



## **Request for Proposals No. 23-024**

### **Dewatering Polymer Supply for Greater Nanaimo Pollution Control Centre**

**Issue Date:** May 15, 2023

**CLOSING DATE AND TIME:**

Proposals are requested to be received at the Closing Location on or before:  
**3:00 PM (15:00 hrs) Pacific Time on June 6, 2023**

**Regional District of Nanaimo (RDN) Contact for Questions:**

Adrian Limpus  
Engineering Technologist, Wastewater Services  
Email: [alimpus@rdn.bc.ca](mailto:alimpus@rdn.bc.ca)

**To schedule a Jar Test, please contact:**

Date: May 15 to June 1, 2023  
Location: Greater Nanaimo Pollution Control Centre  
Contact: Craig Hoover, GNPCC Chief Operator  
[choover@rdn.bc.ca](mailto:choover@rdn.bc.ca)

**Jar Testing of polymers is mandatory prior to submission  
Test Results must be attached to submission**

Questions should be received at least three (3) business days before the  
closing date.

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## 1. Introduction

### 1.1 Invitation to Polymer Suppliers

The Regional District of Nanaimo is interested in procuring dewatering polymer for use in the treatment of wastewater at Greater Nanaimo Pollution Control Centre.

Greater Nanaimo Pollution Control Centre (GNPCC) treats wastewater from Nanaimo, Lantzville, and the Snuneymuxw First Nation. GNPCC was recently upgraded from primary to secondary treatment. The primary treatment process uses sedimentation tanks. The secondary process is an activated sludge process with bioreactors and secondary clarifiers using Modified Lutzack Ettinger (MLE) process to enhance ammonia removal.

### 1.1 Mandatory Jar Testing

**Jar testing of the polymers at Greater Nanaimo Pollution Centre is mandatory PRIOR to submitting a proposal. Test Results must be attached to submission**

Jar testing will be scheduled with:

Craig Hoover  
GNPCC Chief Operator  
[choover@rdn.bc.ca](mailto:choover@rdn.bc.ca)

### 1.2 Term

The contract will be for a five (5) year term. Fixed pricing is required over the first one year of the term. Annual fixed pricing for each subsequent year will be based upon mutual agreement and successful price negotiations between both parties confirmed in writing. The contract will be amended annually to reflect that year's agreed to pricing.

## 2. Instructions to Proponents

### 2.1 Closing Time

Proposals are to be received on or before the closing time of 3:00 PM (15:00 hrs), Pacific Time, June 6, 2023

By Email: With "23-024 GNPCC Dewatering Polymer" as the subject line to this email address  
[alimpus@rdn.bc.ca](mailto:alimpus@rdn.bc.ca)

## **2.2 Amendments to Proposals**

Proponents may amend their proposals prior to the closing time by sending an email to [alimpus@rdn.bc.ca](mailto:alimpus@rdn.bc.ca)

Such amendments should be signed by the authorized signatory of the Proponent.

## **2.3 Withdrawal of Proposals**

Responses may be withdrawn before the deadline upon written notice to the RDN Contact for Questions identified above.

Revisions will be accepted providing written notice is given to the RDN Contact for Questions or designate at least twenty-four (24) hours before the closing time.

## **2.4 Late Submissions**

Submissions received after the closing time will not be evaluated.

## **2.5 Agreement**

The successful Proponent agrees that by submitting a Proposal, the Proponent agrees to all the terms and conditions in this Request for Proposals.

## **2.6 Not a Tender Call**

This process is an RFP not a Tender call.

## **2.7 Contract for Services**

The successful Proponent(s) will be expected to sign a Contract for Services. The Contract for Services must be fully executed by both the RDN and successful Proponent prior to commencement to supply and delivery of this product.

The RDN's preferred Contract for Services is provided, and includes the following:

- RDN Supply Agreement (Appendix C)
- Technical Specifications and Requirements (see Section 3.0)
- 5.7 Product Performance.
- Appendix A – Submission Form
- Addenda issued (if applicable).
- Certificates of Insurance

## 3. Technical Specifications and Requirements

### 3.1 Deliverables

#### 1. General

- Products must be compatible with the RDN's existing chemical delivery and mixing equipment.
- **Polymers must have been jar tested prior to submission at Greater Nanaimo Pollution Control Centre.**
- **Jar test results must be attached to submission.** Please refer to Appendix B for a Sample Jar Test Report. Jar test results need to include optimal dose and settling time. It also is recommended to include pictures.

#### 2. Product Specifications

The polymers must meet the following minimum specifications to be considered.

- Shelf Life: Six (6) months minimum.
- Low toxicity with respect to contact with skin and eyes and to accidental ingestion or inhalation.
- Very low to no downstream environmental toxicity in biosolids and wastewater.

#### 3. Chemical Mixing and Delivery Systems

##### Dewatering Polymer

- Dry Dewatering Polymer compatible with the RDN's existing mixing equipment (Velodyne HydroMax Model: D1800F-S-3D-4C-D Dry Polymer Preparation system)
- Mixing equipment consists of a dry polymer hopper, feed auger, batch tank / mixer, batch transfer pump, polymer dosing tank, and dosing pump system (See Figure 1,2,3,4).
- Dosing pumps utilize make-up water to dose batched polymer to Alfa Laval centrifuge.
- Preferred dry polymer packaging size is in a 750kg super sac.

#### 4. Location

- Greater Nanaimo Pollution Control Centre, 4600 Hammond Bay Road, Nanaimo, BC.

#### 5. Estimated Annual Quantity

- Dewatering Polymer current use approximately 39,100 kg annually. Note consumption can vary depending on the wastewater treatment process and may be different than estimated. The RDN does not guarantee or warrant any volume of orders per year.

