

DISCLAIMER: The *Approved Product and Equipment List (APEL)* is Section 27 of the Water & Wastewater Division’s “Project Design and Technical Specifications Manual” (PDTSM). The PDTSM is one within a series of Niagara Region’s design standards and guidelines. Inclusion onto the *APEL* does not constitute mandatory use of the product in the Region’s contract documents. The approved manufacturer(s) on the *APEL* must meet the specifications as outlined in Niagara Region’s tender or quotation. Products are not necessarily listed in preferential order. Niagara Region reserves the right to list manufacturer(s) for specialized equipment and applications outside the *APEL* in tender or quotation specifications as per Section 1 of the PDTSM.

| <b>Control &amp; Instrumentation</b>                                |  |                                 |                                 |
|---|--|---------------------------------|---------------------------------|
| <b>Equipment</b>  |  | <b>Manufacturer</b>             | <b>Comment</b>                  |
| AC Current Sensor   |  | Troy Control Limited            | KATY Inst. Model 420<br>02 420L |
|   |  | Hammond                         |                                 |
|   |  | Multi-Lin                       |                                 |
| AC Voltage Sensor   |  | Pribusin                        |                                 |
|   |  | Tie-Mark                        |                                 |
| Air Flow Meter  |  | Kurz                            | Kurz 555                        |
|   |  | Dwyer Instruments               |                                 |
|   |  | Bailey                          |                                 |
| Chlorine Residual Analyzer<br>Continuous On-Line<br>(potable water) |  | Prominent                       | Series 1870E                    |
|   |  | Hach                            | SC100                           |
| Gas Monitoring<br>(fixed instruments)                               |  | Armstrong                       |                                 |
|   |  | B & W                           |                                 |
|   |  | General Instrument              |                                 |
|   |  | Industrial Scientific           |                                 |
|   |  | MSA Combustible Gas<br>Analyzer |                                 |
| Conductivity Level Switches   |  | Warrick                         |                                 |
| Control and Relay Panel   | Note: Locks not required. Provide standard lever handle to open/close door.                            | Hammond                         | CSA EEMAC 4X or<br>Type 7       |
|   |  | Ralston                         |                                 |
| Control Circuit Transformer   | Provide slow blow fuse to be mounted on transformer. Tolerance to be +25% of specified rated capacity. | Hammond                         |                                 |
|   |  | Rex                             |                                 |

| Control & Instrumentation          |  |                    |  |
|------------------------------------|--|--------------------|--|
| Equipment                          |  | Manufacturer       | Comment                                  |
| Control Circuit Breaker            |  | Entelec            |  |
|                                    |  | Phoenix            |  |
|                                    |  | Weidmuller         |  |
|                                    |  | Westinghouse       |  |
| DC Loop Power Supply               |  | Honeywell          |  |
| Doppler / Transit Time Flow Meter  | Strap-on type  | ABB                |  |
|                                    |  | Endress+Hauser     | Proline Prosonic.                        |
|                                    |  | Fuji               |  |
|                                    |  | Polysonics         | Polysonics Model LCDT                    |
| Diaphragm Seal for Pressure Gauges |  | Ashcroft Duragauge |  |
|                                    |  | Viton              | Low pressure                             |
|                                    |  | WIKA               |  |
| Ultrasonic Transmitter             |  | Miltronic's        | MultiRanger 100 or 200                   |
| Differential Pressure Switch       | Blower Filter  | Dwyer              | Series 3000                              |
|                                    |  | Magnahelic         |  |
| Differential Pressure Transmitter  |  | Rosemount          |  |
|                                    |  | ABB                |  |
| Dissolved Oxygen Sensor / Analyzer | <b>If used in potable waster, must be NSF/AWWA certified</b> | ABB                |  |
|                                    |  | Aysix Technologies |  |
|                                    |  | Fisher-Porter      |  |
|                                    |  | GLI International  |  |
|                                    |  | Hach               |  |
|                                    |  | Zullig             | Great Lakes Model Z63/5040, Model 5042DO |
| Float Switches                     |  | ABS                |  |
|                                    |  | Flygt              |  |
|                                    |  | Honeywell          |  |
|                                    |  | Siemens            |  |

