REQUEST FOR PROPOSAL

To provide

CONSULTING ENGINEERING SERVICES

For

Rotating Biological Contactor Systems Replacements and Upgrades

DESIGN PHASE

For the

MOHAWKS OF AKWESASNE FIRST NATION

RFP NUMBER:	MCA 26-1005A
FIRST NATION:	Mohawks of Akwesasne
PREPARED BY:	Department of Infrastructure, Housing and Environment
DATE OF POSTING:	May 12, 2026
SUBMISSION DEADLINE:	Before 4:00 P.M. EST on June 2, 2026

Table of Contents

List of Appendices

DEFINITIONS

"Agreement" means the formal written contract that will be entered into at the end of the procurement process which includes the RFP procurement documents, including any addenda; the Service Provider's Proposal Submission; and any amendments executed in accordance with the terms of the Agreement.

"Business Day" and/or "Working Day" is any day other than a Saturday, Sunday or statutory holiday in the Province of Ontario.

"Contract Price" means the amount stated in the Contract to be payable to the Contractor for the Work, exclusive of Goods and Services Tax and Harmonized Sales Tax;

"Indigenous and Northern Affairs Canada (INAC)", "Aboriginal Affairs and Northern Development Canada (AANDC)", and "Indigenous Services Canada (ISC)" shall be considered interchangeable.

"Joint Venture" is a collaborative undertaking by two or more firms for which the participant firms are equally (both jointly and individually) responsible.

"Owner" and/or "First Nation" refers to ABC First Nation and is the entity acquiring the goods and services outlined in the Contract.

"Preferred Proponent" is the entity that is selected by the Owner to enter into the executed Agreement.

"Principal" is an individual in a firm who possesses the legal responsibility for its management (owner, partner, officer, administrator, etc.).

"Proponent" includes firms that submit or intends to submit a proposal in response to this RFP prior to the specified submission closing dates.

"Proposal" refers to documents Proponents submit in response to this RFP.

"RFP" or "Request for Proposal" means the process and RFP documents described in Section 1.1.

"Service Provider" refers to the successful Proponent under Agreement for this Assignment.

"Sub-Service Provider" refers to a firm or individual that has been hired by the Service Provider to perform specific tasks of this Assignment.

"Work" means all the activities, services, goods, equipment, matters and things required to be done, delivered or performed by the Service Provider under the Contract.

PART A – GENERAL CONDITIONS OF REQUEST FOR PROPOSAL

Section 1: GENERAL INFORMATION AND INSTRUCTIONS

1.1 Purpose

This Request for Proposal states the instructions for submitting proposals and the procedure by which a Service Provider will be selected.

The RFP Documents include:

- Part A – General Conditions for Request for Proposal
- Part B – Terms of Reference
- Part C – Proposal Instructions
- Appendices
- Addenda / Clarifications prior to the Proposal Submission closing date

The RFP Documents will be incorporated into the resulting Agreement for this Assignment.

1.2 Issuing Office

Mohawk Council of Akwesasne
Department of Infrastructure, Housing and Environment
Address: 101 Tewesateni Road
Akwesasne, Ontario
H0M 1A1
E-mail: daryl.seymour@akwesasne.ca

1.3 RFP Schedule

The following schedule of activities is tentative and may be changed by the Owner at its sole discretion.

Request for Proposal:	May 12, 2026
Last Day for Consultant Questions:	May 26, 2026 at 4:00 p.m. EST
Issuance of Last Addendum:	May 27, 2026 at 4:00 p.m. EST
Proposals Due:	June 2, 2026 at 4:00 P.M. EST
Selection of Consultant:	June 24, 2026

1.4 Proposal Submission

Detailed submission of the Proposal requirements shall be in accordance with the project specific details outlined in Part C of this RFP.

An electronic pdf copy of the Proposal (“Management Section” and “Cost Section” as a separate password protected email) submitted via e-mail must be received by the Issuing Office, **not later than 4:00 P.M. EST, on June 2, 2026.**

For consistency, www.timeanddate.com will be used as the official clock for receipt of proposals.

Each Proponent alone bears the responsibility for delivery of the Proposal by the stipulated date and time. Proposals submitted after the submission closing date/time will be returned

unopened to the respective Proponent. No alteration to the Proponent's Proposal will be accepted after the Proposal Submission due date, except as provided for herein. A Proposal may be withdrawn by a Proponent by means of a written request delivered to the Issuing Office prior to the Proposal Submission's due date and time.

Please note: The email system of the Issuing Office has a size limit of twenty five megabytes (25 Mb). The Owner will not be responsible for Proposals which fail to deliver due to technical issues with emails or email size.

Each Proponent shall be solely responsible for examining all the RFP documents, including any addenda issued during the RFP period, and shall be deemed to have satisfied itself of the sufficiency of its Lump Sum Price for the Services.

By submitting Proposals, Proponents authorize the Owner to conduct reference checks.

Each Proponent shall review all the RFP documents and shall promptly report and request for clarification of any discrepancy, deficiency, ambiguity, error, inconsistency or omission contained therein. Where such a request results in a change to the requirements of this RFP, the Owner will prepare and issue an addendum to this RFP.

Proponents shall not make verbal inquiries to staff with respect to this RFP. Information given orally by staff will not be binding on the Owner, nor will it be construed as a factor in the evaluation of the Proposals. All inquiries must be made in writing.

1.5 Proposal Evaluation

The evaluation of the Proposal shall be in accordance with the project specific details outlined in Part C of this RFP. Please note the lowest priced, or any proposal, will not necessarily be accepted.

Each Proposal will first be examined to determine if it meets the Mandatory Requirements as described in Section 7.3 (has the information been submitted in the manner specified in the Request for Proposals and all the requirements have been satisfied). A determination of non-compliance (omitted or unacceptable items) may result in disqualification of the submission from further consideration.

Proponents understand and agree that the Owner may, if deemed necessary, verify any information provided in any Proposal. It must be clearly understood that if there is any evidence of misleading or false information having been given, the Owner may, in its sole discretion, reject the Proposal.

Proponents have a right to a debriefing only after the executed Agreement between the Preferred Proponent and the Owner has been signed.

Once the Agreement has been executed, the Owner, when requested, will debrief each Proponent at the Owner's date and time of preference, relative to each Proponent's Proposal evaluation results.

The Owner will consider all Proposals as confidential. The Owner will, however, have the right to make copies of all Proposals received for its internal review process. Any innovative ideas expressed in any unsuccessful Proposal shall be considered proprietary to the respective Proponent.

1.6 Changes to the RFP

The Owner may, in its sole discretion, amend or supplement the RFP Documents prior to Proposal Submission closing dates. The Owner shall issue changes to the RFP Documents by Addenda only. No other statement, whether oral or written, made by the Owner shall amend the RFP Documents. Proponents are to acknowledge and list all addenda received and included in the preparation of their proposal in their proposal.

The Owner reserves the right to modify the schedule or cancel this RFP for any reason without incurring any liability for costs, losses or damages incurred by any Proponents invited to participate in the Proposal phase.

1.7 Conflicts or Inconsistencies

In the event of conflicts or inconsistencies, documents with the most recent date shall prevail.

1.8 Proponents Questions

A Proponent may submit a question regarding the RFP by e-mail.

The last day for questions is **May 26, 2026 at 4:00 p.m. EST.** Questions must be directed to:

Daryl Seymour, P.Eng.
Department of Infrastructure, Housing and Environment
Mohawk Council of Akwesasne
Address: 101 Tewesateni Road
Akwesasne, Ontario
H0M 1A1
E-mail: daryl.seymour@akwesasne.ca

Section 2: TERMS AND CONDITIONS

2.1 Proponents' Terms and Conditions

2.1.1 Proponents' Responsibility

It is the responsibility of each Proponent to inquire about and clarify any requirements of this Request for Proposals, which are not understood prior to the closing date and time of the RFP to ensure that the Proponent has a comprehensive understanding of the project and that their Proposal includes all aspects as per the intent of the project.

Proponents must obtain their own information on all matters and things that may in any way influence them in making their Proposals and fixing prices.

Proponents must determine the sufficiency of the information presented and identify/obtain any additional information, and perform any studies, analysis or investigations as deemed necessary in order to deliver the requirements of this Assignment.

All requirements, including designs, documentation, plans and information viewed or provided to Proponents in connection with this RFP are the property of the Owner and must be treated as confidential and not used for any purposes other than replying to this RFP and the fulfillment of the contract. Upon request of the Owner, all original designs, documents, plans and information shall be returned to the Owner.

Proponents must satisfy themselves in all respects as to the risks and obligations to be undertaken by them.

By submitting Proposals, Proponents accepts that they understand the scope of the project and their proposed work and cost submitted will fulfill the full intent of the project.

2.1.2 Non-Collusion

Proponents **shall not discuss or communicate** with any other Proponents about the preparation of their Proposals. Each Proponent shall participate in the RFP process fairly and without collusion or fraud.

2.1.3 No Liability for Expenses

All Proposals shall be prepared by and at the expense of the respective Proponent. The Owner will not be liable for any loss or damage suffered by any Proponent including, without limitation, any expenses incurred in the preparation and submission of the Proposal.

2.1.4 Irrevocable Offer

Proposals submitted to the Owner shall constitute a valid and irrevocable offer which is open for acceptance by the Owner from and after submission until the expiration of the 90th day following the Closing Date specified in Section 1.3.

The RFP does not create a tender process. This RFP is not an invitation for an offer to contract and is not an offer to contract made by the Owner. By this RFP, the Owner reserves to itself the right, in its sole and absolute discretion, to consider and analyze the Proposals, select a preferred Proponent and negotiate with all or any of the Proponents both before and after award and sign an agreement with the preferred Proponent or not sign an agreement at all.

Without limiting the generality of the foregoing, the Owner reserves the right to a) reject any Proposal whether or not complete and whether or not it contains all the required information; b) require clarification of the Proposal; c) request additional information on any Proposal; d) reject any and all Proposals without any obligation of compensation or reimbursement to the Proponents; e) re-advertise for new submissions or Call for Tenders for this work or the work of a similar nature; f) negotiate with any one or more of the Proponents with respect to any aspect of the RFP, this process, mandatory requirements or otherwise with respect to the Proposal; g) the Owner may, in its sole and absolute discretion, independently verify any information in any submission.

Wherever the words “will”, “shall” or “must” are used in this RFP, the Owner will have the option of waiving this as a mandatory requirement as it is intended the Proposals be subject to review and negotiation and not all options may be known to the Owner at this time. Therefore, the Owner must have the ability to waive what otherwise appear to be mandatory requirements in the appropriate situation as determined by the Owner.

The lowest priced or any proposal will not necessarily be accepted.

2.1.5 Clarification of Proposals/Verification of Information

The Owner, without liability, cost or penalty, may, in its sole discretion at any time after Proposal submissions, seek clarification from any Proponent, either in writing or during any meetings or presentations or interviews with respect to its Proposal. Without limiting the generality of the foregoing, the Owner may, in its sole discretion, request a Proponent to confirm in writing any statement made by the Proponent during any presentation or demonstration, in which case the Proponent will promptly provide such written confirmation to the Owner within the time specified by the Owner. Any written information received by the Owner from a Proponent in response to a request for clarification from the Owner shall be considered an integral part of the Proponent’s Proposal. Without prejudice to its right, the Owner may request clarification if any Proponent’s intent is unclear or the Proposal is unclear or the Owner may waive or request amendments where in the opinion of the Owner there is an irregularity or an omission in the information submitted in the Proposal.

The Owner may verify any Proponent’s statement or claim for whatever means the Owner deems appropriate, including contacting references other than those offered by the Proponent. The Owner may reject any Proponent’s statement or claim if, in the judgment of the Owner, the statement or claim is unwarranted or not credible. The Proponent shall cooperate with the Owner in its attempt to verify any such statement or claim.

In the event that the Owner receives information at any stage of the evaluation process which results in earlier information provided by the Proponent being deemed by the Owner to be inaccurate, incomplete or misleading, the Owner reserves the right to revisit the Proponent’s compliance with the Mandatory Requirements and/or adjust the evaluation or scoring of the Proposal.

2.1.6 Selection Process

Because the Owner bases any decision to award a contract on the Proposals submitted, Proponents should include all requirements, terms and conditions it may have in their Proposal, and should not assume that any opportunity will exist to add such matters after the Proposal is submitted.

The Owner reserves the right, at its sole discretion, to negotiate with any Proponent as it sees

fit, or with another Proponent or Proponents concurrently. In no event will the Owner be required to offer any modified terms to any other Proponent. The Owner shall incur no liability to any other Proponent as a result of such negotiations or modifications.

The Owner shall have the right to negotiate with each and every Proponent the terms and conditions of their Proposal, the details of the contract and the inclusion or exclusion of all or any portion of the Work called for under the proposed services in this RFP. Negotiations may take the form of adding, deleting or modifying requirements to obtain the best possible price. There is no obligation to negotiate with only one Proponent to the exclusion of the other Proponents.

2.1.7 Execution of Agreement

The successful Service Provider will be required to comply with the fully executed agreement with the Owner after acceptance by the Owner. Any subsequent changes to the contract will be made only in writing.

The placing in the mail to the address given in his/her submission or delivery of a notice of award to a Proponent shall constitute notice of acceptance of contract. This acceptance shall be conditional on the Proponent providing all documentation, insurance, bonding, security and certifications as required by the RFP within ten (10) working days of the date that the notice of award is placed in the mail or delivered to the Proponent. The Proponent shall forthwith, within ten (10) working days of receipt thereof, execute the Agreement incorporating the terms and conditions of this RFP and such other terms and conditions as the Owner shall reasonably require.

2.1.8 Failure to Execute Agreement

In the event that a Preferred Proponent fails to enter into and duly execute the written Agreement within the prescribed time in Section 2.1.7, the Owner reserves the right, at its sole discretion, exercising reasonably, to award this Assignment to another Proponent, not to accept any Proposal, or to call for a new Proposal, and the defaulting Preferred Proponent shall be liable for all losses, damages, costs and expenses (including consequential losses and damages, and legal fees on a solicitor and client basis) suffered or incurred by the Owner as a direct or indirect result thereof, including but not limited to any increase in the price of performance over the price submitted by the defaulting Preferred Proponent in its Proposal.

2.1.9 Limitation of Liability

In no event shall either party be liable to the other for indirect or consequential damages, damages for loss of profit, revenue or reputation or other indirect damages arising out of the breach or fault or negligence of either party under the terms of this RFP or any agreement arising therefrom. Clauses that limit the liability of the Proponent with the proposal are not acceptable.

Each Proponent, by submitting a Proposal, agrees that:

1) In the event that any or all of the Proposals are rejected or disqualified for any reason, proper or improper, or the Project or selection process is modified, suspended or cancelled for any reason, neither the Owner or its members, employees, officers, directors or representatives will be liable under any circumstance for any claim, damages, losses, cost, reimbursement or compensation to any person or entity whatsoever arising out of this Proposal, including, but not limited to the cost of

preparation of the Proposal, loss of anticipated profits, loss of opportunity and any other matter;

2) The Proponent hereby waives any claim for loss of profits or loss of opportunity if the Proposal is rejected or disqualified or the Proponent is not successful in the selection process for any reason whatsoever; and
3) The Proponent acknowledges that in evaluating the Proposals, the Owner and its advisors are seeking a Proposal satisfactory to the Owner and under no obligation to the Proponent to do anything other than bona fide consider all Proposals.

In the event that the Owner shall be in default under this RFP or the Agreement, or shall be negligent in the performance of its duties under this RFP or the Agreement, or shall be in default of any legal, contractual or statutory obligation to the Proponents, then in no event shall there be any liability to the Owner, its members, employees, officers, directors, advisors or representatives in excess of the actual out-of-pocket costs incurred by the Proponent in preparing the Proposal of such Proponent and no claim shall be made if not made within six (6) months after the date of receipt of all of the Proposals and opening of the Proposals.

Award of this contract is subject to appropriate funding acceptable to the Owner being available and received by the Owner.

2.1.10 Non-Compliance

The Owner's determination of non-compliance will be based on the contents of the Proposal itself. A Proposal that is compliant is one that conforms to all the terms, conditions, TOR, addenda and other requirements of the RFP without arithmetic errors, material deviation, irregularity, reservation, or omission.

The Owner reserves the right to waive a non-compliance with the requirements of the RFP where the non-compliance is minor or inconsequential. The determination of what is or is not a minor or inconsequential non-compliance, and the determination of whether to waive or not waive the non-compliance, shall be at the Owner's sole discretion.

The Owner may request the Proponent to submit the necessary information or documentation, within a reasonable period of time, to rectify non-compliances or omissions in the Proposal related to documentation requirements. Such omission shall not be related to any aspect of the price of the Proposal. Failure of the Proponent to comply with the request may result in the rejection of its Proposal.

2.1.11 Conflict of Interest and Access to Confidential Information

Each Proponent must include in its Proposal a statement regarding conflict of interest and access to any Confidential Information.

"Confidential Information" refers to confidential information of the Owner (other than confidential information which is disclosed to the Service Provider in the normal course of the Request for Proposal); the Confidential Information is relevant to the Services required by the Request for Proposals, their pricing or the Request for Proposal evaluation process; and the disclosure of which could result in prejudice to the Owner or an unfair advantage to the Service Provider.

The submission of any Proponent may be disqualified where the Proponent fails to provide confirmation or makes misrepresentations regarding any of the above. Further, the Owner shall have the right to rescind any Agreement with the successful Service Provider in the event

that the Owner at his/her discretion determines that the successful Service Provider has made misrepresentation regarding any of the above, in addition to or in lieu of any other remedies that the Owner has in law or in equity.

2.1.12 Requirements from the Joint Venture

“Joint Venture” is a collaborative undertaking by two or more firms for which the participant firms are equally and fully (both jointly and individually) responsible. A Joint Venture is limited to one (1) Proposal. A firm in a Joint Venture may form a Joint Venture with another firm and can provide a Proposal under that Joint Venture. For a Joint Venture, the following information must be provided:

1) Undertaking that the Service Providers in a Joint Venture will be working as equal partners for the purposes of this Assignment.
2) Specialties / areas of work that each individual Service Provider will be responsible for.
3) Lead firm for the Owner contact for the purposes of this Assignment. The Owner will deal with the Lead firm on the contractual matters.
4) Name, title and telephone number of the Principal of the Lead firm who will serve as the Contact for the project. The Principal must have been empowered to sign the Agreement with the Owner and make decisions on behalf of the Joint Venture for the Service Provider firm on contractual matters.
5) Each Service Provider firm in a Joint Venture is responsible for the delivery and quality of work for the purposes of this Assignment.
6) At the award of an Assignment, the Agreement Offer shall be signed by and shall be binding on all firms in a Joint Venture. All provisions and obligations of the Agreement shall apply equally to all Joint Venture Service Provider firms. In case of a breach of the Agreement, all the Service Providers may receive an infraction and related sanction.
7) Each firm in a Joint Venture is responsible for a completed and signed Declaration for No Conflict of Interest.

2.2 Service Provider’s Terms and Conditions

2.2.1 General Conditions

The Owner shall be responsible for ascertaining the availability of all information prior to the start of the project and for determining the procedures to be followed during the project.

The Owner will provide as much information as possible; however, they cannot verify its accuracy or completeness. Information may include data and relevant reports. The Service Provider shall return, in good condition, all materials supplied by the Owner after completion of the project.

The Service Provider and the Owner’s Project Team shall maintain regular direct contact during the course of the project.

Mohawk Council of Akwesasne’s “Consultant Contract – Professional Services” can be found in Appendix H.

2.2.2 Contract Responsibilities

The Service Provider agrees to enter into a contract with the Owner for the work as outlined in the Request for Proposal up to the accepted maximum limited as submitted by the Service Provider.

The Service Provider agrees to carry out the work in accordance with an accepted schedule presented in the Proposal and to submit monthly reports of physical and financial progress and milestones completed.

The Service Provider agrees to make use of any existing data and reports to the maximum extent possible.

The Service Provider agrees to provide complete and comprehensive professional services in the specialty fields required to carry out the work, including any sub-consulting works.

2.2.3 Privileged Information

Any information made available to the Service Provider related to the project shall be treated as privileged and confidential by the Service Provider except where the nature of the project requires the release of such information or where such release is authorized by the Owner.

2.2.4 Property of Documents and Copyright

All materials developed and reports made in connection with the project shall become the property of the Owner and must be turned over with full copyright to the Owner upon completion of the project. This includes all digital files in their original format. The Service Provider shall not divulge or use such material other than in performing the services under the contract.

2.2.5 Terms and Schedule of Payments

As funding is provided primarily from the federal government, any funding and payments thereunder will be subject to the requirements of such program and contracts with the Owner.

Payment by the Owner shall be based on the Service Provider's submission for fees and expenses, supported by time sheets and invoices for actual expenses incurred. A format for invoicing will be agreed by the Owner's Project Team, based on past practices. In general, invoicing should identify staff, rate, and hours for the period. Actual sub-consultant invoices and receipts for disbursements should also be provided.

Payment of fees and reimbursable expenses for services performed by the Service Provider for which the fee is calculated on a percentage of the cost of the work completed, shall be made within 30 days upon receipt of his/her acceptable statement of account by the Owner. The monthly fee shall be based on the Service Provider's monthly progress estimate pro-rated on the basis of the amount of the study completed, applied against the Service Provider's upset limit, as well as the current amount of disbursements incurred.

2.2.6 Invoicing

The Service Provider shall submit two (2) copies of each invoice to the Owner's Project Coordinator on a monthly basis. Invoices shall also be provided in digital format to the Owner's Project Team. Invoices shall include all time and charge-out rates, expenses and disbursements, including any mark-up for sub-Service Providers.

The Service Provider shall record and document the cost for each allowance item separately. The Service Provider invoice shall have a separate charge for each allowance items.

At no time shall the costs for the Consulting Services be exceeded without prior written authorization of the Owner's Project Team. Copies of all invoices shall be sent to the Owner and Project Manager.

2.2.7 Contract Cancellation

The Owner shall have the right, which may be exercised from time to time, to cancel any uncompleted or unperformed portion of the work or part thereof without cause or fault. In the event of such cancellation, the Owner shall pay to the Service Provider the cost and expenses by the Service Provider in performing that portion of the work completed up until the date of cancellation.

The Owner may:

1) If the Service Provider; commits any act of bankruptcy; or if a receiver is appointed on account of its insolvency or in respect of any of its property; or if the Service Provider makes a general assignment for the benefit of its creditors; then, in any such case, the Owner may, without notice; terminate the contract.
2) If the Service Provider; fails to comply with any request, instruction or order of the Owner; or fails to pay its accounts; or fails to comply with, disregard statutes, regulations, by-laws or directives of relevant authorities relating to the work; or fails to prosecute the work with the skill and diligence; or assigns or sublets the contract or any portion thereof without the Owner's written consent; or refuses to correct defective work; or is otherwise in default in carrying out its part of any of the terms, conditions and obligations of the contract, then, in any such case, the Owner may, upon expiration of ten days from the date of written notice to the Service Provider, terminate the contract.
3) Any termination of the contract by the Owner, as aforesaid, shall be without prejudice to any other rights or remedies the Owner may have.
4) If the Owner terminates the contract, it is entitled to:
    a) Take possession of all of the work in progress and finish the work by whatever means the Owner may deem appropriate under the circumstances;
    b) Withhold any further payments to the Service Provider until its liability to the Owner is ascertained;
    c) Recover from the Service Provider loss, damage and expense incurred by the Owner by reason of the Service Provider's default (which may be deducted from any monies due or becoming due to the Service Provider, any balance to be paid by the Service Provider to the Owner).

The Owner shall not be liable to the Service Provider for loss of anticipated profit on the cancelled portion or portions of the work.

2.2.8 Subcontracting Services by the Service Provider

Sub-contracting by the Service Provider shall not be construed to relieve the Service Provider from any obligation under this Assignment or impose any liability upon the Owner. Nothing contained in the assignment documents between the Service Provider and its sub-service provider, shall create a contractual relationship between a Sub-Service Provider and the Owner.

2.2.9 Successors and Assigns

The contract shall ensure to the benefit of and be binding upon the parties hereto and their lawful heirs, executors, administrators, successors and assigns.

2.2.10 Indemnification

The Service Provider shall indemnify and save harmless the Owner, its employees,

contractors, agents and assigns (collectively, the "Indemnities") from and against any and all Claims of any nature whatsoever and howsoever caused resulting from or relating to:

1) any breach, violation or non-performance by or on behalf of the Service Provider of any covenant, obligation or agreement of the Service Provider contained in this Agreement, including any warranty (express or implied);
2) any negligent acts or omissions or willful misconduct by or on behalf of the Service Provider relating to the Services;
3) any acts performed or omitted to be performed (including, without limitation, any negligent acts or omissions) by or on behalf of the Service Provider beyond the authority of the Service Provider hereby conferred;
4) any inaccuracy in or breach of any of the representations or warranties of the Service Provider contained in this Agreement or any document or certificate prepared by or on behalf of the Service Provider given pursuant to this Agreement;
5) any claims for personal injury or property damage by third parties, caused by errors, omissions, negligence, willful misconduct, recklessness or fraud of the Service Provider, its officers, directors, partners, affiliates, agents or employees in connection with the Services; and/or
6) all reasonable costs, expenses and legal fees (on a solicitor and his own client basis) that may be incurred or paid by the Owner in enforcing the terms, covenants and conditions of this Agreement and/or that may be incurred or paid by the Owner in connection with any action, suit or proceeding with respect to a matter for which the Service Provider is obligated to indemnify the Indemnities, provided that the indemnity obligations of the Service Provider hereunder shall not extend to claims attributable to the negligence or willful misconduct of the Owner.

2.2.11 Replacement of Specific Individuals

If specific individuals including those from Sub-Service Providers are identified in the Contract to perform the Work, the Service Provider must provide the services of those individuals unless the Service Provider is unable to do so for reasons beyond its control.

If the Service Provider is unable to provide the services of any specific individual identified in the Contract, it must provide a replacement with similar qualifications and experience. The replacement must meet the criteria used in the selection of the Service Provider and be approved by the Owner’s Project Team. The Service Provider must, as soon as possible, give notice to the Owner of the reason for replacing the individual and provide the name, qualifications and experience of the proposed replacement.

