test solution renewals. At the end of the chronic test, after the number of live individuals has been determined, measure DO, temperature, salinity and pH in all effluent and control test chambers. |

| | |
|---|---|
| Physical-chemical measurements of grab effluent sample and control grab sample. | The following parameters are measured in each grab sample of DSN001-1and each grab sample collected from the East Creek salinity, pH, total residual oxidant, ammonia as N, nitrate and nitrite nitrogen, total and dissolved copper, total and dissolved lead, total and dissolved nickel, total and dissolved zinc, total suspended solids, benzene, 1,1 dichloroethylene, methylene chloride, tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane. |
| Reference toxicant | Sodium dodecyl sulfate. |

| **TABLE II:** **Testing Protocol DSN001-1 Meridia beryllina 7-day chronic tests.** | |
|---|---|
| Testing procedure | Chronic: EPA 821-R-02-014, except as modified below. |
| Test type | Static with daily renewal. |
| Salinity | Greater than or equal to 20 ppt; Effluent (DSN001-1) water, dilution water (East Creek) and lab control water |
| Temperature | $26^{O}C \pm 1$ |
| Light | Ambient laboratory illumination |
| Photoperiod | 16-h light, 8-h dark |
| Test chamber type | Glass or plastic ( 1000 mLs capacity) |
| Test solution volume | 750 mL per replicate |
| Test solution renewal | Daily |
| Age of test organism | 7- 11 days old (no more than 24 hrs between) |
| No. of test organisms | 10 per replicate test chamber |
| Replicates | 4 per concentration (100 %, 50 %, 25 %, 12.5 %, 6.5%), 4-dilution water, 4-lab control water. |
| Source of food | Newly hatched (less than 24-h old) brine shrimp nauplii. Concentrate brine shrimp nauplii with a $\leq$ 150 um sieve mesh and rinse with seawater. |
| Feeding regime | Feed once a day concentrated brine shrimp at a rate per replicate of 0.1 mL (2 drops) on days 0-2 and 0.15 mL (3 drops) on days 3–6. Feed after test solution renewal. |
| Cleaning test chambers | Siphon excess food prior to test solution renewal. |
| Aeration | None, unless DO falls below 4.0 mg/l, then gently aerate all chambers |
| Control/Dilution water | Laboratory control and East Creek water, grab samples, three separate collections: collected on day 0, day 2, and day 4. |
| Effluent | Grab samples collected at (DSN001-1). Three separate grab collections. Samples must be collected on day 0, day 2, and day 4. |
| Test duration | Chronic: 7 days |
| Endpoint | Chronic: Survival, growth |
| Test acceptability criteria | 80% survival (averaged) in controls after 7 days. A minimum average dry weight of 0.50 mg per organism in controls is required. |

| | |
|---|---|
| Mortality observations | Each test chamber is examined for mortality at 24-h intervals. Dead individuals are removed and if any individuals are missing, they are noted. |
| Physical- chemical measurements of solutions in test chambers | DO, temperature, salinity and pH of the effluent and control test solutions are measured at the beginning, at 24-h intervals and at test termination. These parameters are measured prior to and after test solution renewals. At the end of the chronic test, after the number of live individuals has been determined, measure DO, temperature, salinity and pH in all effluent and control test chambers |
| Physical-chemical measurements of grab effluent sample and control grab sample. | The following parameters are measured in each grab sample of DSN001-1and each grab sample collected from the East Creek salinity, pH, total residual oxidant, ammonia as N, nitrate and nitrite nitrogen, total and dissolved copper, total and dissolved lead, total and dissolved nickel, total and dissolved zinc, total suspended solids, benzene, 1,1 dichloroethylene, methylene chloride, tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane |
| Reference toxicant | Sodium dodecyl sulfate. |

**SECTION 7: REPORTING REQUIREMENTS**

(A) The results of chemical analyses and any aquatic toxicity test required above shall be entered on the Discharge Monitoring Report (DMR), provided by this office, and reported to the Bureau of Water Management (Attn: DMR Processing) at the following address. The report shall also include a detailed explanation of any violations of the limitations specified. The DMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Water Management (Attn: DMR Processing)
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(B) Complete an accurate aquatic toxicity test data, including percent survival of test organisms in each replicate test chamber, LC50 values and 95% confidence intervals for definitive test protocols, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test, including measured daily flow and hours of operation for the 30 days of sample collection, shall be entered on the Aquatic Toxicity Report form (ATMR) and sent to the Bureau of Water Management at this address by the last day of the month following the month in which samples are collected.

