

**PURCHASE CONTRACT - GOODS
FOR 23.53541.03RFP-DD
DEWATERING BUILDING EQUIPMENT REHABILITATION**

THIS Purchase Contract for Goods is being entered into, effective as of _____, by and between the City of Las Vegas (the "City"), a municipal corporation in the State of Nevada, and Alfa Laval Inc. (the "Company"), a corporation organized and existing in the State of Texas.

SECTION A – CONTRACT OVERVIEW

A-1 Summary of Contract [CAO-08/22/2019]

- (a) This Contract sets forth the terms and conditions for ordering and delivering the Goods and related Services, including but not limited to Engineering Services, Field Quality Control, Testing, Inspection, and Training as Specified for Systems, Routine and Preventative Maintenance (collectively "Goods") described herein, and the execution hereof by the parties hereto forms a legally binding contract. The City may order, and the Company is obligated to deliver, the Goods in accordance with the terms and conditions of this Contract
- (b) This Contract covers a one-time purchase of the Goods described in Section C. The City will issue a Purchase Order subsequent to the Award Date. The sole purpose of the Purchase Order will be to facilitate payment processing and will not represent the ordering of any additional quantities of Goods beyond what is set forth in this Contract. The Contract number will be reflected on the face of the Purchase Order.

Contract Synopsis The Goods to be procured are more fully defined in Section C	Proposals for centrifuge and associated equipment for installation with a future capital project, as described with more detail in Exhibit A Scope of Work.	
Performance Dates The Performance Period is more fully defined in Section A-2	Award Date See first paragraph	Expiration Date 180 days from award
Contract Type	The contract type is Firm Fixed Price.	
Contract Amount	\$2,341,345.42	Firm Fixed

Contract Exhibits / Attachments The following documents are hereby incorporated into this Contract
Exhibit A - Excerpted Proposal Exhibit B - Pricing Exhibit C - Performance, Schedule, And Payment Form Exhibit D - Assignment Of Contract

City Representative: All routine Company inquiries should be directed to the person identified by the City on the Purchase Order per Section D-5			
Company Representative Per Section D-5	Name Patrick Tung	Phone 804-222-5300	Email patrick.tung@alfalaval.com

City Legal Notice Representative: Per Section E-1			
Company Legal Notice Representative Per Section E-1	Name & Title Patrick Tung	Address 10470 Deer Trail Dr Houston, TX 77038	patrick.tung@alfalaval.com

A-2 Performance Period [CAO-08/22/2019]

- (a) The City may place orders against this Contract from the Award Date through and including the Expiration Date, unless extended in writing.
- (b) The City reserves the right to exercise an option to temporarily extend this Contract for up to one hundred eighty (180) calendar days from the Expiration Date, for any reason.

SECTION B – DEFINITIONS

B-1 Definitions [CAO-01/20/2016]

The following definitions apply to this Contract:

- (a) **Award Date:** The date that a Contract becomes effective. It is the date entered into the first paragraph of the Contract upon execution by an authorized representative of the City.
- (b) **Contract:** This document, consisting of Sections A through E and the Exhibits and Attachments attached hereto, which is binding and effective only upon execution by the City.
- (c) **Contract Amount:** The maximum amount of compensation that may be paid to the Company for performance of the Contract, which includes, without limitation, compensation for all direct and indirect expenses.
- (d) **Firm Fixed Price:** Means a contract that provides for a firm price that is not subject to any adjustment on the basis of the Company's cost experience in performing the Contract.
- (e) **F.O.B. Destination:** Means that the Company is responsible for paying the costs (including, without limitation, the loading, and shipping costs) of transporting the Goods to the point of delivery designated by the City, and includes the risk of loss or destruction associated with such transportation.
- (f) **Goods:** The item(s) to be purchased from the Company, which are listed or described in Section C, "Specifications", and substitutes for such common usage terms as "materials", "equipment", "products" and "supplies".
- (g) **Prompt Payment Discount:** None.
- (h) **Purchase Order (or P.O.):** The administrative document issued by the City to facilitate the ordering of and payment for the Goods purchased pursuant to this Contract.

SECTION C - EXCERPTED PROPOSAL

- C-1** Technical Specifications are set forth in "Exhibit A".

SECTION D– SPECIAL CONDITIONS

D-1 Pricing and Payment [CAO-08/22/2019]

- (a) Payment to the Company will be made only for the actual quantities of the Goods delivered and accepted by the City, upon receipt of an invoice submitted in accordance with Section D-3, "Invoices".
- (b) The City will pay the Company in accordance with the pricing set forth in "Exhibit B" to this Contract.
- (c) The prices set forth herein include the costs and expenses associated with delivering and tendering the Goods to the City including, without limitation, expenses for inspection, meeting warranty requirements and complying with all the terms and conditions of this Contract.

D-2 Pricing Revisions [CAO-01/20/16]

For the term of this Contract, the pricing for the Goods shall remain firm.

D-3 Invoices [CAO-9/2020]

- (a) The Company shall timely submit a detailed invoice to the City within sixty (60) days after shipment of Goods for the quantities delivered and accepted. Each invoice shall contain the following information:
- (b) Each invoice shall contain the following information:
 - (i) the date of the invoice and invoice number;
 - (ii) the Purchase Order number;
 - (iii) the Contract Item against which charges are made; and
 - (iv) the performance dates covered by the invoice.
- (c) Upon reconciliation of all errors, corrections, credits, and disputes, payment to the Company will be made in full within thirty (30) calendar days. **Invoices received without a valid Purchase Order number will be returned unpaid.** If the Company does not timely submit a detailed invoice to the City as required herein, the City shall not have any obligation or liability to effect any payment for said late invoice. The City shall also not be liable for any errors or omissions in an invoice once said invoice is paid by the City, all of which shall be expressly waived by Company. Notwithstanding the foregoing, this paragraph shall in no way waive the City's rights and remedies should the City find any errors or omissions in an invoice before or after said invoice is paid by the City

The Company shall submit the original invoice to:

Department of Finance
ATTN: Accounts Payable
City of Las Vegas
495 South Main Street, 4th Floor
Las Vegas, NV 89101-2986

- (d) The City may subtract or offset from any unpaid invoice from the Company any claims, which the City may have incurred for failure of the Company to comply with the terms, conditions or covenants of this Contract, or any damages, costs and expenses caused by, resulting from, or arising out of the negligent act or omission of the Company in the performance of the services under this Contract. Within ten (10) calendar days, the City shall provide a written statement to the Company of the off-set which has been subtracted from any payment to the Company along with appropriate documentation and receipts, if any, and a description of the failure, error or deficiency attributed to the Company. The Company may dispute the right or amount of the off-set made by the City by providing written notification to the City within ten (10) calendar days after receipt of the City's written notice. The City shall provide a written response to the Company within ten (10) calendar days of receipt of the Company's written dispute notice. If the Company disputes the City's determination, the Company may file a claim pursuant to Section E-2, "Disputes" of this Contract.

D-4 Delivery Requirements [CAO-4/2020]

- (a) Delivery - F.O.B. Destination The Company shall deliver the Goods F.O.B. Destination. The delivery point shall be specified delivery address as listed on each Purchase Order .
- (c) Maximum Delivery Time The maximum delivery time is 52 weeks after receipt of Purchase Order. Failure to meet the delivery time specified shall constitute a breach of contract. The time allotted for delivery of the Goods under the Purchase Order commences on the date the City successfully electronically transmits or faxes the Purchase Order to the Company, or three (3) days after the mailing date of the Purchase Order to the Company. Any Purchase Order issued hereunder incorporates the terms and conditions of this Contract.
- (d) Partial Shipments. Partial shipments will not be permitted.
- (e) Failure to Deliver In the event that the Company fails to deliver the Goods in accordance with the terms and conditions of the Contract, the City shall have the option to either terminate the Contract or procure the Goods from another

supplier. If the Goods are procured from another supplier, the Company shall pay the City any difference between the Contract price(s) and the price(s) paid to the other supplier plus any and all reasonable administrative costs associated with the re-procurement.

(f) Inspection Upon Delivery

- (i) The Goods will be inspected at time of delivery by an authorized representative of the City for compliance with the specifications, workmanship, appearance, proper functioning of all equipment and systems, and conformance to all other requirements of this Contract. In the event deficiencies are detected, the Goods will be rejected to enable the Company to make the necessary repairs, adjustments, or replacements. Payment will not be made and discount period (if applicable) will not commence until the corrective action is complete and the Goods have been re-inspected and accepted by the City.
- (ii) It shall be the responsibility of the Company to arrange for return and pay all costs for return of Goods rejected pursuant to this clause.

D-5 City/Company Representative [CAO - 08/22/2019]

- (a) All routine Company inquiries should be directed to the person identified by the City on the Purchase Order.
- (b) The Company's Representative for this Contract is named in Section A-1 (e). The Company Representative shall have full authority to act for the Company on all matters arising under or relating to this Contract until written notice to the City is provided by the Company of any change in the person acting in this capacity.

D-6 Insurance [CAO-3/31/2022]

The Company shall procure and maintain insurance as required by law and as appropriate for this Contract, including Workers' Compensation, Professional Liability, General Liability and Auto Liability Insurance coverage, at its own expense, for all work related to the performance of this Contract. The Company must remedy at its own expense all injuries to persons and damage or loss to any City property caused in whole or in part by the Company, its subcontractors or anyone employed, directed, or supervised by the company.

D-7 Warranty – Goods [CAO-4/2020]

- (a) Company's Warranty The Company warrants that the Goods supplied to the City are (i) free of defects and deficiencies in design, workmanship and materials, (ii) suitable for the purpose intended by the City, (iii) in compliance with the applicable specifications, and (iv) free from any liens or encumbrances on title of the Goods. If, during the warranty period, any defect or deficiency is found in the Goods, the Company shall immediately, after notification by the City, proceed at its own expense to (i) repair the Goods on-site, together with remedying any damage caused to the finishes, fixtures, equipment and furnishings of the Goods, or (ii) replace the Goods if not capable of repair. If the repairs cannot be made on-site, the Company agrees to arrange at Company's sole expense for the transportation of the Goods to a repair facility unless otherwise agreed in writing by the City. The City's remedy for breach of this warranty is contained in Article 2 of the Uniform Commercial Code. The warranty set forth in this subsection shall be in effect for a period of twenty-four (24) months from Substantial Completion NTE 30 months from delivery, whichever is sooner. The Company must complete the warranty repair or replacement within the time set forth in subsection (d) below.
- (b) Company warrants that the services shall be performed in full conformity with this Contract, with the professional skill and care that would be exercised by those who perform similar services in the commercial marketplace, and in accordance with accepted industry practice. In the event of a breach of this warranty, or in the event of non-performance or failure of the Company to perform the services in accordance with this Contract, the Company shall, at no cost to the City, re-perform or perform the services so that the services conform to the warranty.
- (c) Manufacturer's Warranty For repairs, parts and Services provided by the Company, the Company warrants to the City that the repairs, parts and Services provided to the City will be free from defects in material and workmanship. The duration of this warranty is ninety (90) days from as applicable (i) the date the Equipment which required the repairs, parts or Services is returned to the City by the Company, (ii) the date of the City's receipt of the part, or (iii) the date of completion of the repair or other Services, if performed at the City's facility. If during this ninety day period the City discovers a defect in the repairs, parts or Services the City must promptly notify the Company in writing and the Company shall correct such defect with either new or used replacement parts or reperform the Services as applicable. If the Company is unable to correct the defect after a reasonable number of attempts, the Company will provide a refund of the price paid for the defective repair, parts or Services.

- (d) The Company shall have no responsibility for defects, loss or damage to the extent caused by (i) normal wear and tear, (ii) the City's failure to follow all installation and operation instructions or manuals or to provide normal maintenance, (iii) repairs or modifications by the City or by others not under the Company's direct supervision, (iv) a product or component part which the Company did not design, manufacture, supply or repair, or (v) environmental conditions.
- (e) **Warranty Exclusions Prohibited** The City *will not* accept any warranty clause from the Company or manufacturer which states (i) the warranty of merchantability and/or the warranty of fitness for a particular purpose are not applicable to, excluded from, the purchase of the Goods, or (ii) the Company's and/or manufacturer's warranty clause is in lieu of all other warranties that are either expressed or implied. In addition to these restrictions, the warranty requirements of the Contract shall exist in a direct extension from the manufacturer to the City, as well as from the Company to the City if the Good are sold by Company as a distributor or agent of the manufacturer.

D-8 New Goods [CAO-01/20/16]

Except as provided in Section D-9, "Reconditioned Equipment", the Goods delivered under this Contract must be new. New Goods are defined as Goods that are made up entirely of unused materials and/or genuine original parts. The Goods must not have been operated for any purpose other than routine operational testing, except as specifically authorized elsewhere in this Contract. Demonstrator and reconditioned Goods are not acceptable.

D-9 Updates [CAO-01/20/16]

- (a) The Company shall provide updates to the City as follows:
 - (i) If the manufacturer discontinues, upgrades, and/or makes other changes to the Good(s), the Company shall notify the City of the change within 30 calendar days of notification from the manufacturer. Upon receipt of the notification, the City has the option of either accepting the replacement or canceling the replaced Good(s) from the Contract. Should the Company ship the replacement Good(s) without the City's prior written approval, the Good(s) may not be accepted.
 - (ii) If the City determines that an update is substantial in terms of number of changes, the Company shall provide an updated list of all items available for ordering under this Contract, as of a date specified by the City.
- (b) The City will not accept any substitute Goods for those specified in this Contract.
- (c) Reconditioned equipment must be certified for the Company's standard maintenance agreement at rates that are no higher than the rates for new equipment.

D-10 Discontinued or Upgraded Goods [CAO-4/2020]

If, after execution of this Contract, the Company, or the Company's manufacturer, discontinues, upgrades, and/or makes other changes to the Goods ordered by the City, the Company shall notify the Buyer listed on the current Purchase Order within fifteen (15) calendar days of the change by the Company, or notification from the Company's manufacturer. Upon receipt of notification, the City may (i) accept the upgraded Goods, (ii) accept the replacement Goods in lieu of the discontinued Goods, or (iii) cancel the order of discontinued Goods. If the Company ships replacement Goods without the City's prior written approval, such Goods shall be deemed to be automatically rejected by the City unless otherwise agreed to in writing by the City.

D-11 Packing and Shipping [CAO-01/20/16]

- (a) The Company shall package the Goods in a manner that ensures protection against damage, deterioration and contamination. The Goods must be delivered in new shipping containers suitable for storage or shipment.
- (b) Shipments are to meet applicable Department of Transportation (D.O.T.) Regulations. Serial numbers (if any) noted on the packing slip must match the serial number of the actual goods shipped. Incorrect or questionable documentation of serial numbers may result in shipment rejection. Shipments rejected due to Company's error will be returned solely at the Company's cost.
- (c) Carton(s) shall include one (1) complete packing list that identifies (i) the Purchase Order number, (ii) item number, (iii) item description, and (iv) quantity. **The packing list is to be enclosed in a removable plastic pouch labeled "Packing List Enclosed" and affixed in a readily visible location on the outside of each carton.**

D-12 Purchase Orders [CAO-4/2020]

- (a) A Purchase Order will be issued for the acquisition of the Goods, specifying a single scheduled delivery or multiple scheduled deliveries of the Goods. The time allotted for delivery of the Goods under the Purchase Order commences

on the date the City successfully electronically transmits or faxes the Purchase Order to the Company, or three (3) days after the mailing date of the Purchase Order to the Company. Any Purchase Order issued hereunder incorporates the terms and conditions of this Contract.

D-13 RESERVED**D-14 Pick-Up from Company's Facility [CAO-01/20/16]**

The City shall have the option, but not the obligation, to obtain the Goods directly from the Company's facility. Prior to releasing the Goods, the Company shall confirm that the individual is a City of Las Vegas employee through presentation of an employee badge. The employee's full name is to be recorded at the time of the release, and the employee's full name and the date of the transaction must be identified on any subsequent invoice. Failure to provide the Purchase Order number, employee's full name and the date of the release will result in rejection of an invoice.

D-15 Service Calls and Response Times [CAO-01/20/16]

Upon receipt of a service call, the Company's qualified maintenance technician must respond by phone within four (4) hours of the initial call for service. If on-site service is required, the technician must respond on-site twenty four (24) hours. If response is not possible due to insufficient time remaining in the day (before 5:30 p.m.), the twenty four (24) hour maximum continues from 8:00 a.m. of the next work day.

D-16 Replacement Parts [CAO-01/20/16]

All component replacement parts shall be readily available within three (3) calendar days.

D-17 RESERVED**D-18 Liquidated Damages [CAO-01/20/16]**

- (a) The Company hereby acknowledges that time is of the essence in the delivery of the Goods under this Contract. The Company further acknowledges that in the event the Goods are not delivered by the deadline set forth in Section D-5, "Delivery Requirements", the City will suffer damages which are difficult to ascertain, such as, but not necessarily limited to, the failure to process waste. Because it is difficult or impractical to determine the amount of actual damages which would be incurred by the City, the Company shall pay liquidated damages to the City in the amount of one thousand dollars (\$ 1,000.00) per calendar day for each day beyond the deadline through (i) the date that the Goods are finally delivered to the City, (ii) the date of termination of the Contract, or (iii) the date that substitute Goods are procured and received by the City, whichever is the first to occur.
- (b) The liquidated damages are intended to compensate for the uncertain damages suffered by the City for failure to deliver the Goods in a timely manner and is intended to be in addition to, and not in lieu of, any increased cost which may be incurred by the City in procuring substitute Goods (the recovery of which is provided for in Section E-6, "Termination for Default". The Company will not be charged with liquidated damages when the delay in delivery is beyond the control and without the fault or negligence of the Company as defined in Section E-6, "Termination for Default". If liquidated damages are assessed, the City will provide notice to the Company pursuant to Section E-1, "Legal Notice", and a credit will be issued against any unpaid Company invoice(s) after notice is sent to the Company. If the Company disputes the amount of liquidated damages assessed by the City, the dispute is subject to resolution under Section E-2, "Disputes".

D-19 Material Safety Data Sheets [CAO-01/20/16]

The Company is required to provide the MSDS to the City for hazardous Goods ordered under this Contract. If the MSDS is available, at no cost to the City, on one or more publicly accessible Internet sites, the Company shall provide a list of each applicable along with access instructions to the City's Safety/Loss Control Officer for review and approval. At the discretion of the City, such list and access instructions may be accepted in lieu of paper copies of each applicable MSDS required to be submitted to the City pursuant to the requirements of this Section.

D-20 Technical Services [CAO-01/20/16]

If the Goods purchased under this Contract consist of equipment, and the equipment fails to operate properly on start-up by the City, the Company agrees to provide the services of a field engineer, as needed, to determine the cause of the failure. This service shall be furnished at no additional cost to the City.

SECTION E – GENERAL CONDITIONS**E-1 Legal Notice [CAO-4/2020]**

- (a) Any notice required to be given hereunder shall be deemed to have been given when written notice is (i) received by the party to whom it is directed by personal service; (ii) three (3) days after deposit with the United States Post Office, by registered or certified mail, postage prepaid and addressed to the party to be notified at the address for such party; (iii) or one (1) day after deposit with a nationally recognized air courier service such as FedEx;. All notices shall be effective upon receipt by the party to which notice is given or if it is delivered by email, when the recipient acknowledges having received that email, with an automatic "read receipt" not constituting acknowledgment of an email for notice purposes. Either party hereto may change its address by giving ten (10) days advance notice to the other party as provided herein. Email, phone and fax numbers, if listed, are listed for information only:

FOR THE CITY: Manager, Purchasing and Contracts
City of Las Vegas
495 South Main Street, 4th Floor
Las Vegas, Nevada 89101-2986
Fax: (702) 384-9964
Email: purchasing@lasvegasnevada.gov

FOR THE COMPANY: As Noted in Section A-1 (f) of the Contract:

- (b) The parties shall provide written notification of any change in the information stated above.
- (c) For purposes of this Contract, legal notice shall be required for all matters involving potential termination actions, litigation, indemnification, and unresolved disputes. This does not preclude legal notice for any other actions having a material impact on the Contract.
- (d) Routine correspondence should be directed to the Project Manager or the Company Representative, as appropriate.

E-2 Disputes [CAO-4/2020]

- (a) For each claim or dispute arising between the parties under this Contract, the parties shall attempt to resolve the matter through escalating levels of management. In the event the matter cannot be successfully resolved in this manner, the City is granted the sole right, regardless of which party is asserting the claim or dispute, to determine between arbitration and litigation as the forum in which the party desiring to proceed further shall file to resolve the claim or dispute. For any and all claims or disputes asserted by the Company, the Company shall notify the City of its intent to proceed further with the claim or dispute and in response thereto, the City shall notify the Company as to its selected forum for resolution. For any and all claims or disputes asserted by the City, the City shall notify the Company in the notice of its intent to proceed with further resolution whether it has selected arbitration or litigation as the forum to resolve the claim or dispute. In the event arbitration is the designated forum, such arbitration shall be binding on the parties.
- (b) If arbitration is selected by the City as the forum for further resolution, the claim or dispute shall be filed with the American Arbitration Association under its then current Commercial Arbitration Rules, Expedited Procedures, regardless of the amount of the claim or dispute.
- (c) The laws of the State of Nevada shall govern the validity, construction, performance, and effect of this Contract, without giving effect to its conflict of law provisions. If arbitration is selected, each party hereto consents to, and waives any objection to, venue being the offices of the American Arbitration Association located in Las Vegas, Nevada, or other venue mutually agreed by the parties. If litigation is selected, each party hereto consents to, and waives any objection to, the State courts located in the County of Clark, State of Nevada as the proper and exclusive venue for any disputes arising out of or relating to this Contract or any alleged breach thereof. Each party hereby waives trial by jury in any action, proceeding or counterclaim brought by either of them against the other on any matters whatsoever arising out of or in any way connected with this Contract.

E-3 Notice of Delay [CAO-01/20/16]

- (a) If timely performance by the Company is jeopardized by the non-availability of City provided personnel, data, or equipment, the Company shall notify the City immediately in writing of the facts and circumstances causing such delay. Upon receipt of this notification, the City will advise the Company in writing of the action which will be taken to remedy the situation.