#### 6. Ordering and delivery

- Product ordered through email should be delivered within 14 days or receipt of order.
- Deliveries will be made between the hours of 8:30 am to 4:00 pm.

- Should there be any delay in obtaining product, the RDN reserves to secure alternative product from any source without waving or voiding the terms and conditions

### **7. Material Disclosures**

Currently, the Regional District is purchasing Dewatering polymer from Waterhouse (Wes-Floc 6816 A). Appendix B contains the Safety Datasheet for this product.

### **8. Spills**

The Proponent is responsible for cleaning up any spills in transport and when offloading the product at the RDN's facilities. The Proponent must meet all requirements of the *BC Spill Reporting Regulation*.

### **9. Transport and Delivery**

The Proponent must comply with all Workplace Hazardous Materials Information Systems (WHMIS) in terms of chemical handling and comply with Transport of Dangerous Goods Requirements (TDG) where applicable when transporting the products to the RDN's facilities.

Figure 1 – Dewatering Polymer Mixing and Chemical Delivery System



Figure 2– Dewatering Polymer Mixing and Chemical Delivery System



**Figure 3– Dewatering Polymer Mixing and Chemical Delivery System**



**Figure 4– Dewatering Polymer Mixing and Chemical Delivery System**





### 3.2 General Specifications

The work must be completed in accordance with all applicable federal, provincial, and municipal and local government laws, bylaws, regulations, codes, and standards.

The supplier is responsible for the overall management and administration for supplying the product to the RDN's facilities. Management must include the provision of competent management and administrative staff, appropriate liability insurance, permits, financing and other functions related to the contract administration.

The supplier will also comply with all statutory occupational health and safety requirements under or in connection with the *Workers Compensation Act* and *Occupational Health and Safety Regulation* in performance of the Services and the Contractor represents and warrants to the Regional District that it follows all requirements of the *Workers Compensation Act*, including with respect to registration and payment of assessments. The Contractor must also always comply with all site-specific safety and personal protective equipment (PPE) requirements.

## **4. General RFP Terms and Conditions**

### **4.1 No Contract**

By submitting a Request for Proposal and participating in the process as outlined in this RFP, proponents expressly agree that no contract of any kind is formed until a fully executed contract is in place.

### **4.2 Privilege Clause**

The lowest or any proposal may not necessarily be accepted.

### **4.3 Acceptance and Rejection of Submissions**

This RFP does not commit the RDN, in any way to select a preferred Proponent, or to proceed to negotiate a contract, or to award any contract. The RDN reserves the right in its sole discretion cancel this RFP, up until award, for any reason whatsoever

The RDN may accept or waive a minor and inconsequential irregularity, or where applicable to do so, the RDN may, as a condition of acceptance of the Submission, request a Proponent to correct a minor or inconsequential irregularity with no change in the Submission.

### **4.4 Conflict of Interest**

Proponents shall disclose in their Proposals any actual or potential Conflict of Interest and existing business relationships it may have with the RDN, its elected officials, appointed officials, or employees.

### **4.5 Solicitation of Board Members and RDN Staff**

Proponents and their agents will not contact any member of the RDN Board or RDN Staff with respect to this RFP, other than the RDN Contact named in this document.

### **4.6 Litigation Clause**

The RDN may, in its absolute discretion, reject a Proposal submitted by Proponent, if the Proponent, or any officer or director of the Proponent is or has been engaged either directly or indirectly through another corporation in legal action against the RDN, its elected or appointed officers and employees in relation to:

- (a) any other contract for works or services; or
- (b) any matter arising from the RDN's exercise of its powers, duties, or functions under the Local Government Act, Community Charter or another enactment within five years of the date of this Call for Proposals.

In determining whether to reject a Proposal under this clause, the RDN will consider whether the litigation is likely to affect the Proponent's ability to work with the RDN, its consultants and representatives and whether the RDN's experience with the Proponent indicates that the RDN is likely

to incur increased staff and legal costs in the administration of this Contract if it is awarded to the Proponent.

#### **4.7 Exclusion of Liability**

Proponents are solely responsible for their own expenses in preparing and submitting a Proposal, attending the site, accommodations, meals, travel, any meetings, providing RDN staff training, and any negotiations. The RDN will not be liable to any Proponent for any claims, whether for costs, expense, losses or damages, or loss of anticipated profits, or for any other matter whatsoever, incurred by the Proponent in preparing and submitting a Proposal, or participating in negotiations for a Contract, or other activity related to or arising out of this RFP. Except as expressly and specifically permitted in these Instructions to Proponents, no Proponent shall have any claim for compensation of any kind whatsoever, as a result of participating in this RFP, and by submitting a Proposal each Proponent shall be deemed to have agreed that it has no claim.

#### **4.8 Ownership of Proposals**

All Proposals, including attachments and any documentation, submitted to and accepted by the RDN in response to this RFP become the property of the RDN.

#### **4.9 Freedom of Information**

All submissions will be held in confidence by the RDN. The RDN is bound by the Freedom of Information and Protection of Privacy Act (British Columbia) and all documents submitted to the RDN will be subject to provisions of this legislation. The successful vendor and value of the award is routinely released.

## 5. Evaluation

### 5.1 Evaluation Process

All decisions on the degree to which the polymers recommended meet the stated evaluation criteria, compliance to Technical Specifications, and the scores assigned during the evaluations, are at the sole discretion of RDN.

Proposals submitted should be in enough detail to allow the RDN to determine the Proponent's qualifications and capabilities from the documents received. The selection committee, formed at the RDN's sole discretion, will score the Proposals in accordance with the criteria provided.