Bureau of Water Management (Attn: Aquatic Toxicity)
Connecticut Department of Environmental Protection
79 Elm St.
Hartford, CT 06106-5127

(C) If this permit requires monitoring of a discharge on a calendar basis (e.g. Monthly, quarterly, etc.), but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR and ATMR, as scheduled, indicating "NO DISCHARGE". For those permittees whose required monitoring is discharge dependent (e.g. per batch), the minimum reporting frequency is monthly. Therefore, if there is no discharge during a calendar month for a batch discharge, a DMR must be

submitted indicating such by the end of the following month.

(D) A complete and thorough report of the results of the chronic toxicity monitoring specified in Section 6 shall be prepared as outlined in section 10 of EPA-821-R-02-012 and submitted to the Department for review within 60 days of test completion to the address specified in Section 7(B) of this permit.

## SECTION 8: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS

(A) If any sample analysis indicates that an Aquatic Toxicity effluent limitation in Section 5 of this permit has been exceeded Toxicity, or that the test was invalid, a second sample of the effluent shall be collected and tested for Aquatic Toxicity and associated chemical parameters, as described above in Section 5 and Section 6, and the results reported to the Bureau of Water Management (Attn: DMR Processing), at the address listed above, within 30 days of the exceedance or invalid test. Results of all tests, whether valid or invalid, shall be reported.

(B) If any two consecutive test results or any three test results in a twelve month period indicates that an Aquatic Toxicity Limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report to Bureau of Water Management (Attn: Aquatic Toxicity) for the review and approval of the Commissioner in accordance with section 22a-430-3(j)(10)(c) of the RCSA describing proposed steps to eliminate the toxic impact of the discharge on the receiving water body. Such a report shall include a proposed time schedule to accomplish toxicity reduction and the permittee shall comply with any schedule approved by the Commissioner.

(C) The Permittee shall notify the Bureau of Water Management, Permitting and Enforcement Division, within 72 hours and in writing within thirty days of the discharge of any substance listed in the application but not listed in the permit if the concentration or quantity of that substance exceeds two times the level listed in the application.

(D) The Permittee shall notify the Department of Agriculture, Bureau of Aquaculture and Laboratory at the address listed below, within 72 hours and in writing within thirty days of any permit limit exceedance.

Bureau of Aquaculture and Laboratory (Attn: James Citak, Environmental Analyst III)

Department of Agriculture
P.O. Box 97- 190 Rogers Avenue
Milford, CT 06460
Phone: (203) 874-0696

This permit is hereby issued on 3/9/06.

GINA MCCARTHY
Gina McCarthy
Commissioner

GM/EB

# *DATA TRACKING AND TECHNICAL FACT SHEET*

***Permittee : Algonquin Industries, Inc.*** ***PAMS Company ID: 33807***

***PERMIT, ADDRESS, AND FACILITY DATA***

***PERMIT #: CT0028100*** ***APPLICATION #: 200203749*** ***FACILITY ID: 060-082***

| | |
|---|---|
| ***Mailing Address:*** | ***Location Address:*** |
| ***Street: 129 Soundview Road*** | ***Street: 129 Soundview Road*** |
| ***City: Guilford ST: CT Zip: 06437*** | ***City: Guilford ST CT Zip: 06437*** |
| ***Contact Name: Greg Jankura*** | ***DMR Contact Greg Jankura*** |
| ***Phone No.: (203) 453-4348*** | ***Phone No.: (203) 453-4348*** |

***PERMIT INFORMATION***

***DURATION*** ***5 YEAR X*** ***10 YEAR ___*** ***30 YEAR ___***

***TYPE*** ***New _*** ***Reissuance X*** ***Modification ___***

***CATEGORIZATION*** ***POINT (X)*** ***NON-POINT ( )*** ***GIS # ___***

***NPDES (X)*** ***PRETREAT ()*** ***GROUND WATER (UIC) ( )*** ***GROUND WATER (OTHER) ( )***

***NPDES MAJOR (MA) ___***
***NPDES SIGNIFICANT MINOR or PRETREAT SIU (SI) X***
***NPDES or PRETREATMENT MINOR (MI)***

***PRETREAT SIGNIFICANT INDUS USER (SIU)___***
***PRETREAT CATEGORICAL (CIU) ___***
***Note: If it is a CIU then check off SIU***

***POLLUTION PREVENTION MANDATE*** ***ENVIRONMENTAL EQUITY ISSUE***

***COMPLIANCE ISSUES***

***COMPLIANCE SCHEDULE*** ***YES*** ***NO X*** ***(If yes check off what it is in relation to.)***

*POLLUTION PREVENTION* *TREATMENT REQUIREMENT* *WATER CONSERVATION*

*WATER QUALITY REQUIREMENT* *REMEDIATION* *OTHER*

*IS THE PERMITTEE SUBJECT TO A PENDING ENFORCEMENT ACTION? NO X YES*

*OWNERSHIP CODE*

*Private X* *Federal __* *State __* *Municipal (town only) __* *Other public __*

*DEP STAFF ENGINEER Enna Brown*

*PERMIT FEES*

| *Discharge Code* | *DSN Number* | *Annual Fee* |
|---|---|---|
| *1090000* | *001-1* | *$ 4,087.5* |