The Service Provider must not, in any event, allow performance of the Work by unauthorized replacement persons. The Owner may order that a replacement stop performing the Work. In such a case, the Service Provider must immediately comply with the order and secure a further replacement that is approved by the Owner’s Project Team. The fact that the Owner does not order that a replacement stop performing the Work does not relieve the Service Provider from its responsibility to meet the requirements of the Contract.

2.2.12 Workers’ Compensation Board Coverage

The Proponent, and any proposed Sub-Service Providers, shall provide a Workplace Safety and Insurance Board (WSIB) Registration Number in the Proposal. The Service Provider, and any Sub-Service Providers, shall provide a certificate of clearance from WSIB and on the certificate naming the Owner as Principal:

1) Prior to award
2) Prior to expiration of the contract Period; and
3) At any other time when requested by the Owner.

2.2.13 Insurance

The Contract shall be effective only upon approval by owner of acceptable evidence of the insurance required below. Such insurance shall be in force on the date of execution of the Contract and shall remain continuously in force for the duration of the Contract.

1) Commercial General Liability

    a) The policy limit shall be no less than Two Million Dollars ($2,000,000) per occurrence. The Owner and their representatives shall also be named as being covered by the policy. Such general liability insurance shall provide coverage in respect of property damage and/or bodily injury (including death) arising out of any and all Services and shall include property damage if the damaged work or the work out of which the damage arises was performed on behalf of the Service Provider by a subcontractor and shall include bodily injury (including death) if the bodily injury (or death) arises out of work performed on behalf of the Service Provider. Such insurance shall contain a cross-liability endorsement.

    b) The coverage under the policy shall be maintained continuously with respect to the performance of any aspect of the Services during the Term.

2) Professional Liability Insurance (Errors and Omissions)

    a) The policy shall be in an amount not less than Two Million Dollars ($2,000,000.00) per claim and in the aggregate insuring the Service Provider. The coverage under the policy shall be maintained continuously during the Term and for two years after the termination or expiration of this Agreement and shall cover insurable losses arising out of an error or omission in the rendering of or failure to render the Services.

3) Change in Insurance Coverage

    a) The insurance coverage cannot be modified without written consent of the Owner's Project Team. It is understood and agreed that the Service Provider shall not change or cancel the insurance coverage provided for this project until 60 days after written notice of such change or cancellation has been personally delivered to the Owner.

2.2.14 Assignment

The Service Provider cannot assign the contract in whole or in part without the prior written consent of the Owner and any assignment made without that consent is void and of no effect. All sub-Service Providers are to be identified.

2.2.15 Changes to the Contract

If requested in writing by the Owner, the Service Provider will make any required changes to the Contract. The Service Provider will advise the Owner's Project Team of any such effect on

the time, schedule and budget or any other implications of the changes. Such changes will be incorporated into the Contract by formal change order. No changes required by the Service Provider to remedy errors or other problems attributable to shortcomings of the Service Provider, including persons employed or supervised by them, shall entitle them to additional fees or charges. Rectification of such errors/omissions will be the responsibility of the Service Provider. At no time shall the costs for construction, professional project management or engineering services be exceeded without prior written authorization of both the Owner and Indigenous Services Canada.

2.2.16 Change Orders

The Service Provider shall complete the scope of work in the project as set out in this Request for Proposal and the accepted Service Provider's proposal. The Service Provider shall have no authority to make changes without first obtaining approval from the Owner's Project Team.

In addition, no increase in the contract amount for either fees or disbursements will be permitted unless a request for such additional payment is received in writing and the Owner's Project Team with a full explanation for the reasons therefore, and, a Change Order for such additional payment has been approved by the Owner's Project Team.

2.2.17 Dispute Resolution

Should a dispute arise between the Owner and Service Provider, suggested guidelines for resolution are provided in Section 5 of ISC's CN-1, Construction Contracting Guidelines for First Nations, 2002.

2.2.18 Reserve Access

The Service Provider shall notify and obtain permission from the Owner's Project Coordinator and/or Chief and Council with respect to Reserve access for activities relating to this project.

Service Providers shall not enter any private property for whatever reason without the First Nation approval and without first obtaining approval from the owner of the private property. The Service Provider shall assume all responsibility for trespassing on private land.

2.2.19 Retention of Records

The Service Provider shall retain all records pertinent to expenditures incurred under the Contract in a legible form for a period of ten years.

2.2.20 Inspection of Records

All Service Provider records with respect to any matters covered by the Contract shall be made available to the Owner or its designees at any time during normal business hours, as often as the Owner deems necessary.

PART B – TERMS OF REFERENCE – DESIGN OF ROTATING BIOLOGICAL CONTACTOR SYSTEMS REPLACEMENTS AND UPGRADES

Section 3: INTRODUCTION

3.1 General

This Service Provider Terms of Reference (TOR) defines the scope of engineering services that the Service Provider shall perform for the Mohawk Council of Akwesasne (MCA) for the wastewater systems replacements and upgrades. This Terms of Reference also defines the conditions of the engagement. This Terms of Reference shall be included in the formal Request for Proposals submitted by the band for this service.

Selection of the Service Provider will be by a competitive proposal process, as per the tendering policy of ISC, in response to this Terms of Reference.

The engineering servicing Contract will be between the Service Provider and the Mohawk Council of Akwesasne Project Team.

3.2 Basic Community Profile

The Akwesasne First Nation is located along the St. Lawrence River, where Ontario and Quebec meet the U.S. state of New York. *Figure 1* in Appendix A shows the general location of the community. *Figure 2* in Appendix A presents the existing land use of the Akwesasne Mohawk First Nation.

The Akwesasne First Nation is classified as Geographic Zone 2, meaning that the reserve is located at a distance between 50 and 350 km from a service center to which the community has year-round road access.

The Akwesasne First Nation consists of Cornwall Island district, St. Regis Village district, Tsi Snaihne district, Yellow Island, St. Regis Island, Stanley Island, Hamilton Island and other islands. It covers an area of approximately 8,589 ha (21,224 acres). The Rotating Biological Contractor (RBC) systems replacements and upgrades are located within the District of Cornwall Island in the Province of Ontario.

The Cornwall Island district is an island in the St. Lawrence River. It can be accessed via a bridge located in Cornwall, Ontario. A bridge to the district of Cornwall Island from the United States can be accessed in Rooseveltown, New York.

The Akwesasne community has a registered population of 13,366 as of July 2024 with 10,226 members living on the reserve and 3,140 living off reserve.

3.3 Existing Wastewater System

There are three Rotating Biological Contactor (RBC) wastewater systems that require replacement or upgrades. These systems are the A’nowara’ko:wa Arena, the Ahkwesasne Mohawk School (AMS), and Block 97 RBCs.

Wastewater Quality

The Akwesasne wastewater operators sample the Arena, AMS, and Block 97 RBCs influent and effluent every month. The CBOD and TSS results for 2025 and 2026 are in Table 2.1 and 2.2 below. The effluent results are entered quarterly into Environment Canada’s Wastewater Systems Effluent Regulations (WSER) system.

Table 2.1 – Effluent CBOD Results

RBC	Mar 2025	Apr 2025	May 2025	Jun 2025	Jul 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026
Arena	<2	38	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
AMS	3	3	<2	<2	2	2	<2	2	2	3	4	<2
Blk 97	<2	5	4	3	3	3	<2	3	2	<2	4	5

Table 2.2 – Effluent TSS Results

RBC	Mar 2025	Apr 2025	May 2025	Jun 2025	Jul 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026
Arena	6	12	2	2	3	2	2	3	15	22	<1	1
AMS	9	9	5	5	16	5	8	8	8	6	4	4
Block 97	5	12	9	6	8	9	13	11	5	9	7	9

The carbonaceous BOD (cBOD) level in the Arena RBC in April of 2025 was 38 mg/L which exceeds the WSER maximum allowable level of 25 mg/L. All other cBOD and Total Suspended Solids (TSS) levels are within compliance of WSER in 2025.

Wastewater Treatment

The Arena RBC was installed in 1995 with a design flow of 30 m^3/day and design peak flow of 3.75 m^3/hr. All the equipment within the RBC building is deteriorating due to age and corrosion. As a result, one section of media sheets in the treatment zone has collapsed due to corrosion of the metal framing that connected the media to the rotor. The drive end and stub end of the rotor are also damaged due to wear and tear and corrosion. The motor runs at high temperatures, which is not safe for operations and could lead to the need for motor replacement. Supports that bear the weight of the RBC are extremely corroded. The RBC system is past its life of service and is due for replacement.

The AMS RBC was installed in 1991 with a design flow of 50 m^3/day. The design peak flow of the AMS RBC is recorded as balanced flow at 50 m^3/day. This RBC has experienced wear and tear and corrosion for 35 years. Tanks within the RBC system occasionally overflow, leading at times to partial treatment of the wastewater. The outer tank is corroded and is suspected of leaking. The RBC system is past its life of service and is due for replacement.

The Block 97 RBC was installed in 2000 with a design flow of 200 m^3/day. The design peak flow of the Block 97 RBC is recorded as balanced flow at 200 m^3/day. The treatment zone contains biological discs, polypropylene media sheets, buckets, and rotor. The steel treatment zone tank stands on metal supports which are extremely corroded. The RBC system needs upgrades.

Collection Systems

The Arena RBC services the A'nowara'ko:wa Arena. The Mohawk Council of Akwesasne is considering servicing the houses that reside along Phillip Hoppes Memorial Road leading to the

Arena. The Arena RBC treatment system does not have any lift stations.

The AMS RBC services eight buildings and has one lift station.

- Akwesasne Mohawk School
- Cornwall Island Administration building #1
- Cornwall Island Administration building #2
- Cornwall Island Administration building #3
- Kawehno:ke Medical Clinic
- Akwesasne Mohawk Board of Education
- Peacetree Mall
- Group Home
- Roads Department

The Block 97 RBC has one lift station and services two MCA buildings, Housing Department multiplexes, and three private homes:

- Tsiionkwahonhso:te Long-Term Care Facility,
- Women's Shelter,
- 8 Housing Department apartment buildings - 1 fiveplex, 1 triplex, 1 fourplex, 5 sixplex (all 3-bedroom apartments).
- 25 Housing Department rent-to-own units (all 3-bedroom units).
- 3 private residences.

3.4 Condition Assessment

The Mohawk Council of Akwesasne (MCA) retained EVB Engineering to conduct a condition assessment of the A'nowara'ko:wa Arena and the Ahkwesasne Mohawk School (AMS) RBC facilities.

In the *DRAFT* MCA RBC WWT Facilities Condition Assessment, EVB Engineering produced a list of deficiencies in the AMS and Arena RBC's, see list below:

<u>AMS RBC</u>

- Delamination was observed along the interior and exterior walls of the steel tank.
- Sections of the aluminum grating show signs of deterioration and delamination.
- The drive chain and sprocket assembly show signs of corrosion and scale build up.
- The protective guard rails also show signs of corrosion.
- The gear chain was significantly corroded, showing signs of wear during the inspection. Some slipping of the chain was also observed at the time of the inspection.
- The shaft bearing shows some signs of corrosion at the outlet bucket feed system.
- The biological disk media appear to be intact; however, the steel frame and support rings show moderate signs of corrosion.
- The bucket feed system as the upstream and downstream end of the media appears to be functioning as intended.
- The unit heater is heavily corroded.

<u>Arena</u>

- Heavy corrosion was observed throughout facility (i.e., ladder rungs, steel tank, pillow bearing, shaft).
- The first section of media disks is missing. The shaft bearing along this section was

significantly corroded and movement could be seen while it was rotating.
- The gear reducer and chain show signs of wear.
- There was no biological film build up observed on the media at the time of the inspection, suggesting the system is underloaded.
- The underside of the aluminum cover for the UV encloser was deteriorated.

The *DRAFT* MCA RBC WWT Facilities Condition Assessment also describes other operational and safety concerns such as mechanical reliability and process stability, increased maintenance burdens and unplanned shutdowns, structural safety and load-bearing capacity, occupational health and safety risks, and mechanical hazards.

The conclusion and recommendations of the *DRAFT* MCA RBC WWT Facilities Condition Assessment are to replace the A'nowara'ko:wa Arena and Ahkwesasne Mohawk School RBC facilities. The EVB Engineering, *DRAFT* MCA RBC WWT Facilities Condition Assessment, April 9, 2026, can be found in Appendix E.

The final version of the MCA RBC WWT Facilities Condition Assessment will be available to the successful proponent at a later date.

3.5 Project Team

This project shall be managed with a project team approach. The Project Team shall normally comprise the following key members:

Name and Position	Responsibility
Chief and Council, TBD	Project concurrence with First Nation requirements.
Leslie Papineau Akwesasne First Nation, Project Coordinator	Project responsibility and liaison on behalf of Chief and Council.
Daryl Seymour MCA Capital Management Officer	Provides technical advice to the Project Team. Reviews project documents.
Lorraine Bova MCA Technical Services Engineer	Provides technical advice to the Project Team. Reviews project documents.
Kayla Sunday Environmental Consultant	Provides environmental advice to Project Team.
Consulting Engineer – To be selected	*Responsibilities as outlined in this TOR document.*

The primary overall responsibilities of the Project Team are:

- To keep the Chief and Council fully aware of the status and progress of the project.
- To define, confirm, review and recommend the scope of work to be performed by all parties.
- To implement the project in accordance with the project schedule.
- To fully implement the project in accordance with project approval documents and in compliance with all applicable regulatory agents.

- To ensure compliance with approved budgets and to take whatever measures are deemed necessary to accomplish the project objectives within approved budgets and schedule.
- To ensure qualified resources are utilized throughout the project, including local resources, so that local capacity is nurtured, and the facilities can be successfully constructed and maintained.
- To ensure the best interests of the First Nation are paramount in this project.
- To ensure, where reasonable and within the budget constraints, there is a quantifiable transfer of knowledge to the First Nation.
- To ensure the community becomes familiar with the project and that they are encouraged to have direct involvement in the project.
- To ensure that guidelines are followed.
- To review and recommend to the Chief and Council a list of Qualified Service Providers.
- To recommend and approve any appropriate Change Orders to the proposal prior to the undertaking of such work.
- To closely monitor the physical and financial progress and recommend corrective or remedial action if required.
- To review the monthly Project Status.

Section 4: OBJECTIVES

The main objectives are:

Design Phase

- To provide site investigation, design and engineering services for the complete development of the project to achieve the objective of two rotating biological contactor system replacements and upgrades to the Block 97 RBC satisfying 20-year population growth.
- To provide the First Nation with a cost-effective design for the rotating biological contactor system replacements and upgrades that meets all regulatory requirements including a complete and clear set of contract documents (contract, tender documents, plans and specifications) in accordance with this Terms of Reference and within specified schedule milestones in this terms of reference. All Federal and Provincial regulations (whichever is more stringent) will be met.

Construction Phase

- To provide tender administration services, which could include but not limited to advertising and facilitating tender, answering inquiries, attending pretender site meeting, issuing tender addenda, if any, required for the selection of the Contractor. Coordinate and administer tenders for pre-purchased items as necessary. Coordinate and facilitate the delivery and storage of all pre-purchased items.
- To perform contract administration and construction inspection services necessary for quality control activities and cost control and to ensure that the project is carried out in accordance with the Contract Documents.
- To provide commissioning and reporting services in accordance with Public Works and Government Services Canada — Client Service Team for Aboriginal Affairs and Northern Development Canada's Project Implementation Procedures Manual (PIPM).
- To complete warranty period services to ensure all deficiencies are corrected.

Section 5: SCOPE OF WORK

5.1 General

The following sections outline broadly the scope of work and are not intended to provide every detail of the work to be performed by the Service Provider during this contract. The scope of work items listed in this document shall not be considered to be absolute description of the scope of work. The actual work will be developed further throughout the design and project meetings with the concurrence of the Project Team.

The Service Provider main roles and responsibilities are to:

- Become completely familiar with the expectations and requirements of the First Nation.
- Coordinate with the First Nation Chief and Council, the various committees, and the Project Team, as and when required.
- Chairs meetings and provides meeting minutes as required;
- Define and confirm criteria in the areas of cost control, budgeting, scheduling and quality control.
- Maintain strict budget control and ensure that the design is, at all times, in compliance with the project budget.
- Identify and propose all potential cost saving measurements for construction.
- Ensure payments are controlled based on contractual obligations (project scope, quality, schedule and price).
- Identify all risk elements that may impact pricing and include a budget item in the cost estimate to address this potential risk. This risk identification must be updated at each cost estimate.
- Identify and acquire any approvals/permits required from other agencies (including government).
- Ensure a speedy approval by all the departments and agencies that have jurisdiction on this project.
- Follow all Federal and Provincial Legislation.
- Review of major project items (ie: designs, tender packages, reports, reviews, etc.).
- Providing required documentation.
- Ensure deliverables are met and Project is on schedule.
- Ensure that every effort to expedite the schedule is implemented.
- Keep the First Nation informed of the project status through the implementation of a program of regular monthly reporting as well as the coordination and hosting of regular monthly meetings.
- Oversee all phases and aspects of the project and ensure strict conformity to the objectives of the project to meet the client's requirements.
- Be familiar with the scope of work for all components.
- Be familiar with the inspection requirements at key milestones as the project progresses: e.g. topographic survey, soil testing, material testing, structural inspections and testing, electrical and mechanical components and testing associated in-ground work inspections, and regulatory requirements (eg, in construction and wastewater works construction window).
- Prepare a communications plan to assist the project team and Chief and Council in providing reports to the community members. This communications plan must include a method of translating technical data into a form that is more easily understood by the general public.

- Review and recommend to First Nation and Project Team draft contractual clauses, including but not limited to appropriate financial leverage (e.g., bonds, payment terms), warranty and process warranty clauses, scope definition, quality assurance/quality control expectations, and terms of payment's alignment with measurable/verifiable milestone deliverables.

The scopes of the project include, but are not limited to the following:

Design Phase

- Review the existing studies and all related reference documentation to be familiar with the condition and history of the wastewater system and the project requirements with respect to scope of the work, schedule, budget and First Nation needs/concerns. See Section 5.2.4 for details.
- Prepare a Preliminary Design of the rotating biological contactor system replacements and upgrades with a conceptual design report and cost estimates. Address technical comments, if any, from the Project Team prior to finalizing the Conceptual Design Report. Obtain approval from the Project Team and Chief and Council prior to proceeding with the detailed design.
- Prepare a Detailed Design of the RBC Systems Replacements and Upgrades, including the design drawings, specifications, cost estimates and constructability considerations.
- Prepare the three separate tendering documents and contracts for each of the RBC Replacements or updates projects, which will each be tendered separately, due to funding constraints.

Construction Phase

- Prepare and issue tenders upon approval by the Project Team, review and evaluate tenders.
- Prepare contract for execution between First Nation and successful bidder.
- Provide contract administration and inspection services during the construction phase until project completion.
- Review and approve O&M Manuals developed by the Contractor and ensure training (to be provided by equipment supplier in coordination with the Contractor/Service Provider) to be delivered to the WTP operators.
- Engage in project start-up and commissioning.
- Provide reporting services in accordance with Public Works and Government Services Canada — Client Service Team for Aboriginal Affairs and Northern Development Canada's Project Implementation Procedures Manual (PIPM) and this Terms of Reference.
- Provide warranty period services to ensure all deficiencies are corrected.

5.2 Project Considerations

5.2.1 Scope of Design

This section is intended to be a general overview of the anticipated scope of work.

The existing Akwesasne First Nation rotating biological contactors (RBC’s) have exceeded the end of their design service life and they have many deficiencies throughout. The treatment systems are in compliance with standards defined by WSER but the physical infrastructure is close to failure.

The design of the new treatment systems and upgrades must meet the all regulations, standards, and best practices, including Environment Canada's WSER Regulations, and the RBC systems must have sufficient capacity for current and future flows for 20-year horizon from 2026. The RBC replacement buildings must follow provincial and federal building codes.

The replacement and upgrades are expected to include:

- Design of a new wastewater facility for the A'nowara'ko:wa Arena, including treatment, collection, and building,
- Design of a new wastewater facility for the Ahkwesasense Mohawk School and buildings in this subdistrict, including treatment, collection, and building, and
- Upgrades for the existing RBC system in the Block 97 development.

The scopes of design will include, but are not limited to the following:

- Population projection for 20 years for the population serviced by each wastewater treatment system,
- Investigation of all feasible methods of wastewater treatment for the A'nowara'ko:wa Arena and Ahkwesasne Mohawk School service areas,
- Design wastewater treatment, collection facilities, and wastewater system building for the A'nowara'ko:wa Arena and Ahkwesasne Mohawk School subdistrict,
- Establish equipment and materials in the Block 97 RBC requiring upgrades,
- Design the process for upgrading the equipment and materials in the Block 97 RBC system, and
- Provide a Class "A" estimate for the construction of the A'nowara'ko:wa Arena and Ahkwesasne Mohawk School subdistrict wastewater treatment and collection facilities and for the upgrades to the Block 97 RBC.

5.2.2 Community Involvement

The Service Provider shall work in close cooperation with the First Nation and the Project Team on all aspects of the project and shall ensure the community has ample opportunity to participate in the project.

The Service Provider shall, together with the Chief and Council, define the ways and means by which community participation can occur.

The First Nations' participation shall be encouraged throughout the stages of the project where possible in order to enhance this project. Community participation may be defined as a process of mutual education and cooperation which provides opportunities for Chief and Council, the First Nation and technical specialists to work together to complete the design.

The Service Provider shall maximize the opportunities for employment of First Nation persons and utilization of their resources during both the design and construction phases of this project.

The Service Provider shall identify opportunities for employment of the First Nation members and utilization of Akwesasne First Nation's resources during both the design phase and construction phase of this project. Tender documents will contain clauses instructing bidders as to availability of local resources, complete with unit rates. These clauses shall be included in the tender document front end, however, no minimum quantities shall be specified.

The Service Provider shall inspect all available Mohawk Council of Akwesasne equipment and facilities which are included in the construction contract for the Contractor's use, including

equipment such as loaders and rental housing, and confirm that they are in good working order.

5.2.3 Codes, Standards & Regulations

In the completion of the project, the Service Provider shall ensure that the latest edition of the following regulations, standards and guidelines are adhered to.

- Wastewater Systems Effluent Regulations SOR/2012-139, Environment Canada
- Fisheries Act (RSC 1985)
- Protocol for Centralized Wastewater Systems in First Nation Communities, INAC, April 2010
- Protocol for Decentralized Wastewater Systems in First Nation Communities, INAC, April 2010
- Design Guidelines for Sewage Works, Ministry of Ontario, 2008
- Policy and Practice Report, Municipal Wastewater, Pulp and Paper and Mining Effluents, May 2011
- Emergency Response Plan for Wastewater Systems in First Nation Communities, INAC
- Maintenance Management Plan for Drinking Water and Wastewater Systems in First Nations Communities, INAC, 2014
- First Nations On-Reserve Source Water Protection Plan, INAC, 2014
- Planning for Sewage and Water Services (MOE guideline D-5)
- Servicing Options Statements (MOE Guideline D-5-3)
- Technical Guidelines for Individual On-Site Sewage Systems: Water quality Impact Risk Assessment (MOE Guideline D-5-4)
- Incorporation of Reasonable Use Concept into MOEE Groundwater Management Activities (MOEE Guideline B-7)
- Determination of Contaminants Limits and Attenuation Zones (MOE Guideline B-7-1)
- Resolution of Groundwater Quality Interference Problems (MOEE Guideline B-9 and B-9-1)
- Determination of Treatment Requirements for Municipal and Private Sewage Treatment Works Discharging to Surface Water, MOE, Procedure F-5-1
- Relaxation of Normal Level of Treatment For Municipal and Private Sewage Treatment Works Discharging to Surface Waters, MOE, Procedure F-5-2
- Determination of Treatment Requirements for Municipal and Private Combined and Partially Separated Sewer Systems, MOE, Procedure F-5-5
- Procedures to Govern Separation of Sewers and Watermains, MOE, Procedure F-6-1
- Determination of Phosphorous Removal Requirements for Municipal, Institutional, and Private Sewage Works, MOE, Procedure F-8-1
- Procedure for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works, MOE, Procedure F-10-1
- Manual of Policy, Procedures and Guidelines for Private Sewage Disposal Systems (MOE Guideline F-9-1)

- Water Management - Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of the Environment (MOE B-1-2)
- Deriving Receiving-Water based, Point-Source Effluent Requirements for Ontario Water, MOE, Procedure B-1-5
- Guide for applying for approval of Municipal and Private Water and Sewage Works (MOE Guideline – August 2000)
- O.Reg 129/04 Licensing of Sewage Works Operators.
- Canadian Environmental Quality Guidelines, (CCME)
- Nutrient Management Act
- Canadian Environmental Protection Act, 1999 (S.C. 1999, c.33)
- Canadian Environmental Assessment Act, 2012 (S.C. 2012, c. 19, s. 52)
- The Energy Efficiency Act S.C. 1992, c.36
- Energy Efficiency Regulations
- Species at Risk Act (S.C. 2002, c. 29)
- Indian Reserve Waste Disposal Regulations (C.R.C., c. 960)
- Canada Labour Code (R.S.C., 1985, c. L-2)
- Canada Occupational Health and Safety Regulations (SOR/86-304)
- Occupational Health and Safety Act Section 70 (2) 23. (Ontario)
- Provincial I Territorial Worker's Compensation Act and Regulations (as per project location)
- The Canada Occupational Health and Safety Regulations
- Hazardous Products Act (R.S.C., 1985, c. H-3)
- Hazardous Materials Information Review Regulations (SOR/88-456)
- Hazardous and/or designated substances provincial/territorial acts and regulations
- National Building Code of Canada (latest edition)
- National Fire Code of Canada (latest edition)
- National Plumbing Code of Canada (latest edition)
- National Energy Code of Canada for Buildings (latest edition)
- R2000 Building Standards
- National Energy Code of Canada for Buildings 201 - Part 5 – Canadian Heating, Ventilating and Air Conditioning
- CAN/CSA-B 149.1-05 - Natural Gas and Propane Installation Code
- Canadian Electrical Code
- Ontario Electrical Code
- Fire Protection, Technical Information Document. RPS for INAC - TID-FP-01PWGSC (2000)
- Regulations made under the Ontario Water Resources Act, 1990
- INAC Wastewater and Wastewater Policy and Level of Service Standards (Corporate Manual System)
- Project Implementation Procedures Manual (PIPM) for Water and Wastewater Systems, 2005
- Tendering Policy on Federally Funded Capital Projects for First Nations on Reserve

- Framework to Guide the Development of a First Nation Tendering Policy
- Operational Parameters for the Review and Evaluation of Construction Management Projects
- Management Control Framework for Capital Facilities and Maintenance Program, March, 2013
- INAC's Construction Contracting Guidelines for First Nations and Aboriginal Communities (Contract Administration Training Publication - CN1)
- INAC's Contracting for Professional Services for First Nations and Aboriginal Communities Contract Administration Training Publication - CN2)
- INAC's Contracting for Non-Professional Services for First Nations and Aboriginal Communities (Contract Administration Training Publication - CN3)
- AANDC First Nations and Aboriginal Communities Project Management Manual
- Construction Contracting for First Nations
- AANDC Operational Parameters for the Review and Evaluation of Construction Management
- AANDC Operation and Maintenance
- INAC Technical Support Document, TSD 4-6 Life Cycle Costing, June 1985

Please note that the most recent version/revision of these documents shall always be used. Unless identified otherwise, the most stringent of the applicable guidelines and regulations are to be used in this project.