The RDN may evaluate proposals on a comparative basis by comparing one proponent's proposal to another proponent's proposal. The RDN reserves the right to not complete a detailed evaluation if the RDN concludes the proposal is materially incomplete or, irregular or contain any financial or commercial terms that are unacceptable to the RDN.

The selection committee may proceed with an award recommendation or the RDN may proceed to negotiate with the highest evaluated proponent with the intent of developing an agreement. If the parties after having bargained in good faith are unable to conclude a formal agreement, the RDN and the Proponent will be released without penalty or further obligations other than any surviving obligations regarding confidentiality and the RDN may, at its discretion, contact the Proponent of the next best rated Proposal and attempt to conclude a formal agreement with it, and so on until a contract is concluded or the proposal process is cancelled.

The RDN reserves the right to award the assignment in whole or in part or to add or delete any portion of the work. Throughout the evaluation process, the evaluation committee may seek additional clarification on any aspect of the Proposal to verify or clarify the information provided and conduct any background investigation and/or seek any additional information it considers necessary.

## 5.2 Mandatory Submission Requirements

Proposals not clearly demonstrating that they meet the following mandatory criteria will be excluded from further consideration.

Proposal must be received before the Closing Date and Time
The Proposal must be submitted on <b>Appendix A – Submission Form</b>

## 5.3 Compliance to Technical Requirements

Compliance to Technical Specifications will be assessed for each Polymer recommended:

Compliance to Technical Specifications (Section 3.0) as determined by the RDN in its sole discretion	Pass/Fail
Polymers must have been Jar Tested by Supplier <b>PRIOR</b> to submission	Pass/Fail

## 5.4 Stage 1 – Shortlisting Submissions

Submissions will be ranked in accordance with the following criteria:

Criteria	Evaluation Points
<b>Rate (\$/kg)</b>	40%
<b>Jar Test Results</b> (Sample Report provided in Appendix B)	20%
<b><u>Technical Criteria:</u></b> <ul style="list-style-type: none"> <li>• Proponent Experience and Qualifications</li> <li>• Use of Polymer in Similar Wastewater Applications</li> <li>• Service and Quality Commitments</li> <li>• Sustainability</li> </ul>	40%

*\* For polymers formulated for specific use at GNPCC, provide information on polymers of a similar nature that your firm has supplied to wastewater treatment plants with centrifuge and dewatering processes like GNPCC.*

## 5.5 Stage 2 - Operational Trial

The RDN will shortlist up to four submissions which received the highest evaluation score in the Stage 1 process.

Shortlisted Proponents will be invited to participate in an operational trial in which recommended polymers will be used in the dewatering wastewater treatment process at GNPCC for a period of up to three-weeks in length.

The RDN will purchase the chemicals needed for this trial. However, suppliers will provide only the chemicals needed for the trial. Suppliers will also permit the RDN to return unused chemical at the end of the trial period without a restocking fee.

Polymers will be ranked according to the following criteria based on the operational trial results:

Criteria	Evaluation Points
<b>Financial Criteria</b> (Estimated based on Pricing & Dose)	40%
<b>Operational Trial:</b> <ul style="list-style-type: none"> <li>• Solids Removal</li> <li>• Biosolids and Sludge Consistency</li> <li>• Wastewater Process Impact</li> </ul>	40%
<b>Quality Control, Service Level Commitments, Sustainability</b>	20%

### 5.6 Proof of Concept

Polymers selected may be tested for an additional 3 weeks following both stages of the evaluation process to optimize the polymers tested operationally to meet operational requirements. In the event, testing shows the product as failing to meet operational requirements, and the Supplier is unable to resolve the issue to the RDN’s satisfaction, the Regional District may move on to the next ranked Proponent without further liability, damage, or cost to the RDN.

### 5.7 Product Performance

- (i) If during the Contract term, the polymer is found to be losing its’ effectiveness and/or product dosage increases to a level that is unacceptable to the Regional District, the Supplier will make every effort to improve such performance within 10 working days of notification.
- (ii) Any product substitution suggested by the incumbent supplier will perform equal to and/or better than the initial full-scale evaluation or baseline performance. Additionally, any product substitution will be formally pre-approved by the Regional District and supplied and the unit price in effect at the time of contract issuance.
- (iii) If the substitute cannot be supplied at the same cost or a more effective polymer cannot be found, the Regional District will have the right to contact other Suppliers to supply effective polymer.

## APPENDIX A – SUBMISSION FORM

### REQUEST FOR PROPOSALS No. 23-024

#### GNPCC Dewatering Polymer

#### SUBMISSION FORM

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Please provide pricing in Canadian Dollars, including delivery fees, but excluding any taxes, F.O.B. destination to:

#### Greater Nanaimo Pollution Control Centre

4600 Hammond Bay Road

Nanaimo, BC, Canada, V9T 5A8

#### Required Pricing Information (exclusive of GST/PST)

Recommended Polymer	Description	Unit Price (\$/kg)	Recommended Dosing Rate at GNPCC (dose/dry ton solids)

Please also attach Safety Datasheets (SDS's) for all products listed above.

#### Required Pricing Information Terms and Conditions:

- a) Rates quoted by the proponent must be all inclusive and include all labour and material costs, all transport costs, insurance, costs of delivery, installation, and all other costs to supply product to the RDN's facilities.
- b) The quantities provided are estimates only based on historical averages and will be used to compare bids. Actual quantities ordered may vary depending on operational need. The RDN does not guarantee or warrant any volume of orders per year.
- c) The Regional District of Nanaimo reserves the right, in its sole discretion, to award all of the items, or none of the items. The lowest, or any bid, may not necessarily be accepted.
- d) Pricing is in Canadian Dollars and fixed for a period of one year from the date of notification of award.
- e) The RDN does not pay fuel surcharges

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**GNPCC Dewatering Polymer**  
**SUBMISSION FORM**

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**Technical Criteria:**

**1. Client References** (please enter responses directly into Table below). References may be contacted to allow the evaluation team to obtain more information on use of the polymer in similar process applications, quality, and service level commitments.