*FOR NPDES DISCHARGES*

*Drainage basin Code: 5109* *Present/Future Water Quality Standard: B/A*

*NATURE OF BUSINESS GENERATING DISCHARGE*

*Groundwater remediation system to remove halogenated and aromatic volatile organic compounds.*

*PROCESS AND TREATMENT DESCRIPTION (by DSN)*

*DSN 001-1Contaminated groundwater is pumped from two recovery wells to a settling tank and aerated by two air strippers in series to remove halogenated and aromatic VOC's. The groundwater then passes through two activated carbon filters prior to being discharged.*

*RESOURCES USED TO DRAFT PERMIT*

- *X* *Department File Information*
- *X* *Connecticut Water Quality Standards*
- *X* *Coastal Management Consistency Review Form*
- *X* *Other - Explain*

*BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS*

- *X* *Best Available Technology (BAT)*
- *X* *Best Professional Judgment (See Other Comments)*

_X_ *Case-by-Case Determination (See Other Comments)*

_X_ *In order to meet in-stream water quality (See General Comments)*
*All monitoring was based on BAT using BPJ on a case by case basis*

***GENERAL COMMENTS***

*Water quality based discharge limitations were included in this permit for consistency with Connecticut Water Quality Standards and criteria, pursuant to 40 CFR 122.44(d) and best professional judgment. Each parameter was evaluated for consistency with the available aquatic life criteria (acute and chronic) and human health (fish consumption only) criteria, considering the zone of influence allocated to the facility where appropriate. The statistical procedures outlined in the EPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) were employed to calculate the limits. The most restrictive of the water quality limitations, aquatic life acute, aquatic life chronic, and human health (water and organisms), and anti-backsliding, was used in calculating the maximum instantaneous concentration limits. The governing criteria for each parameter are as follows:*

| | |
|---|---|
| *Benzene* | *anti-backsliding* |
| *1,1 Dichloroethylene* | *human health (water and organisms)* |
| *Methylene Chloride* | *anti-backsliding* |
| *Tetrachloroethylene* | *anti-backsliding* |
| *1,1,1- Trichloroethane* | *aquatic toxicity (chronic)* |
| *Trichloroethylene* | *anti-backsliding* |

***OTHER COMMENTS***

*The Bureau of Water Management issued an administrative Order No. WC 4658 on March 3, 1988. The order required the permittee to take remedial actions to minimize or eliminate the contamination resulting from a 1,1,1 Trichloroethane spill at 129 Soundview Road, Guilford, CT. Since groundwater protection criteria have not been met, remediation efforts will have to continue until these criteria are achieved at an acceptable level of clean up.*

*According to the information provided by the permittee in the application, the treated wastewater discharges into East Creek. The zone of influence allocated for this discharge into East Creek is 5,385 gph, which represents the full 7Q10 flow for this water body. The 7Q10 flow was calculated using stratified drift and glacial till equation provided by the U.S Geological survey for this particular location.*

*Due to the salinity of the receiving stream, the toxicity test species were changed to saltwater organisms, and an annual chronic test was added because of high Instream Waste Concentration (IWC). The sampling analysis submitted as part of the permit application for DSN 001-1 indicated that copper is present. Therefore, a quarterly monitoring requirement for this parameter is recommended in the permit.*

*Additionally, as part of the groundwater remediation project, which included the laying of temporary piping through the tidal wetlands to the discharge point, a structures and dredging permit was required for the installation of pipes through the tidal wetlands to a channel. Therefore, the Office of Long Island Sound Programs (OLISP) issued a permit (No. TWSD-KM-90-117) on July 10, 1992 to conduct regulated activities in the tidal, coastal or navigable waters in East Creek off their property located at 129 Soundview Road in Guilford. According to the terms and conditions of the OLISP permit, shellfish testing was to be conducted twice a year consistent with an approval from OLISP. Shellfish closest to the proposed discharge outfall pipe were to be analyzed for 1,1,1 trichloroethane and other solvent contaminants. Algonquin conducted this shellfish monitoring from 1995-1998. An evaluation of these monitoring reports performed by Department of Agriculture Aquaculture Division indicated that Algonquin has met this sampling requirement and there is no need to continue such monitoring in the future. However, the Department of Agriculture has requested that the permittee notify them if there is a permit limit exceedance. The notification requirement has been specified in section 8:(D) of this permit.*