- (b) The Company shall advise the City in writing of an impending failure to meet established milestones or delivery dates based on the Company's failure to perform. Notice shall be provided as soon as the Company is aware of the situation; however, such notice shall not relieve the Company from any existing obligations regarding performance or delivery.

E-4 Termination for Convenience [CAO - 08/22/2019]

The City shall have the right at any time to terminate further performance of this Contract, in whole or in part, for any reason whatsoever (including no reason). Such termination shall be effected by written notice from the City to the Company specifying the extent and effective date of the termination. On the effective date of the termination, the Company shall terminate all work and take all reasonable actions to mitigate expenses. The Company shall submit a written request for incurred costs for services performed through the date of termination, and shall provide any substantiating documentation requested by the City. In the event of such termination, the City agrees to pay the Company within thirty (30) days after receipt of a correct, adequately documented written request. The City's sole liability under this Section is for payment of costs for Goods and services requested by the City and actually performed by the Company.

E-5 Event of Default [CAO-12/30/2020]

- (a) If, during the term of this Contract, the Company (i) fails to deliver services that comply with the specifications, (ii) fails to deliver the services within the time specified in the Purchase Order or specifications or any extension thereof, (iii) fails to make progress so as to endanger the performance of this Contract, (iv) becomes insolvent, bankrupt or makes an assignment for the benefit of creditors, or if a receiver or trustee in bankruptcy is appointed for the Company, or if any proceeding in bankruptcy, receivership, or liquidation is instituted against the Company and is not dismissed within thirty (30) days following commencement thereof, or (v) fails to perform any of the other obligation or requirement of this Contract, then any of the aforementioned failures shall constitute an "Event of Default" under this Contract.
- (b) If there occurs an Event of Default, the Company shall be entitled to ten (10) calendar days from written notice thereof to remedy the Event of Default, provided, however, such is capable of being remedied within that period. If the Event of Default can be remedied, but the remedy cannot be completed within the ten (10) day period, the Company may be allowed such additional time as may be reasonably necessary to remedy the Event of Default, provided, however, the remedy is commenced within the ten (10) day period and is diligently pursued to completion but in no event later than thirty (30) days after such written notice. Said time period may be extended at City's sole discretion. If the Event of Default is incapable of remediation, or is not remedied as required herein, the City may, in addition to any other remedies available in law or equity, invoke any of the remedies provided for under Section E-6, "Termination for Default", below.

E-6 Termination for Default [CAO-4/2020]

- (a) If the Event of Default is not remedied as required pursuant to Section E-5, "Event of Default", the City may, by written notice to the Company pursuant to Section E-1, "Legal Notice", terminate this Contract in whole or in part.
- (b) If this Contract is terminated in whole or in part because the Company has failed to provide Goods in compliance with the specifications by the deadline of remediation period, the City may acquire, under reasonable terms and in a manner it considers appropriate, replacement goods that are comparable to the Goods that the Company failed to deliver to the City, and the Company shall be liable to the City for any excess costs related thereto. If the City terminates this Contract only in part, the Company shall continue to perform the un-terminated obligations or portions of this Contract.
- (c) The Company shall not be liable for any excess costs if the failure to perform the Contract arises from circumstances beyond the control of, and without the fault or negligence on the part of, the Company. These circumstances are limited to such causes as (i) acts of God or of the public enemy, (ii) acts of governmental bodies, (iii) fires, (iv) floods, (v) epidemics/pandemics, (vi) quarantine restrictions, (vii) labor strikes, (viii) freight embargoes, or (ix) unusually severe weather. The time of performance of the Company's obligations under this Contract shall be extended by such period of enforced delay; provided, however, that such reasonably extended time period shall not exceed sixty (60) days. If the foregoing circumstances result in a delay greater than 60 days, the City may terminate the affected portion of the Contract pursuant to the terms of Section E-4, "Termination for Convenience".
- (d) The City retains the right to terminate for default immediately if the Company fails to maintain the required insurance, and/or bonding, fails to comply with applicable local, state, and federal statutes governing performance of these services, or fails to comply with statutes involving health or safety.
- (e) If the City fails to perform any of its obligations required under this Contract, and the City does not remedy the failure after notice thereof is provided to the City by the Company pursuant to the requirements of Section E-1, "Legal Notice" above, the Company shall have the right to treat the failure as a claim or dispute subject to the resolution provisions of E-2, "Disputes" of this Contract. During the period of such resolution, the Company shall continue with its performance

under the Contract.

E-7 Limitation of Funding/Non-Appropriation [CAO-4/2020]

The Company acknowledges that City is a governmental entity and the Contract's validity is based upon the availability of public funding under its authority. The City reserves the right to reduce estimated or actual quantities, in whatever amount necessary, without prejudice or liability to the City, if funding is not available or if legal restrictions are placed upon the expenditure of monies for the services required under this Contract. In addition, and without prejudice or liability to the City, if funds are not appropriated or otherwise made available to support continuation in any fiscal year succeeding the first fiscal year, this Contract will be deemed to have been terminated automatically **when appropriated funds expire and** are not available. The City shall notify Company in writing of any such non-allocation of funds at the earliest possible date and shall pay Company any reasonable fees earned and costs incurred in performing this Contract for any period prior to such notice.

E-8 Changes - Fixed-Price Goods or Services [CAO-4/2020]

- (a) The City may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this Contract in any one or more of the following:
 - (i) Description of services to be performed or Goods to be provided.
 - (ii) Time of performance (i.e., hours of the day, days of the week, etc.).
 - (iii) Place of performance of the services.
 - (iv) Time or place of delivery of Goods
- (b) If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this Contract, the Company shall provide current, complete, and accurate documentation to the City in support of any request for equitable adjustment.
- (c) The Company must assert its right to an adjustment under this clause within thirty (30) days from the date of receipt of the written order, or shall otherwise be barred and shall have waived any right to an adjustment under this clause.
- (d) The parties shall negotiate a timely requested equitable adjustment by mutual written agreement and the change will be effected by purchase order revision. Failure to agree to any adjustment shall be a dispute under Section E-2, "Disputes"; however, nothing in this clause shall excuse the Company from proceeding with the Contract as changed.

E-9 Entire Contract, Section and Paragraph Headings [CAO-4/2020]

- (a) This Contract represents the entire and integrated agreement between the City and the Company. It supersedes all prior and contemporaneous understandings, negotiations, communications, representations, and agreements, whether oral or written, relating to the subject matter of this Contract.
- (b) The section and paragraph headings appearing in this Contract are inserted for the purpose of convenience and ready reference. They do not purport to define, limit, or extend the scope or intent of the language of the sections and paragraphs to which they pertain.

E-10 Order of Precedence [CAO-7/24/08]

In the event of a conflict between the specific language set forth in Sections A through E of this Contract and any Attachment or Exhibit, the specific language in Sections A through E shall prevail. Any exception to this order of precedence will be addressed through specific language elsewhere in Sections A through E.

E-11 Severability [CAO-7/24/08]

The invalidity, illegality, or unenforceability of any provision of this Contract or the occurrence of any event rendering any portion or provision of this Contract void shall in no way affect the validity or enforceability of any other portion or provision of this Contract. Any void provision shall be deemed severed from this Contract, and the balance of this Contract shall be construed and enforced as if this Contract did not contain the particular portion or provision held to be void. The parties further agree to amend this Contract to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this clause shall not prevent this entire Contract from being void should a provision which is of the essence of this Contract be determined void.

E-12 Waiver [CAO-7/24/08]

Waiver of any of the terms of this Contract shall not be valid unless it is in writing signed by each party. The failure of the City to enforce any of the provisions of this Contract, or to require performance of any of the provisions herein, shall not in any way be construed as a waiver of such provisions or to affect the validity of any part of this Contract, or to affect the right of the City to thereafter enforce each and every provision of this Contract. Waiver of any breach of this Contract shall not be held to be a waiver of any other or subsequent breach of this Contract.

E-13 Modification/Amendment [CAO-7/24/08]

This Contract shall not be modified or amended except by the express written agreement of the parties, signed by a duly authorized representative for each party. Any other attempt to modify or amend this Contract shall be null and void, and may not be relied upon by either party.

E-14 Assignment [CAO-7/24/08R]

The City may assign their rights and delegate their duties under this Contract with the written consent of the other party. Such consent shall be executed through Exhibit D Assignment of Contract. Any assignment shall relieve the City of its obligations under this Contract.

E-15 Indemnification [CAO-4/2020]

- (a) In addition to the insurance requirements set forth in Section D-6, "Insurance", and not in lieu thereof, the Company shall protect, defend, indemnify and hold harmless the City, its elected officials, officers, employees, agents, and consultants (collectively herein the "City") from and against any and all claims, liabilities, damages, losses, suits, actions, decrees, arbitration awards and judgments including attorney's fees, court costs or other expenses of any and every kind or character (collectively herein the "Liabilities") which may be recovered from or sought against the City, as a result of, by reason of, or as a consequence of (i) any act or omission, negligent or otherwise, on the part of the Company, its officers, employees, independent contractors, vendors, suppliers, consultants, or agents in the performance of the terms, conditions and covenants of the Contract; or (ii) a breach of any agreement between the Company and its employees, vendors, independent contractors, suppliers, consultants or agents; or (iii) any default in the performance of any obligation on Company's part to be performed under the terms of this Contract, regardless of whether the Liabilities were caused in part by the City. Company agrees that it is assuming the sole risk of any Liabilities related to the contraction by Company's officers, employees, vendors, suppliers, agents, independent contractors, and consultants or any other person of any viral infection or other disease, including, without limitation, COVID 19, related to the performance of this Contract and that Company's indemnity obligations contained herein cover any such Liabilities. In no event shall the language in this Section constitute or be construed as a waiver or limitation of the City's rights or defenses with regard to sovereign immunity, governmental immunity, or other official immunities and protections as provided by the Federal and State Constitutions or by law.
- (b) If a third party claim against the City for negligent performance by the Company is within the limits of its liability insurance, and the insurance company has accepted the City's tender of defense, then the City will pay the Company what is due and owing to them within the payment method specified in this Contract. However, if the claim is greater than the coverage amount, the City, for its protection, may retain any money due and owing the Company under this Contract, until the claim has been resolved. In the event no money is due and owing, the surety, if required, of the Company, may be held until all of the Liabilities have been settled and suitable evidence to that effect furnished to the City.
- (c) It is expressly agreed that the Company shall defend the City at Company's expense, by legal counsel reasonably satisfactory to City, against the Liabilities and in the event that the Company fails to do so, the City shall have the right, but not the obligation, to defend the same and to charge all direct and incidental costs, including attorney's fees and court costs, to the Company. Company's indemnity obligations herein are not intended to nor shall they relieve any insurance carrier of its obligations under policies required to be carried by Company pursuant to the provisions of this Contract. Company's obligations under this Section shall survive any termination of this Contract.

E-16 Patent Indemnity [CAO-12/30/2020]

The Company hereby indemnifies and shall defend and hold harmless the City and its representatives respectively from and against all claims, losses, costs, damages, and expenses, including attorney's fees, incurred by City and its representatives, respectively, as a result of or in connection with any claims or actions based upon infringement or alleged

infringement of any patent or other intellectual property and arising out of the use of the equipment or materials furnished under the contract by the Company, or out of the processes or actions employed by, or on behalf of the Company in connection with the performance of the Contract. The Company shall, at its sole expense, by legal counsel reasonably satisfactory to City, promptly defend against any such claim or action unless directed otherwise by the City or its representative; provided that the City or its representatives shall have notified the Company upon becoming aware of such claims or actions, and provided further that the Company's aforementioned obligations shall not apply to equipment, materials, or processes furnished or specified by the City or its representatives.

E-17 Audit of Records [CAO-5/2/12]

- (a) The Company agrees to maintain the financial books and records (including supporting documentation) pertaining to the performance of this Contract according to standard accounting principles and procedures. The books and records shall be maintained for a period of three (3) years after completion of this Contract, except that books and records which are the subject of an audit finding shall be retained for three (3) years after such finding has been resolved. If the Company goes out of business, the Company shall forward the books and records to the City to be retained by the City for the period of time required herein.
- (b) The City or its designated representative(s) shall have the right to inspect and audit (including the right to copy and/or transcribe) the books and records of the Company pertaining to the performance of this Contract during normal business hours. The City will provide prior written notice to the Company of the audit and inspection. If the books and records are not located within Clark County, the Company agrees to deliver them to the City, or to an address designated by the City within Clark County. In lieu of such delivery, the Company may elect to reimburse the City for the cost of travel (including transportation, lodging, meals, and other related expenses) to inspect and audit the books and records at the Company's office. If the books and records provided to the City are incomplete, the Company agrees to remedy the deficiency after written notice thereof from the City, and to reimburse the City for any additional costs associated therewith including, without limitation, having to revisit the Company's office. The Company's failure to remedy the deficiency shall constitute a material breach of this Contract. The City shall be entitled to its costs and reasonable attorney fees in enforcing the provisions of this Section.
- (c) If at any time during the term of this Contract, or at any time after the expiration or termination of the Contract, the City or the City's designated representative(s) find the dollar liability is less than payments made by the City to the Company, the Company agrees that the difference shall be either: (i) repaid immediately by the Company to the City or (ii) at the City's option, credited against any future billings due the Company.

E-18 Confidentiality – City Information [CAO-4/2020]

- (a) All information, including but not limited to, oral statements, computer files, databases, and other material or data supplied to the Company is confidential and privileged. The Company shall not disclose this information, nor allow it to be disclosed to any person or entity without the express prior written consent of the City. The Company will use at least the same standard of care and exercise equivalent security measures to maintain the confidentiality of the City's information that it uses to maintain the confidentiality of its own confidential information; provided in no event shall such standard be less than reasonable care. The Company shall have the right to use any such confidential information only for the purpose of providing the services under this Contract, unless the express prior, written consent of the City is obtained. City shall be and remain the sole owner of such confidential information. Nothing contained in this Contract shall be construed as granting or conferring any right or license in the City's information or in any patents, software, or other technology, either expressly or by implication to the Company. Upon request by the City, the Company shall promptly return to the City all confidential information supplied by the City, together with all copies and extracts. Company is required to employ the highest ethical standards and shall avoid those actions that are inconsistent with the City's best interest.
- (b) The confidentiality requirements shall not apply where (i) the information is, at the time of disclosure by the City, then in the public domain; (ii) the information is known to the Company prior to obtaining the same from the City; (iii) the information is obtained by the Company from a third party who did not receive the same directly or indirectly from the City; or (iv) the information is subpoenaed by court order or other legal process, but in such event, the Company shall notify the City. In such event the City, in its sole discretion, may seek to quash such demand.
- (c) The obligations of confidentiality shall survive the termination of this Contract.

E-19 Marketing Restrictions [CAO-4/2020]

The Company shall at all times be in compliance with Las Vegas Municipal Code 1.08.050, and shall not publish or sell any information from or about this Contract without the prior written consent of the City. This restriction does not apply to the use of the City's name in a general list of customers, so long as the list does not represent an express or implied endorsement of the Company or its services. The City logo shall not be used without the prior written consent of the City.

E-20 Intellectual Property Rights [CAO-4/2020]

All deliverables produced under this Contract, as well as all data, notes and documentation collected on behalf of the City, are exclusively the property of the City. The Company shall have no property interest in, and may assert no claim or lien on, or right to withhold from the City, or right to use said data other than in performance of its obligations pursuant to this Contract, any data it receives from, receives access to, or stores on behalf of the City. At any time during the term of this Contract, and within thirty (30) days of the expiration or termination of this Contract, the Company will upon request return the data to the City at no charge in the format held by Company. On City request, the Company will delete all City data and will provide appropriate certification to the City to document the disposal. The Company shall promptly notify the City if the Company becomes aware of any unauthorized access, acquisition, disclosure, use, modification, destruction or other misuse of the City's data or other confidential information, and shall fully cooperate with the City in any legal action taken by the City to enforce its rights therein. This Section shall survive termination or expiration of this Contract.

E-21 Taxes/Compliance with Laws [CAO-08/01/13]

- (a) The City is exempt from paying Sales and Use Taxes under the provisions of Nevada Revised Statutes 372.325(4), and Federal Excise Tax, under Registry Number 88-87-0003k. The Company shall pay all taxes, levies, duties and assessments of every nature and kind which may be applicable to any work under this Contract. The Company shall make any and all payroll deductions required by law. The Company agrees to indemnify and hold the City harmless from any liability on account of any and all such taxes, levies, duties, assessments, and deductions.
- (b) The Company, in the performance of the obligations of this Contract, shall comply with all applicable laws, rules and regulations of all governmental authorities having jurisdiction over the performance of this Contract including, but not limited to, the Federal Occupational Safety and Health Act.

E-22 Licenses/Registrations [CAO-01/20/16]

During the entire performance period of this Contract, the Company shall maintain all federal, state, and local licenses, certifications and registrations applicable to the work performed under this Contract, including maintaining an active City of Las Vegas business license if required by Las Vegas Municipal Code 6.02.060.

E-23 Non-Discrimination and Fair Employment Practices [CAO-07/31/13]

- (a) Discrimination: The City of Las Vegas is committed to promoting full and equal business opportunity for all persons doing business in Las Vegas. The Company acknowledges that the City has an obligation to ensure that public funds are not used to subsidize private discrimination. Company recognizes that if the Company or their subcontractors or subconsultants are found guilty by an appropriate authority of refusing to hire or do business with an individual or company due to reasons of race, color, religion, sex, sexual orientation, gender identity or expression, age, disability, national origin, or any other legally protected status, City may declare the Company in breach of contract and terminate Contract.
- (b) Fair Employment Practices: In connection with the performance of work under this Contract, the Company agrees not to discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, sexual orientation, gender identity or expression, age, disability, national origin, or any other legally protected status. Such agreement shall include, but not be limited to, the following: employment; upgrading; demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- (c) The Company further agrees to insert this provision in all subcontracts hereunder. Any violation of such provision by a Company shall constitute a material breach of this Contract.

E-24 Employment of Unauthorized Aliens [CAO-01/20/16]

In accordance with the Immigration Reform and Control Act of 1986, the Company agrees that it will not employ unauthorized aliens in the performance of this Contract.

E-25 Conforming Services [CAO-4/2020]

The Services performed under this Contract shall conform in all respects with the requirements set forth in this Contract. The Company shall furnish the City with sufficient data and information needed to determine if the Services performed conform to all the requirements of this Contract.

E-26 Independent Contractor [CAO-4/2020]

In the performance of its obligations under this Contract, the Company and any other person employed by it shall be deemed to be an independent contractor and not an agent or employee of the City. The Company shall be liable for the actions of any person, organization, or corporation with which it subcontracts to fulfill this Contract. Accordingly, Company shall be responsible for payment of all taxes including federal, state and local taxes arising out of the Company's activities in accordance with this Contract, including by way of illustration but not limitation, federal and state income tax, Social Security tax, unemployment insurance taxes, and any other taxes or business license fees as required under existing or subsequently enacted laws, rules or regulations. Company shall not be entitled to any benefits afforded to City's employees, including without limitation worker's compensation, disability insurance, health insurance, vacation, or sick pay. Company shall be responsible for providing, at Company's expense, and in Company's name, unemployment, disability, worker's compensation, and other insurance, as well as licenses and permits usual or necessary for performance of its obligations pursuant to this Contract. Company shall hereby defend, indemnify, and hold the City harmless from any claims, losses, costs, fees, attorney's fees, liabilities, damages or injuries suffered by the City arising out of Company's failure with respect to its obligations in this Section. Company, upon request, shall furnish evidence satisfactory to the City that any or all of the foregoing obligations have been fulfilled. During Company's contacts with third parties they shall identify themselves as an independent party and not as an employee for the City. Company understands and agrees that they do not have the power or authority to bind City in any capacity. The City shall hold the Company as the sole responsible party for the performance of this Contract. The Company shall maintain complete control over its employees and all of its subcontractors. Nothing contained in this Contract or any subcontract awarded by the Company shall create a partnership, joint venture, or agency with the City. Neither party shall have the right to obligate or bind the other party in any manner to any third party.

E-27 Official, Agent and Employees of the City Not Personally Liable [CAO-01/20/16]

It is agreed by and between the parties of this Contract, that in no event shall any official, officer, employee, or agent of the City in any way be personally liable or responsible for any covenant or agreement therein contained whether expressed or implied, nor for any statement, representation or warranty made herein or in any connection with this Contract.

E-28 Conflict of Interest (City Officials) [CAO-4/2020]

- (a) An official of the City, who is authorized on behalf of the City to negotiate, make, accept or approve, or take part in negotiating, making, accepting, or approving this Contract, payments under this Contract, or work under this Contract, shall not be directly or indirectly interested personally in this Contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of, or for the City, who is authorized on behalf of the City to exercise any legislative, executive, supervisory or other similar functions in connection with this Contract, shall become directly or indirectly interested personally in this Contract or in any part hereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to this Contract.
- (b) Each party represents that it is unaware of any financial or economic interest of any public officer or employee of the City relating to this Contract. Notwithstanding any other provision of this Contract, if such interest becomes known, the City may immediately terminate this Contract for default or convenience, based on the culpability of the parties.

E-29 Public Records [CAO-5/2/12]

The City is a public agency as defined by state law. As such, it is subject to the Nevada Public Records Law (Chapter 239 of the Nevada Revised Statutes). The City's Records are public records, which are subject to inspection and copying by any person (unless declared by law to be confidential). This Contract and all supporting documents are deemed to be public records.

E-30 Use By Other Government Entities [CAO-01/20/16]

A governing body or its authorized representative and the State of Nevada may join or use the contracts of local governments located within or outside this State with the authorization of the contracting vendor. In the event the Company allows another governmental entity to join the Contract, it is expressly understood that the City shall in no way be liable for the obligations of the joining governmental entity.

E-31 Certification – No Israel Boycott [CAO-4/2020]

(Applicable to contracts with an estimated annual amount over \$100,000)

By signing this Contract, the Company certifies that it is not engaged in, and agrees for the duration of the Contract not to engage in, a boycott of the State of Israel per NRS 332.065.