**Provide contact information of 3 current wastewater customers for the recommended polymer in the Table below.** Provide references from customers that are using their recommended polymer with a similar dewatering process to GNPCC. If polymer has been specifically formulated for GNPCC, provide references from customers using polymers of a similar nature with dewatering processes like GNPCC.

Name of Polymer	Organization / Reference Name	Telephone	Email



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**GNPCC Dewatering Polymer**

**SUBMISSION FORM**

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**IMPORTANT NOTE:** Enter responses directly into the Submission Form. Completed and signed Submission Form must be submitted by email to [alimpus@rdn.bc.ca](mailto:alimpus@rdn.bc.ca) before the Closing Time.

The final Submission Form must be signed. Proponents have the choice of using an e-signature, or to print off the filled-out form, sign, and send in a scanned version by email. If sending in a scanned version, please ensure to open the form to ensure all pages scanned properly.

Respondents can also submit background material to provide further detail pertaining to the questions. Please keep background material concise in nature (maximum of 5 pages of background material preferred)

**2. Use of Polymer in Similar Wastewater Applications** *(see submission instructions above)*

(i) Provide a list of wastewater treatment plants which currently use the polymers identified. How the use of the polymers at these treatment plants like the proposed use at GNPCC?

(ii) What are the advantages of each of the polymers you recommend in comparison to other polymers in the market?

(iii) Explain how your polymer would be compatible with the RDN's existing chemical delivery equipment in its Dewatering and Centrifuge system?

(iv) What is your packaging size (see Section 3.0)? Can you deliver in 750 kg dry polymer super sacs? If not, how would your proposed packaging size be compatible with the RDN's existing equipment?

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**GNPCC Dewatering Polymer**  
**SUBMISSION FORM**

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**3. Company Experience and Qualifications** *(see submission instructions on page 3 of Submission Form)*

(i) Provide a brief description of your company.

(ii) Provide an executive summary describing the Proponent's relevant experience and qualifications in delivering services like those required in this RFP.

(iii) Provide relevant background and experience of all key personnel involved in providing the deliverables including any subcontractors.

**4. Quality Control and Service Level Commitments** *(see submission instructions on page 3 of Submission Form)*

(i) Detail product quality control measures.

(ii) Provide details on product ordering and delivery services. How will firm ensure uninterrupted supply of this product to ensure stability of the wastewater treatment process?

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**4. Quality Control and Service Level Commitments** (continued) *(see submission instructions on page 3 of Submission Form)*

(iii) Provide service level commitments for request response times and lead times upon initiation of order to product delivery.

(iv) What is the shelf-life of the product?

(v) What is your return policy? Provide information on payment for return freight and whether restocking fees would apply.

**5. Sustainability**

(i) Does your firm allow for return of empty containers?

ii) Describe any sustainable processes/technologies employed during the production process?

iii) How does your firm reduce greenhouse gases from transport of the product?

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**SUBMISSION FORM**

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**ACCEPTANCE:**

The undersigned has examined REQUEST FOR PROPOSAL 23-024 and having full knowledge of the requirements of the Owner, do hereby agree to be bound by the Terms, Conditions, Statements and Representations contained herein:

Company Name & Mailing Address:

Phone No:

Contact Name:

Email:

Signature:

E-signatures may be used. Another option is to print, sign, and send in a scanned copy of the form.

Date:

**Note: Jar Test Report must be attached to Submission (see Appendix B for Sample Report)**

## APPENDIX B – JAR TEST REPORT

### Sample Report

<b>Dose</b>		
<b>Settling Time</b>		
<b>Vessel Material</b>		

#### Pictures

#### Dose

5 minutes

10 minutes

30 minutes

**Optimal Dose:**

**Settling Time:**

## **APPENDIX C – SAFETY DATASHEET**

## Safety Data Sheet

**Wes-Floc 6816 A**

Date of Issue: March 1 2021

Version 1.1

Date of Last Revision: March 1 2021

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### 1. Identification

#### Product identifier

Product name : **Wes-Floc 6816A**

Alternate names : None.

#### Other means of identification

Chemical name : Cationic polyacrylamide co-polymer.

Chemical family : Organic polymer.

#### Recommended use of the chemical and restrictions on use

Recommended use : Chemical flocculant for municipal and industrial applications.

Uses advised against : No known restrictions against use.

#### Initial supplier identifier

Company : Waterhouse Environmental Services Corporation,  
400 601 West Broadway,  
Vancouver,  
British Columbia,  
V5Z 4C2,  
CANADA.

Telephone : +1 888 921 3317.

Email : [information@waterhousechemicals.com](mailto:information@waterhousechemicals.com).

#### Emergency telephone number

CANUTEC : +1 613 996 6666.

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### 2. Hazard Identification

#### Classification of the product

Hazard class	Category	Hazard statement
Acute aquatic toxicity	Category 2	H 401 – Toxic to aquatic life.

## Label elements

Hazard symbols :



Signal word :

**Warning.**

Precautionary statements : **Prevention**

P 210	Keep away from open flame and other ignition sources.
P242	Use only non-sparking tools.
P 243	Take precautionary measures against static discharge.
P 273	Avoid release to the environment.
P 284	In case of inadequate ventilation, wear respiratory protection.