| <b>Control &amp; Instrumentation</b> |   |                     |   |
|--------------------------------------|---|---------------------|---|
| <b>Equipment</b>                     |   | <b>Manufacturer</b> | <b>Comment</b>                                |
| Heat Detector – Fire Alarm           |   | Edwards             | P/N: 281C                                     |
| Interposing Relays                   |   | Entelec             | DIN Rail Mounted                              |
| Indicating Lights                    | Replacement of light bulbs must be accessible from the front. | ABB                 |   |
|                                      |   | Allen Bradley       |   |
|                                      |   | Cutler Hammer       |   |
|                                      |   | Square D            |   |
| LED Digital Panel Indicator          |   | Metermaster         |   |
| Liquid Level Transmitter             | (Pressure)  | ABB                 |   |
|                                      |   | Miltronic's         |   |
|                                      |   | Rosemount           | Model 1151LLT                                 |
| Magnetic Flow Meter                  |   | Bailey              |   |
|                                      |   | Endress & Hauser    |   |
|                                      |   | Fisher & Porter     |   |
|                                      |   | McCrometer          |   |
|                                      |   | Rosemount           |   |
| pH Measurement                       | In-line Analyzer  | Beckman             |   |
|                                      |   | Hach                |   |
|                                      |   | Orion               |   |
| Power Failure Relay                  |   | Potter Brumfield    |   |
|                                      |   | Agastat             |   |
| Pressure Switch                      | (Wastewater)  | Ashcroft            | 101ES or 102ES<br>316SS<br>Diaphragm Type 101 |
|                                      |   | Rosemount           |   |
| Pressure Switch                      | (Chemical)  | Ashcroft            | PVC Diaphragm                                 |
| Pressure Transmitter                 |   | ABB                 |   |
|                                      |   | Ashcroft            | Duratron-Bourdon<br>Tube                      |
|                                      |   | Rosemount           | Rosemount 1151<br>Strain Gauge                |

| <b>Control &amp; Instrumentation</b> |                            |                           |                                     |
|--------------------------------------|----------------------------|---------------------------|-------------------------------------|
| <b>Equipment</b>                     |                            | <b>Manufacturer</b>       | <b>Comment</b>                      |
| Pressure Gauge                       |                            | Ashcroft                  | Ashcroft Duragauge<br>1279S or 2462 |
|                                      |                            | Marshall Town             |                                     |
|                                      |                            | Terice                    |                                     |
| Pressure Manometer                   |                            | Meriam                    | Meriam 40HE35                       |
| Push Button                          |                            | Allen Bradley             | AB 800T                             |
|                                      |                            | Square D                  |                                     |
| Selector Switch                      | Make before break type.    | Allen Bradley             | AM 800T                             |
|                                      |                            | Square D                  |                                     |
| Signal Converter                     |                            | Omron                     |                                     |
|                                      |                            | Phoenix                   |                                     |
|                                      |                            | Pribusin                  | Series IUC                          |
| Sludge Density Monitor               |                            | BTG Inc.                  | BTG MEX-3                           |
|                                      |                            | Micro-Motion              |                                     |
| Solid State Timing Relay             |                            | Allen-Bradley             |                                     |
|                                      |                            | Omron                     |                                     |
|                                      |                            | Potter & Brumfield        |                                     |
|                                      |                            | Square D                  |                                     |
| Surge Protection Device              |                            | Total Protection Solution |                                     |
| Temperature Gauge                    |                            | Ashcroft                  | T498A                               |
|                                      |                            | Honeywell                 |                                     |
|                                      |                            | Rosemount                 |                                     |
|                                      |                            | Terice                    |                                     |
| Temperature Indicator/Transmitter    |                            | Ashcroft                  |                                     |
|                                      |                            | Hach                      |                                     |
|                                      |                            | Honeywell                 |                                     |
|                                      |                            | Rosemount                 | Rosemount 444                       |
| Thermostat                           | Low temperature thermostat | Ashcroft                  |                                     |
|                                      |                            | Honeywell                 |                                     |
|                                      |                            | Rosemount                 |                                     |