“Boycott of Israel” means refusing to deal or conduct business with, abstaining from dealing or conducting business with, terminating business or business activities with or performing any other action that is intended to limit commercial relations with Israel; or a person or entity doing business in Israel or in territories controlled by Israel, if such an action is taken in a manner that discriminates on the basis of nationality, national origin or religion. It does not include an action which is based on a bona fide business or economic reason; is taken pursuant to a boycott against a public entity of Israel if the boycott is applied in a nondiscriminatory manner; or is taken in compliance with or adherence to calls for a boycott of Israel if that action is authorized in 50 U.S.C. § 4607 or any other federal or state law.

“Company” means any domestic or foreign sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited-liability partnership, limited-liability company, or other domestic or foreign entity or business association, including, without limitation, any wholly owned subsidiary, majority owned subsidiary, parent company or affiliate of such an entity or business association, that exists for the purpose of making a profit.

A violation of this Section by Company shall be considered an incurable Event of Default of this Contract, thereby allowing the City to immediately terminate this Contract upon giving Legal Notice to Company.

E-32 Counterpart Signatures [CAO-08/11/2022]

This Contract may be executed in counterparts. All such counterparts will constitute the same contract and the signature of any party to any counterpart will be deemed a signature to, and may be appended to, any other counterpart. Executed copies hereof may be delivered by facsimile or e-mail and upon receipt will be deemed originals and binding upon the parties hereto, regardless of whether originals are delivered thereafter.

The parties agree that this Contract may be signed electronically via the City’s designated electronic signature platform, and that the electronic signatures appearing herein shall be considered the same as handwritten signatures for the purposes of validity, admissibility, and enforceability.

E-33 Miscellaneous [CAO-4/2020]

- (a) In the event of a dispute under this Contract which results in litigation or other formal dispute resolution proceedings, the prevailing party shall be entitled to reimbursement of its or their actual reasonable attorney’s fees and costs in connection with such proceeding.
- (b) Time is of the essence of the Contract and each of its provisions.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be executed by their duly authorized representatives.

CITY OF LAS VEGAS

COMPANY

_____ Signature	_____ Date	_____ Signature	_____ Date
_____ Printed Name		_____ Printed Name	
_____ Title		_____ Title	

ATTEST:

LuAnn D. Holmes, MMC
City Clerk

Date

APPROVED AS TO FORM:

DocuSigned by:
Crislove A. Igeleke 9/3/2024 | 4:44 PM PDT
7A0C1A87A10D431...
Deputy City Attorney

Date

Crislove A. Igeleke

Printed Name

EXHIBITS

Exhibit A	Proposal
Exhibit B	Pricing
Exhibit C	Performance, Schedule, and Payment Form
Exhibit D	Assignment of Contract



Date: 10/5/2023
Your ref: Dan Dixon
Our ref: Marc Perratore

City of Las Vegas, Nevada
Dan Dixon
495 South Main Street
Las Vegas, Nevada 89101

Alfa Laval

www.alfalaval.com

WPCF Dewatering Building Equipment Rehabilitation Project

Thank you for your enquiry. On behalf of Alfa Laval and our local representative, The Coombs-Hopkins Company, we are pleased to enclose our proposal for **Three (3) ALDEC G3 125 Decanter Centrifuges** for the **WPCF Dewatering Building Equipment Rehabilitation Project** for dewatering based on the Specification Section 46 71 36.

The centrifuges proposed for this project shall be an "in-kind" replacement for Alfa Laval, which will require **little to no structural changes to the existing dewatering building**, as the footprint of the new centrifuges will be almost identical to the existing equipment at the plant. Furthermore, the ALDEC G3 125 has industry leading reliability which has prompted continued repeat orders for municipal dewatering applications, with over 40 units sold just in the last decade. Our **service center located in Fresno, California** makes Alfa Laval field service engineers and select OEM parts available within 48 hours for service and repairs.

As part of Alfa Laval's dedication to continuous innovation, the ALDEC Decanter Centrifuge is the industry benchmark for dewatering and thickening in wastewater treatment. In summary...

- **ALDEC decanters deliver greater operational efficiency**, allowing for increased sludge treating capacity or dryer sludge cake for reducing sludge disposal costs.
- **Lowest energy consumption**, with optimized motors & drives, delivering the lowest installed power and energy consumption.
- **Low maintenance costs**, with reduced planned maintenance and easily replaceable wear parts.

As requested, we have included the scope of supply and applicable process guarantees based on the defined influent sludge parameters. Technical details along with dimensional drawing for the proposed centrifuge including weights, bowl diameter, speed, installed power, and G-Force are enclosed in the proposal.

Alfa Laval recommends the described equipment per the outlined technical specifications, and additional clarifications for greater understanding of the offer. We trust that we have interpreted the project specifications correctly and shall be pleased to provide any additional information which may be required in support of our proposal.

Best Regards,
Marc Perratore

Marc Perratore
Regional Sales Manager – Water Separation Sales
Alfa Laval Food & Water Division
Cc: The Coombs-Hopkins Company.



Table of Contents

❖ SECTION 1 – BUSINESS INFORMATION	PAGE 3
❖ SECTION 2 – OFFER QUALIFICATIONS & EXPERIENCE	
▪ LIST OF REFERENCES	*RESPONSE ATTACHMENT 5
▪ KEY PERSONNEL	PAGE 4
▪ WORKLOAD ACCOMPLISHMENT	PAGE 6
❖ SECTION 3 – WORK PLAN	
▪ COMPETENCE AND QUALIFICATIONS	PAGE 7
▪ PROJECT MANAGEMENT STRATEGIES AND SYSTEMS	PAGE 9
▪ QC, TESTING, INSPECTION AND TRAINING PROCESSES	PAGE 15
❖ SECTION 4 – EXCEPTIONS TO THE SAMPLE CONTRACT	PAGE 40
❖ MAJOR AND PREVENTATIVE MAINTENANCE INFORMATION	PAGE 42
❖ SECTION 5 – PRICING PROPOSAL	
▪ EXHIBIT B BID PROPOSAL FORM	*REFER TO RESPONSE ATTACHMENT 2
▪ ALFA LAVAL SCOPE LETTER	PAGE 43



Business Information

(a). Business information –

Alfa Laval Inc.
5400 International Trade Drive
Richmond, VA 23231
804-222-5300

(b). Company Officers –

Ester Codina
President & CEO
201-478-1146
Ester.codina@alfalaval.com

Frederico Lucena
Vice President
416-302-0907
Frederico.lucena@alfalaval.com

William J. Connolly
Secretary
804-545-8123
Bill.connolly@alfalaval.com

John Lund
Assistant Secretary
804-236-1261
John.lund@alfalaval.com

(c). Authorized Representative(s)

Marc Perratore
Regional Sales Manager
201-388-8393
Marc.perratore@alfalaval.com

(d). Not applicable as Alfa Laval is an OEM.



Key Personnel Experience

Theodore L. Carten

WORK EXPERIENCE

Field service Engineer

Alfa Laval – Decaners - September 2013 to present

- Complete mechanical repairs to decaners either in the service center or at customer's premises.
- Be able to perform diagnostic tests such as bowl run out measurement, vibration analysis, bearing temperature measurement, visual crack detection, wear assessment, oil quality evaluation, cause of excessive noise etc.
- Ability to determine whether a part should be replaced or a component should be repaired.
- Assess the decaners performance to determine whether a problem is equipment malfunction or process change.
- Know when to call for specialist assistance if the problem appears to be more complex than originally indicated or specialist technical support is needed from the service group.
- Obtain from either internal or external sources, copies of O & M manuals and parts lists for the machines for which quotes can be prepared.
- Disassemble and inspection of machines for the replacement of minor & major service kits to comply with preventative maintenance schedules.
- Discuss with the customer the respective quotations and proposals for service.
- Acquisition of new customers and markets and ongoing support of existing customers.
- Maintain close cooperation and coordination with service sales engineer for service projects in the repair facilities and in the field.
- Follow up on leads and assess the potential for service assistance.
- Regular phone contact with customers, as well as strategic visits to the customers facilities to promote the sale

Roger McKinney

WORK EXPERIENCE

Alfa Laval US

Field Service Engineer Aug 2019 - Present

Lead Mechanic Jan 2017 – Aug 2019

- At the Fresno Service Center, it is my responsibility to safely disassemble, evaluate, provide reports, and re-assemble rotating equipment. I am also able to work on PHEAs required.
- Perform Alfa Laval's products service work on troubleshooting of electrical, electronic, pneumatic, hydraulic and mechanical problems to ascertain the needed corrective action. Replace, repair, or adjust parts and systems as necessary.
- In accordance with preventive maintenance contracts; inspect, calibrates, and run equipment through "cycles" to ensure the complete system is functioning properly.
- Provide information and training to customers regarding proper operation and general maintenance of equipment including peripheral equipment, and make recommendations to customers regarding replacement of worn or damaged parts, systems, etc.
- Completes work orders, expense reports, and daily and weekly time logs ERP, CRM and Lotus Notes.



Key Personnel Experience

Bobby Jensen

WORK EXPERIENCE

Field Service Technician 2001 - Present

- Experienced with all sizes of Sharples and Alfa Laval horizontal decanters in various processes. Conducted mechanical, electrical and process start-ups, routine & preventative maintenance, major machine field overhauls, troubleshooting and customer personnel training.
- Experienced with all sizes of Alfa Laval Plate Heat Exchangers.
- Experience with vertical disc, high-speed oil separators. Conducted mechanical, electrical and process start-ups, routine & preventative maintenance, major machine field overhauls, troubleshooting and customer personnel training.
- Extensive experience in operational processes with various Alfa Laval machines and equipment in the food technology and fats and oils.
- Automation Controls

Specialty Training

- Extensive classroom and field training on mechanical maintenance and overhauls of Alfa Laval decanters and high-speed separators.
- Attended classroom training for basic troubleshooting of electrical controls.
- Attended classroom and field training for ABB electrical controls and panels.
- Trained with Ilya Yevilevich on the DS 401 test trailer for one week.
- Certified ABS (American Bureau of Shipping) welder in 1999 and familiar with many aspects of metal fabrication, arc, tig, and mig welding.
- CCT training on automation for startup and troubleshooting

Timothy Benfield

SKILLS

- Excellent troubleshooting skills in electrical, mechanical and process control.
- Very knowledgeable on separation and separation equipment. Proficient and qualified in electrical, plumbing, mechanical.
- Experienced in PLC programming and system design, trouble shooting, with the following platforms Allen Bradley-RS Logics, Schneider -Twido suite, Omron- CL One plus, PLC Direct, ABB-HMI and VFD Drives, Schneider -altivar 58&71, VFD. ABB VFD AB power flex VFD
- Alfa Laval CCT training for Decanter Connect 6.0Experience in Auto-Cad 11
- Solid works lite
- Proficient Blue print reading

WORK EXPERIENCE

Field Service Tech Level III, South Region

Alfa Laval Houston, Texas - 2021 to Current

- CCT Decanter connect Systems
- Decanter commission, Service and Trouble Shoot and Repair
- High Speed Separator commission, Service and Trouble Shoot and Repair
- Rotary Drum Thickener commission, Service and Trouble Shoot and Repair

Field Service/ Repair Tech.

Hutchison and Hayes Separators Inc. Houston, Texas - 2006 to 2021

• Major Manufactory and Parts sales and service of Decanter Centrifuges
Perform Repair and rebuilds and centrifuges nationally. On short notice in the Oil and Gas energy, Waste oil, waste water, Marine, Bio Diesel, Vegetable oil, Fish meal and oil, and Rendering applications using many types and brand of centrifuges. Including Alfa-Laval BRPX-213, SRG-214, MOPX-205, MOPX-513, AFPX-313, NX-414, BRNX-414 Fodec310, BRPX-517 Hutchison Hayes models 5500,1448,1456 SEA1200, and Render pure 845 HH219 HH160 Duster, Brake Smart 1448 GEA Westfalia models SA-20, thru SA-220 MSD300, RSA 310, SB-80, SB-90 Hysep HD-43 Sharpless P3400, P660 P5400, PM-38000, PM-75000 Bird 2650, 2550 Flottweg Z73, Z6, Z43, Z23 Derreck DE-1000 MiSwaco 414, 514



Workload Accomplishment

Alfa Laval's project teams are configured to include the following personnel, along with estimated percentages of work that each contributes to a project:

- Project Manager: 55%
- Automation Engineer: 10%
- Factory Order Handler: 5%
- Buyers: 5%
- Logistics expert: 5%
- Field Service Coordinator: 5%
- Field Service Technician(s): 15%

Workload can vary over time because these employees are focused on project-based business. In general they are at 70-90% capacity at any given time. Alfa Laval has four (4) Project Managers with extensive experience delivering decanter projects into the Water market, such that capacity is always consciously made available to work on a critical project as needed. Our distributed model for project management allows us to spread out the workload and avoid bottlenecks due to overwork.

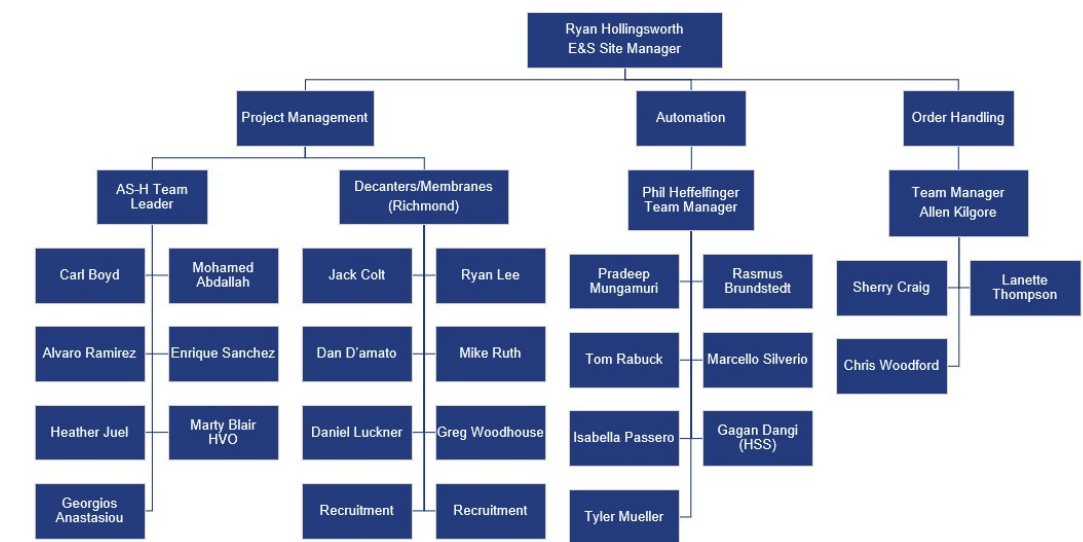
Section 3 – Work Plan

(a) Competence and qualifications performed on this Project.

Alfa Laval uses a Project Management methodology founded on a concept called Six Basics, supported with globally organized training events and by our internal systems. This methodology focuses on six essential milestones critical to effective Project Management including key interface meetings, scheduling, and planning. These are further broken down into business processes which are imported into our QMS system for reference.

In addition, we utilize a SharePoint server platform for storing and sharing project files, financial tracking, and scheduling. Our overall strategy is to deliver on time, on specification, and on budget with customer satisfaction always in mind. We strive to work in a structured, helpful, and professional manner to execute capital projects for Alfa Laval's customers.

Alfa Laval US E&S (Project Management Organization):



Alfa Laval US E&S (Project Management Organization) is part of Alfa Laval's Global Engineering & Supply (E&S) group which handles projects of varied complexity around the world.

The US teams consists of fourteen (14) very experienced Project Managers, eight (8) highly qualified and competent Automation Engineers and a team of Order Management personnel.

With decades of project management, engineering, and automation/controls experience within the Alfa Laval US E&S/PM team and utilizing our set Project Management procedures and tools, Alfa Laval US is fully geared for successful execution of the City of Las Vegas centrifuges project.

Our project management methodologies, strategies and systems are summarized in the section below.

Also attached are the resumes of two of our experienced Project Managers to be reviewed as our competence and qualifications to manage large projects like City of Las Vegas Centrifuge Project - Dewatering Building Equipment Rehabilitation Project.

Project Management Personnel Experience



Allen Kilgore

WORK EXPERIENCE

Engineering and Project Management professional with widespread experience in operations and manufacturing, research and development, and project direction and development spanning plastics, fluids, and local government construction. Proven ability to utilize leadership, communication, and interpersonal skills to manage projects that meet and exceed goals within time and budget demands in both domestic and international manufacturing and municipal industries.

ALFA LAVAL, INC. 2021 - Current

Team Manager, Engineering and Supply Project Assistant Team

- Provide guidance and support for team members while interfacing with sales companies and project managers during project booking and execution processes along with internal Alfa Laval teams needed for order handling • activities.
- Pursue stakeholders in sales, engineering and supply, and Alfa Laval management to foster a conduit for open feedback and continuous process improvement to allow the team to be more effective and efficient while working with varying market segments with unique needs.
- Create and evaluate performance dialogue reports to encourage employee communication and open feedback to establish clear annual goals as well as assisting the team in identifying their own growth opportunities for their current role and moving forward in their career path.

ALFA LAVAL, INC. 2014 - Current

Project Manager, BUD Engineering and Supply

- Manage capital equipment projects across multiple Alfa Laval core equipment types and scopes of supply from bid process through design, installation, commissioning and warranty period.
- Interface with and support internal sales, external sales representatives, applications personnel, field service engineers, equipment suppliers, installing contractors, engineering firms, and end users to foster relationships and facilitate smooth project cycle with customer experience as the primary objective.
- Serve as the PROMIS super user in the US market and assist Alfa Laval team members as well as external consultants in training, utilization, and troubleshooting of Alfa Laval's PROMIS platform.

Master Scheduler and Product Data Specialist, Fluid Handling Manufacturing

ALFA LAVAL, INC. 2010 - 2014

Project Engineer, Plate Heat Exchanger Contract Order Team, ALFA LAVAL, INC. 2007 - 2009

Michael Ruth

WORK EXPERIENCE

Alfa Laval (February 2014 to Present)

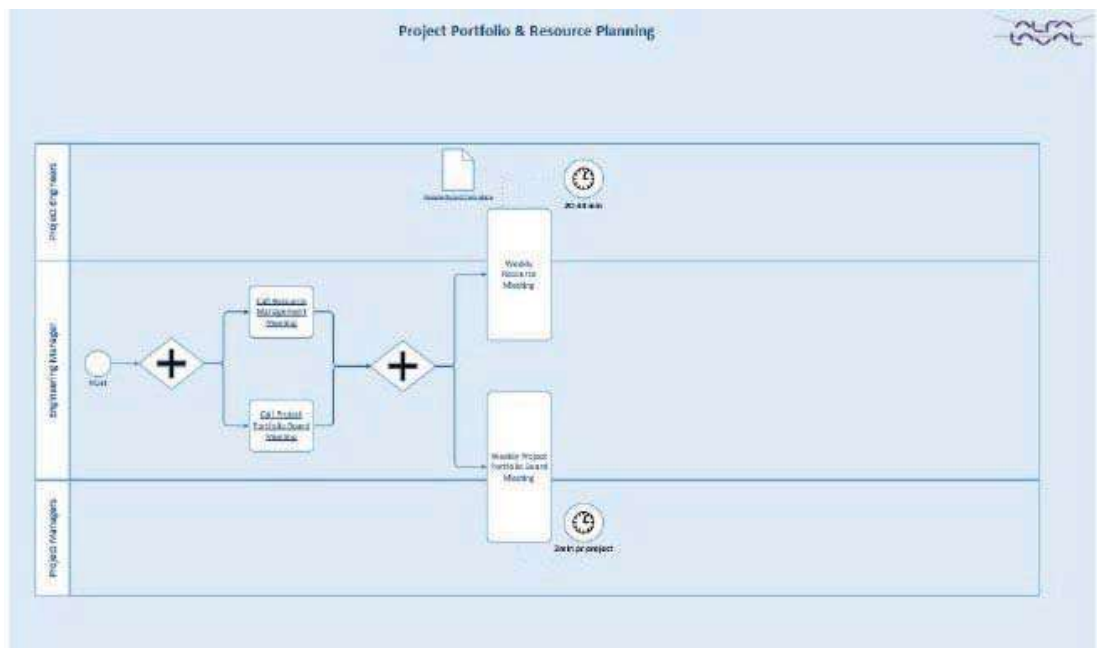
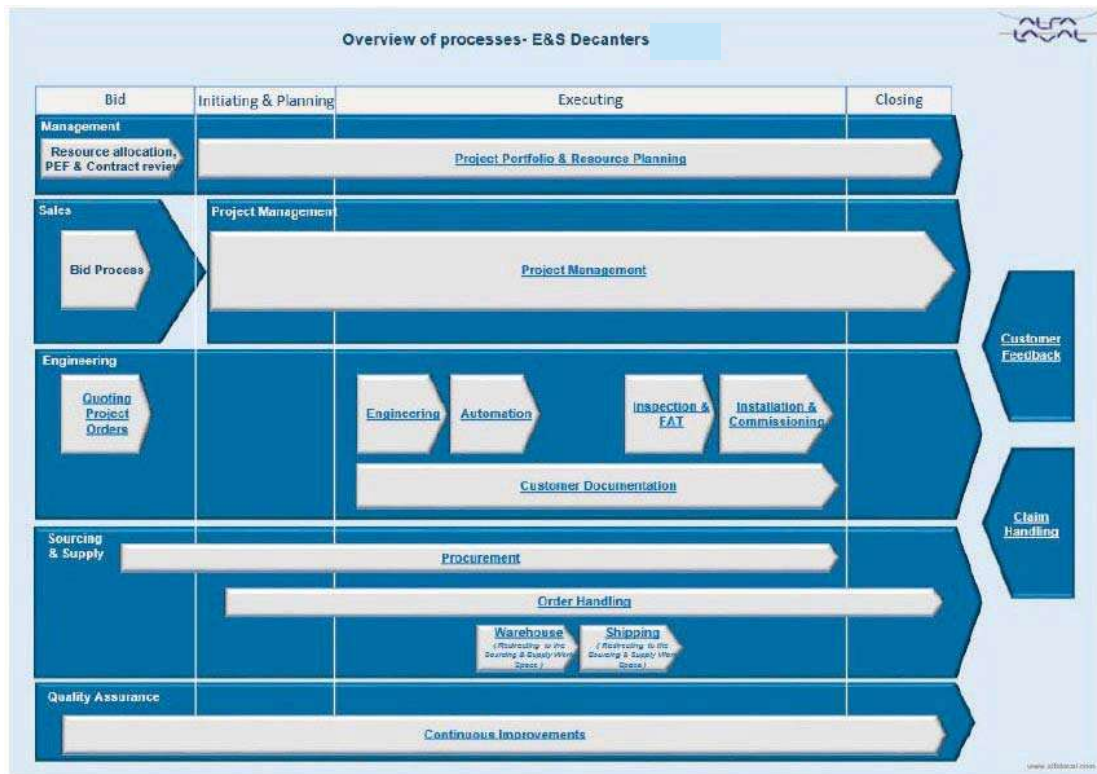
Senior Project Manager