## **Response**

P301+P330+P331+P313	IF SWALLOWED : Rinse mouth. Do NOT induce vomiting. Get medical attention.
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P302+P362+P352+P314 IF ON SKIN : Take off contaminated clothing. Wash with plenty of water and soap. Get medical attention if you feel unwell.

P304+P340+P314 IF INHALED : Remove person to fresh air and keep comfortable for breathing. Get medical attention if you feel unwell.

P305+P351+P314 IF IN EYES : Rinse cautiously with water for several minutes. Get medical attention if you feel unwell.

### **Storage**

P 232 Protect from moisture.

P 235 Keep cool.

P 402 Store in a dry place.

P 405 + P 233 Store locked up. Keep container tightly closed.

### **Disposal**

P 501 Dispose of contents and containers in accordance with local, regional, national, and international regulation.

### **Hazards not otherwise classified (HNOC)**

Spills of this product will produce extremely slippery surfaces when wetted.  
May form combustible dust concentrations in the air.

### **Other non-GHS classifications**

#### **HMIS Rating**

Health	1
Flammability	1
Reactivity	0
PPE	B

**NFPA Rating**

Health	1
Flammability	1
Reactivity	0
Special	

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### 3. Composition / Information on Ingredients

**Composition of product**

Concentration. (W/W%)	CAS Number	Chemical Identity
< 2.5%	124-04-9	Adipic acid
< 2.5%	5329-14-6	Sulfamic acid

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### 4. First-Aid Measures

**Description of necessary first-aid measures**

Ingestion :	Rinse mouth and drink plenty of water. Check breathing and pulse. Place the casualty in the recovery position, cover, and keep warm. Loosen tight clothing such as collar, tie, belt, or waistband. Get medical attention, or call Poison Control if necessary. Do NOT induce vomiting or give anything by mouth if the casualty is unconscious or having convulsions.
Skin contact :	Remove any contaminated clothing and shoes. Wash exposed skin thoroughly with soap and water 15 – 20 minutes. Seek medical attention if irritation develops and persists.
Inhalation :	If breathing difficulties occur after inhalation of dust, keep the patient calm, remove to fresh air and seek medical attention.
Eye contact :	Flush with water for at least 15 minutes with eyelids held open. Lift upper and lower eye lids to ensure all chemical is completely removed. Consult an eye specialist if eye irritation persists.

**Most important symptoms and effects**

Symptoms include possible eye and skin irritation and central nervous system depression. The most important symptoms and effects are described in Section 2 : "Hazard Identification" and Section 11 : "Toxicological Information". Further important symptoms are not known.

**Indication of any immediate medical attention and special treatment needed**

Treat according to individual response to, and location of, exposure.  
There are no known specific antidotes or contraindications.

## 5. Fire-Fighting Measures

### Extinguishing media

Extinguish fire using dry powder, carbon dioxide, or foam.

If water is used, restrict pedestrian and vehicular traffic in the area because this product is extremely slippery when wetted. If possible, avoid high pressure media which may cause the formation of a combustible dust concentration in the air.

### Specific hazards arising from the product

Fire-fighting hazards : Nitrogen oxides (NO<sub>x</sub>), carbon oxides (CO<sub>x</sub>), and hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

Other hazards : This product is extremely slippery when wet.  
Dusty conditions may ignite explosively in the presence of an ignition source and cause a flash fire.

### Special protective actions for fire-fighters

Wear a self-contained breathing apparatus.

### Further information

Evacuate non-emergency personnel from the area.

Dispose of contaminated extinguishing water in accordance with local, regional, national, and international regulations.

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## 6. Accidental Release Measures

### Personal precautions, protective equipment, and emergency procedures

Personal precautions : Avoid dispersal of dust in the air, such as clearing dust surfaces with compressed air. Dust in sufficient concentration may result in an explosive mixture in air. Eliminate open flame and any other sources of ignition. The use of non-sparking tools is recommended. Avoid walking through any spilt product or areas where slip hazard may exist; this product becomes extremely slippery when wetted. Handle in accordance with good industrial hygiene and safety practices.

Protective equipment : Wear adequate personal protective equipment (See Section 8 : "Exposure Controls/ Personal Protection").

Emergency procedures : Prevent further leakage or spillage if safe to do so.  
Keep people away from spill/leak until clean-up is completed.

### Environmental Precautions

Do not flush into drains, surface water, or groundwater.  
Contain contaminated water/firefighting water.

**Methods and material for containment and cleanup**

- Small spills :                    Clean up by sweeping or vacuum.  
Do not flush with water as it will cause a slip hazard.  
Keep the product in a suitable, closed container for disposal.
- Large spills :                    Clean up by sweeping or shoveling.  
Do not flush with water as it will cause a slip hazard.  
Contain with a dust binding inert absorbent material.  
Keep the product in a suitable, closed container for disposal.
- Residue :                        Soak up any residue using an inert absorbent material  
After clean-up, flush away any trace material with water.  
Use a common salt, such as sodium chloride, to aid in the removal of residue.

**Further information**

Use of non-sparking tools is recommend for clean-up and whenever working with dry powder polymers.

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**7. Handling and Storage****Precautions for safe handling**

- General precautions :            Avoid contact with skin and eyes.  
Avoid breathing dust.  
Breathing must be protected without local exhaust ventilation.  
Avoid application of product where slip hazard may exist.  
When using the product, do not eat, drink, smoke, or use tobacco.  
Wash hands before breaks and at the end of the workday.
- Fire and explosion precautions :    Avoid dust formation.  
Routine housekeeping should be instituted to prevent accumulation of dusts on surfaces.  
Provide adequate precautions for static discharge, such as electrical bonding and grounding.  
Eliminate open flame and any other sources of ignition.  
Dry powders may build up static electrical charges during transfer and mixing.  
Refer to "NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids (2013 Edition)" for further information on safe-handling.