| <b>Control &amp; Instrumentation</b> |   |                      |                             |
|--------------------------------------|---|----------------------|-----------------------------|
| <b>Equipment</b>                     |   | <b>Manufacturer</b>  | <b>Comment</b>              |
| Thermowells                          |   | Cleveland Electric   |                             |
|                                      |   | Honeywell            |                             |
|                                      |   | Thermo Electric      |                             |
|                                      |   | Thermo Kinetic       |                             |
| Timer                                |   | Omron                | Omron H3BA                  |
| Turbidity Meter                      | On-line   | Hach                 | Model 1720D<br>Latest Model |
| Uninterruptible Power Supply         | Minimum UPS capacity to be equal to 150% of system full load. | APC Back-UPS         |                             |
|                                      |   | MGE – True On Line   |                             |
|                                      |   | Powerware            |                             |
|                                      |   | SOLA                 |                             |
| Valve Limit Switch                   |   | Micro-Switch         | LS/200LS                    |
| Venturi Flow Meter                   | Components to be single sourced                               | Fisher Porter        |                             |
|                                      |   | Rosemount            |                             |
| Vibration Transducer                 |   | IRD                  | IRD 942                     |
| Voltage to Current Transducer        |   | Phoenix              |                             |
|                                      |   | Pribusin             |                             |
|                                      |   | Control Microsystems |                             |
| Watts Sensor                         |   | Ashcroft             |                             |
|                                      |   | Crompton             |                             |
|                                      |   | Pribusin             |                             |

| <b>Crane and Hoist</b>                 |  |                     |                |
|--|--|---------------------|----------------|
| <b>Equipment</b>                       |  | <b>Manufacturer</b> | <b>Comment</b> |
| Trolleys, hoist, chain<br>And controls |  | Columbus            |                |
|  |  | Demag               |                |
|  |  | Provincial          |                |
|  |  | Richards-Wilcox     |                |

| <b>Digesters</b>    |   |                         |                                  |
|---------------------|---|-------------------------|----------------------------------|
| <b>Equipment</b>    |   | <b>Manufacturer</b>     | <b>Comment</b>                   |
| Digester Tank Cover | Primary tank, secondary tank and sludge storage tank. | Eimco Process Equipment | Steel cover only – no exception. |
|                     |   | OTI                     |                                  |
|                     |   | Westech                 |                                  |

| <b>Electric</b>               |   |                           |                |
|-------------------------------|---|---------------------------|----------------|
| <b>Equipment</b>              |   | <b>Manufacturer</b>       | <b>Comment</b> |
| Electric Motor                | For all applications:<br><br>1. Service Factor: 1.15<br>2. Frame & Bracket: Cast Iron<br>3. Enclosure<br>>40°C Ambient <90°C, ODP<br>>40°C Ambient <80°C, TEFC<br>4. Electric motor used for VFD application must be inverter rated | Canadian General Electric |                |
|                               |   | Etect                     |                |
|                               |   | LeRoy Somers              |                |
|                               |   | U.S. Motors               |                |
|                               |   | Westinghouse              |                |
|                               |   | Toshiba                   |                |
|                               |   | Baldor                    |                |
| Motor Control Centre          | All analog signals to be split out in a separate area of the panel  | ABB                       |                |
|                               |   | Allen-Bradley             |                |
|                               |   | Square D                  |                |
|                               |   | Siemens                   |                |
| Soft Start/Soft Stop Controls |   | Allen-Bradley             |                |
|                               |   | Benshaw                   |                |
|                               |   | Eaton                     |                |
| Variable Frequency Drives     |   | ABB                       |                |
|                               |   | Allen-Bradley             |                |
|                               |   | Danfoss                   |                |