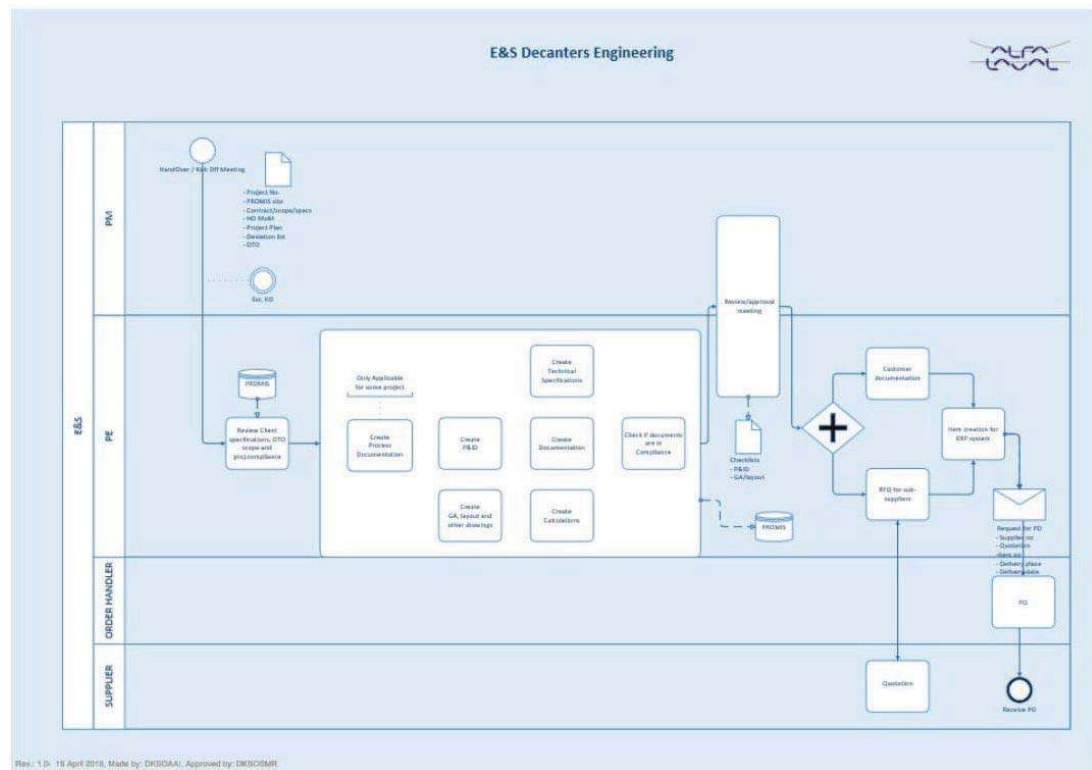
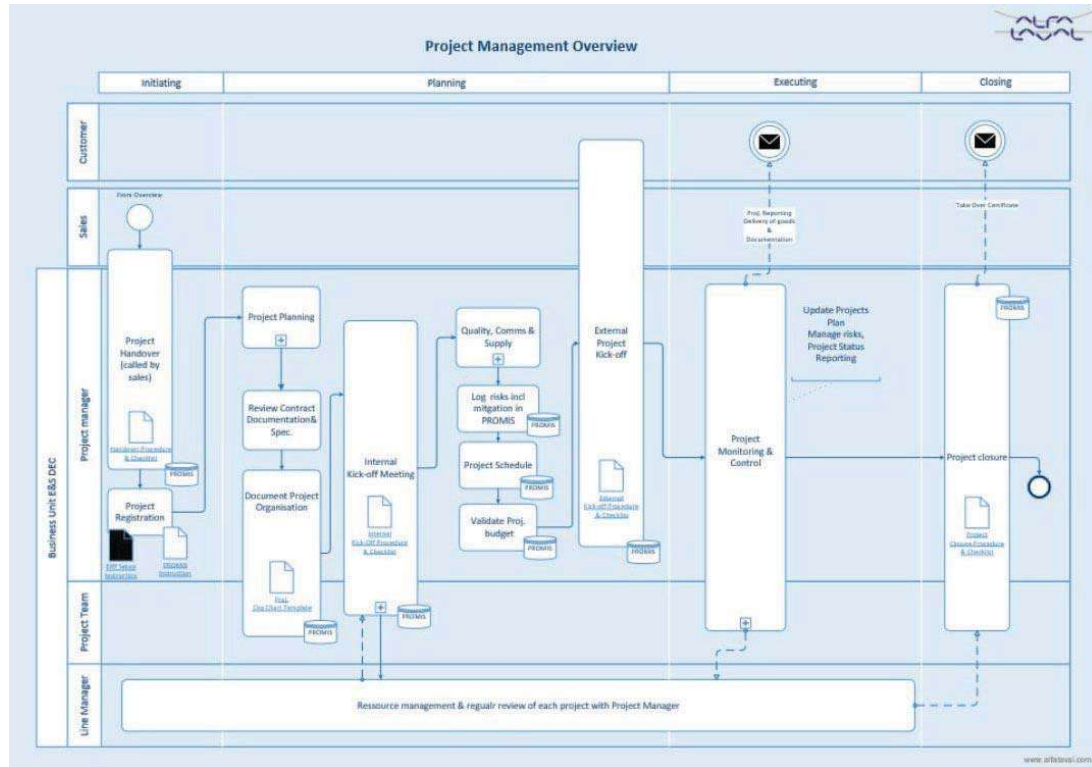
- Acting as Project Manager displayed extensive experience in managing/supervising within a multi-culture, fast-paced environment. Planned and coordinated activities to meet production schedules and stay within budgets. Understanding of ISO standards and TQL/TQM. Actively pursuing PMP Certification. Principle strengths include.
- Accomplishments: Acting as Project Manager directly manages over 45 projects worth over 55 million dollars. Directly interfaces with sales, segment managers, and external customers while managing capital order projects to meet established project schedule and budget.
- Developing engineering solutions for each project in collaboration with business units
- Coordinates all Project Manager activities
- Supports and assists sales personnel in responding to customer requests for commercial and technical information
- Maintains order backlog and margin report.

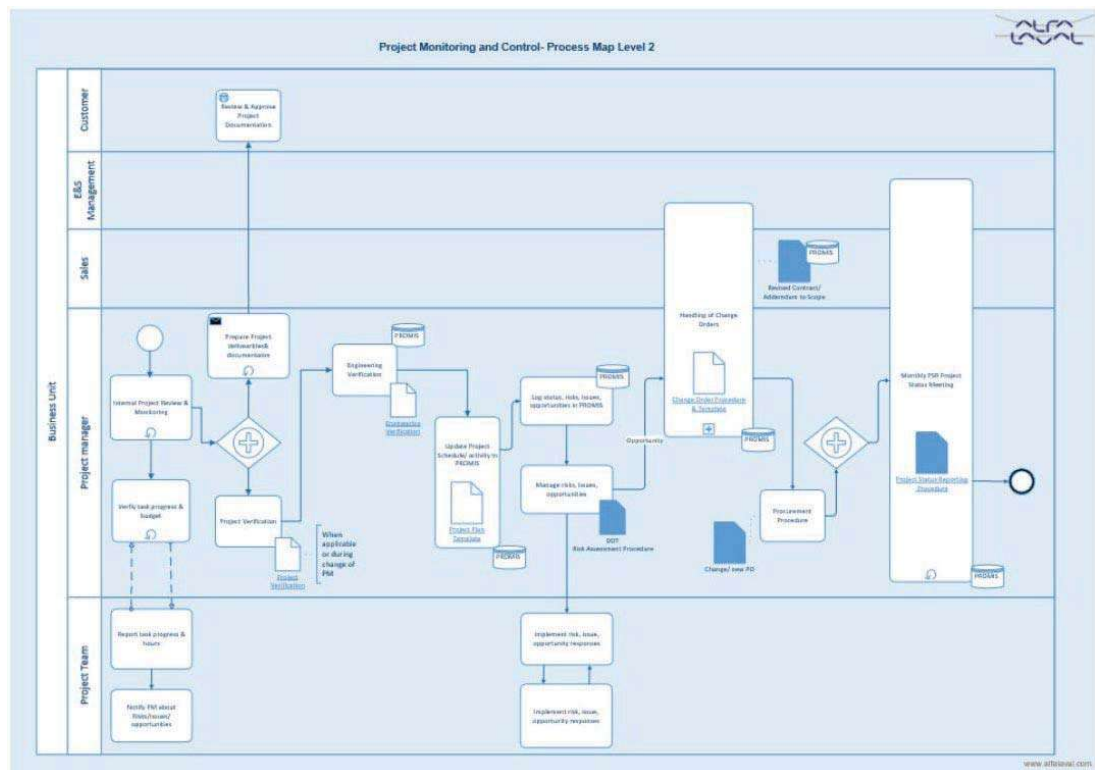
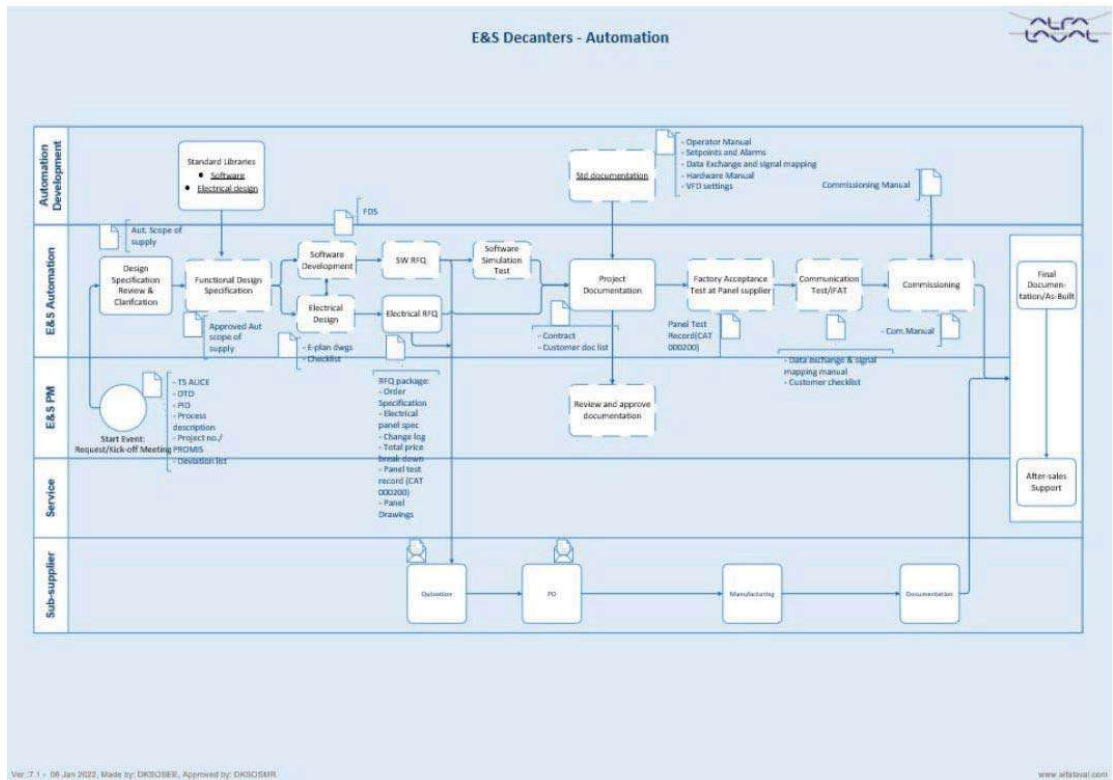
Production Planning Coordinator, Alstom Power (September 2010 – December 2013)

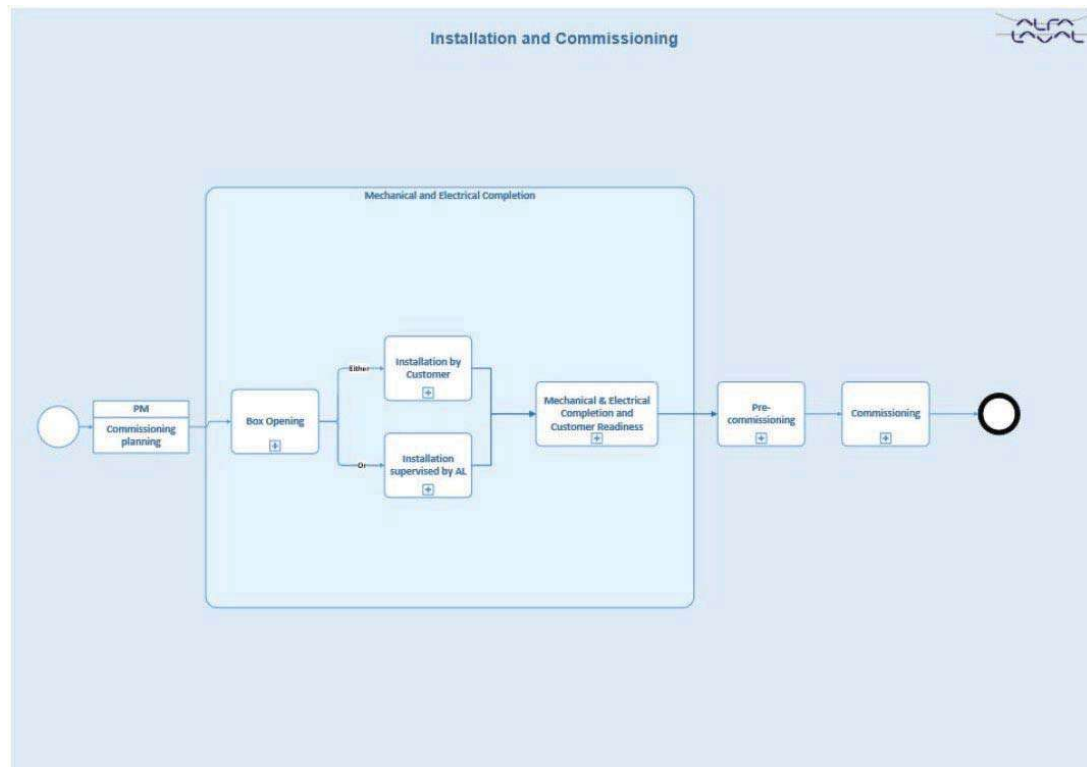
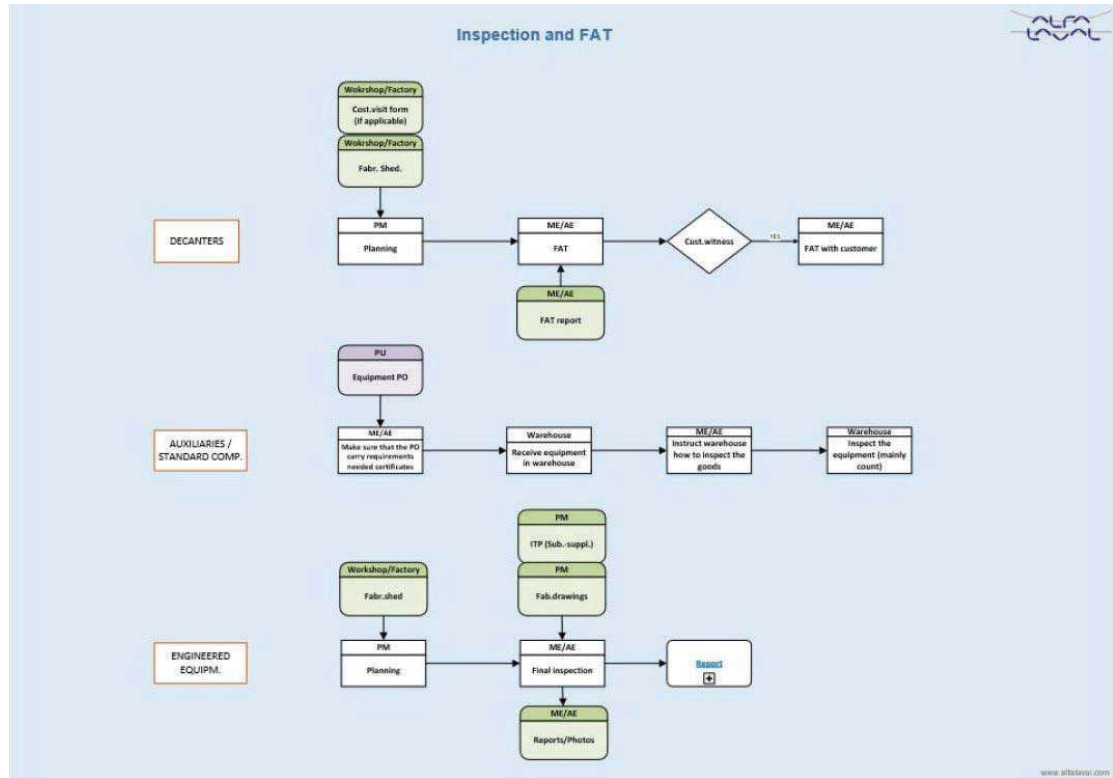
Senior Project Manager, Alstom Power (Oct 2007 - Sep 2010)

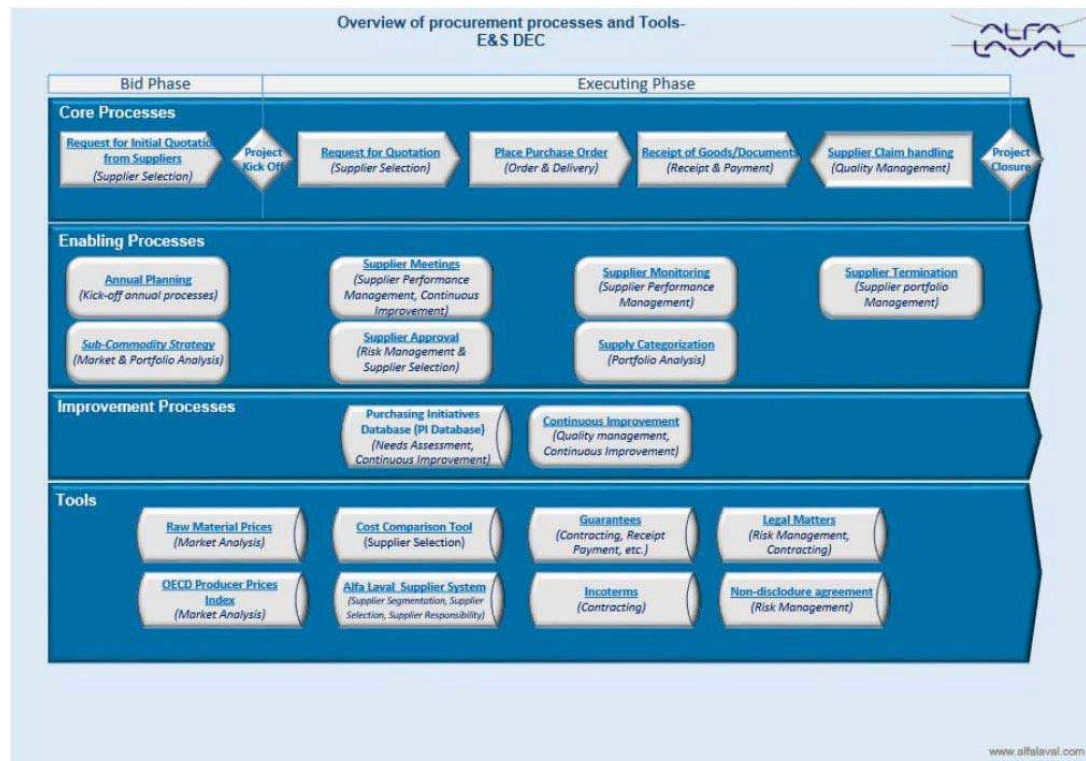
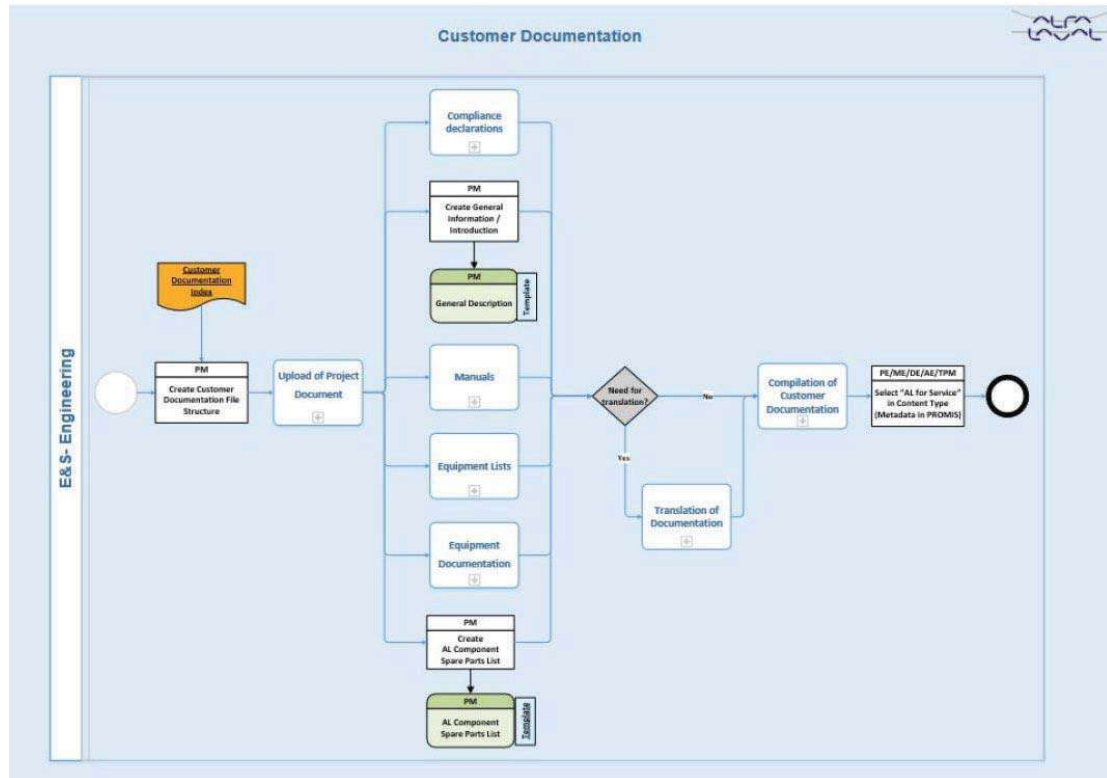
(b) Project management methodologies, strategies, and systems