**Conditions for safe storage including any incompatibilities**

- Store closed in the original container in a cool, dry place.  
Avoid wet, damp, or humid conditions.  
Avoid temperature extremes and ignition sources. Protect from temperatures above 60° C.  
Store away from strong oxidizing agents.

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**8. Exposure Controls / Personal Protection**

**Control parameters**

Any component not listed has no established occupational exposure limits.

Component name	Regulation	Exposure Limit
Adipic acid	OSHA (8-hour TWA)	5 mg/m <sup>3</sup>
	OSHA (15 minutes)	15 mg/m <sup>3</sup>
	ACGIH (8-hour TWA)	5 mg/m <sup>3</sup>
	NIOSH (10-hour TWA)	Not established.

**Appropriate engineering controls**

Ensure adequate ventilation. Avoid the formation and deposition of dust. It is recommended that all dust control equipment involved in the handling of this product either contain explosion relief vents, contain an explosion suppression system, or is used in an oxygen deficient environment. Ensure that dust-handling systems, such as exhaust dusts, dust collectors, vessels, and processing equipment, are designed in a manner to prevent the escape of dust into the work area. Use only appropriately classified electrical equipment and powered industrial trucks.

**Individual protection measures**

Eye and face protection :	Do not wear contact lenses. Use splash resistant chemical goggles or face shield. Maintain an eye wash fountain in the handling area.
Skin protection :	Wear chemical resistant PVC or other protective material gloves and boots. If splashing or repeated contact with the product is likely, wear a chemical resistant apron or protective suit.
Respiratory protection :	No personal protective equipment normally required. If working powder concentrations are more than 10 mg/m <sup>3</sup> , then a NIOSH-certified (or equivalent) organic vapour/particulate respirator is recommended.
General safety and hygiene measures :	Handle in accordance with good industrial hygiene. Ensure adequate ventilation. Wearing of closed work clothes is recommended. Wear protective clothing as necessary to minimize contact with the product. When using the product, do not eat, drink, smoke, or use tobacco. Wash hands before breaks and at the end of the workday.

**9. Physical and Chemical Properties**

All properties listed below are at 20°C and 101.3 kPa unless otherwise stated

Appearance	Off-white powder.
Odour	None.

Odour threshold	No data available.
pH	2.5 – 4.5 at 5 g/l
Melting point/freezing point	>100° C.
Initial boiling point and boiling range	No data available. Product decomposes.
Flash point	Not applicable. Product is a solid.
Evaporation rate	Product is a non-volatile solid.
Flammability (solid, gas)	Not flammable.
Lower explosive limit	Not applicable. Product is a solid.
Upper explosive limit	Not applicable. Product is a solid.
Vapour pressure	Not applicable. Product is a solid.
Vapour density	Not applicable. Product is a solid.
Bulk density	0.68 g/cm <sup>3</sup>
Solubility	Soluble in water and polar solvents.
Partition coefficient (n-octanol/water)	-2
Auto-ignition temperature	Not applicable. Product is a solid.
Decomposition temperature	> 200°C
Brookfield Viscosity (Dilute)	660 mPa.s (cps) at 5.0 g/l 330 mPa.s (cps) at 2.5 g/l 150 mPa.s (cps) at 1.0 g/l
Explosive properties	Kst = 0 (Non-flammable to ignition sources < 2.5 kJ)
Oxidizing properties	No data available.
Minimum ignition energy	2 – 5 kJ

## 10. Stability and Reactivity

### Reactivity

No hazardous reactions are anticipated if the product is stored and handled as indicated.  
No known corrosive effect on metals.  
Not fire-propagating.

### Chemical stability

Stable at normal temperatures and pressure.  
Stable if stored and handled as indicated.

### Possibility of hazardous reactions

This product does not undergo hazardous polymerization.  
Oxidizing agents may cause exothermic reactions.  
Buildup of fine dust may lead to a risk of dust explosions, but the product does not present a dust explosion risk as supplied.

### Conditions to avoid

Avoid extreme temperatures, humidity, dust formation, and electrostatic discharge.

### Incompatible materials

Incompatible with strong acids, strong bases and strong oxidizing agents.

### Hazardous decomposition products

Thermal decomposition may produce nitrogen oxides (NO<sub>x</sub>), carbon oxides (CO<sub>x</sub>), ammonia and hydrogen cyanide (hydrocyanic acid) in an oxygen deficient atmosphere.  
No hazardous decomposition products under normal usage, if stored and handled as indicated.

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## 11. Toxicological Information

### Information on acute toxicological effects

Wes-Floc 6816 A

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#### Acute oral toxicity :

Value : LD50/oral/rat > 5000 mg/kg.  
Method : OECD Guideline 401.  
**Assessment : No known acute oral effects.**

#### Acute dermal toxicity :

Value : LD50/dermal/rat > 5000 mg/kg  
Method : OECD Guideline 402.  
**Assessment : No known acute dermal effects.**

#### Acute inhalation toxicity :

Value: No data available.