| <b>Emergency Standby Power</b> |  |                             |                         |
|--------------------------------|--|-----------------------------|-------------------------|
| <b>Equipment</b>               |  | <b>Manufacturer</b>         | <b>Comment</b>          |
| Engine/Generator               | Standard prime mover is diesel engine.<br>Natural gas engine to be used by exception only. | Caterpillar Genset          |                         |
|                                |  | Crothers Genset             |                         |
|                                |  | Cummins/Onan Genset         |                         |
|                                |  | Detroit Diesel Genset       |                         |
|                                |  | Kohler Power Systems Genset |                         |
| Pyrometer                      |  | Marsh                       |                         |
|                                |  | Thermo Electric             |                         |
| Flexible Connector - Exhaust   |  | Flextronics                 | SS Type RF44 unbraided. |
| Battery Charger                |  | Dynatron                    |                         |
|                                |  | Thompson Technology         |                         |
|                                |  | Vulcan                      |                         |
| Automatic Transfer Switch      |  | Asco                        |                         |
|                                |  | Siemens                     |                         |
|                                |  | Thompson Technology         |                         |
|                                |  | Westinghouse                | Robonic                 |
| Vibration Isolator             |  | Korfund                     |                         |
|                                |  | Vibron                      |                         |

| <b>Process Equipment</b> |                       |                     |                |
|--------------------------|-----------------------|---------------------|----------------|
| <b>Equipment</b>         |                       | <b>Manufacturer</b> | <b>Comment</b> |
| Air Blower               | Positive Displacement | Aerezen             |                |
|                          |                       | Hibon               |                |
|                          | Centrifugal           | Hoffman             |                |
|                          |                       | Lamson              |                |
|                          |                       | HSI                 |                |

| <b>Process Equipment</b>       |                     |   |                                  |
|--------------------------------|---------------------|---|----------------------------------|
| <b>Equipment</b>               |                     | <b>Manufacturer</b>                         | <b>Comment</b>                   |
|                                | Turbo               | Hibon                                       |                                  |
|                                |                     | HSI   |                                  |
|                                |                     | Neuros                                      |                                  |
|                                |                     | KTURBO                                      |                                  |
|                                |                     | Siemens Turbo Compressor (formerly Turblex) |                                  |
| Boilers                        | Dual gas systems    | Cleaver-Brook                               |                                  |
|                                |                     | Donlee                                      |                                  |
|                                |                     | Volcano                                     |                                  |
| Collector Chain (Non-Metallic) |                     | Envirex                                     |                                  |
|                                |                     | Poly Chem                                   |                                  |
|                                |                     | Viking                                      |                                  |
| Digester Waste Gas Burner      |                     | Westech                                     |                                  |
| Fine Bubble Aeration System    |                     | Sanitaire                                   |                                  |
|                                |                     | OTT   |                                  |
|                                |                     | Tideflex                                    |                                  |
|                                |                     | Aquarius                                    |                                  |
| Grit Collection Equipment      |                     | Eimco Process Equipment                     |                                  |
|                                |                     | Arlat                                       | Shaftless Screw.                 |
|                                |                     | Mabarex                                     | Vistex Grit Removal & Classifier |
|                                |                     | Wemco Canada                                |                                  |
| Cyclone & Classifier           |                     | Wemco Canada                                |                                  |
|                                |                     | Smith-Loveless                              |                                  |
| Grinder/Comminuter             |                     | JWC   | Muffin Monster                   |
|                                |                     | Franklin Miller                             |                                  |
|                                |                     | Moyno                                       | For light duty applications      |
|                                |                     | Vogelsang                                   |                                  |
| Tube-in-tube Heat Exchanger    | For digester sludge | Napier Reid                                 | Preferred method of heat         |