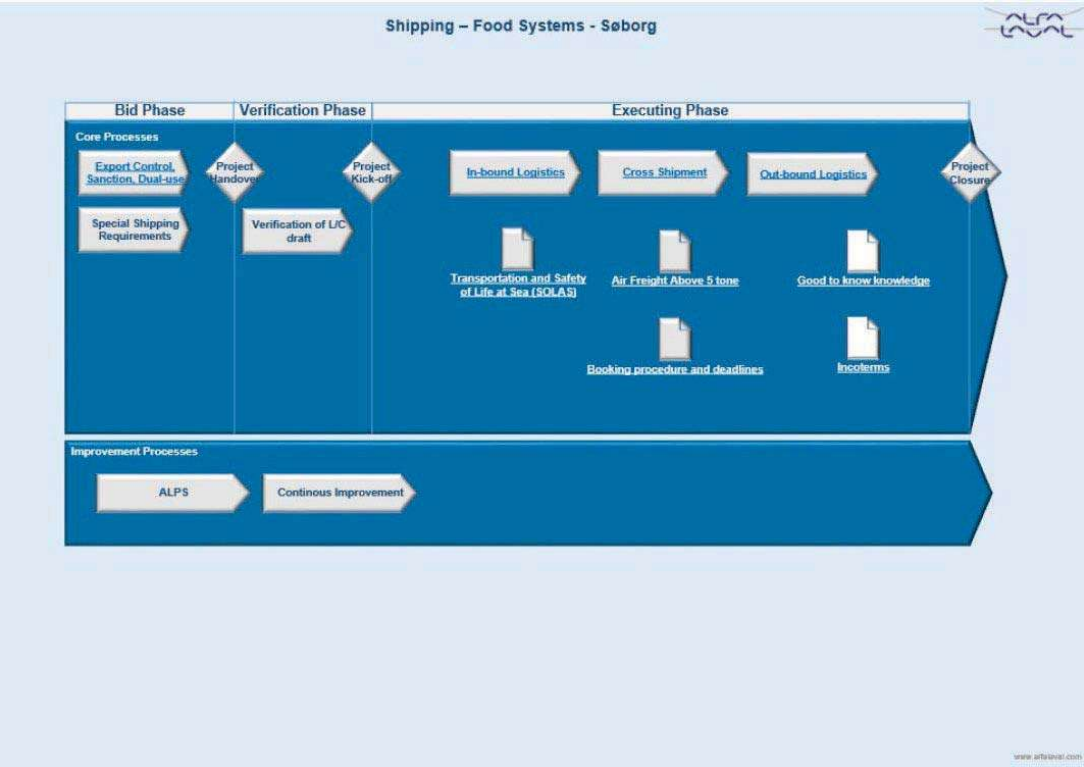
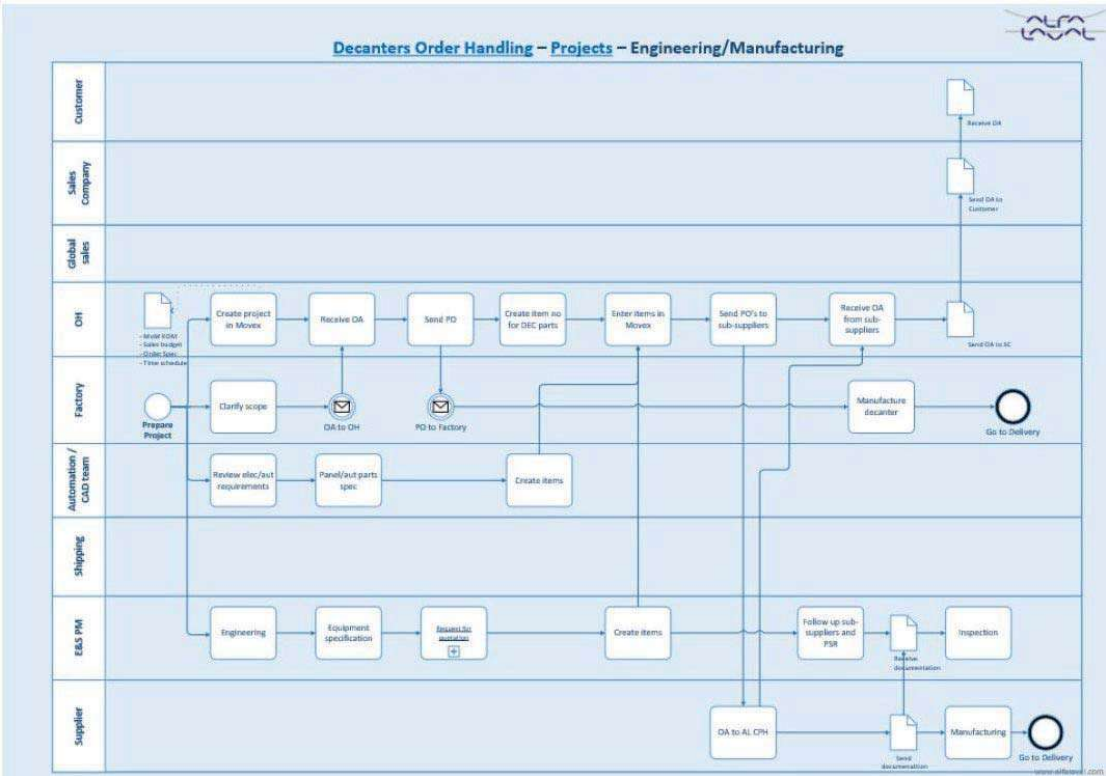













(c) Quality control, testing, inspection, and training as specified for centrifuge system.

The following typical plans are attached in this section:

- Standard Inspection and Test Plan – decanter centrifuge factory
- Standard Factory test procedure for decanter centrifuges
- Sample Factory test certificate for decanter centrifuges
- Sample material certificate for centrifuge bowl
- Sample motor test report
- Sample noise test report
- Typical Decanter centrifuge on-site/field Training outline

MANUFACTURER NAME AND ADDRESS		 <div>Inspection & Test Plan for decanter centrifuge</div>				DEC NO				
ALFA LAVAL KRAKOW SP Z O.O						PAGE NO.				
UL ZAWILA 56 36-390						DATE				
KRAKOW - POLAND						CUSTOMER NUMBER				
ISSUED BY : Tomasz Krzewski - Unit Manager - Quality, Decanter Factory						DECANTER NAME				
APPROVED BY						CUSTOMER				
INSPECTED BY										
No	DESCRIPTION	CHARACTERISTIC CHECKED	METHOD OF CHECK	CHECK RATIO	REFERENCE STD./ ACCEPTANCE STD.	T OF RECORD	INSPECTION AGENCY			OBSERVATION /REMARKS
							P	W	V	
1.0	RAW MATERIAL									
1.1	Raw material for Bowl parts (Cylinder, End Hubs and Cone)	Mechanical and Chemical Properties	Manufacturer's TC/ Laboratory TC	GRI	Material test reports	Material test reports	1	1	2	
1.2	Raw material for Conveyor Parts	Mechanical and Chemical Properties	Manufacturer's TC/ Laboratory TC	GRI	Material test reports	Material test reports	1	1	2	
2.0	CONVEYOR									
2.1	Conveyor dimensional Inspection	Dimensions of Conveyor	Measurement	100%	Conveyor Drawing	Conformance report	1	1	2	
2.2	Conveyor balancing	Unbalance in Conveyor	Dynamic Balancing	100%	ALQMS-705457785-7	Balancing report	1	1	2	
3.0	BOWL PARTS (END HUBS, CYLINDER AND CONE)									
3.1	Paint inspection				ISO 12944					
3.2	Dimensional Inspection	Dimensions of Bowl parts	Measurement	100%	Part drawings	Conformance report	1	1	2	
3.3	Bowl balancing	Unbalance in Bowl assembly	Dynamic Balancing	100%	ALQMS-705457785-6	Balancing report	1	1	2	
4.0	MOTOR AND CONTROL PANEL									
4.1	Motor	Performance	Co-relation with Manufacturer's TC	100%	Alfa Laval standards	Manufacturer's TC	1	1	2	
4.2	Control Panel (If applicable)	Electrical controls	Co-relation with Manufacturer's TC	100%	Alfa Laval standards	Manufacturer's TC	1	1	2	
5.0	GEAR BOX									
5.1	Balancing of Gear Box	Unbalance in Gear Box	Dynamic Balancing	100%	Gear Box Drawing	Gear Box balancing report	1	1	2	
6.0	FINAL TESTING OF DECANter									
6.1	Decanter Performance Test run on test bed for 12 hours	Bearing vibrations and Temperature	Measurement	100%	Decanter FAT procedure ALQMS-705457785-31	Decanter test report	1	2	N/A	
7.0	PRE DESPATCH INSPECTION									
7.1	Final inspection before despatch	Completeness of scope of supply	Visual	100%	Customer PO	Decanter Inspection Report	1	1	2	
Comments A31-F38-						P - Processing Agency W - Witnessing Agency V - Verifying Agency				
						Signed by Signed by (Customer)				



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Gronnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Factory Test of Decaners

Table of Contents

1	Purpose	2
2	Scope	2
3	Responsibility	2
3.1	Business Unit Decaners	2
3.2	Factory production engineering	2
3.3	Production department	2
3.4	Factory Quality Department/ Assembly site quality responsible	3
4	Instruction	3
4.1	Test Procedure	3
4.1.1	Preparation for test	7
4.1.2	Initial test run and balance check	8
4.1.3	Factory test	11
4.1.4	Additional tests and test of electrical equipment	14
4.1.5	Check of decanter after test and preparation for packing	17
4.2	Registration of data	18
4.3	Deviations and concessions on non-conformance	18



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Gronnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Description

Instruction for Factory Acceptance Tests of decaners.

1 Purpose

This instruction shall ensure that all decaners centrifuges are tested according to the same Factory Test Procedure after assembly. The factory test shall ensure that all decaners we deliver fulfil the quality requirements.

2 Scope

The Factory Test Procedure defined by this instruction must be followed for all decaners at all Alfa Laval production and assembly sites for decaners.

3 Responsibility

3.1 Business Unit Decaners

Responsible for:

- The content and maintenance of this instruction.
- Defining the Factory Test Requirements for all decaners and the Acceptance Criteria for all decanter types and sizes.
- For all New Product Development projects, factory test requirements must be considered, and this instruction must be updated with the relevant new requirements.

3.2 Factory production engineering

Responsible for:

- Facilities and equipment for test of decanter centrifuges.
- Necessary instructions for use of equipment and test stands.
- Providing means for registering of basic balancing data as requested in the instruction.

3.3 Production department

Responsible for:

- Executing the factory test according to this instruction.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

- Registering test data and filling out factory test forms.
- Surveillance of factory testing to ensure that it carried out according to this instruction.

3.4 Factory Quality Department/ Assembly site quality responsible

- Remedial actions and decisions when acceptance data are not met.

4 Instruction

4.1 Test Procedure

The decanter factory test can be divided into five main sections.

- I. Preparation for test
- II. Initial test run, bowl balancing and balance check
- III. Factory test of decanter
- IV. Additional tests and test of electrical equipment
- V. Check of decanter after test and preparation for packing

For all decaners specified with a maximum feed temperature of 100 degrees Celsius in the ALICE ordering system, the vibration and balance tests shall be carried out with a water temperature of 80-85 degrees Celsius. For decaners specified with a maximum feed temperature not above 60 degrees Celsius, the test can be carried out with water at ambient temperature.

Report test results is reported using document template S-2/1028E. Additional tests are reported in separate documents.

Vibration measurement equipment and settings

The manufacturing or assembly unit must have vibration measurement equipment, which makes it possible to analyze and distinguish vibrations at bowl and conveyor speed, when the decanter is running with a differential speed of 10 r.p.m. and above. Examples are Vibroport 42, Vibrotest 60, Vibroport 80 (all from BKVIBRO) and Robal from VIKON or similar high resolution FFT vibration analyzers.

For overall vibration measurement the measurement equipment shall be set to indicate r.m.s (root mean square) vibration velocity. The frequency range shall be 10-1000 Hz and the total vibration level readings shall be based on 60 seconds averaging time.

For frequency analysis the signal filter or signal window in the FFT vibration analyzer shall be set to "Flat Top" for correct indication of vibration amplitude. The equipment shall be set to



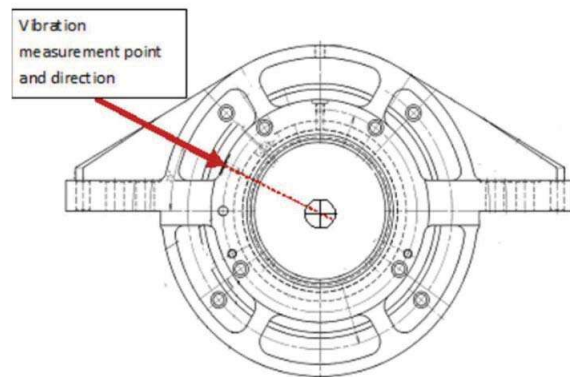
Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

frequency domain averaging mode using at least 4 averages and the levels shall be indicate as r.m.s vibration velocity.

The measurement equipment must be calibrated regularly following the relevant quality instructions.

Vibration measurement reference points and direction

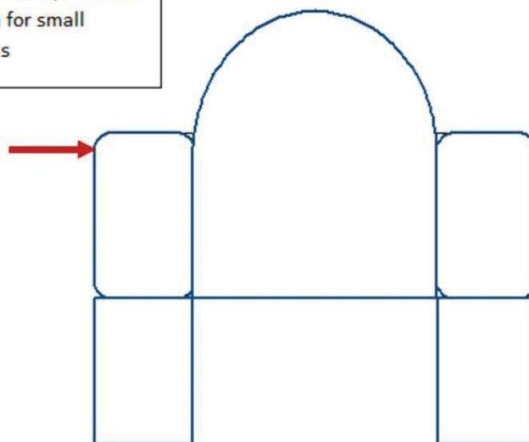
The reference point for all vibration measurements are the main bearings. For data registration and acceptance testing purposes only one measurement direction shall be used on each main bearing. It shall be the same direction on both bearings. The direction must be in a vertical plane perpendicular to the rotor axis and in a mainly horizontal direction (between 0-25 degrees) and always pointing to the centre of the axis of the rotor, as shown in the picture below. The attachment point for the vibration sensor must be on the bearing housing as close to the bearing as possible. On the smallest decaners, where it is not possible to measure on the bearing housings due to the decaners physical size, it is allowed to measure in the horizontal direction on the top of the decanter frame, with the sensors located at the same axial position as the main bearings.





Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Measurement point and direction for small decaners



Direction between 0-25 degrees.

Vibration measurement types

Two types of vibration measurements are used in this instruction and they will be explained here.

1. Total vibration level:

This vibration level corresponds to the ISO 20816-1 standard requirements for vibration level measurements. The vibration level which shall be reported is the r.m.s. (root mean square) vibration velocity in [mm/s] measured in a frequency band of 10-1000 Hz. The requirement on total vibration levels for decaners are based on 60 seconds averaging time in order to level out the influence of the differential speed. The total vibration level can be measured directly with a B&K 2513 vibration meter set to r.m.s. and Leq=60s or with similar equipment.

2. Frequency analysis:

The main purpose of a frequency analysis is to determine the source for the vibrations of a decanter. By carrying out a frequency analysis with a frequency resolution which is significantly smaller than the differential speed (3 rpm=0.05 Hz), the vibration amplitude at the conveyor speed and the vibration amplitude at the bowl speed can be determined. If the vibration measurements are triggered by a fixed trigger point on the bowl, the phase angle of the vibration at bowl speed with respect to this trigger can be determined and therefore used for balancing of the bowl.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Normally the major part of the vibrations of a decanter are caused by bowl and conveyor unbalances, but there can be situations where there are high vibrations at other frequencies and this will indicate that there is a fault on the decanter such as misalignment of bearing housings, resonance of parts, bearing faults, etc. If the total vibration level is high and the bowl and conveyor related vibrations are low, it is an indication of a fault and a frequency analysis of the vibrations and troubleshooting must be carried out. A full frequency analysis in the range from 10-200 Hz and in the range from 10-1000 Hz can be necessary for troubleshooting purposes in some cases.

Table 1. Vibration measurement and frequency analysis at main speed.			
Data which shall be measured and registered.			
	Total vibration level measurement	Frequency analysis	
Large end bearing:	Vibration level [mm/s] r.m.s. 10-1000 Hz 60 sec. average	Vibration amplitude at bowl speed [mm/s] r.m.s.	Vibration amplitude at conveyor speed [mm/s] r.m.s.
Small end bearing:	Vibration level r.m.s. 10-1000 Hz 60 sec. average	Vibration amplitude at bowl speed [mm/s] r.m.s.	Vibration amplitude at conveyor speed [mm/s] r.m.s.

Test speed

The decaners are tested at maximum bowl speed and at operating speed. If the operating speed is same as maximum bowl speed the whole test is run at maximum bowl speed. The test speed data shall be taken from the ALICE order specification. At testing the speed may vary ± 30 rpm from the specified speed.

Braking of the decanter with liquid filled bowl during the test

To avoid spilling of liquid the decanter must be decelerated slowly whenever it is stopped with a liquid filled bowl during the test sequence. This can be accomplished by either letting it run down freely or by using a sufficiently long ramp down time on the frequency inverter.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Gronnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

4.1.1 Preparation for test

Secure the decanter properly to the floor or foundation before test. It is for safety reasons not allowed to test the decanter without securing it to the floor or foundation.

Connect feed pipe, electrical equipment, lubrication pumps etc., necessary to run the decanter.

The decanter must be able to run with a differential speed which makes it possible to analyze if vibrations are related to bowl or conveyor speed. The differential speed must be as high as the back-drive configuration allows and if possible, the maximum differential speed taken from the DSS order specification. For decaners with an ordinary planetary gearbox the sun wheel can rotate in both directions, and at maximum differential speed the direction of rotation usually is opposite to the bowl. On Decaners with DD-gearboxes the sun wheel must always be driven with a motor to obtain a differential speed. On most decaners with DD-gearbox the back-drive motor shall rotate in the same direction as the bowl, but on a few decaners with leading conveyor the direction of rotation shall be opposite to the bowl. Check with the specification.

Define a trigger angle at the bowl circumference and affix a trigger - usually reflective tape - to the gearbox or another part of the rotating assembly.

Check of main drive pulleys - important

Check that the decanter is fitted with the correct pulleys according to the ALiCE specification and that the frequency of the frequency inverter is set to the correct value, so that the maximum bowl speed of the decanter is not exceeded during the test.

Check the alignment of pulleys and motor. Miss alignment cause vibrations, reduced power transmission and wear of V-belts.

Read and note the operating bowl speed and the maximum bowl speed on the ALiCE order specification.

Check that the frequency inverter frequency matches the frequency on the ALiCE order specification at the operating speed with a tolerance of ± 0.5 Hz.

Lubricate the bearings according to instruction [Lubrication of Main Bearings and Conveyor Bearings](#) and start the test.

2-phase decaners



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

On 2-phase decaners the liquid level must be set to neutral. For decaners with dam plates or power plate's neutral level is equal to the solids outlet radius found in the DSS order specifications. On decaners with power tubes the tubes should be set to the 0-position.

3-phase decaners

3-phase decaners must be checked for leakage between the liquid phases. A 2-phase outlet funnel must be mounted on the liquid outlets and when checking for leakage one outlet is closed at the time. On decaners with level tube a phase is closed by turning the tube opening to point toward the centre of rotation. The open phase must be set to at positive level; at least +10 are recommended. If water runs out from solids outlet the level must be increased.

Decaners with paring disk

Decaners with paring disk must be tested for leakage. The leakage test must be performed at two flow conditions, at 90% of full paring disk capacity with a counter-pressure of 2 bar gauge and at 50% capacity with a counter-pressure of 6 bars. There must be a Constant Pressure Valve (CPM) and a pressure indicator on the outlet line from the paring disk. Before test the regulating tubes for the paring disk shall be adjusted to the largest possible radius and after the test reset to the level specified in the ordering specification.

Sealed decaners

Sealed decaners must be careful prepared and tested. The test procedure is described in Instruction [Test of gas tight decaners](#). When starting a sealed decanter first time or starting a decanter with new carbon fiber seals the start procedure described in the instruction must be followed to avoid damaging the carbon seals and the main bearings.

Decanter with rotating feed zone

This decanter type usually has three motors. The normal main drive is divided in two, a bowl drive motor and a motor running the feed rotor. The feed rotor speed must be approximately half of bowl speed and it is recommended to start both motors at same time.

Factory test of this decanter design follow the standard test in chapter 4.1.3 Factory test.

4.1.2 Initial test run and balance check

Start the decanter without feed.