#### Skin irritation/corrosion :

Species : Rabbit.  
Method : OECD Guideline 404.  
**Assessment : Not irritating to skin.**

Serious eye damage/irritation :

Species : Rabbit.  
Method : OECD Guideline 405.  
**Assessment : Not irritating to eyes.**

Respiratory or skin sensitisation :

Method : Derived from the components of the product.  
**Assessment : No suspicion of skin or respiratory sensitisation.**

Aspiration hazard :

Method : Derived from the properties of the product.  
**Assessment : No suspicion of aspiration hazard.**

Single target organ toxicity – single exposure :

Method : Derived from the components of the product.  
**Assessment : None known**

## Information on chronic toxicological effects

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Repeated dose toxicity :

Method : Derived from the components of the product.  
**Assessment : No suspicion of adverse health effects from repeated dose.**

Germ cell mutagenicity :

Method : OECD Guideline 476.  
**Assessment : Not mutagenic.**

Carcinogenicity :

Method : Derived from the components of the product.  
**Assessment : No suspicion of being carcinogenic.**

Reproductive toxicity :



Method : Derived from the components of the product.  
**Assessment :** **No suspicion of being toxic for reproduction.**

Teratogenicity :

Method : Derived from the components of the product.  
**Assessment :** **No suspicion of being toxic for reproduction.**

Single target organ toxicity – repeated exposure :

Method : Derived from the components of the product.  
**Assessment :** **None known.**

### Primary routes of exposure

Primary routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes for entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

### Symptoms of exposure

Symptoms include possible eye and skin irritation and central nervous system depression. The most important symptoms and effects are described in this section and Section 2 : “Hazard Identification” Further symptoms are not known.

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## 12. Ecological Information

### Information on acute ecological effects

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Acute toxicity to fish :

Value : LC50/*Danio rerio*/96 hours = 5 – 10 mg/l  
LC50/fish/96 hours = 1 – 10 mg/l  
Method : OECD Guideline 203.  
**Assessment :** **Toxic to fish.**

Acute toxicity to invertebrates :

Value : EC50/*Daphnia magna*/48 hours = 20 – 50 mg/l  
Method : OECD Guideline 202.  
**Assessment :** **Harmful to invertebrates.**

Acute toxicity to algae :

Value : No data available.  
Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.

Acute toxicity to aquatic plants :

Value : No data available.

## Information on chronic ecological effects

Wes-Floc 6816 A

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Chronic toxicity to fish :

Value : No data available.

Chronic toxicity to invertebrates :

Value : No data available.

Chronic toxicity to algae :

Value : No data available.

Chronic toxicity to aquatic plants :

Value : No data available.

## Persistence and degradability

Wes-Floc 6816 A

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Degradation : Readily biodegradable.

Hydrolysis : At pHs > 6, the polymer degrades more than 70% in 28 days.  
The hydrolysis products are not harmful to aquatic organisms.

Adipic acid

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Degradation : Readily biodegradable.

Hydrolysis : Does not hydrolyse.

Photolysis : Primary degradation half-life (indirect photolysis) = 2.9 days

Sulfamic acid

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Degradation : Not applicable. Sulfamic acid is inorganic.

Hydrolysis : Does not hydrolyse.

**Bioaccumulative potential**

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Partition coefficient (Log power) : < 0

Adipic acid

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Partition coefficient (Log power) : 0.093 at 25°C and pH of 3.3

Sulfamic acid

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Partition coefficient (Log power) : -4.34 at 20°C

**Mobility in soil**

Wes-Floc 6816 A

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Adsorption to solid soil phase is expected due the properties of the product.

**Other adverse effects**

No other adverse effects are known.

**Summary of ecological information**

This product is toxic to fish and harmful to invertebrates and some algae.

The acute effects are due to the cationic charge of the polymer, but irreversible adsorption onto suspended and dissolved matter mitigates aquatic toxicity by a factor of 10 – 100 with 5 – 10 mg/l DOC in the water according to the US EPA "Dirty Water Test."

The product is not biologically available so accumulation in organisms is not to be expected.

There is currently no data available on the chronic effects of this product.

While it is not expected that this product has significant ecological effects, it is recommended this product not be discharged into the environment.

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**13. Disposal Considerations****Disposal methods**

Dispose of in accordance with local, regional, national, and international regulations.

Containers that cannot be cleaned should be disposed of in the same manner as the contents.

Crushing or puncturing the contaminated containers is recommended to prevent unauthorized use of it.

Uncontaminated containers can be reused.

Do not dispose of into drains, surface water, or groundwater.

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**14. Transport Information****Land transport (TDG)**

Not classified as a dangerous good under transport regulations.

**Sea transport (IMDG)**

Not classified as a dangerous good under transport regulations.

**Air transport (IATA)**

Not classified as a dangerous good under transport regulations.

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**15. Regulatory Information****Safety, health, and environmental regulations specific for the product**

Domestic Substances List (DSL) : All components of this product are either listed on the inventory or are exempt from listing.

Ingredient Disclosure List (IDL) : No components listed on the WHMIS ingredient disclosure list.

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**16. Other Information****SDS prepared by :**

Waterhouse Environmental Services Corporations.

**Version number :**

1.1

**Date of issue :**

March 1 2021

**Date of last revision :**

March 1 2021

**Notice to readers :**

This information is supplied in accordance with Canada's Hazardous Products Regulations (HPR) SOR/2015-17 and the U.S. Hazard Communication Standard (HCS).

The information provided in this Safety Data Sheet is correct to the best of our knowledge at the date of publication, but we cannot guarantee that the hazards listed are the only hazards that exist.

No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof is made, and Waterhouse Environmental Services Corporation assumes no responsibility.