During their performance of these works, the Service Provider shall become familiar with the current Level of Service Standards (LOSS) and the Minimum Essential Project Information Requirements (MEPIR) in the PIPM. Those aforementioned documents pertaining to ISC are available from ISC.

5.2.4 Background Information and Existing Documents

The Service Provider shall obtain and review any available background information from the appropriate agencies that is relevant to this project including all pertinent studies, mapping, drawings, etc. The Service Provider shall meet with the First Nation and Project Team representatives to review in detail the schedule, budget, site and project requirements and will undertake necessary field work in order to complete the design. The following documents and studies will be provided by the Mohawk Council of Akwesasne Project Team. Note that this list is not intended to be exhaustive.

- EVB Engineering, Draft *Condition Assessment of Wastewater Treatment Facilities*, March 2026
- Hannah Environmental Equipment Inc. *Akwesasne Assessment Fall 2023*, January 14, 2024
- PJ Hannah, Arena RBC Drawings, 1995
- PJ Hannah, AMS RBC Drawings, 1991
- PJ Hannah, Block 97 Drawings, 2000

5.2.5 Environmental Considerations

5.2.5.1 MCA Environmental Assessment

The Mohawk Council of Akwesasne Environmental Assessment (EA) is an assessment of the project site that determines if community members (Onkweshon:a), their surrounding environment, or their culture will be impacted or disturbed during construction. The EA includes, but is not limited to, project description, MCA Environment program consultation, community consultation strategy, and environmental effects and mitigation measurements.

The MCA Environment Department completed the EA reports when the RBC systems were constructed.

5.2.6 Cost Estimates

Estimated life cycle costing for a 20 year period shall be included for each Design Completion Stage (Capital Cost, O&M Costs for 20 year cycle and 20 year life cycle costs). Annual operating and maintenance costs shall include a breakdown of labour, equipment, materials, hydro, minor replacement, reports, etc.

The cost breakdown shall be in a tender format with appropriate headings such as: item, unit, quantity, unit cost and total. Mobilization, demobilization, design, construction inspection, legal survey, first nation administration, project management, known risk items and contingency are to be shown as separate amounts. Provide a summary of unit prices.

Mobilization and demobilization costs shall be defined as follows:

1. Mobilization - Those costs which will be incurred by the contractor to transport equipment and materials from the nearest railhead or highway to the site and the contractor’s costs to set-up at the site including a storage yard and building, and campsite for his/her men; and,
2. Demobilization - Those costs incurred to abandon the site including transportation of equipment from the site.
3. Mobilization and Demobilization costs shall be isolated from the costs which are applicable to a particular component of a Project and each shall be identified separately.

The Service Provider shall provide Construction Cost Estimates at the Conceptual Design (Class “D”), the 66% (Class “B”) and the 99% (Class “A”) Design Completion Stage.

Variances between each new and preceding cost estimate must be substantiated and discussed.

All estimates shall be in current Canadian dollars.

For the purposes of this Terms of Reference, Class A, B, C, and D, Cost Estimates are defined as follows:

Bid Price: This is the selected bidder’s final price after tender. 2% Construction Contingency will be allowed.

Class “A” Estimate: This is a detailed estimate based on quantity takeoff from final drawings and specifications prepared by appropriate qualified technical personnel. It is used to evaluate tenders or as a basis of cost controls. It is used for obtaining approvals, budgetary control, and design cost. It is based on the 99% detailed design package and final design package. 5% Construction Contingency will be allowed. For this project, a Professional Quantity Surveyor (PQS) may be required to provide the Class A pre-tender cost estimate based on the 99% detailed design tender documents. The cost of the PQS should be included in the Service

Provider's base design cost. The Service Provider shall provide a credit as a separate line item in Cost of Services Form, if the Project Team determines the PQS service is not required.

Class "B" Estimate: This is prepared by appropriate qualified technical personnel after site investigations and studies have been completed and the major systems defined. It is based on the Conceptual Design package and 66% detailed design package. 10% Construction Contingency will be allowed.

Class "C" Estimate: This is prepared by appropriate qualified technical personnel with limited site information and is based on probable conditions affecting the project. It represents the summation of all identifiable project elemental costs and is used for program planning, to establish a more specific definition of client needs and to obtain preliminary project approval. It is based on the Feasibility Study. 10% Construction Contingency will be allowed.

Class "D" Estimate: This is a preliminary estimate, which, due to little or no site information, indicates the approximate magnitude of cost of the proposed project, based on the client's broad requirements. This overall cost estimate may be derived from lump sum or unit costs for a similar project. It may be used in developing long term capital plans and for preliminary discussion of proposed capital projects.

5.2.7 Permits and Approvals

The Service Provider shall be responsible for obtaining all necessary permits, approvals and other authorizations required by any governmental, regulatory or other body having jurisdiction, including the payment of all fees in connection therewith.

5.2.8 Provisional Items and Cash Allowance (If Required)

The following items shall be listed as provisional item in the Proponent's proposal. Each Proponent should include the scope of work for each provisional item listed and whether it is anticipated that the item will be required for the study in their Proposal.

If the scope of a provisional item cannot be determined at this point, a cash allowance has been included for the item. Costs for the work by the Service Provider and by any Sub-Service Provider shall be paid from the cash allowance in the Service Provider's Contract. Where costs under a cash allowance exceed the amount of the allowance, the Service Provider will be compensated for any excess incurred, substantiated, and approved by the Project Team. Mark-up by the Service Provider for the work provided by sub-Service Provider will not be permitted. The Service Provider must provide the Project Team with a proposed scope of work and cost estimate for the work for approval prior to proceeding with this work. The Service Provider shall prepare the Terms of Reference for the item and solicit submissions from a minimum of three firms as per ISC's tendering policy for work that is estimated to cost over $30,000. The Service Provider will review proposals and make recommendations to the First Nation and project team regarding the acceptance of the proposal that best meets the requirements of the First Nation.

5.2.8.1 Geotechnical Analysis

The Service Provider shall carry out all required site investigations, field survey work, soil testing, and site geotechnical work at the locations of and along alignments of all proposed works. The services should include all geotechnical testing and any applicable ground water monitoring at the location of the project, and along alignments of all proposed works. A cash allowance of $40,000 has been included for the third-party geotechnical costs, which will be

invoiced by the Service Provider with no mark-up. The cash allowance includes the net cost of services for engineering services, labour costs, products, testing machinery and lab equipment, freight handling, unloading, and other authorized expenses incurred in performing the work. The Service Provider shall utilize First Nation equipment/labour as much as possible. The allowance does not include Service Provider's cost to retain and coordinate third party's works, which shall be included in the base design costs.

5.2.8.2 Sanitary Sewer Inflow and Infiltration Investigation

The Service Provider shall propose the methodology for the sanitary sewer inflow and infiltration (I&I) investigation that may start with flow monitoring to determine the area of high I&I and then conduct CCTV inspection to identify I&I issues for the I&I reduction plan development. If the third parties' services are required for flow monitoring and CCTV inspection, the Service Provider shall retain the third parties through a competitive bidding process. A cash allowance of $40,000 has been included for the third parities' service costs, which will be invoiced by the Service Provider with no mark-up. The Service Provider's cost to retain and coordinate the third-parties' works, including obtaining competitive pricing, and the cost for I&I reduction plan development shall be included in the base design cost.

5.2.8.3 Archeological Assessment

Not required for this assignment, as new facilities will be located on already disturbed soil.

5.2.9 Minimum Essential Project Information

The Service Provider shall provide the following minimum essential project information.

1) Selected Option Summary:
   a) Needs and L.O.S.S. - Population/student projection, program objectives, shortfalls and needs, L.O.S.S. rationale, impact on needs & L.O.S.S.
   b) Existing facility condition, capacity, disposition.
   c) Design parameters and project scope – to confirm or update the previously approved design parameters.
   d) Confirmation that the best available project opportunity has been selected as the basis of the concept design.
2) Design concept rationale:
   a) Program requirements – (detailed project brief).
   b) Description of how the concept addresses program requirements and L.O.S.S., as applicable, for architectural, structural, siting, site development, infrastructure, and building services. Provide a detailed explanation of the design logic and rationale behind all major design decisions.
   c) Functional drawings – spatial relationship diagrams for interrelated functions, to illustrate a thorough analysis of functional aspects.
   d) Soil investigations results – geotechnical factors, risks, costs & environmental concerns.
   e) A detailed site analysis on a drawing. Outline the opportunities and constraints related to the site analysis (synthesis of all analysis stated on the site analysis drawing).
   f) Site development – spatial relationship diagrams of alternative clearing/grading/landscaping/facilities concepts, to compare functional, capital & O&M cost factors.
3) Concept Design Drawings:

(A set of conceptual line drawings, in sufficient detail to establish the basis for: preliminary design; outline of major components; and capital & O&M cost estimates)

a) Architectural concept line drawings – space allocation, layout, profiles; and type and location of major components, equipment, material, etc.
b) Structural concept line drawings – types and capacity of foundations, structural elements, and bracing.
c) Building services concept line drawings – type and location of component for HVAC, fuel, plumbing, electrical, fire protection, and energy management.
d) Infrastructure concept line drawings – water & sewer, roads, parking, fuel supply, power supply, telephone.
e) Topographical survey drawing.
f) Site development concept line drawing – site plan; site development plan; environmental protection requirements.
g) Hazard & operability review

4) Environmental Considerations:
   a) Environmental conditions
   b) Mitigations requirements
5) Class “B” Cost estimate:
   a) Cost breakdown – Class “B” construction & non-construction costs breakdown.
   b) O&M annual costs.
6) Proposed Project Management arrangements:
   a) Project schedule – as proposed.
   b) Method of implementation – public tenders or construction management/day/labour.
   c) Project organization – project manager, project team, construction supervision.
   d) Project control – quality management, QA/QC, schedule control, cost control.

5.3 Project Phases

The Design Phase includes:

- Conceptual Design (33% Design Completion Stage)
- Detailed Design (66% and 99% Design Completion Stage)

The Construction Phase includes:

- Tendering
- Contract Administration and Inspections Services
- Start-Up and Commissioning
- Warranty Period

If the Project Team is satisfied with the Service Provider in their performance of the Project, then they will be given the first opportunity to provide Construction Phase services. After completion of Design Phase, if the cost to complete the Construction Phase services is expected to exceed the cost identified in the accepted proposal, the Service Provider shall submit a full revised proposal for Construction Phase services including all rationales and justifications for the changes. If the Service Provider’s proposed fees are not accepted by the Project Team, the First Nation reserves the right to Request for Proposals for the Construction Phase services from other Service Providers.

5.3.1 Conceptual Design (33% Design Completion Stage)

Prior to the project initiation meeting, the Service Provider shall produce a Contract between

themselves and the First Nation. A draft shall be provided to the Project Team for review and comment and once acceptable, the Service Provider shall produce sufficient originals for execution between themselves and the First Nation. The Service Provider shall hold a project initiation meeting in Akwesasne First Nation so that the Service Provider can become familiar with the project.

The Service Provider shall review the findings and the recommendations from the Conditions Assessment Report and confirm their agreement with the recommended solution or provide any proposed deviations from the Conditions Assessment Report. The Service Provider shall issue a memo summarizing their agreement with the findings or any proposed deviations, including the construction cost differences and rationale. The Service Provider will meet with the project team to confirm agreement with any proposed changes. Once the Project Team has reviewed the background material with the Service Provider, the Service Provider shall commence the conceptual design.

All design work shall be conducted in conformance with the most recent regulations and standards and guidelines of Ontario and Federal and in accordance with the Project Implementation Procedures Manual. See Section 5.2.3 for more details.

The Service Provider will commence the sampling for raw sewage quality characterization analysis. This should be done on the same visit of the project initiation meeting in order to minimize the cost. The Service Provider shall collect adequate raw sewage sampling to confirm the parameters that may affect the treatment process. A testing for raw sewage quality characterization will be required. The testing shall be performed by an accredited laboratory.

A geotechnical investigation will be required as per Section 5.2.8.1 if the RBC system design will lead to any construction on undisturbed terrain. Associated administrative and coordination fees shall be included within the Service Providers' proposal.

The Service Provider shall complete a Receiving Water Assessment to confirm if the proposed treated effluent quality design objective is complying with Ontario regulations and determine if higher than normal level of treatment is required.

A meeting will be held in the community to discuss the recommendations outlined in the Draft Conceptual Design Report and the Service Provider will revise it to incorporate the comments of the Project Team into the final Conceptual Design Report.

At the conclusion of the conceptual design, the Service Provider will develop and submit to the Project Team the following, but not limited to and not necessarily in the following order, in the form of a Conceptual Design Report:

- Summary
- Confirmation that the treatment selected in the Conditions Assessment Report is recommended by the Service Provider
- Updated population projections based on current values
- Discussion on population projections.
- General design progress
- Design / construction concerns that may affect costs
- Design assumptions, criteria and goals
- Comprehensive list of required approvals & reviews.
- Flow schematics indicating all treatment units and equipment for the primary treatment process and waste handling system.

- Conceptual layouts showing the arrangement of wastewater treatment systems.
- Design parameters establishing treatment unit sizes and specific design criteria for minimum, average and maximum conditions of the major processes and waste handling systems.
- Design parameters for structural, mechanical, electrical and other engineering and architectural works.
- Confirm sufficient wastewater treatment is provided under the design.
- If pre-selection for certain equipment is recommended, prepare a pre-selection document and administer the pre-selection process on behalf of the First Nation. The pre-selection document will require the manufacturer to provide a performance guarantee that the pre-selected equipment will satisfy the most stringent federal or provincial standards.
- Requirements for ancillary facilities including space needs for plant administration, laboratory, maintenance, chemical handling and storage.
- Hydraulic profile establishing operating water elevations through the RBC system at normal and peak flows.
- Instrumentation and control narratives. Plant control concepts including plant control logic and key control parameters.
- A SCADA system must be incorporated in the final design, the Service Provider shall outline the parameters which can be monitored from a remote location and work closely with the Operator to design the system in accordance with the operator requirements.
- Design criteria for sizing the treatment equipment, pumps, dosing system, and disinfection system.
- Electrical power supply requirements. Confirmation that sufficient electrical power is available at the site (include proof).
- Results of the geotechnical investigation.
- Details of the plan to maintain operations of the existing RBC system during the construction process.
- Evaluation of potential construction risk and proposed mitigation measures to avoid cost overrun.
- Erosion and sediment control best management practice.
- Discussion of the geotechnical findings and recommendations with respect to foundation design and backfill.
- Discussion of HVAC design as required.
- Discussion of energy efficiency, if applicable.
- Discussion of alternatives.
- Fire safety if required.
- Landscaping.
- Air quality considerations.
- A preliminary schedule for the construction phase. The project schedule, as a minimum, shall include the key milestones.
- Method of project implementation. This should comply with the First Nation’s and ISC’s Tendering Policies.
- Class "B" Cost Estimate including Life Cycle Cost.
- Discussion of Operation/Maintenance requirements and projected annual O&M costs.
- Obtain ISC’s estimated annual O&M funding for the water system and discuss variance with the projected O&M costs.
- List of material suitable for pre-purchase

- MCA Environmental Assessment Report See Section 5.2.5.1.
- Conceptual Design Drawings
  - Site Plan, including site servicing
  - Landscaping/topographic Plan
  - Environmental protection measures if required
  - Architectural layouts and elevations
  - Process units structural drawings (developed to 33% completion)
  - Building and system services
  - Facility hydraulics process schematic including all equipment
  - Process & Instrumentation Diagram
  - Distribution and collection systems layouts and elevation.
- Minimum Essential Project Information Requirements. See Section 5.2.9.

A Conceptual Design Report shall be presented upon completion of the conceptual design. It will be presented to the project team and approved by Mohawk Council of Akwesasne, with input from the project team.

At each project milestone, the Service Provider must obtain project team concurrence with all recommendations and decisions made prior to proceeding with subsequent phases of the design.

5.3.2 Detailed Design (66% and 99% Design Completion Stage)

With the conclusion of the Conceptual Design, identified by the project team approval of the Conceptual Design Report, the Detailed Design will commence.

This phase of the work involves preparing detailed drawings and specifications within the framework established during the conceptual design. Throughout this phase project control must be maintained by close communication with the Project Team.

The following drawings are required to be submitted as a minimum:

1) Existing Community Plan – Show community layout, reserve boundaries and locations of the proposed project.
2) General site plan for each wastewater system.
3) Provide a full set of detailed site, architectural, structural, mechanical and electrical drawings.
4) Provide full sheet flow schematics for the RBC system showing piping, appurtenances, equipment, etc.
5) If any, plans for relocation, removal and/or demolition including details for existing utility protection including hydro and lighting poles, telephone lines, gas lines etc.
6) If any, plans for tree removal and protection.
7) If any, Erosion and Sediment Control Plan.

Identify opportunities for employment of the First Nation members and utilization of First Nation resources during construction phase of this project. Tender documents will contain clauses instructing bidders as to availability of local resources complete with unit rates shall be included in the tender document front end, however, no minimum quantities shall be specified. The tender front end component outlining local resources and costs which are to be incorporated into the project shall be discussed with the Project Team, and at the earliest stage possible in the final design to avoid delays.

The Service Provider shall provide copies of plans and specifications as required for review by all regulating and approval authorities (i.e. ISC-FNIHB and CID, Health Canada, Ontario Ministry of the Environment Conservation and Parks, TSSA and others as required) at the 66% and 99% stage. Provide the Project Team with copies of all correspondence/approvals from these authorities. The MCA Environment Assessment Report must be updated by the Service Provider as part of their Conceptual Design Report submissions.

At the 66% Design Package, the Service Provider shall prepare a Class “B” cost estimate for the construction of the project, including Life Cycle costs for a 20 year period of operation. At the 99% Design Package, the Service Provider shall prepare a Class “A” cost estimate for the construction of the project, including Life Cycle costs for a 20 year period of operation by a Professional Quantity Surveyor (PQS). The cost estimate must be updated and submitted with each submission of the drawings & specifications.

The professional seal shall be applied on the final Design Package by the Service Provider(s) licensed for practice in Ontario to identify their professional responsibility.

The Service Provider shall tag all equipment used on all Process and Instrumentation Drawings (P&ID) for the identification of the equipment. On completion of detailed design, equipment tag numbers shall be submitted.

Prepare and administer all work required to tender and procure the items chosen for pre-purchase if required.

An independent Wastewater Treatment Operator will be retained by the Project Team to conduct an "Operational Functionality Review" of the design. The review shall be completed by an operator holding a Wastewater Treatment Class II or greater level certification under current applicable Ontario Regulations. The Service Provider will cooperate fully and arrange to provide all information necessary to the Operator chosen for this assignment. The procurement of the Operator will be coordinated and facilitated by the Project Manager.

It should be noted that Construction Phase Project Approval will not be granted until all required permits and approvals are obtained allowing construction to proceed. All necessary permits, approvals, etc., relating to the project from authorities having jurisdiction, i.e., Environment Canada, Department of Fisheries and Oceans, First Nations & Inuit Health Branch (Indigenous Services Canada), Ontario MNR, MECP, etc. must be prepared by the Service Provider in the name of the First Nation. The Service Provider is encouraged to satisfy these requirements as soon as possible in the design process in order to avoid delays in project approval. The Service Provider must perform sufficient research so as to be fully aware of ALL regulatory authorities involved and will submit this full list to the Project Team at the earliest possible time in the process, but prior to making a submission to any agency. The Service Provider will be responsible for all costs associated with obtaining required approvals for construction. The Construction contract will not be approved until construction funding has been approved.

In the Construction Phase, the Service Provider shall prepare the Final Tender Documents including all tendering documents required for public tender advertising, using an agreeable tendering process platform. These documents shall include a full set of tender drawings, bid documents, bid form, technical specifications. The specifications will include a list of spare parts, operational equipment, and emergency replacement parts that are to be provided by the contractor during the construction phase. This list will be reviewed and approved by the Project Team. The specifications will also include provisions of engaging the operator from time to

time during construction stage for training purposes. Geotechnical information should be included in the tender plans to assist contractors in their preparation of tenders.

As part of the detailed design, the Service Provider shall prepare a decommissioning plan for the components of the existing treatment systems that are not required once the new plant is operational. This includes proper disposal of existing equipment and structures. All surplus or removed material must be completely removed from the community.

As part of the detailed design phase, the Service Provider shall also prepare the Quality Surveillance Plan and Commissioning Plan to ensure Performance Guarantees are in place for the treatment equipment to be used for the project.

The Service Provider shall comply with the requirements of the Project Implementation Procedures Manual.

The Detailed Design will conclude with the Mohawk Council of Akwesasne approval of the Final Tender Documents, with input from the Project Team. This includes the receipt of all regulatory approvals from all authorities having jurisdiction.

Any re-design work that is required as a result of the Service Provider's failure to be familiar with an existing facility shall be at the Service Provider's own cost.

5.3.3 Tendering

Upon approval by the project team and all necessary regulatory agencies, the Service Provider shall, at the direction of the Project Manager, call tenders on the proposed works. The tender shall not proceed without approved capital funding for construction.

The procedure for the tendering of Capital Projects shall comply with the First Nation's and ISC's Tendering Policy. The goal of the tendering policy is to maximize the value of the Contracts and that it be awarded in an open and equitable fashion while at the same time, maximizing local benefits to the Mohawk Council of Akwesasne community.

It is possible that the Owner may select a two stage Pre-Qualification tender process. For contracts that are complex in nature and exceed $5M in estimated cost, Contractors should be pre-qualified for submission of tender. Please review PIPM Section 12 – Pre-Qualification of Contractors.

The Service Provider shall coordinate the publication of the call for tenders on a public tendering platform selected by the Project Team and the issuing of all tender documents with a nominal charge for the documents. Tenderers will have the completed tenders submitted to the Service Provider's office.

During the tendering period, the Service Provider shall respond, in writing, to all questions and requests for information. If, as a result of questions or other circumstances, the Service Provider realizes a need for changes to the tender package, they shall issue an Addendum(s) to all plan takers with a copy sent to the Project Team.

The Service Provider shall arrange for a mandatory tender site visit to be attended by all interested bidders. Each individual attending the tender site visit, including the Service Provider, will be responsible for their travel costs and meals.

The Service Provider shall administer the tender period. Immediately following the close of tenders, the Service Provider shall attend at the tender close location and participate in the

opening of all properly received tenders. The Service Provider shall record the tenderers name and submitted tender value in a form acceptable to the Project Team.

Within one week of the tender opening date, the Service Provider shall then review and evaluate all tenders and prepare a report for submission to the project team. The report shall include, as a minimum, the following components:

1) Name of each tenderer and the tender value
2) Status of all required tender submittals
   a) Formality
   b) Balanced pricing in tender breakdown
   c) Bonding
   d) Performance
   e) Local content
   f) Safety track record
   g) Claims/litigation's record
   h) Payment record
   i) Reference checks and reports on last three significant construction projects
   j) Contractor's financial position reference check
   k) A detailed summary of all the Tenderer's unit prices, along with the average unit price for the three lowest bidders
   l) Etc.
3) Commentary on completeness of tenders
4) Commentary on any irregularities in the bid or tender documents
5) Recommendation regarding award.

A copy of all tenders shall be provided to the Project Team in PDF format. Within one week of the opening of the tenders, the Service Provider shall call a Project Team meeting to evaluate the tenders. This meeting will conclude with a recommendation to the First Nation, from the Project Team, on award of the Contract. The First Nation will then issue a Band Council Resolution to the team documenting their decision.

5.3.4 Contract Administration and Inspections Services (Construction Phase)

Upon award to a General Contractor, the Service Provider shall produce sufficient original contract documents for signature to be signed at the initial construction meeting, or before, as required.

During the performance of the Contract, the Service Provider will provide the full contract administration services including full time site inspection services during all critical periods. A critical period is defined as times of intense activity and at all times when work is being completed that cannot be viewed at a later time.

It is the Service Provider's responsibility to determine that the Contractor discharges his obligations faithfully under the terms and conditions of the construction contract and executes the work as designed. It is also his/her responsibility to confirm that the facility, when constructed, will perform and function as intended through site inspection, verification reports etc.

This service shall include, but not limited to the following:

- Assign a qualified and experienced Service Provider to oversee the Administration and Inspection services during the construction phase and warranty period of the project.