- I. Increase the speed of the empty decanter slowly until maximum bowl speed is reached or the total vibration level on the main bearings exceeds 18 mm/s r.m.s.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Table 2. Acceptance criteria for vibration of decaners - mm/s r.m.s.
 Values are at maximum bowl speed

Design code	Bowl diameter [mm]	Max. total vibration level 10-1000 Hz Average - 60 seconds [mm/s] r.m.s.	Max. vibration amplitude at bowl frequency [mm/s] r.m.s.	Max. vibration amplitude at conveyor frequency [mm/s] r.m.s.
NX904	200	6.0	3.0	5.0
NX910, 911, 912, 913	280	6.0	3.0	5.0
NX418, 420, 422	353	6.0	3.0	5.0
NX3651, 3652, 3656	360	6.0	3.0	5.0
NX4031, 4032	400	6.0	3.0	5.0
NX4451, 4452, 4456	440	6.0	3.0	5.0
NX934, 935, 936, 937	450	6.0	3.0	5.0
NX438, 439*	480	8.0	3.0	6.0
NX4931, 4932	490	6.0	3.0	5.0
NX5041, 5042, 5046, 5051, 5052, 5052R	500	6.0	3.0	5.0
NX5151, 5152	510	8.0	3.0	6.0
NX5541, 5542, 5541R, 5542R	550	6.0	3.0	6.0
NX5730, 5732	570	6.0	3.0	5.0
NX944, 944 HS, 945	575	6.0	3.0	5.0
NX6541, 6542, 6541R, 6542R, 6546	650	8.0	3.0	6.0
NX7241, 7242	720	6.0	3.0	5.0
NX706, 707 - DS706	740	8.0	3.0	6.0
NX10041, 10042, 10046	1000	6.0	3.0	5.0
XM905 - DS906	1016	6.0	3.0	5.0

* Some conveyors designed for NX438 and NX439 have two close located natural frequencies that interact and can cause vibration problems. A decanter that cannot meet the acceptance level at conveyor frequency at max speed 3650 rpm can be accepted if the conveyor vibrations at 3450 rpm is within acceptance level and the total vibration level at maximum bowl speed is within acceptance level 8.0 mm/s.

If the acceptance criteria are not met, see section on rules for deviations and concessions on non-conformance in section 4.3.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

4.1.3 Factory test

The purpose of the factory test is to verify the quality of the decanter and ensure that the decanter runs stable at the operating speed.

This part of the test must be conducted with the correct upper casing which will be delivered with the decanter.

During the factory test, the upper casing and the decanter shall be carefully observed to detect for leakage. Also check the decanter for unusual noise and vibrations of components in order to see if all parts are correctly attached and that motor vibration isolators are functioning.

The factory test will consist of:

If the operating speed is identical to the maximum bowl speed:

- I. Test at maximum bowl speed - test period according to column 4 in table 3 below.

If the operating speed is lower than the maximum speed:

- I. Test at maximum bowl speed - test period according to column 5 in table 3 below.
- II. Test at operating speed or maximum bowl speed - test period according to column 6 in table 3 below.

In all cases, the test shall end, and final vibration readings taken first when the total vibration level has stabilized.

At the start and end of each test sequence, the following measurements shall be recorded:

- I. Total vibration level + Frequency analysis
- II. Main bearing temperatures
- III. Test cell temperature
- IV. Water temperature
- V. Check water cooled oil lubrication systems according to table 4

Note: For decaners with bowl diameter below 300 mm, a measurement of the total r.m.s. vibration level is enough, a frequency analysis of vibrations is not required.

During the test, check vibrations on attached parts with a hand-held instrument in order to detect if all parts are properly attached and that the motor vibration isolators are functioning. "Take a walk around the decanter". Note the inspection result in the test report.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Measure the gearbox temperature immediately after the test.

Temperature limits:

Main bearings – stable temperature: Ambient temperature + 50 °C (Max 100 °C)

Gearbox temperature aftertest: Ambient temperature + 60 °C (Max 100 °C)

Flow rates and test duration is listed in the Table 3, below.

UNREGISTERED COPY



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Table 3. Test parameters

Maximum bowl speed and operating speed are run according to the ALICE ordering specification for the decanter. *The maximum permissible bowl speed for each design code must not be exceeded.* Tolerance on speeds: ± 30 rpm.

Design Code	Bowl diameter [mm]	Flow rate [m ³ /hr] (* see note)	Test time Test at maximum speed only	Test time Test at maximum and operating speed		Max. permissible bowl speed [rpm]
			Max. speed [min]	Max. speed [min]	Operating speed [min]	
NX904	200	0.5 -1	90	45	45	5300
NX910, 911, 912, 913	280	2-3	90	45	45	4400
NX416, 417, 418, 420	353	4-5	120	60	60	4000
NX422	353	4-5	120	60	60	3600
NX3651, 3652, 3656	360	4-5	120	60	60	4200
NX4031, 4032, 4036	400	9-10	120	60	60	3350
NX4451, 4452, 4456	440	9-10	120	60	60	3800
NX934, 935	450	9-10	120	60	60	3250
NX936, 937	450	9-10	120	60	60	2900
NX438, 439	480	9-10	120	60	60	3650
NX441	480	9-10	120	60	60	3250
NX4931, 4932	490	9-10	120	60	60	2900
NX5041, 5042, 5046	500	9-11	120	60	60	3600
NX5051, 5052, 5052R	500	9-11	120	60	60	2850
NX5151, 5152, 5156	510	10-13	120	60	60	3250
NX5541, 5542, 5541R, 5542R	550	10-15	120	60	60	3400
NX5731, 5732	570	10-15	120	60	60	3400
NX944, 944HS, 945	575	10-15	120	60	60	3075
NX6541, 6542, 6541R, 6542R, 6546	650	13-18	180	90	90	3100
NX7241, 7242	720	15-20	180	90	90	2900
NX706, 707 - DS706	740	15-20	180	90	90	2800
NX10041, 10042, 10046	1000	20	240	120	120	2200
XM905 - DS906	1016	20	240	120	120	2100



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Gronnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

*For decaners with paring discs the flow rates may be used as described in the 'paring disc' section.

Table 4. Check of water-cooled oil lubrication system - reference values

			Small end bearing		Large end bearing	
	Oil temperature Inlet [°C]	Supply pressure [PSI]	Oil Flow [litre/min]	Oil temperature return [°C]	Flow [litre/min]	Oil temperature return [°C]
NX706, 706 Decanter mounted	45	6-7				
DS706, XM905, DS906 Floor mounted	40	6-7	40-60	60	40-60	60

When test is completed do as follows:

- Check oil filter and replace if it is contaminated
- Inspect oil tank for metallic debris and clean if needed
- Check all connections and fittings for leakage
- Inspect welding seams at all connections and asses the quality of the welding seams

4.1.4 Additional tests and test of electrical equipment

Some decaners have several design specific tests that shall be done in addition to the standard factory test described above. Additional customer requirements for testing and customer inspection can be carried out as a part of the Factory Test. Individual planning must be made for each case. The design defined, and standardized costumer tests are:

- I. 3-phase decaners – mandatory
- II. Paring disc decaners – mandatory
- III. Sealed decaners – mandatory
- IV. Decaners with CIP – mandatory
- V. Noise test – optional costumer requirement
- VI. Test of control system - mandatory

3-phase decaners



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

The additional test of 3-phase decaners is checking for leakage between the liquid phases. One liquid outlet at the time is closed and if water comes out from the closed outlet there is a leakage and it must be measured and compared with leakage limits.

Table 5. Flow rate and max allowed leakage for 3-phase decaners				
Design code	Bowl diameter [mm]	Flow [m³/h]	Leakage limit	
NX910, 911, 912, 913	280	3.0	1.0%	(30.0 l/h)
NX418, 420, 422	353	5.0	1.0%	(50.0 l/h)
NX3651, 3652, 3656	360	5.0	0.3%	(15.0 l/h)
NX4451, 4452, 4456	440	10.0	0.3%	(30.0 l/h)
NX438, 439*	480	10.0	1.0%	(100.0 l/h)
NX5041, 5042, 5046, 5051, 5052	500	10.0	0.3%	(30.0 l/h)
NX5151, 5152	510	13.0	0.3%	(39.0 l/h)
NX5541, 5542, 5541R, 5542R	550	15.0	0.3%	(45.0 l/h)
NX944, 945	575	15.0	1.0%	(150.0 l/h)
NX6541, 6542, 6541R, 6542R, 6546	650	18.0	0.3%	(54.0 l/h)
NX7241, 7242	720	20.0	0.3%	(60.0 l/h)
NX706, 707	740	20.0	1.0%	(200.0 l/h)

Paring disc decaners

Decaners with paring disk must be tested for leakage at 90% of full paring disk capacity and at 50% of full capacity with a counter-pressure of 2 bar respectively 6 bar gauges. The leakage must be observed over 15 minutes at each flow/pressure conditions. The regulating tubes for the paring disk shall be adjusted to the largest possible radius at the test and reset to the level specified in the ordering specification after the test.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Table 6. Maximum allowed leakage for paring disc decanter centrifuges			
Design code	Bowl diameter [mm]	Leakage limit	
		90% of full paring disc capacity and 2 bar gauge	50% of full paring disc capacity and 6 bar gauge
NX911, 912, 913	280	3.0 l/h	3.0 l/h
NX3650, NX4450, NX5040, NX 5050, NX5150, NX6540, NX7240	360, 440, 510, 650 and 720	5.0 l/h	5.0 l/h
NX418, NX438, NX944/945, NX706/7	353, 480, 575 and 740	10.0 l/h	10.0 l/h

Sealed decaners

Decaners with seals and purge panels must be checked according to instruction [Test of gas tight decaners](#) in connection with the factory test. The instruction must be followed strictly, and the decanter must pass all sections of the test instruction. All acceptance limits are described in the instruction. The test sheet specified in the instruction must be filled in and stores with the factory test report.

Decaners with CIP

On all decaners with CIP arrangement in the cover, this arrangement must be tested with water to check that connections and nozzles do not leak. Leakage from the CIP arrangement must be done with water at a flow that cause between 2 - 3 bar gauge on the CIP supply line.

Leakage is not accepted.

Noise test

A noise test can be offered on customer request. The noise test is primarily for the American market and performed according to ANSI standard S1.13-2005. The noise test procedure is described in [Noise Test Decanter](#).

In case that another standard is requested by the customer this can only be accepted after evaluation and agreement with Decanter R&D.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Before noise test it must be checked that all outlets are connected to the water tank arrangement used for factory testing with closed pipe connections. All covers and guards must be mounted during noise testing and before the test it must be checked that there is no loose part that generate undesired noise.

Data from measurement as well as registration of decanter type, size, etc. are written in the relevant form (see S2-1095E).

Control system

For all decaners with control system it shall be checked, with the control box belonging to the decanter connected, that the temperature measurements on main bearings, vibration measurements and bowl speed measurement of the control system are correct. The reference speed measurement at this test must be independent from the control system.

4.1.5 Check of decanter after test and preparation for packing

Before packing of the decanter:

- Check that the Cover can be closed and opened correct - see below
- Control tightening torque for bowl assembly - note in the test log if torque has changed
- Control tightening of main bearing bolts
- Check electric equipment
- Check control system according to [Test of decaners with Basic control system](#), [Test of decaners with BCC control system](#) or [Test of decaners with Plus control system](#)
- Check oil level in gearbox and inspect the gearbox seals
- Tighten the belts in accordance with the drawing specifications.
- Check alignment of motors and pulleys
- For decaners with GS-Coupling check and adjust the release torque for the GS-coupling according to Release torque specifications on the GS-coupling assembly drawing.
- Lubricate main and conveyor bearings according to [Lubrication of Main Bearings and Conveyor Bearings](#)
- Drain all liquid out of the bowl, by lifting the decanter legs to tilt the machine for example

When the cover is closed there must not be any gap between brackets and the frame

It is a safety issue that covers with spring supported hinges is opened and closed according to design specifications:



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

- When all screws have been untightened check that the cover easily can be opened
- The cover must have a rest position at angle close to 40 degrees from closed.
- It must be easy to close the cover from rest position.
- Open the cover to vertical and check that it is stable
- Give the cover a push and check that it stops close to rest position – the cover must not close completely.

If any deviation is observed, the spring configuration must be adjusted.

4.2 Registration of data

Ensure that required data are recorded and filed. All test data must be stored electronically in an environment shared by all decanter factories.

List of forms for reporting:

- Factory test S-2/1028
- Control system S-2/1094
- Sealed decaners S-2/1090
- Noise test: S-2/1095
- Final inspection S-2/1083
- 3-phase
- Paring disc

4.3 Deviations and concessions on non-conformance

If one or more of the quality requirements are not met at the test, the quality department must be informed to decide on remedial and corrective actions.

The quality department must make a deviation report and action report. If a new test run shall be carried out, the data from the "rejected" as well as the new test shall be kept.

Functional requirements such as leakage must always be met.

If the requirements to the vibration level are not met, a repeated balancing of bowl or conveyor can be necessary.

If the conveyor vibration exceeds the limits after repeated balancing, the quality department can consider a concession after agreement with Decanter R&D.



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Table 7a. Factory Test summary

	Action	Measurements - Data recording
Preparation for test	<ul style="list-style-type: none"> • Install and secure decanter in test cell • Connect necessary electrical equipment • Connect feed and outlet from decanter • Check decanter pulley size • Check alignment of pulleys and motors • Adjust paring disk level tubes to the largest possible radius 	<ul style="list-style-type: none"> • Note decanter serial number • Review ALiCE specification and identify all testing parameters
Initial test run and balance check	<ul style="list-style-type: none"> • Check the balance condition -vibration level - of the decanter • Analyse vibrations and balance bowl • Evaluate conveyor balance condition • Check vibration level with acceptance criteria 	<ul style="list-style-type: none"> • Vibration level and frequency analysis, empty bowl at first balancing speed • Vibration level and frequency analysis, water filled bowl at first balancing speed
Factory test	<p>Fit the decanter with its original cover and test:</p> <ul style="list-style-type: none"> • Minimum 60 minutes with flow at max. bowl speed. • Minimum 60 minutes with flow at operating bowl speed. <p>If operating speed is identical to maximum speed, continue 60 minutes at max speed. Total testing time is minimum 120 minutes.</p> <ul style="list-style-type: none"> • Check upper casing and paring disk (if present) for leakage. 	<p>At the start and end of each sequence, measure and record</p> <ul style="list-style-type: none"> • Test cell temperature • Flow rate • Vibration level and frequency analysis with flow • Bearing temperatures • Reference parameters for water cooled lubrication systems ref. Table 4 • Water temperature <p>At the end of the test, measure and record the gearbox temperature</p>



Title: Factory Test of Decaners	Document ID: ALQMS-705457785-31
Process: Realization	Approval Status: Approved Version: 3.0
Organization: DEC Decaners	Site: Soborg
Process Owner: Erland Grønnegaard	Description: Moved from Lotus Notes QI-8.2.4-09E
Document Owner: Kevin Cunningham	

Table 7b. Additional tests summary

	Action	Measurements - Data recording
Additional tests, and check of decanter after test	<ul style="list-style-type: none"> • Check leakage on 3-phase decaners • Check leakage on paring disc decaners • Check "gastight" decaners according • Check CIP on decaners with CIP • Carry out noise test if requested • Check bowl speed measurement of control system with independent measurement • Check open/closing function of covers with hinges: can the cover be opened and closed easily and do the cover stop at rest position when pushed to close • Control tightening torque for bowl assembly bolt connections • Control tightening of main bearing bolts • Check electric equipment and control system • Check oil lubrication system and change oil filters, if contaminated • Check oil level in gearbox and inspect the gearbox seals • Tighten the belts in accordance with the drawing specifications to the tension for new belts • Check alignment of motors and pulleys • Check and adjust release torque for GS coupling • Lubricate main and conveyor bearings • Re-adjust paring disk level tubes to the setting specified in the ALICE order 	<ul style="list-style-type: none"> • Note any deviation found in the test log and inform the quality department.

Example



Quality Certificate Works Test Certificate

Customer: _____

Customer's Reference:
Nathan Arjunan
Our Reference:
Pawet Dec
Customer Order:
PO 1323136001

Product No.: _____ Type Designation: _____ Serial No.: _____ Gearbox No.: _____

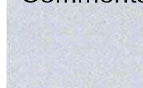
The above decanter has been run on test stand with water for two hours continuously under the following conditions:

Max. speed:	3400	rpm		
Operating speed:	3400	rpm		
Flow:	15000	l/h	30	°C

	Gear box end	Drive end	
Vibration level at max. speed:	2,7	3,8	mm/s RMS
Vibration level at operating speed:	2,7	3,8	mm/s RMS
Bearing temperature:	41	34	°C

During the test no irregularities or other defects were noticed according to test procedure. We hereby certify that the decanter described above has been tested and complies with the product description requirements of Alfa Laval Copenhagen A/S.

Comments:



Krakow: 16-04-2019

Form nr.: S-2 / 1052 Rev. 7

Alfa Laval Krakow
Decaners
Quality Inspection
Tomasz Krzewski

Inspector Kontrola Jakości
Tomasz Krzewski

Provningsintyg 3.1 / Work certificate 3.1					<div style="font-size: 2em; font-weight: bold;">00</div> <div style="color: blue; font-weight: bold;">OSTERBY GJUTERI</div>																																																																																		
Dokument nr / B10.14					Page 11(1)																																																																																		
Certifikat nummer / Certificate no 2018.281				Kund / Customer: ALFA LAVAL KRAKOW Sp.z o.o. Ul.Zawila 56 30-390 KRAKOW/ POLAND																																																																																			
Material: EN 10283 - GX2CrNiMoN22-5-3 Steel No 1.4470, AT OGAB ref R640-6 AL 111 2377-52, rev 7																																																																																							
Kundens best.nr och rel. / Customers Order No. and ref.			Orderdatum / Orderdate		OGAB ordernr / OGAB order No.																																																																																		
2579767			180910		12011																																																																																		
Chargenr/ Cast No:	Provnr/ Test No.	Detalj, Ritn.nr/ Detail, Draw. No.			Order dos.	Kvantitet/ Quantity																																																																																	
8700	64.6666	HUB SMALL 61245564			1	2																																																																																	
8700	6667	HUB SMALL 61245564			1	1																																																																																	
8700	60.6661	HUB LARGE 61245565			2	2																																																																																	
8700	6663	HUB LARGE 61245565			2	1																																																																																	
<div style="text-align: center;">An alysis % / Analysis %</div> <table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.8em;"> <thead> <tr> <th style="width: 10%;">Chargenr/ Heat no</th> <th style="width: 5%;">Mn</th> <th style="width: 5%;">C</th> <th style="width: 5%;">Si</th> <th style="width: 5%;">Mn</th> <th style="width: 5%;">P</th> <th style="width: 5%;">S</th> <th style="width: 5%;">Cr</th> <th style="width: 5%;">Ni</th> <th style="width: 5%;">Mo</th> <th style="width: 5%;">W</th> <th style="width: 5%;">Co</th> <th style="width: 5%;">Nb</th> <th style="width: 5%;">V</th> <th style="width: 5%;">Cu</th> <th style="width: 5%;">N</th> <th style="width: 5%;">Al</th> <th style="width: 5%;">Fe</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>21.0</td> <td>4.6</td> <td>2.11</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.12</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>0.03</td> <td>1.00</td> <td>2.00</td> <td>0.036</td> <td>0.026</td> <td>23.0</td> <td>6.6</td> <td>3.11</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.2</td> <td></td> <td></td> </tr> <tr> <td>8700</td> <td></td> <td>0.03</td> <td>0.65</td> <td>1.1</td> <td>0.021</td> <td>0.002</td> <td>22.3</td> <td>5.1</td> <td>2.9</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.17</td> <td>0.02</td> <td></td> </tr> </tbody> </table>							Chargenr/ Heat no	Mn	C	Si	Mn	P	S	Cr	Ni	Mo	W	Co	Nb	V	Cu	N	Al	Fe								21.0	4.6	2.11						0.12					0.03	1.00	2.00	0.036	0.026	23.0	6.6	3.11						0.2			8700		0.03	0.65	1.1	0.021	0.002	22.3	5.1	2.9						0.17	0.02										
Chargenr/ Heat no	Mn	C	Si	Mn	P	S	Cr	Ni	Mo	W	Co	Nb	V	Cu	N	Al	Fe																																																																						
							21.0	4.6	2.11						0.12																																																																								
		0.03	1.00	2.00	0.036	0.026	23.0	6.6	3.11						0.2																																																																								
8700		0.03	0.65	1.1	0.021	0.002	22.3	5.1	2.9						0.17	0.02																																																																							
<div style="text-align: center;">Hallslshelsprov / Mechanical Tests</div> <div style="text-align: center;">Tensile Test according to ISO 6892-1 // Impact Test ISO 148-1 with V-notch 10x10 // Hardness Brinell ASTM A370 and ISO 6606-1</div> <table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.8em;"> <thead> <tr> <th style="width: 10%;">Chargenr / Heat no</th> <th style="width: 10%;">Provn Test No.</th> <th style="width: 15%;">Sträckgräns / Yield Strength (N/mm²)</th> <th style="width: 15%;">Brottgräns / Tensile Strength (N/mm²)</th> <th style="width: 15%;">Förllängning / Elongation (%) 5xd</th> <th style="width: 15%;">Kontrakt i on/ Area Reduct (%)</th> <th style="width: 15%;">Slagseghet / Impact strenght (-10°C)</th> <th style="width: 15%;">Hardhet / Hardness (HB)</th> <th style="width: 10%;">Ferrite content %</th> </tr> </thead> <tbody> <tr> <td>Min</td> <td></td> <td>450</td> <td>880</td> <td>25</td> <td></td> <td>70</td> <td>200</td> <td>40</td> </tr> <tr> <td>Max</td> <td></td> <td></td> <td>860</td> <td></td> <td></td> <td></td> <td>260</td> <td>60</td> </tr> <tr> <td>8700</td> <td>6664</td> <td>477</td> <td>723</td> <td>36.0</td> <td>62.0</td> <td>147.147.147</td> <td>217</td> <td>47</td> </tr> <tr> <td>8700</td> <td>6666</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>48</td> </tr> <tr> <td>8700</td> <td>6667</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>47</td> </tr> <tr> <td>8700</td> <td>6660</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>48</td> </tr> <tr> <td>8700</td> <td>6661</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>46</td> </tr> <tr> <td>8700</td> <td>6663</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>48</td> </tr> </tbody> </table>							Chargenr / Heat no	Provn Test No.	Sträckgräns / Yield Strength (N/mm ²)	Brottgräns / Tensile Strength (N/mm ²)	Förllängning / Elongation (%) 5xd	Kontrakt i on/ Area Reduct (%)	Slagseghet / Impact strenght (-10°C)	Hardhet / Hardness (HB)	Ferrite content %	Min		450	880	25		70	200	40	Max			860				260	60	8700	6664	477	723	36.0	62.0	147.147.147	217	47	8700	6666							48	8700	6667							47	8700	6660							48	8700	6661							46	8700	6663							48
Chargenr / Heat no	Provn Test No.	Sträckgräns / Yield Strength (N/mm ²)	Brottgräns / Tensile Strength (N/mm ²)	Förllängning / Elongation (%) 5xd	Kontrakt i on/ Area Reduct (%)	Slagseghet / Impact strenght (-10°C)	Hardhet / Hardness (HB)	Ferrite content %																																																																															
Min		450	880	25		70	200	40																																																																															
Max			860				260	60																																																																															
8700	6664	477	723	36.0	62.0	147.147.147	217	47																																																																															
8700	6666							48																																																																															
8700	6667							47																																																																															
8700	6660							48																																																																															
8700	6661							46																																																																															
8700	6663							48																																																																															
Övrigt / Other: Penetrant Test: PT-testing has been done according to EN 571-1. All parts have been tested and accepted according to EN 1371-1 Level: SP2, CP2, LP2 and AP2. Ferrite content is measured with the mean value at five points. Tensile testing performed at Swerea Swecast.																																																																																							
Värmebehandling / Heat treatment: (V3) AT 1120°C (water) BATCH 4220 Details marked: Hllrmed lntygas alt provalng av mataltla11tllililownatieu• qaulfal / AL																																																																																							
We hereby certify, that the material is as described in the laboratory test report.																																																																																							
Ort/ Place Osterbybruk		Datum/ Date 181220		Namn / Name		CSTEABY GJUIBI																																																																																	