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END OF DATA SHEET

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## **APPENDIX D – SUPPLY AGREEMENT**

BETWEEN: (the "Supply Contractor")

AND: **Regional District of Nanaimo** (the "RDN")  
6300 Hammond Bay Road,  
Nanaimo, BC, Canada  
V9T 6N2

THIS AGREEMENT WITNESSES that the Supply Contractor and the RDN agree as follows:

1. The Supply Contractor shall provide all labour, equipment, and materials required to supply and deliver the Product ("Dewatering Polymer") to Greater Nanaimo Pollution Control Centre located at 4600 Hammond Bay Road, Nanaimo, BC, Canada within the required time and delivery location, as identified the Contract Documents.
2. Shipping Terms: Freight on Board (FOB) destination, freight prepaid and allowed.
3. The RDN shall pay the Supply Contractor the Contract Price, as required by the Contract Documents.
4. The Contract Price shall be the sum in Canadian Dollars of the following:
  - (a) the Proposal Price, \$ /kg and

The Contract Price shall be the entire compensation owing to the Supply Contractor by the RDN for the Product and shall cover and include necessary costs including but not limited to all supervision, labour, materials, Supply Contractor's Plant and Equipment, overhead, profit, financing costs, duty, shipping charges, fabrication and finishing, conveyance and delivery, packing, crating, freight, cartage, off-loading, drafting charges, tariffs, warranty and all other costs and expenses whatsoever incurred in performing the Contract.

Except for the amounts which the RDN in good faith is disputing and except for any set off which the RDN may claim and except for invoices (or portions of invoices) in respect of which the RDN has requested and not received supporting evidence, the RDN shall pay invoices submitted to it for the Services within 30 days' receipt thereof.

5. The term of a Contract shall commence on \_\_\_\_\_, and expires \_\_\_\_\_, unless terminated, cancelled, or extended.

The contract will be for a five (5) year term. Fixed pricing is required over the first one-year of the term. Annual fixed pricing for each subsequent year will be based upon mutual agreement and successful price negotiations between both parties confirmed

- in writing. The contract will be amended annually to reflect that year's agreed to pricing.
6. The Supply Contractor shall supply and deliver the Product to the Delivery Point no later than 10 working days from receipt of order. Deliveries will be made between the hours of 8:30 am to 4:00 pm. Should there be any delay in obtaining Product, the RDN reserves to secure alternative product from any source without waving or voiding the terms and conditions.
  7. The Contract Documents shall form a part of this Agreement as though recited in full.
  8. The Contract supersedes all prior negotiations, representations, or agreements, whether written or oral and is the entire agreement between the RDN and the Supply Contractor with respect to the subject matter of this Agreement.
  9. The Supply Contractor shall not assign the Contract, or any portion of the Contract, or any payments due or to become due under the Contract, without the express written consent of the RDN.
  10. No action or failure to act by the RDN or an authorized representative of the RDN shall constitute a waiver of any right or duty afforded any of them under the Contract or constitute an approval or acquiescence in any breach thereunder, except as may be specifically agreed in writing.
  11. This Agreement shall enure to the benefit of and be binding upon the RDN and the Supply Contractor and their respective heirs, executors, legal representatives, successors and permitted assigns. In the event of more than one person being the Supply Contractor, the grants, covenants, provisos and claims, rights, powers, privileges, and liabilities shall be construed and held to be several as well as joint.
  12. Time shall be of the essence of this Agreement.
  13. This Agreement may be executed in any number of counterparts, each of which will be deemed to be an original and all of which taken together will be deemed to constitute one and the same instrument. Delivery by electronic transmission in portable document format (PDF) of an executed counterpart of this Agreement is as effective as delivery of an originally executed counterpart of this Agreement.
  14. The Supply Contractor will comply with all applicable federal, provincial, and municipal and local government laws, bylaws, regulations, codes, and standards.
  15. The Supply Contractor will comply with all Workplace Hazardous Materials Information Systems (WHMIS) in terms of chemical handling and comply with

Transport of Dangerous Goods Requirements (TDG) where applicable when transporting and delivering Product to the RDN's facilities.

16. The Supply Contractor is responsible for cleaning up any spills in transport and when offloading Product at the RDN's facilities. The Supply Contractor must meet all requirements of the *BC Spill Reporting Regulation* in the event of a spill.
17. The Supply Contractor will ensure that the Product meets the requirements identified in Section 3.0 Technical Requirements of the *GNPCC Dewatering Polymer Request for Proposals issued in May 2023* attached as Appendix A).
18. (i) If during the Contract term, the Product is found to be losing its' effectiveness and/or product dosage increases to a level that is unacceptable to the RDN, the Supply Contractor will make every effort to improve such performance within 14 days of notification.  
  
(ii) Any Product substitution suggested by the incumbent supplier will perform equal to and/or better than the initial full-scale evaluation or baseline performance. Additionally, any product substitution will be formally pre-approved by the RDN and supplied and the unit price in effect at the time of contract issuance.  
  
(iii) If the substitute cannot be supplied at the same cost or a more effective Product cannot be found, the RDN have the right to contact other vendors to supply effective Product.
17. The Supply Contractor shall arrange commercial general liability coverage in an amount not less than one million dollars (\$1,000,000) per occurrence for bodily injury, death, or property damage, including coverage for loss of use. Such policy shall include the Regional District as an additional insured.
18. This agreement may be cancelled by either party for any reason without cause or penalty upon sixty (60) calendar day's written notice. The agreement may be cancelled by the RDN with thirty (30) calendar days' notice if written agreement between both parties on the following year's fixed pricing is not obtained.

If this option is exercised, the RDN will be under no further obligation to the Supply Contractor, except to pay the Supply Contractor such amount as the Supply Contractor may be entitled to receive for services properly performed and provided to the date notice is given to the Supply Contractor.



IN WITNESS WHEREOF the parties hereto have executed this Agreement as follows:

REGIONAL DISTRICT OF NANAIMO

by its authorized signatory on \_\_\_\_\_ day of \_\_\_\_\_, 2023 (the date of Agreement):

SIGNED on behalf of the **Regional District of Nanaimo** by:

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

**Supply Contractor**

by its authorized signatory on \_\_\_\_\_ day of \_\_\_\_\_, 2023:

SIGNED on behalf of the Supply Contractor by:

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_