- The Service Provider shall provide the services of Professional Engineers qualified in their relevant disciplines to make regular site visits as required, at a minimum of one (1) per month until completion of the work, to ensure that the construction is completed in accordance with the Contract documents. The Service Provider's lead Professional Engineer will attend on-site monthly project meetings with the Project Team and others.
- Prior to the commencement of construction, the Service Provider shall issue "Issued for Construction" Contract documents that incorporate all changes occurring during the tendering process, including all addenda and post tender addenda. These documents must be stamped, signed and dated by a Professional Engineer.
- The Service Provider shall facilitate the receipt of all pre-contract submittals, including, but not limited to: insurance, bonding, WSIB clearance, and others.
- The Service Provider shall procure, from the Contractor, within ten days of award, a detailed progress draw breakdown to be used as the basis for Payment Certification. The Service Provider must review and accept this breakdown and provide a copy to the Project Team.
- The Service Provider will request from the Contractor all shop drawings for all components of the works. It is the responsibility of the Service Provider to review and approve shop drawings prior to the contractor's installation of each piece of equipment.
- The Service Provider shall review each progress payment request from the Contractor and issue a Certificate of Payment. The Certificate of Payment will certify the value of the work performed to date, the value of the holdback to date, and the payment for the period. The Certificate, with all required submittals, must then be submitted to the Project Team for review, processing and payment.
- The Service Provider shall review all requests for additional costs and all requests for contract time extension from the contractor and recommend action in response to the request. If necessary, the Service Provider shall issue a contemplated change order for pricing by the contractor and on acceptance recommend a relevant contract change order. All change orders to be processed in accordance with the Construction Protocol.
- The Service Provider shall ensure the availability of an experienced and qualified construction Inspector who shall be available for inspections of all significant components of the works. The Service Provider shall provide monthly reports on the construction progress and activities. This individual(s) must be familiar with all aspects of the work. The First Nation Project Manager in consultation with the Project Team will approve the qualification of the inspector prior to the commencement of construction. The Service Provider may, with knowledge and prior agreement of the Project Team, engage sub- Service Providers for certain inspections.
- Resident inspection is estimated to be 2,400 person-hours for completion of the works (i.e. twelve-month period assuming 240 working days at 10 hours/day for one inspector). Each consultant shall use these numbers in determining their fixed lump sum fee. However, each consultant shall also provide a written assessment of the person-hours required to complete each phase of the Project. After design is complete, the Service Provider will provide an updated proposal for the Construction Phase (Contract Admin, Start-Up Commissioning, Warranty Period) for the project team to review. Resident inspection time will be documented and variation from the estimated person-hours will be debited or credited by the Service Provider's contract as required at the end of the Project. All disbursements for the full-time resident inspection services, including local transportation, accommodations and meals while on site, shall be included in the Service Provider's fee. The estimated inspection hours do not include commissioning. The Service Provider will be responsible to include in their fees all hours and expenses for the commissioning activities identified in Section 5.3.9. The

construction schedule will be finalized based on the General Contractor's schedule. Once the construction schedule is provided by the Contractor, the Service Provider shall submit a formal plan on the utilization of these hours for approval by the Project Team.

- The Service Provider shall at all times have current and up to date contract documents, including up to date drawings and specifications available at the site of the Work and shall ensure the Contractor is working from current drawings and specifications.
- During periods when full time supervision is underway, the Service Provider shall issue daily and weekly reports complete with photographic record from the site. These reports shall be distributed electronically to the First Nation Project Manager.
- The Service Provider shall maintain, at all times, proper communication channels as per the Project Approval documents and as per the Construction Protocol. These will be reviewed at the pre-construction meeting. The Service Provider shall also ensure that the Contractor maintains proper communication channels throughout the project.
- In their proposal, the Service Provider shall include the activities related to the commissioning process. In advance of the completion of the construction work, the Service Provider shall submit a detailed commissioning procedure document to the project team. The commissioning procedure document shall include all equipment so as to prove that the correct equipment is installed according to the manufacturer's recommendation and operates in the intended manner to the design capacity. The Service Provider shall ensure that a representative of all major equipment manufacturers incorporated in the works is available. (Additional information is provided in Section 5.3.9).
- The Service Provider shall prepare the project Operations and Maintenance manual document that includes all shop drawings, operating and maintenance procedures, references for all spare parts, suppliers' information, as built (record) drawings and any other pertinent information as may be required for the operation and maintenance of the completed works. This must be available at least one month in advance of commissioning so that it can be referenced by the operators of the plant.
- Upon completion of the project works, the Service Provider shall prepare project completion documentation. Fees will be held back from the Service Provider until this is received in a form acceptable to the Owner.

5.3.5 Quality Assurance during Construction

The Service Provider shall put in place a Quality Assurance (QA) program at the construction phase, including the planned and systematic actions to verify that the works are constructed in accordance with applicable codes, guidelines, and standards and as specified in the contract.

The Service Provider is required to implement the following Quality Assurance program during the construction of the facility:

1) Check all layouts to verify conformance with design drawings.
2) Inspect all construction work and installation of equipment.
3) Keep proper records of the progress of the construction work, noting unusual or unforeseen events that may have delayed the progress of work.
4) Review shop drawings to verify that contractual requirements are met for materials and equipment.
5) Issue clarification drawings to meet intent of contract requirements.
6) Provide technical specialists to carry out inspection of work constructed or installed to verify its compliance with contractual requirement and codes, regulations, etc.
7) Arrange for external specialist testing firms to verify work that is beyond the expertise of

the Service Provider.

8) Perform check-out/verification of all equipment, process and/or mechanical system, instrumentation & control system and SCADA system.
9) Verify that the Contractor performs all instrumentation calibration as specified.
10) Inspect and ensure that the Contractor executes the work with skilled craftsman and that the works are completed in a good workmanship like manner.
11) Verify that the Contractor observes the Occupational Health and Safety Act, and all applicable Regulations for Construction Projects.
12) Ensure that all spills are contained and cleaned up by the Contractor immediately when found. Contact all environmental agencies/departments that has jurisdiction on the project, and advise them of the spill and action taken, if any, to contain and mitigate its impact on the environment.
13) Ensure that the Contractor institutes environmental protection measures prior to commencing any construction works on the site as specified in the contract.
14) Ensure that all regulatory agencies have been notified of completed work and that the required inspections have been carried out.
15) Verify and ensure that the Contractor observes and complies with all Environmental Protection Acts or Regulations during the construction of the facility.

5.3.6 Supervisory, Control and Data Acquisition Programming (SCADA) (Construction Phase)

The Service Provider is fully responsible to ensure the programming of the Human-Machine-Interface (HMI) and PLC of the project's SCADA system and integration to the existing SCADA system, where required, including but *not* limited to the following:

1) Programming of all field controller logic for the modified operation of the site/process area(s) based on the approved process control narratives developed as part of the project.
2) Configuration of all network devices, including but not limited to workstations, switches, routers, servers, and modems as required to fully integrate the SCADA system. The Service Provider is to ensure that configuration of all networking devices and the SCADA system is compatible with the First Nation current standards.
3) Configuration of the HMI, including but not limited to modifying existing screens (graphics), integrating into an existing application, designing and implementing new screens, co-ordinating data collection and reporting to meet the First Nation requirements are the responsibility of the Service Provider.

It is the Service Provider responsibility to familiarize them with the First Nation's existing SCADA systems and associated requirements for both in facility networks and distribution or collection systems wide area networks, where required. The Service Provider is to design and contractor to configure, program, and integrate the field controllers and associated software, networking devices and the HMI to the existing system, or where there are none installed, for the new SCADA system. ***Testing and implementation is entirely the responsibility of the Service Provider, which includes written format on witnessing and verification procedures.***

5.3.7 Operations Manual (Construction Phase)

The Service Provider is required to develop an Operations Manual in close cooperation with the Project Team.

The Operations Manual shall, at minimum, include following contents:

1) RBC System Overview: A generalized description of the RBC system's main components, history, and design criteria.
2) Detailed Treatment Operation: Information related to actual operation of the RBC system, including treatment processes and common utilities. The processes shall describe all of biological, chemical and physical processes which are directly related to treating wastewater. Common utilities shall describe utilities essential to the operation of processes, which may include building mechanical, HVAC, gas monitoring, and emergency power supply, etc. Under this section, all operations of the lagoon system shall be described and their respective tasks shall be broken down into clear and detailed step-by-step instructions for operator to follow, which shall include normal operations, start-up, shut-down, process control, monitoring and reporting, maintenance, safety procedures, and emergency provisions.
3) Treated Wastewater Quality Control: Summarization of sampling location, frequency, and types of parameters monitored. The monitoring and reporting requirements stated in applicable regulations shall be identified in this section
4) Potential Operating Problems: Description of the cause of potential operating problems and corresponding remedial actions
5) Appendices: Provision of additional information, such as Process Design Brief, Process Control Narrative, etc.

The draft version of the Operations Manual shall be completed and delivered to the Project Team on completion of detailed design for review and comment. The Operations Manual shall be completed before commissioning the system.

The format of the Operations Manual shall be prepared by the Service Provider in a format acceptable by the Project Team.

Format of Operations Manual

1) The Operations Manual shall be prepared using Microsoft WORD and as an online interactive document. The text of the online version must be identical to the hard copy version. The online interactive document must be compatible with the computers on site.
2) The Manual is to be displayed on the screen as a combination of text, graphics and photographs.
3) Information must be accessible from the Menu bar with pop-up screens of related topics such as Table of Contents, etc.
4) Graphics must be accessible by using the facility layout drawing and clicking on the appropriate area for additional information.
5) Make key word index available to search for information.
6) The menu bar, including the standard options of "PRINT", "OPTIONS", "EDIT", etc. must include the key process area. A single click of the selected process area should provide the detailed function of that process area, etc. By double clicking the selected process area, a sub-menu bar is to be provided to provide additional detailed information. This is the same as using the graphical method of accessing information with the exception that a single click of the selected item will move it to the next level until the primary element is accessed.
7) The Operations Manual's graphic, database and text must be user-friendly and capable

of being updated by First Nation staff, to reflect changes or modifications to the equipment or process. The method for making the changes must be fully documented by the Service Provider in the Operations Manual.

5.3.8 Operations and Maintenance Manual (Construction Phase)

Prior to training and commissioning the Service Provider shall compile the Operations and Maintenance Manual (O & M) with assistance from the contractor. Training and/or commissioning will not commence until the O&M Manual has been approved and accepted by the Project Team. The Operations Manual specified in 5.3.7 shall be included as part of the O&M Manual.

5.3.9 Start-Up and Commissioning (Construction Phase)

Refer to Chapter 15 of the "Project implementation Procedures Manual", available from ISC, for requirements for commissioning and sample component verification test templates.

The start-up and commissioning processes are a quality assurance procedure required to ensure that the works will operate in accordance with the design intent. The completed system shall meet or exceed the established design requirements. It is the responsibility of the Service Provider to verify that all components of the new facility function and interact with other systems and processes as required. The purpose of this section, therefore, is to identify the procedures and minimum requirements necessary to ensure that the First Nation is provided with a fully functional facility upon completion of construction activities.

It is mandatory that the Service Provider’s Head Office staff and Resident Engineering staff exercise QA and ensure that the verification of all equipment, system and sub-systems processes and the like have been fully tested, documented and verified for proper operation. The Service Provider should provide staff who are skilled in the area for which start-up will be carried out by the contractor and/or equipment supplier. They shall not assign staff without the related field-testing experience nor shall they attend any start-up without proper tools and/or equipment.

The Service Provider is required to develop a clearly defined protocol for the start-up plan prior to the Project Approval Request submission or Tendering, whichever occurs first. The plan must identify the level of incomplete work, if any, that will be accepted for the sole purpose of facilitating the start-up process. The contractor must be prepared to abandon the start-up process if it is determined during the start-up process that there are equipment and/or process deficiencies that will jeopardise the facility performance. The start-up shall be rescheduled only after the deficiencies have been remedied.

A minimum of four months before Commissioning is scheduled to start, the Service Provider is to submit to the Project Team a draft detailed Commissioning Plan in a form acceptable to the Owner. The Commissioning plan must be finalized no less than three months before Commissioning is scheduled to start. A strategy meeting specifically to discuss Commissioning is required and will include the project team and the general contractor as well as any required sub-trades.

The start-up and commissioning process must be fully documented and submitted following system verification. The General Contractor will coordinate the testing and commissioning of all equipment and provide copies of test results and reports to the Service Provider. The Service Provider will witness such tests and submit these to the First Nation.

Start-up is the verification of the proper installation of all mechanical, electrical and instrumentation equipment. It relates to those activities and tests that are required to advance the newly installed equipment, control systems and facility processes to an operational readiness level.

Commissioning is the verification of the proper functioning of the various systems individually and as a whole. It is the act of placing the equipment into full operational service meeting the appropriate regulatory requirements and specified parameters without system failures under design operating conditions. Commissioning shall not commence until the construction and start-up phase has been successfully completed and the reports have been delivered to and approved by the First Nation Project Manager.

The Service Provider is required to perform a Performance and System Tests Protocol and must be submitted to the Project Team for review and approval. The tests protocol will be structured to permit wherever possible a stress test at the rated facility or equipment capacity. Stress testing may be cancelled if the required personnel are not present for the testing which will be decided by the First Nation Project Manager.

The Service Provider is also required to prepare a SCADA system implementation procedure includes what is commonly referred to as Factory Acceptance Test (FAT) and Site Acceptance Test (SAT). It is mandatory that testing and troubleshooting of the software be undertaken in order to ensure that the system has been properly verified that it will perform in the manner as intended or required. The Service Provider shall provide all process narratives and graphics to the First Nation not less than two working weeks prior to FAT.

5.3.10 Training on Operation and Maintenance Manuals (Construction Phase)

When the construction works have been completed, the Service Provider shall revise the draft Operation Manual and submit the final version of the Operation and Maintenance Manuals to the First Nation Project Manager. The First Nation Project Manager shall review and approve the Operation and Maintenance Manuals. The Service Provider shall allow adequate time for the training of the First Nation Operating staff on the operation of the facility. As a minimum, training shall be conducted on site. The Service Provider shall provide all classroom material, information, etc. for the training session.

The operator(s) shall receive training regarding the operation and maintenance of all mechanical components including controls and instrumentation. Regardless of the listed requirements for startup and commissioning of equipment, a minimum of four hours must be set aside and solely devoted to instructing the First Nation operator(s) on each piece of equipment of the new facility. Training on the different equipment shall not be done concurrently. This training shall be provided by the respective suppliers. Training periods shall not coincide with equipment start-up or commissioning. It shall be given following the successful completion of the three-day trial run period and prior to the 14-day performance and reliability run period.

As a minimum, the training shall include the following:

1) Operation of the facility
2) Description and function of newly constructed treatment process
3) Treatment process and effluent criteria
4) Identification of critical process “bottleneck”
5) Process upset and rectifications

6) Sampling and monitoring
7) Safety procedures
8) Handling of alarms
9) On-line Operation of the facility and SCADA System
10) Using the Manual as an on-line tool
11) Procedures for First Nation Operating staff to update the Manual

5.3.11 Start-up Phase (Construction Phase)

During the start-up phase, the Service Provider and all relevant subcontractors and suppliers shall demonstrate the proper operation of all components of the installed equipment and the facility.

A minimum of two months prior to the anticipated date of start-up, the Service Provider shall develop and provide the Contractor with a pre-commissioning checklist outlining items of work that must be in final working order prior to commissioning. This checklist shall be followed by the Contractor during the start-up period and reviewed with the Service Provider and First Nation representative.

Start-up shall be conducted a minimum of two weeks prior to commissioning. As a minimum, it shall take place in the presence of the First Nation representative(s), the Service Provider, any Sub-Service Provider, the General Contractor, the operator and all required suppliers, subcontractors and the system programmer.

During the Start-up phase, the Service Provider shall

- Approve the start-up date in consultation with the First Nation.
- Witness all tests and sign test reports as a witness.
- Review the completed pre-commissioning checklist and advise the Contractor of any deficiencies or corrections to be made.

The start-up phase includes, but is not limited to, the following:

- Leakage testing
- Hydrostatic testing
- Verification of proper pump rotation and value operation
- Manufacturers/supplier's certification of equipment operational readiness
- Instrumentation and control system checking
- Instrumentation calibration
- Testing of HVAC system, power generation system, building electrical systems and any other system essential to the operation of the facility
- Start-up of equipment.

The pre-commissioning checklist, as completed by the Contractor, shall be provided to the Service Provider for review. After reviewing the checklist, the Service Provider will advise the Contractor of any deficiencies and any corrections to be made. The Contractor shall employ whatever means necessary to correct the deficiencies as quickly as possible. The Service Provider shall carry an inspection to ascertain that all deficiencies have been made good before commissioning is scheduled. Once the Service Provider is satisfied that all equipment/systems are in order and all noted deficiencies have been corrected, the Service Provider, in consultation with First Nation representative, will establish a date for the commencement of commissioning. It shall take place at least 10 days after the successful

start-up.

5.3.12 Commissioning Phase (Construction Phase)

Two weeks prior to it, the Service Provider shall submit a commissioning plan to the Project Team for review and discussion. During the commissioning phase, a series of test procedures will be performed to verify that the equipment is operating properly. The commissioning stage is to ensure automatic plant operation through the PLC (if applicable). These procedures shall take place over an initial three-day trial run period under normal operating conditions and a 14-day final performance and reliability run period during which the Service Provider shall instruct the Contractor's commissioning supervisor to perform operational adjustments that will simulate normal operating and other design parameters, at the 10 year design flow rate. The Contractor including all applicable mechanical and electrical subcontractors, in the presence of the Service Provider, the Sub-Service Provider(s), and the First Nation's representative(s), shall complete commissioning of equipment. The facility operator(s) shall also be present during this process to witness the functional performance testing and proper operation of the equipment being commissioned.

The Contractor shall provide the Service Provider draft copies of the Operating and Maintenance Manual at least one week prior to the commencement of the three day trial run period.

One week prior to start of the 14-day performance and reliability run, the Service Provider shall provide the First Nation draft copies of the Operating Manual. This Operational Manual shall be finalized within two weeks subsequent to completion of the commissioning.

The Contractor shall meet with the Service Provider to discuss and finalize the procedure for the trial run and final performance and reliability run period. This will be carried out according to a project-specific system verification checklist.

5.3.13 Performance and Reliability Run (Trial Run and Final Run) (Construction Phase)

During the Performance and Reliability Run the Service Provider shall:

- Monitor the Performance and Reliability Run on behalf of the First Nation.
- Assess whether any abnormalities affect the integrity of the test during the testing period.
- Assess the results of the test run and determine whether additional testing is required.

The complete plant will perform for an initial trial run period of three continuous working days under normal operating conditions. During this period the Contractor shall have qualified electrical and mechanical superintendents on site. The superintendents shall assist the Service Provider and operators in verifying the operation of the system. The performance and reliability run will commence on a Tuesday unless otherwise approved by the Service Provider.

The Contractor shall investigate the cause of all abnormalities such as vibration, overloading, over-heating, unexpected operating results and provide reports as necessary to the Service Provider to demonstrate that the abnormalities have been resolved and eliminated.

The Scope of Work of this Contract includes the Performance and Reliability Run and Substantial Performance is conditional on completion of this test to the satisfaction of the Service Provider.

Additional site visits required by the Service Provider, Suppliers, Subcontractors and the First Nation representative(s) to successfully complete the Performance and Reliability Run, as a result of the Contractor being unprepared, shall be at the expense of the Contractor.

After successful commissioning of all systems during the three-day trial run, the facility will be operated with the support of the Contractor for a minimum period of 14 continuous days without failure under normal and 20 year design operating conditions. If the system fails to perform as specified, the Contractor shall take appropriate measures to correct the problem(s). On completion of the remedial work, the operational period shall recommence and extend for another 14 continuous days. This procedure will be repeated until the system operates in accordance with the specified requirements. The Contractor shall have qualified mechanical and electrical personnel on site during this 14- day operational period. There shall be no testing, start-up or commissioning scheduled between December 15th and January 4th.

5.3.14 Attendance at Start-up and Commissioning (Construction Phase)

The Service Provider shall ensure that the General Contractor arranges for all applicable mechanical and electrical subcontractors, including authorized equipment representatives and the system programmer, to be on site during the start-up and commissioning phases. The Service Provider shall ensure that the First Nation's representative and operator(s) are in attendance on the date for commencement of the start-up and commissioning phases.

The Contractor must ensure that all equipment is installed and operational prior to commencement of the start-up phase. The equipment representatives must be prepared to demonstrate proper operation of their respective equipment during this period.

5.3.15 Start-up and Commissioning Report (Construction Phase)

Following successful commissioning of all RBCs, the Service Provider shall prepare a report regarding the start-up and commissioning process. The report shall include the following:

- Project name
- First Nation name
- Project Number
- Name of General Contractor, subcontractors, First Nation representative(s) and operators, and Service Provider representatives and equipment suppliers present during each of the start-up and commissioning processes
- Date of start-up and commissioning
- Reports/certification from equipment suppliers
- Pre-commissioning checklist
- System verification checklist.

This report shall be provided to the First Nation within four weeks of the successful performance and reliability run period.

5.3.16 Termination of Commissioning Phase (Construction Phase)

The Commissioning Phase will only be terminated upon successful completion of the following:

- Verification/check-out of all equipment, systems and sub-systems to ensure they meet the design requirements
- Completion of the 14 day continuous performance and reliability run period at the 20 year design flow.

- Completion of Operator(s) training
- Submission of all deliverables, start-ups and commissioning reports, performance tests, equipment manuals, operation and maintenance manual and Service Provider report on commissioning and operation of facility.

Substantial Completion is conditional on successful completion of the 14 day performance and reliability run period, operators' training plan and submission of equipment manuals and performance test records.

The start of the one-year maintenance period shall be effective from the date of Substantial Completion of the Contract, as per the Certificate of Substantial Performance issued by the Service Provider.

The Service Provider shall prepare and submit the deficiencies list with action plan.

The Service Provider shall confirm that all required inspections by regulatory agencies have been performed prior to issuance of Substantial Completion Certificate.

The Service Provider shall verify that the Contractor has provided a copy of all approvals, from these regulatory agencies, in each set of the Maintenance Manual.

5.3.17 Warranty Period (Construction Phase)

Near the end of a one year warranty period, the Service Provider shall arrange a warranty inspection of all major components. Following the inspection, the Service Provider must provide a report to the First Nation detailing the findings. The Service Provider must coordinate the timely completion of any corrective work required with the contractor and oversee the completion of the required work identified during the Warranty Inspection.

5.3.17.1 Project Completion Report

Within six months of Contract Completion, the Project Manager or Service Provider, if so designated, shall prepare a Project Completion Report as described herein. The purposes of the Project Completion Report are to provide:

- A historic reference document containing technical, financial, physical and administrative data on all phases of the project,
- Certification by a qualified professional that all codes and standards were attained,
- Certification by a qualified professional that the work has been completed,
- Information on lessons learned and user satisfaction which will be beneficial in planning and managing future projects.

The report shall include, but not limited to the following:

1) **Table of Content**
   a) Provide a table of contents describing the main body of the report as well as the various documents in the appendices.
2) **Summary**
   a) Project title, location and Contract number,
   b) Brief description of the project, including purpose of project,
   c) Brief description of the existing facilities and history of the project.
   d) Brief description of the project including size and number of units constructed.
   e) Brief description of the implementation method, i.e., type of tendered Contract and

the reasons for choosing this method, etc.

3) **Project Team**
   a) Name and address of the design Service Provider,
   b) Name and address of the Project Manager,
   c) Name and address of the Contractor(s),
   d) The names and roles of the Project Team members,
   e) The name and address of the consulting firm in charge of inspecting the construction works,
4) **Schedule, Cost and Cash Flow**
   a) The principal dates in the schedule, that is, the date of the Contract award, construction start up, commissioning, completion dates, other milestones, etc.
   b) A brief breakdown of the project costs, i.e., cost of planning, design, construction (itemized as per summary of Contract), project management, construction supervision, Band administration, change orders, etc.
   c) A brief breakdown of the cash flow.
5) **Design and Construction**
   a) A brief description of the design methodology and process.
   b) A synopsis that highlights areas of special interest, variances form original scope of work and schedule, deficiencies, problems or outstanding issues on the project Contractor performance, items effecting schedule or completion.
6) **Employment, Resources and Training**
   a) A brief history of band member employment throughout the project, highlighting the level of employment, level of experience of employees, both before and after employment, effect on project, and problems.
   b) A brief history of band resources employed throughout the project, highlighting the resources used, level of use, effect on project, and problems.
   c) A brief description of the training program provided for the First Nation highlighting areas of training provided, effectiveness of training, number of persons trained in each area (include the names of the trainees), cost of training, level of expertise attained, and future training requirements.
7) **Geographic location**
   a) Provide a map, drawn to an appropriate scale, of the area where the project was carried out.
8) **Site**
   a) Describe the project site in terms of easily identifiable fixed points. For example, on the _____ Reserve, on Highway _____ approximately _____ kilometres south of_____.
9) **Description of the project**
   a) A more detailed description than the one in the summary is given here. A list of the principal parts of the project and the expected qualities (for example, installation of 850m of pipe with a diameter of 150 mm) is to be included in this section.
10) **Project Synopsis**
   a) This section includes all observations, suggestions and recommendations dealing with the design itself, the material used, the progress made during construction, and so forth. This section is a summary of the experience acquired during the project and will serve as a guide to both the design Service Provider and the Project Manager during subsequent projects of the same kind.
   b) Appraisal of the Service Provider’s and the Contractor’s work is also to be included in this section.

c) Statements of how the completed project satisfies the identified needs and relationship of the project to the community development.

11) **Professional Certification**

a) The following duly executed statement by the Project Manager shall be included in the report:

"I hereby certify that all the work has been completed in accordance with the Terms and Reference of this project and that the specified codes and standards have been attained."

Signature	Professional Designation	Date

12) Appendices

a) Site plan
b) As-built drawings
c) location of Final Facility Operation Manual and date delivered and to whom
d) location of Final Equipment Operations & Maintenance Manual and date delivered and to whom
e) contribution agreement
f) unit price breakdown
g) letter of conformance
h) copies of all testing certificates, and verification for the constructed facilities
i) Certificates and results from material testing
j) copies of approvals or acceptance certificates from regulatory agencies
k) copy of warranties
l) Commissioning report c/w full chemical analysis of treated water to demonstrate that the plant can treat wastewater at design flows that meet all MOE requirements
m) Photographs to illustrate various characteristics of the project, including the site, key stages or operations during construction and, the condition of work at various times, particularly at project completion
n) Copies of all payment certificates for construction, invoices for non-construction cost, and all other invoices.

5.4 Reports and Deliverables

5.4.1 General

At the project outset, the Service Provider will be required to set up and administer a file transfer site for the purpose of storing and distributing project files. The file transfer site must be accessible by the project team full time and set up in a secure format to protect the information. If the First Nation is unable to access the file transfer site due to size, firewall, etc., the Service Provider will be required to provide an additional one (1) USB Key for deliverables that cannot be sent via e-mail.