EXHIBIT A
PROPOSAL

WPCF Dewatering Building Equipment Rehabilitation Project

Alfa Laval Copenhagen A/S

Maskinvej 5
DK-2860 Søborg

Example



Subject: Noise test										
Type: <u>ALDEC 105</u>		Machine no.: <u>5250089</u>		Date Sign. / Operator: <u>17.04.18 STM/LSD</u>			Date Sign. / Quality Control: <u>Stgpol S</u>			
Participant:										
Customer representative:					Alfa Laval representative:					
_____					<u>S. Stgpol, J. Wojnicki,</u>					
_____					<u>D. Duda</u>					
Measurement Condition:										
Manufacturing no: <u>5250089</u>					Spec. Number: <u>9630604301</u>					
Design code: <u>Nx 5540</u>					Flow Rate: <u>15,0</u> m³/h.					
Bowl Speed: <u>3400</u> RPM					Solids discharge outlet and liquid outlet closed.					
Solids discharge outlet and liquid outlet closed.					Closed connection to the water tank system.					
Test location:										
Test cell: <u>2</u>					Floor Area: <u>98</u> m².					
Length: <u>14</u> m.					Room Volume: <u>406,7</u> m³.					
Height: <u>4,15</u> m.					Width: <u>7</u> m.					
Measurement Standard:										
ANSI 1.13-2005, Measurement of Sound Pressure Levels in Air.										
Measurement equipment:										
Sound Level meter:					Serial no 3024838					
½" Microphone:					Serial no 3177725					
Sound Level Calibrator:					Serial no 3022389					
Measurement uncertainty estimated to ±1 dB.										
Sound Pressure Level										
	Total A-weight L _{pa} dB(A)	Octave frequency bands Zero weighting Frequency [Hz]								
		31.5	63	125	250	500	1k	2k	4k	8k
Pos. 1	83,0	78,3	84,1	82,4	78,4	84,0	75,0	73,1	75,0	73,0
Pos. 2	82,0	78,2	84,0	84,6	77,1	78,8	74,7	72,6	74,8	72,5
Pos. 3	82,4	76,8	82,6	81,6	81,1	79,7	74,1	71,8	75,5	73,3
Pos. 4	80,5	70,1	85,5	77,1	74,3	76,1	72,0	70,5	75,6	71,5
Pos. 5	81,3	69,7	83,2	77,3	77,7	78,8	74,6	71,9	73,7	70,4
Pos. 6	82,5	74,7	86,7	80,1	76,7	80,6	76,7	72,9	73,9	70,5
Pos. 7	82,0	68,8	83,5	77,4	77,9	80,5	75,7	72,1	73,7	69,8
Pos. 8	80,6	67,5	82,5	80,3	74,3	76,7	75,2	71,2	74,2	66,3
Comments:										

Decanter Centrifuge Training Outline

Required Reading: (prior to training): Alfa Laval ALDEC G3-125 Decanter O&M Manual

- I. Operator Training I (classroom)
 - A. Presentation:
 - 1. Decanter Training, How the Decanter Centrifuge Works, Alfa Laval Decaners, Disassembly and Assembly
 - B. Cursory Review of O&M Manual (with Q&A)
 - C. Detailed review of O&M Manual
 - 1. Operators Manual, Preventative Maintenance Schedule, Troubleshooting
 - 2. Spare Parts Catalog
 - 3. Review and Discuss Parts and Field Service Support
 - a) During the Warranty Period, After the Warranty Period
 - 4. Review Operator Interface Unit (OIU)
- II. Operator Training II: (field)
 - A. Review System Components
 - B. Review and Demonstrate Normal Operating Procedures
 - 1. Start Up, Standby and Production Modes, Torque Control and Differential Control Modes
 - 2. Review Procedure for Selecting and Operating Auxiliary Equipment
 - a) Feed Pumps, Polymer Pumps, Diverter Gates
 - 3. Procedure for Setting and Modifying Process Parameters
 - a) Power Dam Plates, Sludge Feed Flow Rate, Polymer Feed Flow Rate, Lad or Differential Setting
 - 4. Shut Down
 - C. Alarms and Shutdowns
 - 1. Review Operator Interface, Identify Source of Alarm, Acknowledge Alarm, Clear Alarm
 - D. Cleaning
 - 1. Flush, Clean-In-Place
 - E. Disassembling and Assembling
 - 1. Rotating Assembly, Main Bearings, Conveyor Bearings, Conveyor, Main Drive, Back Drive
 - F. Troubleshooting

Controls Training Outline

- I. Introduction (classroom)
 - A. Review of course outline
 - B. Review the Operation & Maintenance (O&M) Manual contents
- II. Hardware review (field)
 - A. Starter panel, Operator panel, Centrifuge
- III. Operating Sequence (classroom)
 - A. Auto start-sequence, Production mode, Auto-stopping mode, Clean-In-Place (CIP) mode, Timers, Faults
- IV. Major Component Review
 - A. Operator panel, Back drive controller, Main drive controller, VFD control panel, VFD hardware and firmware manuals, Programmable Logic Controller (PLC)
- V. Trouble shooting
- VI. Q&A

Page 1 of 1



Review of Sample Contract

Dewatering Building Equipment Rehabilitation

Paragraph B-1:

(e) Unloading of equipment is excluded from Alfa Laval's scope of supply.

(g) Please strike "Prompt Payment Discount" as Alfa Laval does not offer this.

Paragraph D-3

(e) Please strike "Prompt Payment Discount" as Alfa Laval does not offer this.

Paragraph D-4

(c) 90 days after PO fabrication is unrealistic. This exception should not count against this evaluation. Please refer to Alfa Laval's proposal for estimated lead times.

(e) Please edit the 2nd sentence to read as follows: If the Goods are procured from another supplier, the Company shall pay the City any difference between the Contract price(s) and the price(s) paid to the other supplier plus any and all **reasonable** administrative costs associated with the re-procurement.

Paragraph D-7

- (a) Please edit this paragraph to read as follows: Company's Warranty The Company warrants that the Goods supplied to the City are (i) free of defects and deficiencies in design, workmanship and materials, ~~(ii) suitable for the purpose intended by the City,~~ (iii) in compliance with the applicable specifications, and (iv) free from any liens or encumbrances on title of the Goods. If, during the warranty period, any defect or deficiency is found in the Goods, the Company shall immediately, after notification by the City, proceed at its own expense to (i) repair the Goods on-site, together with remedying any damage caused to the finishes, fixtures, equipment and furnishings of the Goods, or (ii) replace the Goods if not capable of repair. If the repairs cannot be made on-site, the Company agrees to arrange at Company's sole expense for the transportation of the Goods to a repair facility unless otherwise agreed in writing by the City. The City's remedy for breach of this warranty is contained in Article 2 of the Uniform Commercial Code. The warranty set forth in this subsection shall be in effect for a period of **twenty -four (24) months from Substantial Completion NTE 30 months from delivery (as specified)** whichever is sooner. The Company must complete the warranty repair or replacement within the time set forth in subsection (d) below.
- (b) Please replace this paragraph with the following: For repairs, parts and Services provided by the Company, the Company warrants to the City that the repairs, parts and Services provided to the City will be free from defects in material and workmanship. The duration of this warranty is ninety (90) days from as applicable (i) the date the Equipment which required the repairs, parts or Services is returned to the City by the Company, (ii) the date of the City's receipt of the part, or (iii) the date of completion of the repair or other Services, if performed at the City's facility. If during this ninety day period the City discovers a defect in the repairs, parts or Services the City must promptly notify the Company in writing and the Company shall correct such defect with either new or used replacement parts or reperform the Services as applicable. If the Company is unable to correct the defect after a reasonable number of attempts, the Company will provide a refund of the price paid for the defective repair, parts or Services.
- (c) The Company shall have no responsibility for defects, loss or damage to the extent caused by (i) normal wear and tear, (ii) the City's failure to follow all installation and operation instructions or manuals or to provide normal maintenance, (iii) repairs or modifications by the City or by others not under the Company's direct supervision, (iv) a product or component part which the Company did not design, manufacture, supply or repair, or (v) environmental conditions.
- (f) Please strike this paragraph

Paragraph E-4 Please edit this paragraph as follows:

The City shall have the right at any time to terminate further performance of this Contract, in whole or in part, for any reason whatsoever (including no reason) **with prior written notice to the Company of no less than sixty (60) days**. Such termination shall be effected by written notice from the City to the Company specifying the extent and effective date of the termination. On the effective date of the termination, the Company shall terminate all work and take all reasonable actions to mitigate expenses. The Company shall submit a written request for incurred costs for services performed through the date of termination, and shall provide any substantiating documentation requested by the City. In the event of such termination, the City agrees to pay the Company within thirty (30) days after receipt of a correct, adequately documented written request. The City's sole liability under this Section is for payment of costs for Goods and services requested by the City and actually performed by the Company.

Paragraph E-6

- (b) In the fourth line, please add "reasonable" between "any" and "excess".

Please add the following: The Company may terminate the Agreement if the City: (a) is in material breach of the terms of the Contract and has failed to remedy the breach (where the breach is capable of being remedied) within 30 days' notice in writing specifying such breach; (b) the City fails to pay any monetary obligation when due under the Contract within 30 days' notice in writing specifying such failure; or (c) the City otherwise fails to pay its debts when due.

- (c) Please add the following in the fifth line after "weather". "The affected Party shall promptly inform the other Party in writing and shall within ten (10) days of one of these circumstances occurring." Please edit the last sentence as follows:



page 2/2

The time of performance of the Company's obligations under this Contract shall be extended by such period of enforced delay; provided, however, that such reasonably extended time period shall not exceed **ninety (90) days**. If the foregoing circumstances result in a delay greater than 90 days, **either party** may terminate the affected portion of the Contract pursuant to the terms of Section E-4, "Termination for Convenience".

Paragraph E-15 Please modify as follows:

(a) In addition to the insurance requirements set forth in Section D-6, "Insurance", and not in lieu thereof, the Company shall protect, defend, indemnify and hold harmless the City, its elected officials, officers, employees, agents, and consultants (collectively herein the "City") from and against any and all **third-party** claims, **and any** liabilities, damages, losses, suits, actions, decrees, arbitration awards and judgments including **reasonable** attorney's fees, court costs or other expenses of any and every kind or character **resulting therefrom** (collectively herein the "Liabilities") which may be recovered from or sought against the City, as a result of, by reason of, or as a consequence of (i) any act or omission, ~~negligent or otherwise,~~ on the part of the Company, its officers, employees, independent contractors, vendors, suppliers, consultants, or agents in the performance of the terms, conditions and covenants of the Contract; **or (ii) personal injury or death; or (iii) third-party property damage, a breach of any agreement between the Company and its employees, vendors, independent contractors, suppliers, consultants or agents; or (iii) any default in the performance of any obligation on Company's part to be performed under the terms of this Contract, regardless of whether the Liabilities were caused in part by the City. Company agrees that it is assuming the sole risk of any Liabilities related to the contraction by Company's officers, employees, vendors, suppliers, agents, independent contractors, and consultants or any other person of any viral infection or other disease, including, without limitation, COVID 19, related to the performance of this Contract and that Company's indemnity obligations contained herein cover any such Liabilities.** In no event shall the language in this Section constitute or be construed as a waiver or limitation of the City's rights or defenses with regard to sovereign immunity, governmental immunity, or other official immunities and protections as provided by the Federal and State Constitutions or by law.

(d) It is expressly agreed that the Company shall defend the City at Company's expense, ~~by legal counsel reasonably satisfactory to City,~~ against the Liabilities and in the event that the Company fails to do so, the City shall have the right, but not the obligation, to defend the same and to charge all direct and incidental costs, including **reasonable** attorney's fees and court costs, to the Company. Company's indemnity obligations herein are not intended to nor shall they relieve any insurance carrier of its obligations under policies required to be carried by Company pursuant to the provisions of this Contract. Company's obligations under this Section shall survive any termination of this Contract.

Paragraph E-16 Please add:

The Company undertakes no indemnification in respect of third-party rights (i) where the alleged patent infringement is based upon or related to any method, process or design claims in third party U.S. patents, any combination of the Equipment with other equipment not supplied by the Company, or any modifications of the Equipment made by the City and not approved by the Company, or (ii) to the extent the alleged infringement is directly attributable to the negligence or intentional misconduct of the City.

Paragraph E-17: Please modify as follows:

(b) The City or its designated representative(s) shall have the right to inspect and audit (including the right to copy and/or transcribe) the books and records of the Company pertaining to the performance of this Contract during normal business hours. The City will provide prior written notice to the Company of the audit and inspection. ~~If the books and records are not located within Clark County, the Company agrees to deliver them to the City, or to an address designated by the City within Clark County. In lieu of such delivery, the Company may elect to reimburse the City for the cost of travel (including transportation, lodging, meals, and other related expenses) to inspect and audit the books and records at the Company's office.~~ If the books and records provided to the City are incomplete, the Company agrees to remedy the deficiency after written notice thereof from the City, and to reimburse the City for any additional costs associated therewith including, without limitation, having to revisit the Company's office. The Company's failure to remedy the deficiency shall constitute a material breach of this Contract. The City shall be entitled to its costs and reasonable attorney fees in enforcing the provisions of this Section.

Paragraph E-20

Please add the following to the end of the sentence:

Nothing in the Agreement shall affect the pre-existing intellectual property rights of the parties. Additionally, each party shall retain all its rights, title and interest in any and all inventions (including discoveries, ideas, or improvements, whether patentable or not) owned by it prior to this Agreement.

Maintenance

Decanter



Project ref: Alfa Laval Inc
Line ref: Las Vegas, NV
Model: **ALDEC G3-125**
Item id: **n/a**
No of units: **3**

Date: 09/20/2023
Page: 1(1)

Scope of services

The Services will apply to the Equipment listed below:

Decanter model ALDEC G3-125
Nos of decanters: 3
Application: 143 Sludge Treatment Municipal Waste

Preventive maintenance - Prevent problems before they occur

Alfa Laval Preventive Maintenance ensures production reliability by servicing equipment only when necessary. Ultimately, preventive maintenance reduces unplanned stops, increases equipment lifetime, increases operational safety and reduces workplace accidents. Preventive maintenance services and intervals are application dependent and tailored to meet specific operational conditions.

The below listed services are selected for this Service Agreement.

Inspection and Lubrication: By Plant Maintenance Crew

Inspection of the decanter at site. See specific inspection check points listed in the appendix "scope of services"

Major service: By Alfa Laval with the assistance of Plant Maintenance Crew

Major service of the decanter at site or in an Alfa Laval service workshop. Service to include inspection, replacement of all seals o-rings, and gaskets, and inspection of stationary and rotating parts. Also to include conveyor bearing service, greasing, and major main bearing kit.

Intermediate service: By Alfa Laval with the assistance of Plant Maintenance Crew

Service of the decanter gearbox at site or in an Alfa Laval service workshop. Service to include inspection of seals, o-rings and gaskets, inspection of stationary and rotating parts. Also to include conveyor bearing service, greasing, and intermediate main bearing kit.

Service Kits

Alfa Laval Service Kits ensure that the correct and most up-to-date spare parts are on site to conduct planned service. Developed based on years of practical experience, Alfa Laval Service Kits include all spare parts required for a specific service.



1. BASIS OF DESIGN.

General Data

Sludge Origin:	Wastewater Treatment Plant
Sludge Type:	Municipal anaerobically digested blend of primary and WAS (50/50 by mass)
Duty:	Dewatering

Sizing Data

Capacity per Unit

Hydraulic (gpm):	400
Solids (lbs./hr.):	5000

Number of units

Operating:	3
Standby:	0

Feed Solids

Range (%):	1.5 – 3.0
------------	-----------

Polymer Consumption:

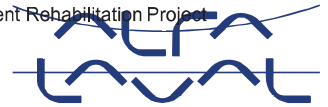
Estimated Design Dosage (active lbs./dT):	40
---	----

Decanter Performance

Estimated Cake Solids (%):	22
Estimated Recovery (%):	95

Other Parameters

Bowl Diameter (in)	28.35
Maximum Bowl Speed (rpm)	2,900
Installed Power (HP)	190
G-Force (x g)	3,344



2. PROPOSAL

2.1. Three (3) ALDEC G3 125 Centrifuges, each will come complete and include the following scope of supply:

- Modular frame with process-contact areas in 316 SS
- Alfa Laval's factory standard Vibration isolators measuring in vertical direction only
- Singular, hinged cover in 316 SS (covers belts, rotating assembly and gearbox).
- Abrasion protection (Tungsten Carbide on wear surfaces)
- Rotating assembly complete with 30 kNm Standard or Direct Drive (DD) gearbox and pillow block bearings
- All bearings grease lubricated
- Manual grease pump
- Vibration and temperature sensors in main bearing housings
- Standard Factory Paint System
- Standard Alfa Laval factory testing - General performance testing, abrasion testing, and noise testing
- Main drive Motor: 150 Hp AC VFD
 - Severe Duty, NEMA Premium Efficiency
 - 1800RPM, 3Phase, 60Hz, 460VAC
 - IP55
 - Horizontal, drive coupled
 - TEFC
 - Space heater
- Back drive Motor: 40 Hp AC VFD
 - Severe Duty, NEMA Premium Efficiency
 - 1800RPM, 3Phase, 60Hz, 460V
 - IP55
 - Horizontal drive coupled
 - TEFC
 - Space heater

2.2. Three (3) Centrifuge Control Panels, each with the following scope of supply:

- NEMA 4X 60"H x 36"W Enclosure with Fan/Filter
- Modicon M340 series PLC
- 10-inch Modicon Harmony GTO series HMI
- X80 series Modules
- Anybus Bolt WAP (Wi-Fi Access Point) for control on iOS and Android devices
- Dual Bearing Vibration Monitoring
- Through-the-door, rotary type circuit breaker disconnect
- Panel Input Power 120VAC
- 24 VDC Control with UPS
- UL-508A Standards with UL Label & Certificate
- SCADA Integration - Modbus TCP/IP
- Gateway Dell E3002- Remote Support and Monitoring w/1 year Data Subscription
- Feed Control for Valves (4-20mA)
- Configured with 120 VAC Control for HS and LS Flush Motorized Valves with position feedback
- Feed pump and Polymer pump Control - Network Connection
- Diverter Conveyor Control - Hardwired Connection
- Control of centrifuge during power loss or outage



2.3. Three (3) Centrifuge VFD Panels, each with the following scope of supply:

- NEMA 12 87"H x 32"W x 24"D Enclosure with Fan/Filter
- ABB ACS 880 VFDs: Main Drive 200 HP(ULH), Back Drive 40 HP(6-Pulse)
- Panel Input Power 380-480 VAC 3ph, 50/60 Hz

2.4. Three (3) UGSI Polyblend M-Series M6000-P30BA-L-V-PLC Polymer Activation System, each with the following scope of supply:

- Patented UGSI Mixing Chamber with Brass Impeller
- Variable Speed: 1.5HP, 3450RPM, 480V, 3PH, 60Hz
- 39", 38", 81" stainless steel frame
- Dilution Water Inlet
 - 2" PVC Piping for 6000GPH
 - 1.5-inch Diaphragm Check Valve
 - 2-inch Solenoid Valve
 - Rotameters
 - Secondary Dilution
 - Pressure reducing valve, 2-inch Brass Watts model LF223-HP-2.0"
- Polymer Pump
 - NETZSCH 30GPH, Progressive Cavity Pump w/ Mechanical Seal, 316SS Rotor, & Viton Stator
 - 0.5-inch PVC Piping for 30GPH Progressive Cavity Polymer Pump
 - Loss of Polymer Flow Switch
- Calibration Cylinder Kit
- Solution Outlet – 3-inch Static Mixer
- 480V, 3PH, 60Hz Power Supply
- Skid Mounted Electrical Control Panel
 - NEMA4X 316 Stainless Steel Enclosure
 - Modicon M340 PLC Platform
 - Harmony GTO 10.4-inch HMI with Modbus
 - Unmanaged ethernet switch
 - Variable Speed Frequency Drives
 - On-Off-Remote Switch
 - "Run" Indicator Light
 - Pump Stroke Frequency Display
 - Pump Flow Rate Display
 - Remote Start Contact
 - "Run" Output Contact
 - "Loss of Water Flow" Output Contact
 - Loss of Polymer Flow Output
- Spare parts
 - One (1) Mixing Chamber O-rings/M20-2400
 - One (1) Neat Polymer Valve, Check, SS, 0.5-inch, TxT
 - One (1) Polymer Pump Stator
 - One (1) Polymer Pump Mechanical Seal
 - One (1) Mixer Mechanical Seal /M20-2400

2.5. Three (3) Sets of Centrifuge Ancillaries, each set shall include the following items:

- Set of painted carbon steel centrifuge anchor plates
- Feed Flexible Connection, 316SS/SBR
- Polymer Flexible Connection, 316SS/PTFE
- Solids Flexible Connection, CI Neoprene/316SS
- Solids Support Chute, 316SS



- Solids Transition Chute, 316SS
- Centrate Flexible Connection, CI Neoprene/316SS
- Centrate Transition Chute, 316SS
- Bowl Cart, Painted Carbon Steel
- Set of Centrifuge Anchor Bolts
- Drawings

2.6. Service time as follows:

- One (1) trip, one (1) 8-hour site day for centrifuge installation
- Three (3) trips, three (3) 8-hour site days for centrifuge start-up testing
- Three (3) trips, twelve (12) 8-hour site days for centrifuge general performance acceptance testing
- One (1) trip, two (2) 8-hour site days for training
- Three (3) trips, fifteen (15) days for centrifuge start-up

2.7. Also included with pricing:

- Special Warranty: The Centrifuge Manufacturer shall warrant all equipment supplied to be free of defects in material and workmanship for two (2) years from Substantial Completion for each centrifuge as defined above, not to exceed thirty (30) months from date of delivery to jobsite or storage. Warranty shall cover all labor and material necessary for repairs for all system components and controls furnished by the Centrifuge Manufacturer. We shall have no responsibility for defects, loss or damage to the extent caused by (i) normal wear and tear, (ii) your failure to follow all installation and operation instructions or manuals or to provide normal maintenance, (iii) repairs or modifications by you or by others not under our direct supervision, (iv) a product or component part which we did not design, manufacture, supply or repair, or (v) due to environmental conditions. Alfa Laval reserves the right to review operating and maintenance records to ensure compliance.
- We are offering this DDP Jobsite
- Tools per 46 71 36
- Spare parts per 46 71 36
- Lab services for the performance test and startup per 46 71 36
- Electronic Submittal and O&M Manual

2.8. Proposal Alternatives – Optional Supply Items per Exhibit B

- Service Contract for one (1) calendar year of recommended routine maintenance for three (3) ALDEC-G3-125 centrifuges, including all labor, parts, supplies and lubricants. Also includes any special tools and spare parts not already included within Section 46 71 36.
- One (1) spare, complete rotating assembly, including a bowl, scroll, gearbox, and associated parts.
- One (1) spare conveyor scroll and associated parts.
- One (1) spare primary, main drive motor and associated parts
- One (1) spare secondary, back-drive motor and associated parts
- Five-Year Extended Warranty for all three (3) ALDEC-G3-125 centrifuges, including all parts, loaded labor costs, travel, and per diem for supplier's personnel to provide onsite service (at the City of Las Vegas Water Pollution Control Facility), for any warranty services needed for 5 years, assuming an average runtime of 4,000 hours/year.
- 10-Year Extended Warranty for all three (3) ALDEC-G3-125 centrifuges, including all parts, loaded labor costs, and travel per diem for supplier's personnel to provide onsite service (at the City of Las Vegas Water Pollution Control Facility), for any warranty services needed for 10 years, assuming an average runtime of 4,000 hours/year.
- Minor Preventative Maintenance, including all maintenance, parts, loaded labor cost, travel, and per diem – quoted as per centrifuge per year.