General report requirements:

1) Four (4) physical copies and a digital copy by file transfer site and on one (1) USB Key unless otherwise specified. The physical copies shall be submitted to the First Nation. All USB Key shall be properly labelled and dated.

2) Reports shall be presented in draft format for review and approval by the Project Team. The Service Provider shall obtain written approval by the Project Team prior to continuation of the Scope of Work or publication of the report.
3) Reports presented in draft format shall be submitted to the Project Team three (3) weeks prior to the scheduled meetings.
4) Reports shall be revised as required, by the Service Provider to meet the scope of Work and to incorporate the approved comments resulting from the project meetings.
5) All reports/technical documents shall be written and formatted as per engineering best practices.
6) All project documents, drawings, maps, etc., shall use metric (S.I.) units.
7) The revision number and dates of preparation and submission shall be clearly identified.
8) Each page shall have a header and footer giving the project, page number and date.
9) Appendices shall be separated by clearly identified tabbed pages.
10) The font shall generally be of size 12 and Arial or Times New Roman.
11) A sign off page for the Project Team shall be included with each report.
12) The Service Provider shall apply their professional seal to identify their professional responsibility on the signature page of all reports required by the Terms of Reference.
13) Reports shall be bound.

The Service Provider shall turn over all original photographs, maps and reports to Akwesasne First Nation. The Service Provider shall also make available physical and digital copies (in original software format) of the reports including drawings, maps and all other information pertinent to the project. Submission shall be in both Microsoft Word and Adobe PDF formats, drawings/maps shall be in AutoCAD DWG / ArcGIS (shapefiles, rasters, MXD) and Adobe PDF formats.

Copyright to all original maps, documents and data derived from the Project shall be retained by the First Nation, for their use. This statement shall be included in the agreement between the Service Provider and the First Nation.

5.4.2 Maps, Drawings and Associated Information

1) The Service Provider shall provide the following drawings and associated information: Four (4) physical copies of all drawings/maps shall be submitted in A1 format (594x841 mm) for submission. Copies of all drawings/maps shall be included in the reports in 11”x17” format. All details and notes shall be large enough to be legible when the drawings are reduced to 11”x17” format.
2) Cover Sheet with First Nation Logo, Location Plan (in Ontario), and Drawing Index;
3) General site plan.
4) Provide a full set of detailed site, civil, architectural, structural, process, instrumentation, mechanical, and electrical drawings.
5) Provide full sheet flow schematics for the WWTP showing piping, appurtenances, equipment, etc.
6) The Service Provider shall apply their professional seal to identify their professional responsibility to each drawing, and the title page and final page of all specifications. This should be done at a minimum for the 99% Completion Stage, Issue for Tender, and Issue for Construction.
7) All drawings must be produced in AutoCAD or ArcGIS.
8) All drawings shall be prepared in metric (S.I.) units.
9) All AutoCAD drawings are to be complete with all ‘XREF’ files.
10) All drawings must include the Akwesasne First Nation logo.

11) The complete tender package must be provided in AutoCAD format.
12) Provide As-Built drawings in hardcopy, AutoCAD (complete with all Xref files) and PDF format.
13) All reports and drawings are to be distributed electronically in PDF format.
14) Operation and maintenance plans and operational manuals in both MS Word and PDF.
15) Reviewed and approved shop drawings in PDF, as part of the O&M manuals.
16) Construction pictures in JPG format.

5.4.3 Deliverables

The Service Provider shall provide the Project Team with sufficient copies of the reports, drawings, specifications, etc., at various stages of the project development. Additional information on deliverables is provided in the Project Implementation Procedures Manual.

5.4.3.1 Conceptual Design

The following deliverables are to be provided as a minimum:

1) Draft Conceptual Design Report
2) Revised Draft Conceptual Design Report (if required)
3) Final Conceptual Design Report
   a) Project Team comments and Service Provider's responses to be included in appendices
   b) Project Meeting minutes to be included in appendices

5.4.3.2 Detailed Design

The following deliverables are to be provided as a minimum:

1) For Review – Draft and Final Reports and Drawings at 33% Complete*
2) For Review – Draft and Final Reports, Drawings and Specifications at 66% Complete*
3) For Review – Draft and Final MCA Environmental Assessment Report at either 33% or 66% Complete
4) For Review – Draft and Final Simple Environmental Review prior to tender
5) For Review – Draft and Final Reports, Drawings and Specifications at 99% Complete*
6) For Review – Draft and Final Tender Documents*
7) Documents of Contractor Pre-Qualification
8) Pre-selection of equipment as required
9) Operational Functionality Review (Provisional)
10) Equipment Tag Number Listing
11) Permits and Approvals
12) Application of Permits and Approvals Status Report
13) Operational manual
14) As-built drawings (Construction Phase)

*In addition to standard submission, the Service Provider shall also submit the same number of physical copies of the drawings in A2 (420x594 mm) format.

5.4.3.3 Tendering (Construction Phase)

The following deliverables are to be provided as a minimum:

1) Specifications and Drawings to be issued for Tender

2) Addenda during Tendering
3) Contract Document for execution by Contractor and First Nation, incorporating all Addenda
4) Issue for construction drawings and Specifications with 1 set of drawings for "As-Constructed" record.

5.4.3.4 Contract Administration and Inspections Services (Construction Phase)

The following deliverables are to be provided as a minimum **during Construction Phase**:

1) Issuance of monthly construction work progress report, including schedule, etc.
2) Construction photographs at all key stages of the works and suitably filed and titled
3) Issuance of payment certificates on a monthly basis to final completion
4) Issuance of change orders within ten (10) consecutive working days from the date of acceptance of the Contractor's Contemplated Change Order.
5) Issuance of the spare part lists to Contractor 2 months after award of contract
6) Draft Operation and Maintenance Manual. See Section 5.4.3.5.2.

5.4.3.5 Start-up and Commissioning (Construction Phase)

The following deliverables are to be provided as a minimum **prior to Substantial Completion**:

1) Rotating equipment verification report
2) Mechanical system verification report
3) Factory Acceptance Test (FAT) report, if any
4) Site Acceptance Test (SAT) report, if any
5) Instrumentation and control loops verification report
6) Calibration report
7) SCADA system verification report
8) Air balancing report and HVAC verification report
9) Pre-commissioning Checklist
10) Videos taken during commissioning and training

The following deliverables are to be provided as a minimum **at Substantial Completion:**

1) Final Operation and Maintenance Manual. See Section 5.4.3.5.2.
   a) All approvals and permits filed in maintenance manual
   b) All Warranty and Guarantee Certificates included in each set of Maintenance Manual
2) Listing of all Contractors/Sub-Contractors, name of contact person, telephone and email address
3) Listing of all Suppliers, name of contact person, telephone and email address
4) "As-built" drawings. See Section 5.4.3.5.1.
5) HMI and PLC software
6) Deficiency list with action plan
7) Contract Release Form
8) Final Facility SCADA and PLC Manual
9) Co-ordination study of protective devices
10) Certificate of Substantial Performance
11) Payment Certificate for Lien Holdback Release
12) Equipment Inspection, Start-up and Commissioning Reports
13) Verification report by the Service Provider for the operation of the facility.

5.4.3.5.1 As-Built / Record Drawings (Construction Phase)

The Service Provider shall prepare and submit the following “As-built” information to the First Nation Project Manager:

1) Complete “As-built” drawings eight (8) weeks after the date that the Service Provider has issued the Substantial Completion Certificate to the Contractor.
2) All “As-built” survey information
3) In addition to standard submission, one set of full size “As-built” drawings and one set of reduced half-size drawings -.
4) At the end of the warranty period, one year from the date of issuance of the Completion Certificate, re-issue any “As-built” drawings to reflect changes made during the warranty period.
5) “As-built” documentation includes the submittal of all-installed software for all components of the project’s SCADA System. This includes the HMI and PLC software.

5.4.3.5.2 Operation and Maintenance Manual (Construction Phase)

The following deliverables* are to be provided as a minimum:

1) During Construction Phase, Draft Operation Manual by Service Provider.
2) One month prior to scheduled Substantial Completion date, Draft Operation and Maintenance Manual by Contractor. Manuals must be received, reviewed and accepted by the Project Manager prior to Substantial Completion and must be on site during all operator training sessions.
3) At Substantial Completion of Contract, Final Operation Manual by Service Provider
4) At Substantial Completion of Contract, Final Operation and Maintenance Manual by Contractor.
5) At Substantial Completion of Contract, Service Provider to turn in copy of original field notes.

*One USB each to First Nation Project Manager and to First Nation operators. The USB should include videos of the installation and operation of equipment to supplement the information. This manual must be provided in binder format.

5.4.3.6 Warranty Period (Construction Phase)

The following deliverables are to be provided as a minimum **at Contraction Completion:**

1) Total Completion Certificate
2) Updated Deficiency List

The following deliverables are to be provided as a minimum **Prior to End of Warranty and Guarantee Period:**

1) Final inspection and re-issue Deficiency List three (3) weeks prior to end of Warranty and Guarantee period
2) At the end of the Warranty and Guarantee period, inspect facility with First Nation Project Manager and/or Facility Operator to verify all deficiencies have been rectified by the Contractor
3) If all deficiencies have been corrected by the Contractor, issue Payment Certificate for release of Warranty and Guarantee Holdback
4) Completion Report – 6 months after Contract Completion

5.4.4 Approval and Acceptance

The Service Provider shall ensure that the reports are reviewed by the Project Team and provide written evidence of the Project Team's acceptance.

The Service Provider shall acknowledge that the Project Team represents the First Nation.

The Service Provider shall modify the final documents in response to Project Team comments on the Draft Reports.

5.5 Meetings

5.5.1 General

The Service Provider shall:

1) Prepare and submit a proposed meeting agenda, in a form acceptable to the team, to the Project Team member's five (5) working days prior to all design review meetings.
2) Record and distribute the design review meeting minutes, in a form acceptable to the team, to the Project Team members within the five (5) working days immediately after the meeting date.
3) Call Project Team meetings after milestones have been completed, for example, field work completion and report completion.
4) Review the progress of the project including the following as a minimum:
   a) Project objective and scope for the period
   b) Service Provider's staff assigned to the project
   c) Work progressed to date and any anticipated roadblocks
   d) Engineering budget and any anticipated deviation
   e) Any instructions from the First Nation that will result in scope change
   f) Public participation and preparation of advertisements, public information handouts, etc.
   g) Project alerts

5.5.2 Project Meetings

The Service Provider shall allow for the following meetings (minimum) with the Project Team:

1) Upon award of the Engineering Services contract, hold an initiation meeting at the First Nation so that the Service Provider can become familiar with the project and any concerns of the First Nation can be properly addressed.
2) Upon completion of the field work, review of the available information and the production of the draft Conceptual Design Report a meeting will be held with the First Nation to discuss the findings and review/discuss the report.
3) Meetings will be held at the 66% and 99% stages of the Detailed Design production. The review meetings will be held at a location to be determined
4) A mandatory tender site meeting will take place prior to the submission of the contract pricing (construction phase)
5) Tender review meeting
6) During the construction phase, there will be regular monthly construction meetings (estimated 14 meetings including kick off and commissioning)
7) Final inspection and commissioning meeting (construction phase)
8) One year warranty inspection meeting (construction phase)
9) In addition to the meetings, the Service Provider shall allow for regular conference calls

with the Project Team

For the purpose of costing, assume that all meetings will be held at the First Nation. Credits should be provided back to the Owner for meetings that do not occur on site.

5.6 Progress Reporting

A physical and financial report detailing the work accomplished during the period and commentary on the compliance with the schedule shall be submitted to the Project Team on an interval of thirty (30) calendar days and is due one week after the end of the period.

Regular project updates shall be provided on the status of the project (e-mail or verbally) on an interval of not more than fourteen (14) calendar days.

Two (2) physical copies and a digital PDF copy of each report shall be submitted to the Project Team. The Service Provider shall provide a copy of each updated schedule in MS Project and PDF to the Project Team.

5.6.1 Physical Report

The Service Provider shall regularly report to the Project Team, the extent of the work completed and milestones achieved to date. A physical accounting of the work completed is to accompany any invoices. The report should include the following:

1) Progress of Project achieved to date
2) Review of work planned to be completed for the month
3) Work completed for the month and to date versus planned progress as noted in work plan
4) Gantt chart showing actual vs. planned schedule
   a) Schedule must identify activities/tasks, expected start/completion date, milestones.
5) Outstanding Action Items, either internal or external to the First Nation
6) Project alerts of critical Issues which may delay the project
7) Status of Application for Approvals
8) Expenditure of engineering fees for the month and to date
9) Graph of planned vs. actual expenditure of engineering fees
10) If project is behind planned schedule, provide information to the First Nation Project Manager on reason(s) for it and advise course of action the Service Provider will take to recover and maintain original schedule.
    a) Where the First Nation Project Manager is unable to approve the Service Provider's request for the revision to the project schedule, the Service Provider's Project Director will be required to meet with First Nation Project Manager/Management and to provide reasons for the firm's inability to recover the slippage in the project schedule. The Project Director will be required to provide assurance that appropriate actions have been taken and demonstrate how the firm will prevent a similar situation from occurring again in the future.

5.6.2 Financial Report

The Service Provider shall regularly report to the Project Team a financial summary in the form of an invoice that details the project budget, invoice for the period categorized by fees and expenses, including any sub-Service Provider costs that period:

1) On an interval of thirty (30) calendar days (in correspondence with the Physical Report),

with headings as follows:

Budget	**Billings**
Fees	Previous Billings
Expenses	Billings This Period
Total Contract	Billings To Date

2) As part of the Service Provider's monthly invoices (if more convenient). See Section 2.2.6 for invoicing details.

During the construction phase, the Service Provider shall submit a monthly cost control report to the First Nation Project Manager with respect to the following:

1) Approved Engineering Fees.
2) Expenditures to-date.
3) Balance of Fees.
4) Projection of engineering fees required to complete the contract to the Substantial Completion stage versus balance of approved fees available.
5) Recommend course of action to the First Nation Project Manager to mitigate any cost overrun in the event that the approved engineering fees will not be able to sustain the project to the Substantial Completion stage.
6) Value of Contract amount.
7) Payment to Contractor to-date.
8) Approved Change Orders issued to-date.
9) Value of Contract plus all Change Orders approved to date.
10) Include or identify any potential additional costs for work that is outside the contract, which may be required to complete the construction works.
11) Description of work performed to-date and advise on progress to-date versus tender schedule submitted by Contractor.
12) Recommend any action to be taken by the First Nation to mitigate cost overruns for the project as a whole.

5.7 Project Schedule

The proposed schedule at this stage is as follows. Please note that the schedule is subject to change:

Milestone Event	**Dates**
Design Service Provider Award	June 24, 2026
Draft Conceptual Design Report Submission	To be Provided by Proponent
Conceptual Design Report Submission	To be Provided by Proponent
66% Design Submission	To be Provided by Proponent
99% Design Submission	To be Provided by Proponent
Pre-Order Long Lead Time Items (post 99% design)	To be Provided by Proponent
Final design complete	To be Provided by Proponent
Construction Phase Approval	To be Provided by Proponent
Tender Period	To be Provided by Proponent
Select General Contractor	To be Provided by Proponent

Construction starts	To be Provided by Proponent
Substantial completion	To be Provided by Proponent
Warranty Period	To be Provided by Proponent

In the schedule, the Service Provider shall:

- Allow sufficient time in the project schedule to distribute documents to the Project Team for any meetings.
- Allow three (3) weeks for the review of the submission by the Project Team prior to scheduling a meeting date.
- All meetings and milestones shall be clearly identified in the proposed project schedule.

PART C – PROPOSAL INSTRUCTIONS

Section 6: PROPOSAL REQUIREMENTS

6.1 General

The Proponent will acknowledge in the Proposal that they have had adequate discussions and access to sufficient information to enable them to undertake the required work as detailed herein within the time limits stipulated for the project.

The estimated cost for the project submitted in the Proponent's Proposal shall include all necessary expenditures to undertake all the required work outlined in these Terms of Reference and in the Proponent's proposal.

6.2 Submission Requirements

This proposal is a "Two Envelope" system, to be titled as the "Management Section" and "Cost Section". All information related to cost is to be contained in the "Cost Section" only. The Service Provider shall submit an electronic copy of their "Management Section" and an electronic copy of their "Cost Section" in separate emails. The "Cost Section" shall be password locked. If the Proponent's proposal achieves the minimum technical scoring, the Proponent will then be asked for the password.

The proposals are to be emailed or hardcopy delivered and must be received by **June 2, 2026 at 4 pm EST** to the attention of Daryl Seymour, daryl.seymour@akwesasne.ca.

Please Note: All submissions submitted by Proponents via e-mail to the contact are deemed received once the e-mail has entered into the e-mail inbox of the contact. Submissions shall be directed only to the contact. **Please note the maximum file size is twenty-five Megabytes (25Mb).** The contact shall not be responsible for any e-mail delivery issues or technical problems with regard to the submissions, or if the submission is sent to an email address that is different from the one provided for submissions. It is the Proponent's responsibility to ensure that the proposal with any applicable attachments have been submitted and received on or before the stipulated date and time. The Owner will not accept submission of any proposals after the closing date and time.

For consistency, www.timeanddate.com will be used as the official clock for receipt of proposals.

Failure to submit proposals by the date and time specified shall result in disqualification of the proposal. Late proposals will not be accepted and will be returned unopened. Each Proponent alone bears the responsibility for delivery of the proposal by the stipulated date and time. No fax transmissions will be accepted.

No alteration to the Proponent's proposal will be accepted after the proposal submission due date, except as provided for herein. A proposal may be withdrawn by a Proponent by means of a written request delivered to the issuing office prior to the proposal submission due date and time.

Each Proponent shall be solely responsible for examining all of the RFP documents, including any addenda issued during the RFP period, and shall be deemed to have satisfied itself of the sufficiency of its lump sum price for the services.

By submitting proposals, Proponents authorize the Owner to conduct reference checks.

Each Proponent shall review all the RFP documents and shall promptly report and request for clarification of any discrepancy, deficiency, ambiguity, error, inconsistency, or omission

contained therein. Where such a request results in a change to the requirements of this RFP, the Owner will prepare and issue an addendum to this RFP.

Proponents shall not make verbal inquiries to staff with respect to this RFP. Information given orally by staff will not be binding on the Owner, nor will it be construed as a factor in the evaluation of the proposals.

6.3 Technical Section

The Technical Section of the proposal shall include, but not limited to, the following information.

6.3.1 Section 1 – Proponent/Firm

This section should give a brief description of the Proponent's firm, qualifications and expertise.

The Proponent shall include in the Proposal their qualifications to undertake the project including a list of similar work undertaken in Government, First Nation and Private sectors and corresponding references (Minimum of 3 projects in the past 10 years). The information must include the contact name, current telephone number and email and a short description of the individual's role in the project. Methods for controlling costs and schedules should be provided including examples and stating whether or not the completed projects were on time, and on budget.

6.3.2 Section 2 – Proponent's Team

This section will identify assigned staff and any sub-Service Providers along with their qualifications, registration and the value they add to the project. All requirements for the Proponent shall apply to the sub-Service Providers.

The Service Provider's Project Manager must provide information regarding their experiences in the last five (5) years that are relevant to the duties required herein. It is recommended to include a brief statement relative to the qualifications of the Project Manager to undertake the project based on experience on similar projects, cost control, expertise, etc.

The committed back-up for the Project Manager if the Project Manager is not available should be identified including their qualifications.

The Proposal shall identify the portions of the project to be undertaken by each member of the Team. This should include a description of their project duties and responsibilities and estimated hours for the project. Only team members that are actually going to work on the project shall be listed in the proposal.

No changes in the Proponent's Team will be permitted without a written request for such changes and written approval by the Project Team.

The Proponent shall provide an organization chart and a description of the management methods that will be used to ensure that the work is done in a manner that meets these Terms of Reference.

The Proponent shall provide an Appendix showing the Curricula Vitae/Resumes of their proposed Project Team staff and any sub-Service Providers. The Proponent shall provide

proof of registration or licensure to practice within the Province of Ontario with a P. Eng. Designation. Proof of sub-Service Providers professional engineering registration and professional insurance are to be provided with the proposal.

No members of the Proponent's project team are to be changed without the approval of the Owner as per Section 2.2.11.

6.3.3 Section 3 – Project Understanding

This section should give a brief description on the proposed scope of work and an overall approach to the work. This should include an understanding of specific project goals and requirements highlighting those that are of particular significance to the project (i.e functional/technical requirements, existing conditions, challenges and restraints etc).

6.3.4 Section 4 – Methodology

The Proponent's proposal shall contain an outline of the methodology that the Proponent proposes to utilize in undertaking the project. The following details are recommended for inclusion in the proposal:

- Highlight technical methods and innovative ideas to be utilized to complete the project.
- Detail the process that will be utilized to complete the project and how the scope of work in the Terms of Reference will be met and exceeded.
- Any major difficulties that are anticipated.
- Highlight any request for changes to the statement of work.
- What steps will be taken to promote and implement skill transfer to the First Nation.
- Details of the methodology proposed by the Service Provider for the Inflow and Infiltration study

6.3.5 Section 5 – First Nation Participation

The Proponent shall outline any opportunities for First Nation members to become involved in the project. This will be treated separately from the opportunities that may arise with the Contractor.

6.3.6 Section 6 – Work Plan

A "Work Plan" demonstrating how the requirements of the scope of work will be met and showing the assignment of specific team members to tasks and the number of person-hours that each team member will spend on each task. The use of specialized services should also be shown. This information should be shown on a chart, in matrix form, excluding costs. Availability of the assigned personnel is to be indicated in the proposal. The percent (%) utilization of the assigned personnel is to be shown and totaled. The sections of the matrix shall include as a minimum all the phases shown in the Cost of Services Form in Appendix B. The total number of hours per task, per section, per team member and for the whole project shall be shown in the matrix.

The Work Plan should include the utilization of First Nation labour, equipment, and/or accommodation required throughout the project. Utilization of the First Nation local labour, equipment, and/or accommodation is expected if required.

6.3.7 Section 7 – Schedule

The Proponent's proposal will indicate the number of weeks required to complete the project and include the proposed schedule. The Proponent shall use Microsoft Project to provide a schedule of suggested milestones, key stages, work durations and dates for the implementation of the project. The schedule shall include the project start and end date. The schedule shall be based on award of the project within two weeks of the closing of the request for proposal. Scheduling shall be updated regularly and monthly reports sent to the Project Team, in both hard copy and digital formats.

The schedule shall be included in the Proponent's contract.

The Microsoft Project digital file shall be available to the Owner if requested.

It is encouraged that the Proponent provides examples of similar projects that they met their proposed schedule including corresponding references.

6.3.8 Section 8 – Project Implementation and Control

This section should give a brief description on the management of the work, delegation of responsibility, work plans, scheduling and cost control, reporting and quality control. Methods for controlling costs and schedules should be presented.

6.3.9 Section 9 – Insurance

The project insurance requirements are described in Section 2.2.13.

The Proponent shall provide proof of insurance within three days of notice of intent to award.

6.3.10 Section 10 – Conflict of Interest

The Conflict-of-Interest requirements are described in Section 2.1.11.

The Proponent shall complete and submit the Conflict of Interest (COI) Forms provided in Appendix D. The Proponent shall complete COI Form A and complete and submit either:

1) COI Form B to declare no current or future conflict of interest (actual, perceived or potential) in submitting a Proposal, or, if selected, with the contractual obligations of the Service Provider under the Agreement and that the Proponent neither has, nor has access to, any Confidential Information.
2) COI Form C to declare any (all) situation(s) that may be a conflict of interest in submitting a Proposal or, if selected, with the contractual obligations of the Service under the Agreement.

6.4 Cost Section

The fixed consulting fees and disbursements for the performance of his services for all portions of the projects based on the requirements of the Terms of Reference to be provided in a password locked electronic document. Hourly rates for all assigned staff, administration fees on disbursements, or on Sub-Proponent fees, and other Consulting Firm Policies shall be submitted. This should include rates and policy for "overtime" work undertaken.

The price(s) quoted shall include any and all applicable taxes, unless exempt in which case the Proponent shall include Tax Registration Number (if the Proponent is Registered). The Proponent should note that the First Nation is HST Exempt. An HST Exemption letter can be

provided upon request from the Proponent.

The Proponent shall provide a cost breakdown of the services requested in this Terms of Reference. The breakdown shall show the fixed cost of professional fees and expenses. The work breakdown shall be in the form of a time and task activity matrix and demonstrate the person-hours for each task. This information must be shown in a chart, in matrix form, preferably in the same one referred to in the aforementioned “Work Plan”, but including costs. Only the fixed fee portion will be used in the calculation of points for cost. The cost breakdown and time cost categories by section shall include as a minimum all the phases shown in the Cost of Services Form in Appendix B. The total cost per task, per section, per team member and for the whole project shall be shown in the matrix.

The Proponent shall describe in detail the basis upon which the fee is based, and clearly outline the cost of any exclusion, provisional and/or discretionary items which may impact the proposed fee.

The breakdown of the Proponent’s proposed fees and disbursements as described in the Proponent’s Proposal will be summarized from the submitted time and task activity matrix of work using the format shown in Appendix B.

The engineering budget for the project will not be shared with Proponents.

Section 7: PROPOSAL EVALUATION

7.1 Evaluation Process

1) Each proposal will first be evaluated separately by a minimum of three representatives from the Evaluation Team using the point system and all criteria except costs as indicated on the attached “Evaluation Criteria Table”.

2) The evaluation procedure using all criteria except costs is to:

   a) Assign a score between 0 to 10 to each proposal for all criteria;

   b) Calculate the Mark for each criterion by multiplying the Score by the weight; and

   c) Add up each mark to determine the subtotal.

3) All score sheets from each representative will hold the same weight and averages will form the Evaluation Team’s Scores.

4) Evaluation team shall review averages and achieve consensus on proposal scoring prior to opening cost envelope.

5) The Cost Sections are opened for all proposals attaining 60 percent or more of the technical component. Where the Proposal does not score a minimum of 60 percent in the technical evaluation portion the Cost Section will be returned unopened. The PDF copy of the “Cost Section” should be provided in a password locked electronic document.

6) Proposals prices that are either 60% higher or 60% lower than the average Proposal price may be disqualified.

7) The terms of the contract may be negotiated with all or any Proponent. Should negotiations breakdown with the Proponent with the highest points, the Proponent with

the second highest points will be contacted. This procedure will be continued until a contract is finalized. In the event that there are multiple Proponents with the highest score, the Project Team has the discretion to choose between these Proponents based on the Project Team's requirements.

7.2 Evaluation Team

Evaluations of the Proponents qualifications and proposals shall consist of the following representatives:

- First Nation Chief & Council (1)
- First Nation Project Coordinator (1)
- First Nation Capital Services (1)
- First Nation Technical Services (1)

7.3 Proposal Mandatory Requirements

The following are Mandatory Requirements that the Proponent must provide in their proposals. Failure to provide any of these Mandatory Requirements may result in disqualification of the firm's proposal.

1) That the persons assigned to the lead roles in the project have proof of good standing from the Professional Engineers Ontario.
2) That the Proponent firm has a Certificates of Authorization issued by the Professional Engineers Ontario.
3) That the Proponent firm has the insurance as described in Section 2.2.13. Proof of Insurance is to be provided in the proposal.
4) Acceptance Form in Appendix C.
5) Statement on Conflict of Interest as described in Section 2.1.11.
6) Statement on Non-Collusion as described in Section 2.1.2.
7) Three (3) references from three (3) different organizations for which the Proponent has performed similar work. The information must include the contact name, current number, email, a short description of the work and the individual's role in the project.
8) Fees and disbursement for the specified services expressed as a lump sum (fixed) and summarized on a COST OF SERVICES FORM submitted in a separate password protected email named as "**COST SECTION**".

7.4 Proposal Evaluation Criteria Table

Proposals will be evaluated according to the work identified in the “Terms of Reference” and using the criteria and point system set out as follows:

Evaluating Team Member: _____

Criteria	Mark (0 - 10)	Weight	Score	Comments/Notes
Firm: Experience and satisfactory performance on similar projects (government and private sector). The references provided may be contacted. Responsible officers of government funded projects may also be contacted when such projects are referenced.		1.0		
First Nation Experience: Experience, registration and satisfactory performance on similar First Nation projects. The references provided may be contacted. Responsible officers of government funded projects may also be contacted when such projects are referenced.		0.5		
Project Team: The number, qualifications and relevant experience of personnel to be assigned. Time Task Matrix is provided.		2.0		
Proposal: The depth and detail of the proposal which indicates an understanding of the size, complexity and time constraints of the work.		1.0		
Schedule: The proposed schedule for the work. Management of the work, delegation of responsibility, work plans, schedule and cost control, reporting and quality control.		1.0		
Methodology: The methodology for the performance of the work in accordance with the Terms of Reference. This includes the Proponents management section and proposed skill transfer to the First Nation.		2.5		
Costs of Services*: Lowest Proposal Cost ÷ Evaluated Proposal Cost x 10		2.0		

Marks

10 Proposal exceeds requirements.
7 Most of the important elements are provided, acceptable.
4 Some of the important elements are provided, unacceptable.
0 The element was not provided.

*Where the ratio method is deemed inappropriate for use in awarding points for cost by the Evaluation Team due to unique circumstances, an alternative cost evaluation process may be utilized. It should be noted that the cost for some or all the Provisional Items may be excluded when evaluating costs of services.

APPENDICES

APPENDIX A – COMMUNITY LAYOUT, MAP, DRAWINGS, & BACKGROUND

Figure 1: Akwesasne Location

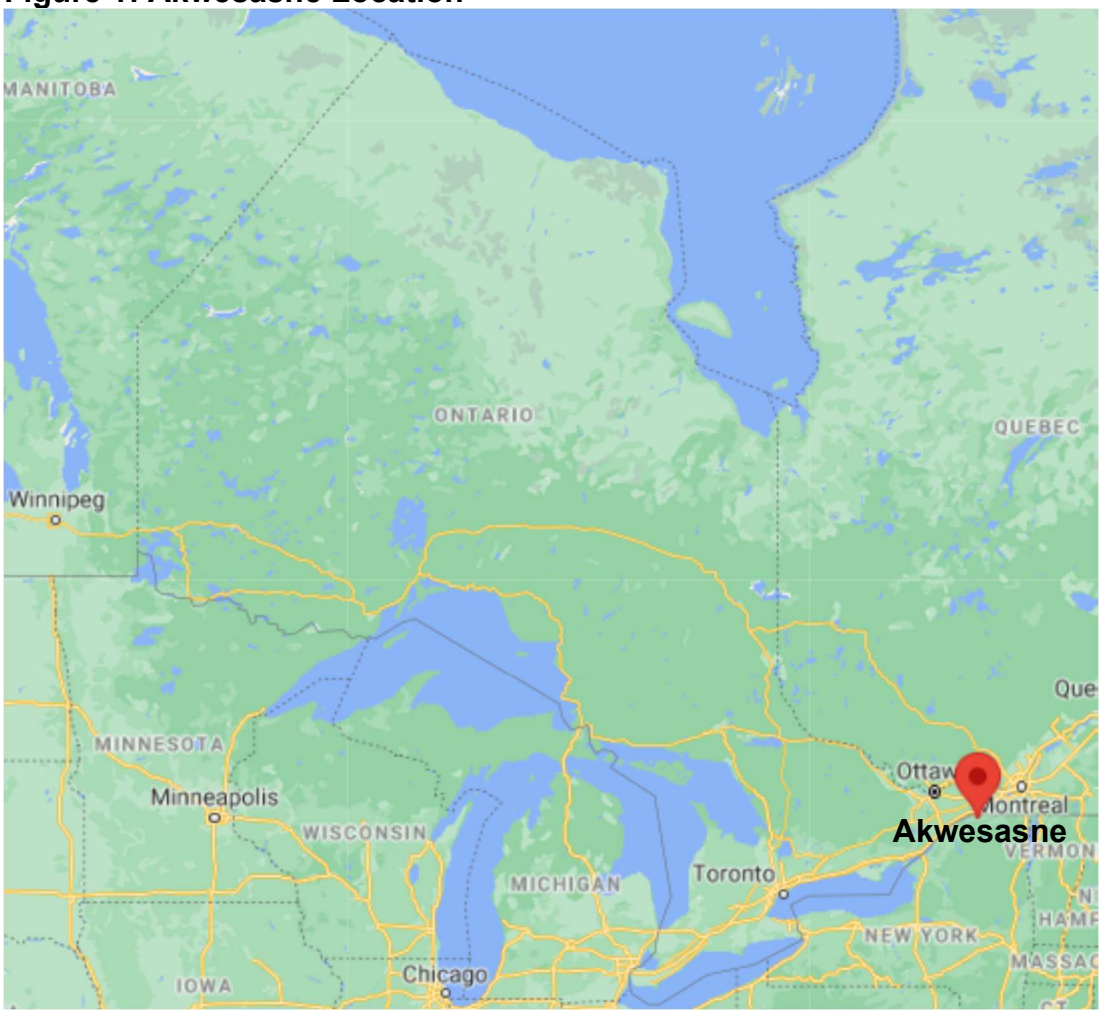


Figure 2: Cornwall Island Akwesasne

APPENDIX B – COST OF SERVICES FORM

(TO BE PROVIDED IN A SEPARATE ENVELOPE)

Location of Work: Akwesasne First Nation, Ontario
Description of Work: Consulting Engineering Services for Akwesasne First Nation's Rotating Biological Contactor Systems Replacement and Upgrades

PHASE		FEES	DISBURSEMENTS	TOTAL
1.	Conceptual Design	$_____	$_____	$_____
2.	Detailed Design	$_____	$_____	$_____
3.	Travel to Meetings in Akwesasne during design stage (6 meetings)	$_____	$_____	$_____
	Sub-Total	$_____	$_____	$_____
Cash Allowances				
4.	Geotechnical Analysis	$_____	$_____	$40,000
5.	Sanitary Sewer I&I Investigation by Third Party (Refer to Section 5.2.8.3)	$_____	$_____	$40,000
6.	Archeological Assessment	$_____	$_____	$_____
	Sub-Total	$_____	$_____	$80,000
7.	Tendering	$_____	$_____	$_____
8.	Contract Administration and Construction Inspection based on 12 month construction schedule	$_____	$_____	$_____
	Resident Inspection (based on 2,400 hours of site inspection)	$_____	$_____	$_____
9.	Travel to Meetings in Akwesasne First Nation during Tendering/Construction Stage (12 meetings anticipated)	$_____	$_____	$_____
10	Commissioning	$_____	$_____	$_____
11	Project Completion Report	$_____	$_____	$_____
12	Warranty Inspection	$_____	$_____	$_____
13	Additional Project Team Meetings	$_____	$_____	$_____
14	Pre-Qualification of Contractors	$_____	$_____	$_____
15	Additional Month(s) of Construction Duration	$_____	$_____	$_____
	Sub-Total	$_____	$_____	$_____
	TOTALS	$_____	$_____	$_____
16	Credit for cost estimate by PQS	$_____	$_____	$_____
17	Credit for a meeting to be held via conference call instead of on-site meeting	$_____	$_____	$_____

Name of Firm: _____

Address of Firm: _____

_____

Signature of Consultant: _____

_____
Position/Capacity

*Please provide an hourly rate for all assigned staff in the event the First Nation requires additional advisory services outside the scope of this RFP including any terms and conditions. This should include rates and policy for “overtime” work undertaken.

APPENDIX C – ACCEPTANCE FORM

Akwesasne FIRST NATION
RBCs Replacements and Upgrades

To: Mohawk Council of Akwesasne
101 Tewaseteni Road
Akwesasne, Ontario
K6J 0G5

ACCEPTANCE

The Proponent hereby acknowledges that it has examined all the Request for Proposal ("RFP") documents, including Addenda numbered [1] _____ issued prior to the Proposal Submission Deadline.

The Proponent hereby agrees upon acceptance by the Owner to provide the Work specified in the RFP annexed hereto and forming part hereof in accordance with the RFP and its Terms and Conditions for the prices stated in the Cost of Services Form.

The Proponent hereby accepts that Proposals submitted to the Owner shall constitute a valid and irrevocable offer which is open for acceptance by the Owner from and after submission until the expiration of the 90th day following the Proposal Submission Deadline.

[1]Proponent to fill in each Addendum No. received, e.g., 1, 2, 3, etc. as applicable

I HAVE AUTHORITY TO BIND THE SERVICE PROVIDER:

_____
Signature of Authorized Signing Officer:

_____
(Print Name, Title)

_____
(Date)

Note: In case of a Joint Venture, signatures of all partners are required.

APPENDIX D – CONFLICT OF INTEREST (COI) FORMS

COI Form A: RFP Preparation Participants

The following is a list of the Service Provider staff who participated in the preparation of the RFP submission:

Name	Business Address	Business Telephone Number	Contribution Or % Of Work

COI Form B: Certification - No Conflict Of Interest

I/We hereby certify that there is not nor was there any actual or potential conflict of interest or unfair advantage in our submitting the Proposal or performing the Services required by the Agreement.

In submitting the Proposal, our company has no knowledge of or the ability to avail ourselves of confidential information of the Owner (other than confidential information which may have been disclosed by the Owner to the Proponents in the normal course of the Request for Proposal) where the confidential information would be relevant to the Services, their pricing or the Request for Proposal evaluation process.

_____	_____
Name	Signature
_____	_____
Position	Date

Note: In case of a Joint Venture, signatures of all partners are required

COI Form C: Certification - Conflict of Interest

In submitting our Proposal the Service Provider declares that the attached is a list of situations, each of which may be a conflict of interest, or appears as potentially a conflict of interest in our Company submitting the Proposal or performing the contractual obligations of the Service Provider under the Agreement.

In submitting the Proposal, our Company has/has no (strike out the inapplicable) knowledge of or the ability to avail ourselves of confidential information of the Owner (other than confidential information which may have been disclosed by the Owner to the Proponents in the normal course of the Request for Proposal) where the confidential information would be relevant to the Services, their pricing or the Request for Proposal evaluation process and where access to such additional information may prejudice the Owner or be an unfair advantage to the Service Provider.

(If declaring that the Service Provider has access to additional information that may be confidential, other than confidential information which may be disclosed by the Owner to the Proponents in the normal course of the Request for Proposal, please attach an explanation describing the additional information and how you have access to it).

With the exception of those situations and/or access to additional information disclosed on the list attached, I/We hereby certify that there is not nor was there any other actual or potential conflict of interest or unfair advantage in our submitting the Proposal or performing the Services required by the Agreement.

I/We hereby acknowledge that the Owner at his/her sole discretion shall have the right to determine whether or not the declared situations do constitute an actual or potential conflict of interest or whether access to additional confidential information does constitute an unfair advantage over other Service Providers.

I/We acknowledge that in the event that the Owner finds the situations to be a conflict of interest or access to the additional confidential information to be an unfair advantage that our Proposal may be rejected.

_____	_____
Name	Signature
_____	_____
Position	Date

Note: In case of a Joint Venture, signatures of all partners are required

APPENDIX E – RELEVANT DOCUMENTS

The following documents are provided separately to assist the proponents with preparing the proposals.

- EVB Engineering, DRAFT *Condition Assessment of Wastewater Treatment Facilities*, March 2026
- Hannah Environmental Equipment Inc. *Akwesasne Assessment Fall 2023*, January 14, 2024
- PJ Hannah, Arena RBC Drawings, 1995
- PJ Hannah, AMS RBC Drawings, 1991
- PJ Hannah, Block 97 Drawings, 2000

APPENDIX F – MCA RBC WWT CONDITION ASSESSMENT DRAFT

TECHNICAL MEMORANDUM

PROJECT: **MCA RBC WWT Facilities Condition Assessment**

DATE: April 9th, 2026

TO: Daryl Seymour, P. Eng, Capital Planning and Development - Engineer

FROM: Adam Poapst, P. Eng., Jamie Baker, P. Eng.

RE: **Condition Assessment Report** DRAFT

1 INTRODUCTION

1.1 BACKGROUND

EVB Engineering was retained by the Mohawk Council of Akwesasne (MCA) to undertake a condition assessment of the existing Rotating Biological Contactor Facilities servicing the Ahkwesahsne Mohawk School and the A'nowara'ko:wa (Turtle Dome) Arena.

The intent of this assessment is to review the overall condition of the existing RBC Facilities in operation and provide recommendations for rehabilitation and/or replacement. Our condition assessment team completed their site inspection on September 10th, 2025. Our findings are contained herein.

1.2 RBC FACILITY DESCRIPTIONS

The existing RBC facilities servicing the Ahkwesahsne Mohawk School and the A'nowara'ko:wa Arena are Klargester Biodisc/Roto Pack RBC units, supplied by PJ Hannah Equipment Sales Corporation.

The treatment system is an attached growth secondary treatment plant and is comprised of the following components:

1. A primary clarifier located beneath the rotating attached growth plates.
2. A flow through chamber that contains a partially submerged RBC.

3. A final clarifier that controls the water level in the RBC zone and discharges through an outlet channel containing a UV disinfection light.
4. A gravity sewer discharge outlet.

Raw sewage enters the primary clarifier tank through the inlet sewer. Solids settle to the bottom of the clarifier tank while the supernatant is transferred into the flow through chamber where the filter media is located. The filter media is comprised of biological discs and rigid polypropylene media, supported by corrosion protected steel frames. The steel frames are installed on a shaft bearing that is rotated using a gear reducer and motor. Settled sludge is sent back into the clarifier, while the supernatant is transferred into the final clarifier tank via second bucket feed system. Effluent from the final clarifier flows through an ultraviolet disinfection system prior to final discharge to the outlet sewer.

The settled sludge in the Primary Clarifier tank is removed via 75mm diameter desludging lines with quick connections located outside the steel enclosure.

Table 1-1 below presents the design criteria for each RBC facility.

Table 1-1: RBC Design Criteria

Parameter	Ahkwesahsne Mohawk School	A'nowara'ko:wa Arena
Age	35 years (Installed July 1991)	30 years (Installed March 1996)
Model Number	BS11-HBP	BHP8F-BFP
Average Daily Flow	50 m^3/d	30 m^3/d
Peak Daily Flow	-	-
BOD_5 (Influent / Effluent)	170 mg/L / 20 mg/L	140 mg/L / 20 mg/L
TSS (Influent / Effluent)	200 mg/L / 20 mg/L	200 mg/L / 20 mg/L

Section 8:

1.2.1 2025 OPERATING DATA

The following tables present the sampling data collected at the RBC facilities during the 2025 operating year. Based on the influent samples collected, it appears that both facilities are significantly underloaded with respect to BOD5 and TSS. Each effluent sample collected appears to be within the effluent limits for the facilities, except at the Arena in April for $cBOD_5$ and in December for TSS.

Table 1-2: 2025 Sampling Data - AMS

Date	cBOD5			TSS		
	Influent	Effluent	% Removal	Influent	Effluent	% Removal
January	15	< 2	> 87%	17	8	53%

February	96	3	97%	58	8	86%
March	-	3	-	-	9	-
April	50	3	94%	24	9	63%
May	29	< 2	> 93%	33	5	85%
June	-	< 2	-	-	5	-
July	64	2	97%	109	16	85%
August	29	2	93%	25	5	80%
September	-	< 2	-	-	8	-
October	47	2	96%	55	8	85%
November	237	2	99%	335	8	98%
December	-	3	-	-	6	-

Table 1-3: 2025 Sampling Data - Arena

Date	cBOD5			TSS		
	Influent	Effluent	% Removal	Influent	Effluent	% Removal
January	< 2	< 2	-	2	2	0
February	50	< 2	> 96%	720	17	98%
March	-	< 2	-	-	6	-
April	112	38	66%	41	12	71%
May	21	< 2	> 90%	11	2	82%
June	-	< 2	-	-	2	-
July	56	< 2	> 96%	18	3	83%
August	63	< 2	> 97%	33	2	94%
September	< 2	< 2	-	5	5	0%
October	4	2	50%	12	3	75%
November	23	< 2	> 91%	22	15	32%

December	-	< 2	-	-	22	-

2 CONDITION ASSESSMENT

2.1 AHKWESAHSNE MOHAWK SCHOOL

(AMS) RBC FACILITY

The RBC facility servicing the AMS appears to be constructed as per the “Approved for Construction” drawings provided by PJ Hannah (Drawing 4633/3 and 4951).

The RBC facility is comprised of an 8.83m long by 3.65m wide steel tank and is covered by an insulated FRP shell. The FRP shell is approximately 8.01m x 3.35m. At the outlet end of the steel tank, there is a 1.5m wide by 1.8m long steel chamber to house a UV disinfection system upstream of the outlet pipe. Effluent is discharged via a 150mm diameter outlet pipe.

Access is provided by a man door located on the north and south sides of the FRP shell. An aluminum grated walkway is installed above the steel tanks.

During the investigation, the following observations were made with respect to the internal components of the RBC facility.

1. Delamination was observed along the interior and exterior walls of the steel tank
2. Sections of the aluminum grating show signs of deterioration and delamination.
3. The drive chain and sprocket assembly show signs of corrosion and scale build up. The protective guarding also shows signs of corrosion.
4. The gear chain was significantly corroded, showing signs of wear during the inspection. Some slipping of the chain was also observed at the time of the inspection.
5. The shaft bearing shows some signs of corrosion at the outlet bucket feed system.
6. The biological disk media appear to be intact; however, the steel frame and support rings show moderate signs of corrosion.
7. The bucket feed system as the upstream and downstream end of the media appears to be functioning as intended.
8. The unit heater is heavily corroded.

Figure 2-1: RBC Media

Figure 2-2: UV Chamber

Figure 2-3: RBC Gear Chain and Guard

Figure 2-4: Shaft Bearing and Bucket Feed

The following implications are noted, based on the observed conditions of the AMS RBC Facility.

1. Corrosion and slipping of the gear chain increase the risk of failure and cause an unplanned stoppage at the facility, resulting in process upset.
2. Elevated bearing friction and wear can increase rotational load on the shaft and drive system due to corrosion, heightening the risk of bearing seizure or shaft damage and increasing the power demand.
3. Further deterioration of the aluminum grating could cause safety issues to maintenance staff.

Section 9: *A'NOWARA'KO:WA ARENA RBC FACILITY*

The RBC facility servicing the A'nowara'ko:wa Arena appears to be constructed as per the "As-Built" drawings provided by Rosemount Design Group (Drawing MUN-4). The RBC facility is comprised of a 7.62m long by 2.96m wide steel tank and is covered by an insulated FRP shell. The FRP shell is approximately 6.82m and x 2.96m. At the outlet end of the steel tank, there is a 0.8m wide by 2.60m long steel chamber to house a UV disinfection system upstream of the outlet pipe. Effluent is dosed with ferric chloride and treated by the UV system prior to being discharged via a 100mm diameter outlet pipe.

Access is provided by a man door located on the north and south sides of the FRP shell. Ladder rungs are provided below the man doors down to the aluminum grated walkways installed above the steel tanks. A ferric chloride tank is located on the aluminum grating, downstream of the media disks.

In the springtime ice melt from rink sent through the facility; however, operations staff noted that the system generally appear to be underloaded. It's also been observed that the pH is around ~4 in raw sewage.

During the inspection, the following observations were made.

1. Heavy corrosion was observed throughout facility (i.e., ladder rungs, steel tank, pillow bearing, shaft).
2. The first section of media disks were missing at the time of the inspection. Operations noted that this section of media was removed approximately 2 years ago, due to significant deterioration. The shaft bearing along this section was significantly corroded and movement could be seen while it was rotating.
3. The gear reducer and chain show signs of wear.
4. There was no biological film build up observed on the media at the time of the inspection, suggesting the system is underloaded.
5. The underside of the aluminum cover for the UV encloser was deteriorated.

Figure 2-5: Biological Media Disk

Figure 2-6: Corroded Shaft Bearing

Figure 2-7: Aluminum Grating Platform

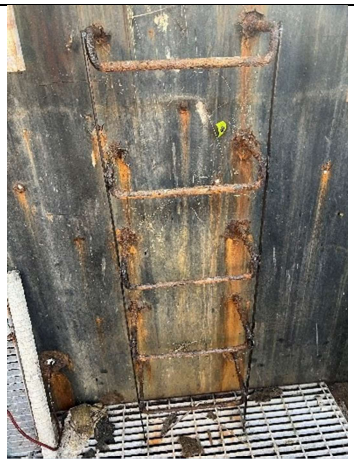


Figure 2-8: Access Ladder

The following implications are noted, based on the observed conditions of the AMS RBC Facility.

1. Heavy corrosion of the access ladder presents a significant safety concern to the Operators trying to enter the facility to complete any maintenance activities.
2. Elevated bearing friction and wear caused by the corrosion to the shaft bearing can increase rotational load on the shaft and drive system, heightening the risk of bearing seizure or shaft damage and increasing the power demand.
3. Further deterioration of the aluminum grating could cause safety issues to maintenance staff.

3 OPERATIONAL AND SAFETY CONCERNS

3.1 OPERATIONAL CONCERNS

Section 10:

3.1.1 MECHANICAL RELIABILITY AND PROCESS STABILITY

The advanced corrosion and deterioration observed in drive components, bearings, shafts, and structural supports at both facilities present a significant risk to continuous operation.

The severely corroded chain-and-sprocket drive system observed at the AMS Facility increases the likelihood of:

- Drive failure or sudden stoppage of RBC rotation
- Uneven or intermittent rotation leading to biomass sloughing

- Loss of treatment efficiency due to inadequate oxygen transfer

Furthermore, a sudden RBC stoppage can result in:

- Rapid deterioration of the attached biomass
- Increased biochemical oxygen demand (BOD) and ammonia concentrations in the effluent
- Potential non-compliance with effluent discharge limits

Once biofilm health is compromised, recovery of RBC performance can take several days to weeks, depending on loading conditions and seasonal temperatures.

Section 11:

3.1.2 INCREASED MAINTENANCE BURDEN AND UNPLANNED SHUTDOWNS

Measured against typical RBC lifecycle expectations (20–30 years for major components with rehabilitation), both facilities exhibit conditions consistent with deferred maintenance.

Operational impacts include:

- Increased frequency of reactive maintenance
- Reduced ability to perform predictive maintenance due to component inaccessibility and corrosion
- Higher likelihood of emergency shutdowns requiring bypassing or reduced treatment effectiveness

In particular, corroded guards, seized fasteners, and degraded platforms complicate routine tasks such as:

- Chain lubrication
- Bearing inspection
- Media cleaning and debris removal

As component failures become more frequent, operational costs will disproportionately increase relative to remaining asset value.

3.2 SAFETY CONCERNS

Section 12:

3.2.1 STRUCTURAL SAFETY AND LOAD-BEARING CAPACITY

Both facilities exhibit significant corrosion of structural steel elements, particularly at splash

zones and wastewater contact areas. Observed section loss raises concerns regarding:

- Reduced load-carrying capacity of media support frames
- Loss of alignment between shafts, bearings, and drive systems
- Progressive failure under cyclic loading during RBC rotation

At the Arena Facility, corrosion of internal frames and the RBC superstructure may increase the risk of:

- Sudden deformation or collapse of support components
- Secondary mechanical damage to shafts and bearings

Section 13:

3.2.2 OCCUPATIONAL HEALTH AND SAFETY RISKS

The condition of access infrastructure presents immediate safety concerns:

- Fixed ladders at the Arena Facility show severe corrosion, including:
  - Corroded anchor points to concrete walls
  - Potential lack of structural capacity to safely support personnel
- Handrails, guardrails, and walkways at both facilities exhibit:
  - Coating failure and rust buildup
  - Reduced structural integrity
  - Increased slip and trip hazards due to wet, biofilm-coated surfaces

These conditions are likely non-compliant with current occupational health and safety standards and increase the risk of:

- Falls from height
- Slips into process tanks
- Entrapment during mechanical inspection or maintenance activities

Section 14:

3.2.3 MECHANICAL HAZARDS

The degraded condition of mechanical guards at the AMS Facility increases exposure to rotating machinery hazards:

- Corroded or compromised guards may no longer provide effective protection
- Chain and sprocket assemblies, if partially exposed, pose entanglement risks
- Emergency shutdown reliability may be compromised if corrosion affects controls or access

4 CONCLUSIONS AND RECOMMENDATIONS

Both the AMS and Arena RBC Facilities exhibit widespread mechanical degradation and corrosion consistent with end-of-life conditions. The corrosion observed on key mechanical components in each facility present a high risk of mechanical failure, leading to treatment interruption and possible spills. Additionally, elevated risks to the operators performing routine maintenance is noted due to the corrosion observed on the access ladders, platforms and handrails.