- Major Preventative Maintenance, including all maintenance, parts, loaded labor cost, travel, and per diem – quoted as per centrifuge every two (2) years.

2.9. The water supply available at each unit shall be as follows:

- Bowl Flushing: 250 gpm up to the feed rate @ max 45 psi
- CIP Flushing 110 gpm @ max 45 psi
- Temperature: Ambient (40 - 90 F)

2.10. Cake capacity during a power loss condition for each centrifuge:

- 26.2 cu ft/0.97 cu yd

2.11. Dimensioned drawing: (See Appendix A)

2.12. Notes of Clarification

26 29 25

1.01.A.1., 2.01.A, 2.05.A. – Alfa Laval shall provide ABB ACS880 low harmonic VFD, which is the active front end alternative for 18 pulse VFDs and ABB ACS880 6-pulse VFD for back drive motors.

46 71 36

1.05.E.3. – Drawings shall be per Alfa Laval standard format and content and may not include all the requested bowl dimensional information.

1.05.E.5. – Alfa Laval shall not provide gearbox data sheets with submittals as our gearbox is proprietary technology.

1.05.F.3. – Only centrifuge bearing life calculations shall be provided. Bearing life calculations will not be PE stamped.

1.05.G.3., 1.05.H.4. – ASTM G65 test reports shall be historical data only, as the conveyor design has not changed since the test reports were created. Actual components used shall not be tested.

2.11.D.4. – Alfa Laval shall not use external fuses mounted on field connection terminal blocks.

DRAWINGS

I911, I912, I913 – Centrifuge control panel shall provide hardwired control for the respective inclined cake conveyors 1, 2, and 3, respectively.

- Technical submittal documentation shall be per Alfa Laval's (and /or sub-supplier) standards, delivered electronically, in English language. Additional documentation requirements shall incur extra engineering cost, material cost and delivery time.
- All scope of supply modifications / additions requires prior agreement by both parties and written acknowledgement by Alfa Laval.

2.13. Escalation Charges:

- In the event that delivery of equipment cannot be made on the scheduled delivery date agreed upon between Alfa Laval and Purchaser and as evidenced by the terms of the contract, due to Purchaser delay, Alfa Laval reserves the right to assess reasonable escalation charges to the project at the rate of 1% per month of the contract value for material price escalation for each month that the project is delayed.



- Given the current volatility in steel prices over the past twelve months, Alfa Laval has made this offer based upon shipment of the offered products contained herein within the schedule dictated above. Should the projected shipment schedule fall outside this period for any reason, pricing shall be subject to review and revision.

2.14. Exclusions from this quotation:

- All mechanical & electrical Installation
- Equipment offloading and placement
- Field wiring, conduit and electrical flexible connections...etc.; contractor shall remain responsible for meeting all relevant electrical codes
- Pipes, valves, and fittings...etc.
- Anchor bolts are supplied by others.
- Associated equipment, i.e., sludge macerators, feed pumps, cake conveyors, centrate tanks and pumps...etc.
- Measuring instruments between centrifuges and associated equipment
- Noise abatement enclosures
- Odor control equipment
- Inspection and access platforms or ladders
- Harmonic study per 1.05.F.1
- Utilities and consumables like polymer, power, water and other consumables required during testing, start-up and commissioning
- Storage and handling fees
- Detailed or project specific related engineering
- Duties, taxes, bonds...etc.

2.15. Process performance is per specified basis of design.

- Alfa Laval has existing centrifuges on site and the expected performance of the new centrifuges should equal or better than the existing machines.

3. COMMERCIAL TERMS

3.1. Base Bid - Refer to Exhibit B Proposal Form

3.2. Optional Supply Items - Refer to Exhibit B Proposal Form

3.3. Payment Terms – Per bid documents

3.4. Estimated Delivery Time

- Submittals: 8 – 12 weeks from fully executed PO
- Centrifuge: 45 – 52 weeks from receipt of approved submittals and/or release to manufacture

3.5. Quotation validity

- 120 days

3.6. Contact

- Rep contact name: Tucker Southern
- Rep phone number: 307-690-7699

CENTRIFUGE

D

D

FEED FLEXIBLE CONNECTION

POLYMER FLEXIBLE CONNECTION

C

SOLIDS FLEXIBLE CONNECTION

C

SOLIDS CHUTE
SUPPORT PLATE

B

FLOWMETER

FLUSH WATER MANIFOLD

B

FLUSH WATER CONNECTION
DOWNSTREAM OF FLOWMETER

FEED PIPING

A

This document and its contents is owned by Alfa Laval AB (publ.) or its affiliates and protected by laws governing intellectual property and thereto related rights. Without limiting any rights related to this document, no part of this document may be copied, reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, without the expressed permission of Alfa Laval. Nor may it be used in any other way or for any other purpose than expressly permitted by Alfa Laval. Alfa Laval will enforce its rights related to this document to the fullest extent of the law, including the seeking of criminal prosecution.

DRAWN
JHK
CHECKED 5/18/2022

QA
MFG
APPROVED

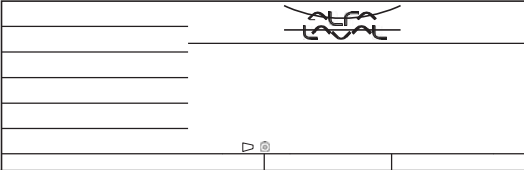
DRAWING UNITS
INCHES

TITLE
LAS VEGAS EXAMPLE
CENTRIFUGE INLET FEED/WATER PIPING

SIZE 3RD ANGLE DWG NO
C PROJECTION CLV-EC01

REV
0

A



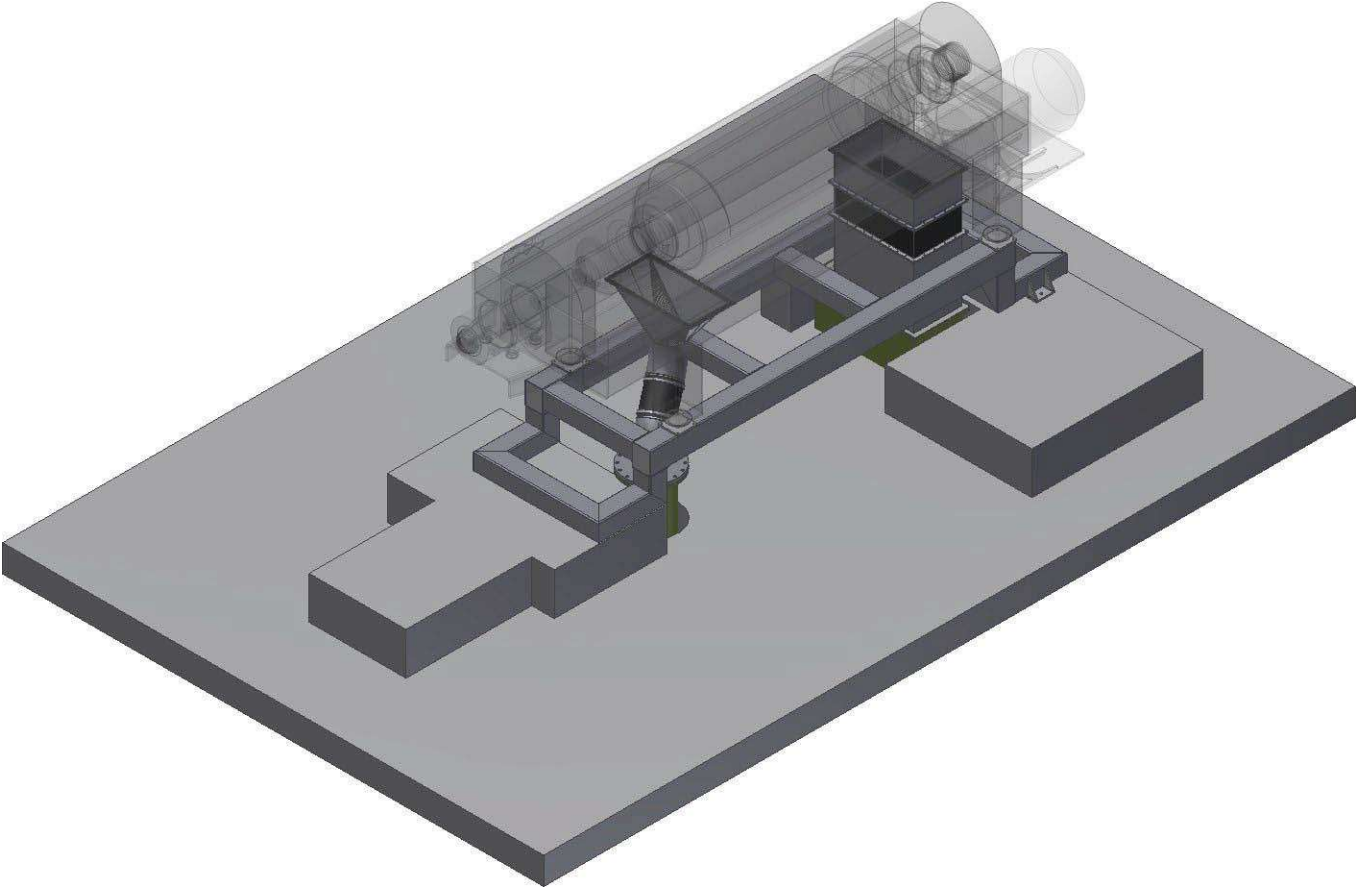


EXHIBIT B**PRICING**

Please indicate your quote in the spaces provided below:

BASE BID:

ITEM NO.	Description	Unit	QTY	Unit Prices	Extended Amount
1	Engineering Services as provided per Item 4.a for approved shop drawing and associated design coordination.	Lump Sum	1	N/A	\$ 10,000.00
1	All Work as defined in the RFP to supply three (3) complete centrifuge and polymer blending systems except those items listed separately below.	Lump Sum	1	N/A	\$ 43,596.80
2	Dewatering Centrifuge System as Specified.	Each	3	\$ 349,338.73	\$1,048,016.20
3	Polymer Blending Units as Specified.	Each	3	\$169,512.33	\$508,537.00
4	Instrumentation, Controls, and Programming (for Centrifuges Only) as Specified.	Lump Sum	1	N/A	\$433,515.00
5	Field Quality Control, Testing, Inspection, and Training as Specified for Centrifuge System.	Lump Sum	1	N/A	\$ 132,551.00
6	Field Quality Control, Testing, Inspection, and Training as Specified for Polymer System.	Lump Sum	1	N/A	\$9,000.00
7	Operations and Maintenance Manuals as Specified.	Lump Sum	1	N/A	\$ 2,000.00
8	Freight Costs to Project Site.	Lump Sum	1	N/A	\$79,203.00
9	Extended Proposal Validity- Bidder agrees to hold the prices for one (1) year from the Proposal Due Date for itemized cost listed.	Lump Sum	1	N/A	\$10,000.00

TOTAL FIRM SYSTEM PRICE IN U.S. DOLLARS (SUM OF ITEMS 1 THROUGH 9): \$ 2,276,419.00

TWO MILLION, TWO HUNDRED SEVENTY-SIX THOUSAND, FOUR HUNDRED NINETEEN DOLLARS _____ (Price in Words)

EXHIBIT B
ADDITIONAL OPTIONS

ITEM	Description	Unit	QTY	Unit Prices	Extended Amount
1	Service Contract: provide one (1) calendar year of Supplier's recommended routine maintenance for all three centrifuges, including all labor, parts, supplies and lubricants. Any special tools and spare parts not already included within Section 46_71_36 - CENTRIFUGE DEWATERING EQUIPMENT, but required for the routine maintenance shall also be provided by the SUPPLIER.	Lump Sum	1	N/A	\$ 6,786.79
2	5-Year Extended Warranty for all three Centrifuges: provide warranty services including all parts and loaded labor cost, including travel and per diem, for Supplier's personnel to provide onsite service (at the City of Las Vegas Water Pollution Control Facility), for any warranty services needed for 5 years, assuming an average runtime of 4,000 hours/year.	Lump Sum	1	N/A	\$17,000.00
3	Minor Preventative Maintenance: Provide minor preventative maintenance schedule including the maintenance activities that will be provided and how many machine hours each activity occurs at. Provide cost for SUPPLIER to provide recommended minor preventative maintenance services including all maintenance, parts, loaded labor cost, including travel and per diem.	3 Each 3 Years	3X3	\$4,571.07	\$41,139.63

TOTAL OPTIONS \$64,926.42
BASE BID \$2,276,419.00
TOTAL PRICE \$2,341,345.42

EXHIBIT C

PERFORMANCE, SCHEDULE, AND PAYMENT FORM

Please complete the required information in the spaces provided below:

PERFORMANCE:

Indicate the OFFEROR's performance parameters for the following items:

1. Power consumption of one complete centrifuge system (main drive, back drive, lube system, controls, and instrumentation) at full capacity (5,000 dry pounds per hour, 400 gallons per minute, operating 24 hours per day):

2,877.6
_____ kW-hrs/day

2. G-Volume per centrifuge (see Specification 46_71_36 for calculation formula):

452,877
_____ gallons

3. Annual maintenance costs for first five years of centrifuge operation. OFFEROR shall include a narrative description (separate attachment) detailing cost of routine maintenance work items and frequency, with estimated labor hours required per maintenance activity. Assume each centrifuge operates 4,000 hours per year:

13,930.61
\$ _____ per year
 - - - .

4. Total number of days required, after approved submittal, for OFFEROR to fabricate and deliver to the City of Las Vegas Water Pollution Control Facility the complete centrifuge and polymer blending equipment package, including control panels:

280
_____ calendar days

SCHEDULE:

The OFFEROR shall be bound by the required equipment delivery schedule and will be based, in part and/or whole, on the aforementioned lead time provided by the OFFEROR (Performance Criteria, Item 4). The OWNER anticipates selecting the OFFEROR in **December 2023**. The OFFEROR'S purchase order generated by the selected CONTRACTOR is anticipated to be issued in **December 2024**. The OFFEROR shall then provide a complete submittal package for review within four weeks after the purchase order is executed.

The OFFEROR shall coordinate their submittals with the selected CONTRACTOR to confirm the final approval of the submittal package, including any required resubmittals, meets the projects overall schedule requirements.

It is anticipated that a maximum delivery date shall occur no later than **November 2025** to meet the construction schedule (based upon ten months after Purchase Order is issued). Adherence to meeting such date will be a requirement of the awarded OFFEROR and shall include all preceding milestones including submittal development, shop drawings, OWNER review, fabrication and delivery.

PAYMENT:

The OWNER intends to make payments for the OFFEROR'S equipment to the selected CONTRACTOR, in accordance with the following schedule:

1. **Shop Drawing Engineering (Base Bid item 1):** Fifty Percent (50%) upon first shop drawing submittal and fifty percent (50%) upon approved shop drawings and completion of engineering design coordination services.
2. **Ten percent (10%)** of the OFFEROR'S contracted price for the Base Bid offering shall be paid upon OWNER'S approval of equipment submittals.
3. **Seventy percent (70%)** of the OFFEROR'S contracted price for the Base Bid offering shall be paid upon delivery of the equipment to the City of Las Vegas Water Pollution Control Facility in a condition acceptable to the selected CONTRACTOR and OWNER.
4. **Ten percent (10%)** of the OFFEROR'S contracted price for the Base Bid offering shall be paid upon 1) the approval of Operation and Maintenance Data per SECTION 01_78_24 - OPERATION AND MAINTENANCE MANUALS, which are acceptable to the selected CONTRACTOR and the OWNER. 2) The completion of Operations and Maintenance Personnel Training per Specification Section 46_71_36 - CENTRIFUGE DEWATERING EQUIPMENT.

5. **Ten percent (10%)** of the OFFEROR's contracted price for the Base Bid offering shall be paid upon successful operation and testing of the equipment, as well as confirmation by the OWNER that such equipment meets the specified performance requirements per Specification SECTION 46_71_36 - CENTRIFUGE DEWATERING EQUIPMENT. If the OFFEROR'S equipment fails to meet the specified performance requirements, the OWNER may elect to retain this portion of the OFFEROR'S contracted price for the Base Bid as a penalty for not meeting the requirements.
6. **Spare parts (Items A-2 through A-5)** shall be paid for in full upon acceptance by the OWNER.
7. **Additional Services under the Proposal Alternates (A-1, A-6, A-7, A-8 and A-9)** shall be paid for after service are performed and based on a% complete of each line item, as agreed to by the OFFEROR and the OWNER as part of the work authorization process.

EXHIBIT D ASSIGNMENT OF CONTRACT

This Assignment of Contract (the "Assignment") is made and entered into as of _____ by and between:

Assignor: City of Las Vegas
Address: 495 S. Main Street
Las Vegas, NV. 89129
Contact: Dan Dixon
Information: 702-229-6173 ddixon@lasvegasnevada.gov

Assignee: [Contractor Name]
Address: [Address of Contractor]
Contact Information: [Phone, Email]

Recitals

WHEREAS, the Assignor has entered into a contract dated *[Date of Original Contract]* (the "Contract") Contract No. 23.53541.03RFP-DD Dewatering Building Equipment Rehabilitation with Alfa Laval, Inc.], a copy of which is attached hereto as Attachment A; and

WHEREAS, the Assignor desires to assign all of its rights and obligations under the Contract to the Assignee, and the Assignee desires to accept such assignment.

Agreement

1. Assignment and Acceptance.

The Assignor hereby assigns, transfers, and conveys to the Assignee all of its rights, title, and interest in and to the Contract, together with all duties, obligations, and liabilities thereof. The Assignee hereby accepts such assignment and agrees to assume and perform all duties, obligations, and liabilities of the Assignor under the Contract.

2. Representations and Warranties.

The Assignor represents and warrants that:

- The Contract is in full force and effect.
- The Assignor has full power and authority to assign the Contract.
- To the best of the Assignor's knowledge, there are no defaults or breaches under the Contract.

The Assignee represents and warrants that:

- The Assignee has full power and authority to accept the assignment of the Contract and to perform its obligations under the Contract.

3. Notice.

All notices, requests, demands, and other communications required or permitted to be given under this Assignment shall be in writing and shall be deemed to have been duly given if delivered personally, sent by registered or certified mail (return receipt requested), or sent by a recognized overnight courier service, to the parties at their respective addresses set forth above.

4. Governing Law.

This Assignment shall be governed by and construed in accordance with the laws of the State of [State].

5. Further Assurances.

The parties agree to execute and deliver such further documents and to take such further actions as may be reasonably necessary to carry out the purposes of this Assignment.

6. Entire Agreement.

This Assignment constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements and understandings, whether written or oral, relating to such subject matter.

REMAINDER OF PAGE HAS BEEN INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be executed by their duly authorized representatives.

ASSIGNOR: CITY OF LAS VEGAS

ASSIGNEE: COMPANY

Signature Date

Signature Date

Printed Name

Printed Name

Title

Title

ATTEST:

LuAnn D. Holmes, MMC Date
City Clerk

APPROVED AS TO FORM:

Deputy City Attorney Date

Printed Name