It is in our opinion that the MCA begin planning to replace the AMS and Arena RBC facilities. In the short term, the following recommendations should be made to prolong the life of the existing facilities.

1. Remove or restrict access to the corroded ladders and handrails at the Arena RBC.
2. Replace or rehabilitate the drive components (chains, sprockets, bearings and guards) at the AMS Facility.
3. Clean and rebalance the RBC media packs and replace the missing media at the Arena Facility.

APPENDIX G – HANNAH-AKWESASNE ASSESSMENT FALL 2023

Hannah Environmental Equipment Inc.
144 Wescar Lane, Suite 200, Carp, Ontario, K0A 1L0
Phone: (613) 254-7475 Fax: (613) 963-9653
www.HannahEquipment.com

14 January, 2024

Mohawk Council of Akwesasne

PO Box 579

Cornwall, ON

K6H 5T3

Attention: John Adams

Supervisor Water and Wastewater

WTP Office Phone:

Work Cell: (613) 9334624

Personal Cell: (613) 5517411

john.adams@akwesasne.ca

dts.wwwmanager@akwesasne.ca

Our reference number: H062

Copy to:

Clayton Burnes

Plant Operator, Water and Wastewater

Cell: 518-651-5419

clayton.barnes@akwesasne.ca

Re: Cornwall Island RBC Wastewater Treatment Plant Inspections

Pre-amble:

Rotating Biological Contactor (RBC) wastewater treatment systems manufactured by Hannah Equipment have served the Akwesasne community well, by protecting human health and the environment, for the

past 32 years. The band members operating these plants report the equipment is easy to run and they appreciate the reliable treatment performance the systems provide.

On October 12 2023, an onsite inspection of three wastewater treatment plants was completed by Hannah. Some of this equipment is now 12 years beyond the end of its design life, failing and in urgent need of replacement.

Plants Assessed:

Site Name: Arena

Installation Date: January 1995

Model: BS8F-BFP

Serial #: TK1865

Site Name: Block 97 Lot 19 Residents & Care Facility

Installation Date: September 2000

Model: BC3.66

Serial #: Unknown at this time

Site Name: School / AMS Business Facility and Rehabilitation Facility

Installation Date: August 1991

Model: TK1266

Serial #: BS11H-BP

On December 18 2023 Hannah visited each of these plants a second time to check on some of the details included in this report, and to compare the condition of the process with that seen in October 2023.

Summary

At the Arena site, and Lot 97 site, the RBC rotor and biozone require replacement. At the Arena, consideration should also be given to replacing the outer tank which contains the clarifiers. At the School site, the RBC rotor, biozone and outer tank need replacement.

The combined time for customer emergency order preparation, and production of these large custom components by Hannah, is usually six to eight months. During that period, it's important to repair and maintain the existing components, so the plants continue to treat, and as a result, off site hauling and disposal costs are avoided. Below we provide the maintenance activities and repairs recommended prior to the arrival of the large components.

By eventually exchanging existing large components in need of repair, with new ones produced by Hannah, you will achieve stable, long term quality treatment of the community's wastewater without the need for additional plant operators that would be required for running other more complex systems.

The equipment assessment results and recommendations for each system follow. This assessment focused primarily on Hannah supplied components. Cost estimates for the Hannah core system components in need of replacement have been provided. In addition, some of the near term repair cost estimates have also been provided.

Arena RBC - Observations and Recommendations

Over use of Alum up stream of the RBC resulted in an Alum build up on bank #1. This build up, and the system's long service life, has contributed to the collapse of the media sheets. Other critical components including the non drive end rotor bearing have also failed. The bearing failure has probably damaged the rotor stub shaft.

This plant has a 20 year design life. This month the plant began its 30th year of operation. Given its old age and numerous problems, the RBC module, including the rotor, drive system and biozone tank should be ordered now, and installed as soon as possible. Consideration should also be given to replacing the outer steel tank. An estimate for the supply of this equipment is provided below.

Running to complete failure is not a viable option because that would result in huge hauling and offsite disposal fees. For example, the plant is rated at 30 m3/day and we are told it operates at about half that which is 3962 US gallons per day. A typical pumper truck carries 3500 US gallons and the charge for this service is about $2,500 per load. Production of the custom equipment recommended, requires approximately 161 days. Emergency funding approval and order placement by a client typically requires about 60 days for a total hauling time of 221 days, if the plant were to fail. If the plant was run to failure, the total cost of hauling would therefore be approximately $552,500. This cost can be avoided by ordering the required components promptly, and making the repairs, before the plant fails completely and stops treating. We understand Third High Farms Limited located at 12 Bath Road, Iroquois South Dundas, have handled sludge hauling and disposal for you in the past. Our hauling estimate presented here should be verified with Third High.

Mechanical

Buildings/Structure

There is an FRP cover over the RBC.

- The FRP cover is sun faded. Other than its appearance and deteriorating hatch hardware, the cover is sound. A thorough cleaning and a fresh coat of gelcoat, as well as fresh hardware, will help extend the covers operating life, considerably.
- The original electric vent fan at the drive end and weather hood vent at the non-drive end are missing. The resulting holes in the FRP enclosure have been covered with clear Plexiglas. The Plexiglas allows UV sunlight to enter the building. UV kills desirable biomass required by the treatment process. Non light emitting plastic should be used in place of the Plexiglas.

- The bulb is missing from the exterior alarm warning light. This should be replaced because its job is to alert the operator and maintenance team when a plant fault or outage occurs.

Outer Tank

Under the FRP cover, and below grade, a steel tank houses the treatment system. This tank includes three chambers. They are the Primary Clarifier, Final Clarifier and UV chamber. The tank is corroded, but normal for its age. It is currently functional. It appears that several cathodic protection anodes are missing. These should be replaced because they slow corrosion of the steel work and particularly the steel tanks.

The most noticeable corrosion is where one of the access ladders is welded to the steel enclosure tank. More specifically, the corrosion is on the ladder at the drive end where the individual ladder rungs are welded to the partition steel wall that divides the area above the final clarifier from the area above the UV system. This corrosion is a safety issue because it has weakened the rungs. As a result, the rungs could break causing injury to the operator.

The ladder rungs should be replaced.

The inside of the outer steel tank was not inspected below the waterline however the tank appears to be intact and functional above the waterline. It is impossible to visually inspect the outside of the tank because it is entirely below grade.

In January 2024 this plant began its thirtieth year of operation. Given the age of this medal tank, and its deteriorating condition, consideration should be given to replacing it when the RBC module is replaced.

Electrical

The control panel appears to be in good condition. It is located in the arena building away from the treatment area. Some of the electrical wiring within the treatment system tank is dilapidated or missing.

The motion sensor, originally located next to the rotor, at the drive end, appears to be missing and should be replaced with an amp sensor either in the control panel, or next to the panel. This arrangement would provide more durable and reliable rotation sensing.

Ventilation

The original electric ¼ hp vent fan at the drive end, and weather hood vent at the non drive end, are both missing and the holes they occupied have been block. The biological process performed by the RBC requires the present of oxygen. The fan and vents should be replaced because more ventilation is needed to maintain suitable oxygen levels during the summer months when the bugs are most active.

Heating

The 1.6KW 208/1/60 atmosphere heater is missing. This should be replaced otherwise the "bugs" that carry out biological process and treatment will slow down or even stop completely during the cold winter months.

Control Panels

The control panels appear to be in good condition. The panel for the RBC and a separate panel for the UV are both located in the arena building away from the harsh treatment zone.

Consider adding current based, RBC rotation sensing to the RBC panel, because the reed switch sensor, originally located at the RBC rotor drive end, is now missing. The amp or current sensor suggested above, provides more durable and reliable rotation sensing than the original reed switch. Cell based text messaging could also be added to the controls. This feature alerts the plant's operator in the event of a plant failure.

Grating and Hand Rails

The hand rails and some of the grating were removed from their normal position prior to the inspection however they appear to be complete and in good condition.

Safety Cages around moving parts

The guards are in place and in good condition.

RBC

Rotor Steelwork

- The steelwork is rusty, but normal considering the age of the unit.

Bearings and stub shaft

- The non drive end bearing has failed. As a result, the stub shaft has been riding on the bearing housing. This has damaged the stub shaft which means the stub shaft would need to be replaced at significant cost before the new bearing is installed if a long term fix is desired.
- The drive bearing is functioning, but should be replaced due to its age.

Failed bearing should be replaced

Remote Lube Lines

- There is insufficient grease reaching the bearings. The lube lines may be blocked and may need replacement.

Drive system

- The motor is running hot. I was unable to hold my hand on it for 5 seconds. This indicates resistance to rotation of the RBC rotor which is to be expected given the non drive bearing failure and stub end damage.
- The gearbox operating temperature and sound is normal however it should be replaced due to its age.
- Sprockets are warn, chain is stretched. All require replacement.
- Oil bath has been flooded. The incoming liquid displaced the lubricant in the bath and left the chain traveling through water rather than oil. To help protect the chain the operator has been

regularly applying aerosol lubricant to the chain. While this is commendable, it is a more labor intensive and costly solution than a properly functioning oil bath.

Media

- Bank 1 is the first bank of media when counting from the non-drive end of the rotor. It is at the receiving end of the biozone and is the most heavily loaded bank. Bank 1 is completely missing. The remaining media appears to be in fair condition.
- Bank #1 failed recently. It appears to have failed because one of the U clamps connecting an outer media support rod, to the support steelwork broke, causing the media pack it secures to break free. This pack then piled up against the biozone and the remaining packs in the bank, dislodging and destroying them.

- In order to keep operating, all media from bank one and all but one of the media support rods were removed by the operator. This reduces the process capacity of the treatment plant by approximately 30%. However, given the low sewage flow, the plant may continue to produce acceptable water quality even in the absence of this bank.
- Rotor age, over use of alum, and dosing alum at the wrong location, all contributed to the media failure in bank one.

Alum dosing system and injection point.

Heavy alum build up on bank one in 2018 prior to media failure

Bank one failure fall 2023

Very heavy alum build up is evident on discarded media sheets from bank one.

Another media sheet from bank one with extremely heavy alum overloading

Balanced Flow Process Bucket Pump

- The buckets and a non-Hannah bucket feed trough are present and functioning.

Rotation Sensor

- Missing.
- Consider electrical load sensing at main panel to monitor rotation rather than a sensor at the rotor. While this would require changes to the panel, it would move the sensing away from the hostile bioreactor environment, making it more durable and reliable.

Biozone

- The Biozone is functioning. However, its supports which bear several tonnes during operation are extremely corroded. The tank is also at end of life and due for replacement.

Final Clarifier

The Final Clarifier is in acceptable condition for its age, above the waterline.

Scum Tank and Sludge Return System

The sludge return system is functioning, however it is currently controlled manually by the operator. It should instead be started and stopped automatically by the control panel, as it originally was at the time of installation.

UV

- UV chamber is in good condition.
- During the October visit, it required a clean out to reduce turbidity and improve disinfection.

Clayton, the operator, began the clean out promptly during the October assessment.

Process

Odour

The odour is healthy and normal.

FRP Cover

More ventilation is required during the summer months when the bugs are active.

Primary Clarifier

Base on odor and appearance the primary process is healthy. No sludge judge was available and no sludge measurements were taken. Based on forecasted design flow and loading shown below, this system provides six months of sludge storage. However actual sludge production should be measured using a sludge judge. The primary clarifier should be pumped when the sludge volume reaches 10.4m3.

DESIGN CRITERIA		
AVERAGE DAILY FLOW	30	M^3 /DAY (JOUR)
SOURCE: DOMESTIC		M^3 /H
PEAK FLOW	3.75	M^3 /H
INFLUENT BOD TOTAL: SUMMER / WINTER	6	KG/DAY (JOUR)
INFLUENT BOD SETTLED (EST)	4.2	KG/DAY (JOUR)
INFLUENT SUSPENDED SOLIDS	6	KG/DAY (JOUR)
EFFLUENT BOD	15 (AVG.)	MG/L
EFFLUENT SUSPENDED SOLIDS	15 (AVG.)	MG/L
TEMPERATURE	10°	C MIN.
	21°	C MAX.
BIO SUPPORT MEDIA DIA.	1.85	MM
BIO SUPPORT MEDIA AREA	857	M^2
DISC LOADING: SUMMER / WINTER	4.9	GM/M^2
PRIMARY CLARIFIER		
CAPACITY INCLUDING SLUDGE	23	M^3
SLUDGE STORAGE CAPACITY	10.4	M^3
SLUDGE STORAGE TIME	180	DAYS (JOUR)
THIS TIME BASED ON SLUDGE PRODUCTION OF .5 KG SLUDGE/ 1.0 KG BOD @ 5% SOLIDS		
FINAL CLARIFIER		
CAPACITY INCLUDING SLUDGE	5.7	M^3
SLUDGE STORAGE CAPACITY	-	M^3

Biozone

The wastewater is cloudy and turbid

Bank #1

Media and all but one of the media support rods are missing however the remaining steel work and pump buckets have a thick grey coating. This is likely an alum build up due to excessive dosing, and the wrong dosing location.

Bank #2

The biomass is abnormally light in growth. The colour is white beige. There is some alum on this bank.

Bank #3

The biomass is extremely light in growth. The colour is white beige.

Bank #4

The biomass is extremely light in growth. The colour is white beige.

Sludge Return System

This system should regularly collect sludge from the final clarifier and return it to the primary clarifier. When the plant was first installed, a single electric sludge return pump was set up to operate automatically. The default setting is a 3 min run time, once every 3 hours. The pump is now being operated manually, because at some point after installation the timer was disconnected, disabled or failed.

Final Clarifier

No sludge judge was available at this plant and accumulated sludge in the Final was not measured.

Chemical Dosing

The dosing system was operating. The injection point was next to the inlet of the primary clarifier. As mentioned, this location caused an alum build up on the RBC rotor. The buildup needlessly strains the RBC media and shortens media life. The alum should be injected immediately upstream of the final clarifier near the biozone discharge to the final clarifier.

The operator reported that ½ to 1 liter of alum is injected each day. During the assessment, it was observed that the alum flow briefly exceeded the influent flow. The injection rate should probably be reduced, while taking into consideration the alum producers dosing instructions. The dosing location should be moved to the final stage of the biozone. Alum is highly corrosive. Therefore, it should be injected into the biozone liquid without making direct contact with the biozone tank wall.

UV influent Chamber

The liquid in the UV chamber was turbid during the October 2023 assessment. The turbidity was probably caused in part by the release of spent alum dislodged from the bank 1 media sheets, when they were removed. The liquid clarity had improved considerably by the December 18, 2023 visit.

UV System

In working condition.

In October the frame and bulbs required cleaning which the operator began promptly while we were doing that assessment.

Arena Facility and Community Changes Contemplated

We understand plans are underway to add 10 offices and a conference room to the arena complex. In addition, consideration is being given to connecting 12 homes, located along Phillip Hopps Memorial Rd, to the treatment plant. Provided the plant has sufficient capacity, these residential connections would benefit the plant process by making the flow and loading more consistent. This however raises a question. Can the plant accommodate additional flow and loading?

While more details are required on conference room size and use, the following, very preliminary calculations indicate the plant has the required capacity. The operator estimates the current flow to be less than 15m3/day. We expect the addition of the 12 homes and 10 offices would bring the total average flow to approximately 25m3/day, which is less than the plant's 30m3/day rated capacity. (See design criteria included above.) Typically there would be one person per office, with each person creating a daily flow of 50l. A small home typically has 3 occupants, with each creating a daily flow of 250l per occupant.

Calculations;

10 offices x 1 occupant x 50l per occupant = .5m3/day

12 homes x 3 occupants x 250l per occupant = 9m3/day

Total Incremental Flow 9.5m3/day

The impact of the facility expansion requires a more thorough review. Peak flow at the arena should be measured to ensure the facilities actual peak, and the residential forecasted peak, do not exceed the peak capacity of the plant. In the absence of a flow meter, tracking potable water production for the arena would help determine the actual wastewater flow rate. Please provide us the name of the architect and consulting engineer retained for this project so we can assist them.

Recommendations

The RBC module including the rotor and steel biozone are beyond end of design life. The rotor is failing and the tanks supports are corroded. The module should be replaced as soon as possible. Consideration should also be given to replacing the outer steel tank.

Equipment production time is currently 161 days. Emergency order approval and order placement by a client usually requires 40 - 60 days. During this combined 6 to 8 month period, it is important to keep the plant running and thus avoid hauling costs. Therefore, the following steps should also be taken.

Recommended Repairs

1. The non-drive end bearing must be replaced promptly. (See estimate below.)
2. Replace ladder rungs as this is a safety issue.
3. Move alum dosing from plant inlet to biozone outlet.
4. Consider replacing media on Bank #1. (See estimate below.)
5. Replace heater.
6. Replace missing wiring.
7. Reintroduce sludge return system timer. Replace the timer if it is missing or has failed.
8. Consider updating the control panel to include current based rotation sensing and alarm auto dialer.
9. Replace the missing venting system.

10. Replace exterior alarm light bulb
11. Pressure wash and gelcoat the FRP cover.

Recommended Maintenance Steps

1. Pump out and clean the clarifiers.
2. Pump out and clean the UV influent tank.
   It is imperative that the pump truck operator removes the sludge from the bottom of the tanks. Far too often a pump truck operator will take only the easy to access liquid in the tank, leaving the solids behind. This does the biological process no good at all. As a matter of fact, it is counter-productive.
3. Invest in a "Sludge Judge" for this plant.
4. Grease older bearings each month. Apply ¼ tube of grease. It is not possible to over grease these slow-moving bearing. The bearings are operating in a highly corrosive environment. Purging the old grease with new is a good practice.
5. Keep the chain oil topped up. If the oil bath floods, remove water from the bath and replace the oil.
6. Change oil in gearbox based on drive manufacture's recommendation.

Budget Estimate for Hannah Supplied Items

Supply and Install

Non drive bearing $3,400 – This should be done immediately to avoid destroying the existing rotor and the treatment process.

Bank 1 media $31,850 – Consider effluent results when contemplating this expenditure.

Supply only FOB our Montreal Fab Shop

BS8 module including rotor and biozone $195,000

BS8 rotor, biozone and outer tank $435,000

The final plant repair price will depend on actual costs at time of order and the accessories included in the order. Accessory examples include, but are not limited to, dosing equipment, UV disinfection and controls.

When evaluating your options for the facility, bear in mind that the sewage treatment plant you have is grandfathered in. To change the system, other than repairs or replacing like for like, triggers the expense of permitting or re-permitting discussions.

Block 97 RBC - Observations and Recommendations

This Hannah system was delivered during 2000 and is now in its 24th year of operation. The Hannah scope of supply for the plant included the biozone tank, rotor and drive system, for placement in concrete tanks designed and built by others. Hannah also supplied the FRP enclosure, electric drive motor and drive failure warning sensor. This assessment focuses primarily on the Hannah supplied items, however, other items are mentioned.

In general, this plant is functioning well and the operator says it's been performing very reliably and is easy to operate. Unfortunately, the biozone is now extremely corroded and this has weakened its support structure. The rotor is functioning well however it has passed the end of its design life. Both the rotor and biozone should now be replace. An estimate for the supply of this equipment is provided below.

Mechanical

Buildings/Structures

There is an FRP cover over the RBC supported by concrete step walls.

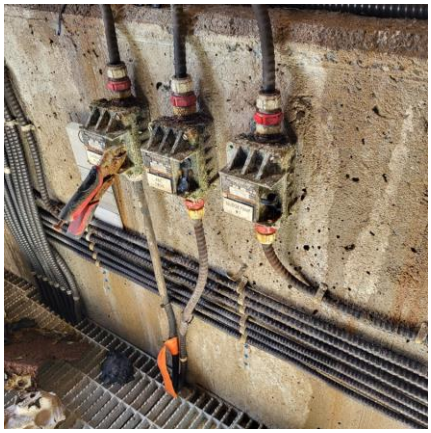
- The FRP cover is sun faded. Other than its appearance the cover is sound. A thorough cleaning and a fresh coat of gelcoat will help extend the covers useful life, considerably.
- The original electric vent fan at the drive end is not working and the weather hood vent at the non-drive end has been blocked.

Outer Tank

The concrete outer tank appears to be in excellent condition above grade on the exterior and above the water line on the interior. The concrete tank includes the primary clarifier, final Clarifier and UV chamber. It is currently functional.

Electrical

Some of the electrical components and wiring within the treatment area are dilapidated or missing. These should be replaced.



Ventilation

The original electric vent fan at the drive end is missing and the vent at the non drive end is blocked. These should be replaced and operated during the summer months.

Heater

The heater is not working and should be replaced.

Control Panel

The control panels appear to be in good condition. They are located on the outside of the plant and away from the moist treatment area, which is good.

Grating and Hand Rails

Some of the grating was removed from its normal position prior to the inspection however the grating and handrails appear to be complete and in good condition.

Safety Cages around moving parts

The guard around the belts between the sheaves on the motor and gearbox are in near new condition.

RBC

Rotor Steelwork

- The steelwork is rusty, but normal considering the age of the unit.

Bearings and stub shaft

- Both of the bearings and stub shafts appear to be okay. The bearing should be greased at minimum quarterly, and monthly is best for an older unit like this one. The drive end bearing can't be easily greased because it doesn't have a grease nipple or remote lube line connected to it. A nipple and lube line should be installed. The operator says he has been disassembling the drive end bearing in order to grease it. While this dedication and effort is commendable, because the grease extends bearing life, it is not good use of the operator's time and effort.

- 

Drive system

- The direct drive gearbox is quiet, running smoothly and is not overheating.
- The electric motor operating temperature is also normal.

Media

- The media is in very good condition for a unit of this age.

Forward Feed

- This bucket pump system at the non drive end of the plant pumps from the primary and feeds the biozone
- It is currently working properly. The operator mentioned that it sometimes becomes blocked. Inserting a cleanout probe, or water jetting with a garden hose, as part of routine maintenance and before an obstruction develops, will help avoid blockages.

Recirculation system

- This bucket pump system at the drive end of the plant pumps from the biozone and feeds the primary
- When properly set up it returns approximately 15% of the flow from the biozone to the primary clarifier. This return is rich in bugs and oxygen which boost the performance of the primary clarifier.
- During our October visit, this recirculation system was not working because the end of the gravity flow discharge pipe was positioned higher than the bucket feed. To correct this, the elbow from the trough needed to be rotated 180 degrees, so it would be pointed down rather than up.

- On December 18 2023, the discharge was in the proper position and pointed down.

Rotation Sensor

- The rotation sensor is missing
- Consider electrical load sensing at main panel to monitor rotation rather than a sensor at the rotor. While this would require changes to the panel, it would move the sensing away from the hostile bioreactor environment, making the sensor more durable and reliable.

Biozone

- The steel biozone tank stands on metal legs and it straddles the concrete tank. The biozone tank and its metal supports are extremely corroded. We have seen this corrosion situation in other plants that serve long term care and medical service facilities and believe pharmaceuticals contribute to the problem. The biozone and rotor weigh over 12 tonnes dry and more than that when liquid and biomass are present during operation, so sturdy supports are critical. The biozone should be replaced.

Drive end corner of biozone on left when facing RBC module shows significant corrosion

Biozone tank side wall shows significant corrosion

Biozone tank lip rail support corroded

Torque arm support corroded

Biozone tank end wall corroded

Final Clarifier

- The benched, concrete, final clarifier appears to be in good condition.

Sludge return system

- This system return sludge from the final clarifier to the primary. It was supplied by others and is being run manually by the operator. Our standard sludge return operates automatically. The default setting, for a unit of this type, is a 3 min run time, once every 3 hours. We understand it is being operated manually, because at some point after

installation the timer was disable, disconnected or failed. The timer should be reintroduced.

Process

Odour

The odour is healthy and normal.

FRP Cover

The original vent fan at the drive end, and weather hood vent at the non drive end, are both missing. The biological process performed by the RBC requires the presence of oxygen. More ventilation is needed to maintain suitable oxygen levels, during the summer months when the bugs are most active. The fan and vent system should be replaced.

Primary Clarifier

The process is healthy.

The sludge depth was not measured. The primary clarifier must be desludged at regular intervals. Specifically, this should be done when the top of the sludge (not the floating scum) is approaching 91 inches, from the top of the walkway grating. Desludging is required for two key reasons. First it boosts process performance. Second, it helps prevent corrosion. This is because sulfate-reducing bacteria are active in old sludge, where oxygen is low or absent, and anaerobic conditions develop. These sulfate-reducing bacteria produce hydrogen sulfide which causes sulfide and contributes to metal stress, corrosion and cracking.

Biozone

The wastewater is turbid.

RBC

Bank #1

- The biomass growth is medium to light. The colour is a healthy beige.

Bank #2

- The biomass growth is light. The colour is a healthy beige.

Bank #3

- The biomass growth is extremely light. The colour is a healthy beige.

Bank #4

- The biomass growth is extremely light. The colour is a healthy beige.

Bank #5

- There is almost no biomass on this stage

Recirculation system

The operator reports that there was recently a blockage in the recirculation system.

Final Clarifier

The liquid in the Final Clarifier is good and would be improved with proper sludge return pump start frequency and duration.

Avoid storing sludge in the final clarifier, scum and sludge should be automatically transferred from the final clarifier to the primary clarifier.

UV influent chamber

In good condition.

Requires a clean out.

UV System

Is operating

Recommendations

The design life of an RBC module is 20 years. This RBC was shipped in 2000. It is now in its' 24th year of service and more than 3 years past the end of its design life. The rotor is in good condition. Unfortunately, the biozone is extremely corroded and this has weakened its support structure. The biozone supports the rotor and straddles the concrete clarifier. In addition, the combined weight of the rotor and biozone is significant at about 12 tonnes dry and more when biomass and liquid are added to it during operation. The biozone should be replaced. While the rotor is functioning well it is at end of design life and should also be replaced during the biozone replacement. Based on our experience placing a new RBC module into the existing concrete tank, will provide decades of additional plant life.

Budget Estimates for Major Hannah Supplied Items

Supply FOB our Montreal Fab Shop

3.66 module including rotor and biozone $585,500 FOB our Montreal fabrication facility.

When evaluating your options for the facility, bear in mind that the sewage treatment plant you have is grandfathered in. To change the system, other than repairs or replacing like for like, triggers the expense of permitting or re-permitting discussions.

Short term repair, maintenance and process recommendations

Mechanical and Controls

1. Install a nipple and lube line on the drive end bearing.
2. Greasing the bearing once a year is not frequent enough. It will lead to premature bearing failure. At minimum grease the bearings every three months. The target is 1/2 tube every 3 months. (The cost of a tube of grease is insignificant compare to the cost of replacing a failed bearing.) Greasing monthly is ideal for older bearings that are approaching end of service life.
   It is not possible to over grease this slow-moving bearing. The bearings operate in a highly corrosive environment. Purging the old grease with new is a good practice.
3. Move alum dosing from plant inlet to biozone outlet.
4. Change the gearbox oil at the frequency recommended by the gearbox manufacturer.
5. Replace any damage, broken or missing electrical switches including the pump switch
6. Add auto start and timer to the sludge return system.
7. Update the control panel to include motion rotation sensing and an alarm auto dialer.
8. During the summer pressure wash and gelcoat the FRP cover.
9. Replace the venting system.

Process

1. Clean the UV system
2. In the winter maintained the close vents to help retain the heat and help with the treatment process. Open them again in the spring.
3. Any scum blanket present in the settling tank during the winter should be left in place because it will help retain the liquid's heat which is beneficial to the process during the winter.

   When removing sludge, it is imperative that the pump truck operator removes only that from the bottom of the tanks. Far too often a pump truck operator will take only the easy to access liquid in the tank, leaving the solids behind. This does the biological process no good at all. As a matter of fact, it is counter-productive.

School RBC - Observations and Recommendations

As with other RBCs, this plant has a 20 year design life. In August 2023, it began its 33rd year of operation and it has served the community very well. Given its old age, current repair requirements and its damp location, this plant should be replaced with a new BS11H-BP. An estimate for the supply of the rotor, biozone tank and outer tank enclosure is provided below.

Mechanical

Buildings/Structures

There is an FRP cover over the RBC.

- The FRP cover is sun faded. Other than its appearance the cover is sound. A thorough cleaning and a fresh coat of gelcoat will help extend the covers operating life, considerably.
- The original electric vent fan at the drive end and weather vent at the non-drive end are missing. The resulting holes in the FRP have been covered with Plexiglas.
- The control panel and dosing pump are in a brick building located 8 to 10 ft south of the FRP enclosure.
- The alarm light is missing from the exterior of the brick building. It should be replaced.

Outer Tank

The steel tank that houses the treatment system is currently functional but extremely corroded at many locations. In addition, the operator believes it has been breached and is leaking because ground water infiltration was observed during a recent pump out. The outer tank includes the primary clarifier, final clarifier and UV chambers and it supports the biozone and rotor.

Corrosion in primary clarifier chamber of outer tank

Corrosion of outer tank near alum feed line

Corrosion of outer tank at stainless steel fastener

Corrosion on lip of outer tank at access hatch

Corrosion of outer tank lip immediately below FRP cover on south side of outer tank

Electrical

Some of the electrical wiring in the control room, as well as some within the treatment system tank, is dilapidated or missing.

Disconnected wiring in control room

Disconnected wiring in treatment tank

Ventilation

The original electric vent fan at the drive end and weather vent at the non drive end are missing.

Heater

Neither of the two original heaters are working and one is missing.

Control Panel

The control panel appears to be in reasonable condition. It is in a brick building located next to the RBC. As a result of its location, the panel is not exposed to the moist and corrosive treatment zone.

Grating and Hand Rails

Some of the hand rails and grating was removed from its normal position prior to the inspection making it difficult to know if it's complete.

Safety Cages around moving parts

The chain guard was missing and should be replaced.

RBC

Rotor Steelwork

- The steelwork is rusty, but normal considering the age of the unit.

Bearings and stub shaft

- Both of the bearings and stub shafts appear to be okay.(Also see drive system notes below.)
- It appears they have not been greased recently

Remote Lube Lines

- There are no functioning lube lines
- Insufficient grease is reaching the bearings. The grease nipples may be blocked and may need replacement.
- At minimum grease the bearings every three months. A lower frequency will lead to premature bearing failure. The target is approximately one tube of grease per bearing per year. This would equal ¼ tube every 3 months. (The cost of a tube of grease is insignificant compare to the cost of replacing a failed bearing.) It is not possible to over grease this slow-moving bearing. The bearings are in a highly corrosive environment. Purging the old grease with new is a good practice because it helps protect them from moisture and H2S.

Drive system

- The motor is running hot. This indicates resistance to rotation of the RBC rotor. The bearings may need grease. If grease doesn't lower motor operating temperature, the bearings should be checked more closely.
- The gearbox operating temperature and sound is normal.
- During the October assessment both sprockets were warn. The drive sprocket was extremely warn. The chain is stretched. All required replacement. The operator replaced the drive sprocket prior to the December reassessment.
- Oil bath has been flooded. The incoming liquid displaced the lubricant in the bath and left the chain traveling through water rather than oil. To help protect the chain the operator has been regularly applying aerosol lubricant to the chain. While this is commendable, it is a more labor intensive and costly solution than a properly functioning oil bath.

Media

- The media appears to be in good condition, particularly given the age of the system.

Forward Feed Bucket Pump

- The forward feed is working properly

Recirculation Bucket Pump System

- The discharge trough is damaged and not able to operate at maximum capacity.

- When properly set up, it returns approximately 15% of the flow from the biozone to the primary clarifier. This return is rich in bugs and oxygen which boost the performance of the primary clarifier.

Biozone

- The Biozone is extremely corroded and past end of design life. It should be replaced.

<u>Final Clarifier</u>

The Final Clarifier is corroded

<u>Sludge return system</u>

This system regularly collects sludge from the final clarifier and returns it to the primary clarifier. When the plant was first installed, a single sludge electric return pump was set up to operate automatically. The default setting is a 3 min run time, once every 3 hours. The frequency and duration can be adjusted somewhat to optimize the plant based on the actual site requirements.

The pump is now being operated manually, because at some point after installation the timer was disabled, disconnected or failed. The automatic control should be reintroduced.

<u>Dosing System</u>

The dosing tank is empty.

The dosing system may not be working.

The injection point is at the plant inlet. It should be moved to the biozone outlet.

UV System

- The UV chamber is dirty.
- It requires a clean out to reduce turbidity and improve disinfection
- Frame and bulbs will also require cleaning

Process

Odour

The odour is abnormal and smells somewhat of raw sewage, ammonia and H2S.

FRP Cover

The biological process performed by the RBC requires the presence of oxygen. The original ventilation system is missing. More ventilation is needed to maintain suitable oxygen levels during the summer months when the bugs are most active. The fan and vent system should be replaced. Vents should be closed during the winter when the bugs are less active.

Primary Clarifier

The primary contains a lot of debris including candy wrappers, feminine hygiene products and wipes. There is almost no sludge blanket.

This system has a shallow primary clarifier and 60 days of sludge storage. Sludge depth should be monitored using a sludge judge and it should be pumped at the proper interval.

Biozone

The liquid in the biozone is turbid. Bubbles in the liquid, indicate anaerobic conditions.

RBC

Media Bank #1 and Bank #2

- The biomass is very light in growth and patchy. The colour is beige
- On December 18, 2023 the biomass appearance on bank 1 had improved considerably

Media Bank #3 and Bank #4

- The biomass growth is extremely light to almost non-existent. The colour is brown/beige grey.

Forward Feed Bucket Pump

- There is a thick white coating on the buckets and bucket arms. This appears to be alum built up on the buckets and bucket pump arms.

Recirculation Bucket Pump System

- The discharge trough is damaged and not able to operate at maximum capacity. It should be returning approximately 15% of the flow from the biozone to the primary clarifier

Final Clarifier

- The liquid is turbid in October but showed some improvement in December.

Sludge Return

Scum Tank and Sludge Return System

The sludge return system is operating. However it's being controlled manually. It should be started and stopped automatically by the control panel.

UV Influent Chamber.

Turbid. Clean out to reduce turbidity and improve disinfection

Process Conclusions

During the assessment done October 12, 2023, the process appeared to be dormant or possibly dead. However on December 18, 2023 the biomass had reestablished itself, particularly on bank one, and the odor of the plant had improved.

We suggest the following;

1. Check for deep cleaning protocols at the school and restaurant, that may periodically be killing the microbes required by the process.
2. Sample test influent and effluent and determine the flow either by installing a meter at the wastewater plant or measuring the potable water ultimately reaching the plant.

The plant was purchased to treat the wastewater flow produced by the school. In the years following installation of the plant, more buildings have been added to the sewer system served by the plant. For example, a strip mall with a gas station and food service facility has been added. This raises an important question, can the existing plant effectively treat all of the sewage it is now receiving? In order to complete some preliminary analysis and to help answer this question, Hannah has requested the latest drawings of the collection system, as well as a list of the homes and other buildings connected to the collection system feeding this plant. Once we have that information, we will begin the analysis. The sampling recommended above will help determine whether or not the plant is correctly sized for the current loading.

Recommendations

Given its old age, current repair requirements and its damp location, this plant should be replaced with a new BS11H-BP. An estimate for the supply of the rotor, biozone tank and outer tank enclosure is provided below.

Budget Estimates for Major Hannah Supplied Items

Supply of new BS11H-BP rotor, biozone tank and outer tank $495,000 FOB Hannah.

Equipment production time is currently 161 days. Emergency order approval and order placement by a client usually requires 40 to 60 days. During this combined 6 to 8 month period,

it is important to keep the plant running and thus avoid hauling costs. Therefore, the following steps should also be taken.

Short term maintenance and process recommendations

1. Clear or replace lube lines
2. Grease bearings monthly. Apply ¼ tube.
3. Keep the chain bath clean and oil topped up.
4. Move alum dosing from plant inlet to biozone outlet.
5. Change oil in gearbox based on drive manufacture's recommendation.
6. Pump out the clarifiers
7. Pump out and clean the UV influent tank
   It is imperative that the pump truck operator removes the sludge from the bottom of the tanks. Far too often a pump truck operator will take only the easy to access liquid in the tank, leaving the solids behind.
8. Clean UV frame and bulbs
9. Replace chain guard
10. Replace missing heater
11. Replace ventilation system.
12. In the winter close the cover vents to help retain the heat. Open them again in the spring.
13. Reintroduce sludge return pump timer
14. Pressure wash and gelcoat the FRP cover. This will extend its life and is relatively inexpensive.
15. Consider updating the control panel to include current based rotation sensing and an alarm auto dialer.

Estimates in this Report

The large dollar estimates are for core plant components only. They do not include chemical dosing, control panels, UV systems etc.

The forecasted costs provided in this report are estimates only and FOB our shop. They are based on projects we have completed in the past, adjusted based on average cost increases in material and labor. They are provided to assist in comparing options and considering funding requirements. The estimates are not an offer of sale and they may change. We'll provide more accurate Quotations once we have reviewed this report with you and identified and discussed the options you intend to consider.

When evaluating your options, bear in mind that the sewage treatment plants you have are grandfathered in. To change the system, other than repairs or replacing like for like, triggers the expense associated with permitting or re-permitting discussions.

Thank you for the trust you have placed in our team, products and services over the past three decades!

As always, feel free to call us regarding this report or any treatment questions you may have.

David H Mains

APPENDIX H – MOHAWK COUNCIL OF AKWESASNE CONSULTANT CONTRACT-PROFESSIONAL SERVICES

CONSULTANT CONTRACT - PROFESSIONAL SERVICES

Consultant Services

Financial Code: 8201-

This Consultant Contract is made as of

BETWEEN:

Mohawk Council of Akwesasne
(referred to in the contract as the "Mohawk Council").

AND:

Consultant
(Referred to in the Contract as the "Contractor")

A1 Contract

1.1 The following documents and any amendments relating thereto from the Contract between the Mohawk Council and the Contractor:

1.1.1 this Consultant Contract;

1.1.2 the document attached hereto as Appendix "A" and entitled "General Conditions", referred to herein as the General Conditions;

1.1.3 the document attached hereto as Appendix "B" and entitled "Terms of Payment", referred to herein as the Terms of Payment;

1.1.4 the document attached hereto as Appendix "C" and referred to herein as the Consultant Work Plan;

1.2 In the event of discrepancies, inconsistencies or ambiguities of the wording of this document, the wording of the document that first appears on the above list shall prevail over the wording of a document subsequently appearing on the list.

A2 Date of Completion of Work and Description of Work

2.1 The Contractor shall, between the date of the Consultant Contract and the --th day of ----------, ------ perform and complete with care, skill, diligence and efficiency the work that is described in the Consultants Work Plan submitted_____.

A3 Contract Amount

3.1 Subject to the terms and conditions of this Contract, and in consideration for the performance of the work, the Mohawk Council of Akwesasne shall pay to the Contractor:

3.1.2 A sum not to exceed _____
The Mohawk Council of Akwesasne is exempt from HST (GST+PST).

A4 Appropriate Law

4.1 This Contract shall be governed by and planned in accordance with the laws in force on First Nations Territory.

A5 Mohawk Council Project Manager

For the purpose of the Contract, the Mohawk Council hereby designates **Leslie Papineau, Director, Department of Infrastructure Housing Environment** as the Mohawk Council Project Coordinator.

Their duly authorized officers have executed on behalf of the Contractor and on behalf of the Mohawk Council this Contract.

SIGNED, SEALED AND DELIVERED ON BEHALF OF THE MOHAWK COUNCIL

By: _____

in the presence of: _____

Date: _____

SIGNED, SEALED AND DELIVERED ON BEHALF OF _____

By: _____

in the presence of: _____

Date: _____

Addresses of Contracting Entities:

Mohawk Council of Akwesasne
101 Tewesateni Rd., Akwesasne, ON, K6H 0G5
Attention: Leslie Papineau, Director
Telephone (613) 575-2250 Ext. 1005

Consultant

APPENDIX "A"

GENERAL CONDITIONS - PROFESSIONAL SERVICES

GC1 Interpretation

1.1 In the Contract:

1.1.1 "contract" means the contract documents referred to in the Consultant Contract;

1.1.2 "invention" means any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement thereof;

1.1.3 "work", unless otherwise expressed in the contract, means everything that is necessary to be done, furnished or delivered by the Contractor to perform the Contractor's obligations under the contract;

1.1.4 "Mohawk Council of Akwesasne Representative" means the officer or employee of the Mohawk Council who is designated by the Consultant Contract and includes a person authorized by the Mohawk Council Representative to perform any of the Representative's functions under the contract;

1.1.5 "Prototypes" includes models, patterns and samples;

1.1.6 "Technical Documentation" means designs, reports, photographs, drawings, plans, specifications, computer software, surveys, calculations and other data, information and materials collected, computed, drawn or produced, including computer print-outs.

GC2 Successors & Assigns

2.1 The contract shall ensure to the benefit of and be binding upon the parties hereto and other lawful heirs, executors, administrators, successors and assigns.

GC3 Assignment

3.1 The contract shall not be assigned in whole or in part by the Contractor without the prior written consent of the Mohawk Council and any assignments made without that consent is void and of no effect.

3.2 The assignment of the contract shall not relieve the Contractor of any obligation under the contract or impose any liability upon the Mohawk Council.

GC4 Time Is Of Essence

4.1 Time shall be of the essence in performing and undertaking all matters pertaining to this Contract.

4.2 Any delay by the Contractor in performing the Contractor's obligations under the contract which is caused by an event beyond the control of the Contractor, and which could not have been avoided by the Contractor without incurring unreasonable cost through the use of work-around plans including alternative sources or other means, constitutes an excusable delay. Events may include, but are not restricted to: acts of God, acts of local or provincial governments, fires, floods, epidemics, quarantine restrictions, strikes or labour unrest, freight embargoes and unusually severe weather.

4.3 The Contractor shall give notice to the Mohawk Council immediately after the occurrence of the event that causes the excusable delay. The notice shall state the cause and circumstances of the delay and indicate the portion of the work affected by the delay. When requested to do so by the Mohawk Council Representative, the Contractor shall deliver a description, in a form satisfactory to the Mohawk Council, of work around plans including alternative sources and any other means that the Contractor will utilize to overcome the delays and endeavor to prevent any further delay. Upon approval in writing by the Mohawk Council of the work- around plans, the Contractor shall implement the work-around plans and use all reasonable means to recover any time lost as a result of the excusable delay.

4.4 Unless the Contractor complies with the notice requirements set forth in the contract, any delay that would constitute an excusable delay shall be deemed not to be an excusable delay.

4.5 Notwithstanding that the Contractor has complied with the requirements of GC4.3, the Mohawk Council may exercise any right of termination contained in GC8.

GC5 Indemnification

5.1 The contractor shall indemnify and save harmless the Mohawk Council from and against all claims, losses, damages, costs, expenses, actions and other proceedings, made, sustained, brought, threatened to be brought, prosecuted, in any manner based upon, occasioned by or attributed to any injury to or death of a person or damage to or loss of property arising from any willful or negligent act, of omission or delay on the part of the Contractor, the Contractor's servants or agents in performing the work or as a result of the work being performed in a negligent or unprofessional manner.

5.2 The Contractor shall indemnify the Mohawk Council from all costs, charges expenses whatsoever that the Mohawk Council sustains or incurs in or about all claims, actions, suits and proceedings for the use of the invention claimed in a patent, or infringement or alleged infringement of any patent or any registered industrial design or any copyright resulting from the performance of the Contractor's obligations under the contract, and in respect of the use of or disposal by the Mohawk Council of anything furnished pursuant to the Contract.

5.3 The Contractor's liability to indemnify or reimburse the Mohawk Council under the contract shall not affect or prejudice the Mohawk Council from exercising any other rights under the law.

5.4 The Contractor shall provide evidence of Professional Liability Insurance in force with minimum coverage of $2,000,000.00.

5.5 The Contractor is required to give immediate written notice to the Mohawk Council of any material change in or cancellation of its Professional Liability Insurance.

GC6 Notices

6.1 Where in the contract any notice, request, direction, or other communication is required to be given or made by either party, it shall be in writing and is effective if delivered in person, sent by registered mail, by Facsimile or by Email addressed to the party for whom it is intended at the address listed below. Any notice, request, direction or other communication shall be deemed to have been given if by registered mail when the postal receipt is acknowledged by the other party; by telegram or Received Reply, when transmitted. The address of either party may be changed by notice in the manner set out in this provision.

Mohawk Council of Akwesasne
101 Tewesateni Road
Akwesasne, Ontario K6H 0G5
Att: Leslie Papineau, Director
leslie.papineau@akwesasne.ca

Consultant

GC7 Local Labour & Materials

7.1 The Contractor shall use Mohawk Labour and materials in the performance of the work in the construction phase to the full extent to which they are procurable, consistent with proper economy and the expeditious carrying out of the work.

GC8 Termination or Suspension

8.1 The Mohawk Council may, by giving notice to the Contractor, **terminate immediately** or suspend the work with respect to all or any part or parts of the work not completed.

8.2 All work completed by the Contractor according to Terms of Reference before the giving of such notice shall be paid for by the Mohawk Council in accordance with the provisions of the Contract and, for all work completed before the giving of such notice, the Mohawk Council shall pay the Contractor's costs as determined under the provisions of the contract, in addition, an amount presenting a fair and reasonable fee in respect for such work.

8.3 In addition to the amount which the Contractor shall be paid under GC8.2, the Contractor shall be reimbursed for the Contractor's cost of and incidental to the cancellation of obligations incurred by the Contractor pursuant to such notice and obligations incurred by or to which the contractor is subject with respect to the work.

8.4 Payment and reimbursement under the provisions of GC8 shall be made only to the extent that it is established according to the Terms of Reference that the costs and expenses were actually incurred by the Contractor and that the same are fair and reasonable and are properly attributable to the termination or suspension of the work or the part thereof so terminated.

8.5 The Contractor shall not be entitled to be reimbursed any amount which, taken together with any amounts paid or becoming due to the Contractor under the contract, exceeds the contract price applicable to the work or the particular part thereof, unless additional works have been approved in writing.

8.6 The Contractor shall have no claim for damages, compensation, loss of profit, allowance or otherwise by reason of or directly or indirectly arising out of any action taken or notice given by the Mohawk Council under the provisions of GC8 except as expressly provided therein.

GC9 Termination Due To Default of Contract

9.1 The Mohawk Council may, by giving 24-hour notice to the Contractor, terminate the whole or any part of the work if:

(i) the Contractor becomes bankrupt or insolvent, or a receiving order is made against the Contractor, or an assignment is made for the benefit of creditors, or if an order is made or resolution passed for the winding up of the Contractor, or if the Contractor takes the benefit of any statute for the time being in force relating to bankrupt or insolvent debtors, or

(ii) the Contractor fails to perform any of the Contractor's obligations under the

contract, after 30 days notice, or, in the Mohawk Council view, so fails to make progress as to endanger performance of the contract in accordance with its terms.

9.2 In the event that the Mohawk Council terminates the work in whole or in part under GC9.1, the Mohawk Council may arrange, upon such terms and conditions and in such manner as the Mohawk Council deems appropriate, for that phase of work to be completed that was so terminated, and the Contractor shall be liable to the Mohawk Council for any excess costs relating to the completion of that phase of the work.

9.3 Upon termination of the work under GC9.2, the Mohawk Council may require the Contractor to deliver and transfer title to the Mohawk Council, in the manner and to extent directed by the Mohawk Council, any finished work which has not been delivered and accepted prior to such termination and any materials or work-in- process which the Contractor has specifically acquired or produced for the fulfillment of the contract. The Mohawk Council shall pay the Contractor for all such finished work plus the proportionate part of any fee fixed by said contract and shall pay or reimburse the Contractor the fair and reasonable cost to the Contractor of all materials or work-in-process direction. The Mohawk Council may withhold from the amounts due to the Contractor for the incomplete portion of the work such sums as the Mohawk Council determines to be necessary to protect the Mohawk Council against excess costs for the completion of the work.

9.4 The Contractor shall not be entitled to be reimbursed any amount which, taken together with any amounts paid or becoming due to the Contractor under the contract, exceeds the contract price applicable to the work or the particulars part thereof, unless written approval has been granted.

9.5 If, after the Mohawk Council issues a notice of termination under GC9.1, it is determined that the default of the Contractor is due to causes beyond the control of the contractor, such notice of termination shall be deemed to have been issued pursuant to GC8.1, and the rights and obligations of the parties hereto shall be governed by GC8.

GC10 Records To Be Kept By Contractor

10.1 The Contractor shall keep proper accounts and records of the cost of the work and of all expenditures or commitments made by the Contractor including the invoices, receipts and vouchers, which shall at reasonable times be open to audit and inspection by the authorized representatives of the Mohawk Council who may make copies and take extracts therefrom.

10.2 The Contractor shall afford facilities for audit and inspection and shall furnish the authorized representatives of the Mohawk Council with such information as the Mohawk Council or they may from time to time require with reference to the documents referred to herein.

10.3 The Contractor shall not dispose of the documents referred to herein without written consent of the Mohawk Council, but shall preserve and keep it available for audit and inspection for such period of time as may be specified elsewhere in the contract or, in the absence of such specified period, a period of two years following completion.

GC11 Ownership of Intellectual & Other Property Including Copyright

11.1 Technical documentation and prototypes produced by the Contractor in the performance of the work under the contract shall vest in and remain the property of the Mohawk Council in respect for the foregoing in such manner as the Mohawk Council shall direct.

11.2 Technical documentation shall contain the following copyright notice:

Mohawk Council of Akwesasne 2022/2023

11.3 Technical information and inventions conceived or developed or first actually reduced to practice in performing the work under the contract shall be the property of the Mohawk Council. The Contractor shall not divulge or use such in performing the work under the contract "without written permission" and shall not sell other than to the Mohawk Council any articles or things embodying such technical information and inventions. From such technical information and inventions, all software, and all electronic data relating to same shall become the property of the Mohawk Council of Akwesasne, and may not be reproduced, sold or used without their written permission.

GC12 Conflict Of Interest

12.1 The Contractor declares that the Contractor has no pecuniary interest in the business of any third party that would cause a conflict of interest or seem to cause a conflict of interest in carrying out the work. Should such an interest be acquired during the life of the contract, the Contractor shall declare it immediately to the Mohawk Council Representative.

GC13 Contractor Status

13.1 This is a contract for the performance of a service and the Contractor is engaged under the contract as an independent contractor for the sole purpose of providing a service. Neither the Contractor nor any of the personnel engaged by the Contractor may be an employee, servant or agent of the Mohawk Council. The Contractor agrees to be solely responsible for any or all payments and/or deductions required to be made including those required for Canada, Quebec Pension Plan, Unemployment Insurance, Worker's Compensation (WSIB and/or CSST) or Income Tax.

GC14 Warranty By Contractor

14.1 The Contractor warrants that the Contractor is competent to perform the work required under the contract in that the Contractor has the necessary qualifications and certificates including the knowledge, skills and ability to perform the work.

14.2 The Contractor warrants that the Contractor shall provide a quality of service at least equal to that which contractors generally would expect of a competent contractor.

GC15 Amendments

15.1 No amendments of the contract or waiver of any of the terms and provisions shall be deemed valid unless effected by the written amendment.

GC16 Entire Contract

The Contract constitutes the entire agreement between the parties with respect to the subject matter of the contract and supersedes all previous negotiations, communications and other agreement relating to it unless they are incorporated by reference in the contract.

APPENDIX "B"

TERMS OF PAYMENT - PROFESSIONAL SERVICES

Payments for the satisfactory performance of the work under the contract shall be based on:

Fees based on hourly costs (invoices showing time, staff, expenses etc.) including expenses such as printing and travel to a maximum of	
Fees do not include disbursements, addition topographic	
and Legal surveys, geotechnical investigation and	
materials testing which are not expected at this time. All	
eligible disbursements If approved in advance will be	
invoiced at cost.	

The Consultant shall submit detailed program billings at the end of each month. The Mohawk Council will make payment of progress billings within thirty (30) days of receipt.

Invoicing shall make reference to the Project Number and/or Purchase Order Number. The invoices shall be progressively numbered 1, 2, 3, etc., as they are submitted.

Also, invoice shall indicate upset fee limit, amount due this invoice and total invoiced to date.

APPENDIX “C” PROPOSAL