| <b>Process Equipment</b>        |                     |                           |   |
|---------------------------------|---------------------|---------------------------|---|
| <b>Equipment</b>                |                     | <b>Manufacturer</b>       | <b>Comment</b>  |
|                                 |                     | Claro                     | exchangers in WW  |
| Rectangle Heat Exchanger        |                     | DDI                       |   |
| Spiral Heat Exchanger           | For digester sludge | Alfa Laval                |   |
|                                 |                     | Dorr Oliver Long          |   |
| Bar Screens                     |                     | Arlat                     |   |
|                                 |                     | Duperon                   |   |
|                                 |                     | US Filter ( Envirex )     | Rex Link Belt   |
|                                 |                     | Headworks                 | Mahr Bar Screen   |
| Sludge & Scum Removal Equipment |                     | Eimco Process Equipment   |   |
|                                 |                     | US Filter ( Envirex )     |   |
|                                 |                     | WesTech                   | COP WW Clarifier  |
| Sludge Dewatering/Thickening    |                     | Phoenix Process Equipment | Belt Filter Press Models LC, MC, WX-E/G/H, WXG-W, WXH-W |
| Spiral Dewatering Press         |                     | Arlat                     |   |

| <b>Pumps - Dynamic (Centrifugal)</b>   |                                      |                     |                     |
|--|--------------------------------------|---------------------|---------------------|
| <b>Equipment</b>                       |                                      | <b>Manufacturer</b> | <b>Comment</b>      |
| Axial Flow                             |                                      | Fairbanks Morse     |                     |
| Screw Centrifugal                      |                                      | Hidrostal           |                     |
|  |                                      | XCS                 |                     |
| Centrifugal Chopper                    |                                      | Vaughn Chopper Pump |                     |
|  |                                      | Wemco Chopper Pump  |                     |
|  |                                      | CHOPX Chopper Pump  |                     |
| Modified radial flow: vertical turbine | For wastewater effluent applications | Byron Jackson       |                     |
|  |                                      | Johnson             |                     |
|  |                                      | Layne               | Orig.l Manufacturer |

| <b>Pumps - Dynamic (Centrifugal)</b>             |   |                     |                                     |
|--|---|---------------------|-------------------------------------|
| <b>Equipment</b>                                 |   | <b>Manufacturer</b> | <b>Comment</b>                      |
|  |   |                     | only                                |
| Modified radial flow: vertical turbine           | For potable water applications                  | Fairbanks Morse     |                                     |
|  |   | Worthington         |                                     |
|  |   | Peerless            |                                     |
| Radial Flow, Mixed Flow and Standard Centrifugal |   | Fairbanks Morse     |                                     |
|  |   | Gorman Rupp         |                                     |
|  |   | Wemco               |                                     |
|  |   | Hidrostal           |                                     |
|  |   | Worthington         |                                     |
|  |   | Hayward Gordon      | Torus Recessed Impeller Vortex Pump |
| Submersible Pump                                 | Both dry and wet pit applications in wastewater | Flygt               |                                     |
|  |   | ABS                 |                                     |
|  |   | Hidrostal           |                                     |
| Vertical centrifugal pump                        |   | Cornell             |                                     |
|  |   | Smart Turner        |                                     |

| <b>Pumps - Displacement (Rotary)</b> |   |                     |                |
|--------------------------------------|---|---------------------|----------------|
| <b>Equipment</b>                     |   | <b>Manufacturer</b> | <b>Comment</b> |
| Single rotor                         | Includes vane, piston, flexible member, screw, peristaltic  | Moyno               | Screw pump     |
|                                      |   | Seepex              | Screw pump     |
|                                      |   | ITT Marlow          | Piston pump    |
|                                      |   | Watson Marlow       |                |
| Multiple rotor                       | Includes gear, lobe, multiple screw, circumferential piston | Vogelsang           | Lobe           |

| <b>Pumps - Displacement (Rotary)</b> |  |                     |                |
|--------------------------------------|--|---------------------|----------------|
| <b>Equipment</b>                     |  | <b>Manufacturer</b> | <b>Comment</b> |
|                                      |  |                     |                |

| <b>Pumps - Displacement (Reciprocating)</b> |                            |                     |                |
|---|----------------------------|---------------------|----------------|
| <b>Equipment</b>                            |                            | <b>Manufacturer</b> | <b>Comment</b> |
| Diaphragm                                   |                            | Fisher-Porter       | Simplex        |
|   |                            | Penn Valley         | Dual Disc      |
| Electronically Actuated Diaphragm           | Used for chemical metering | Grundfos Alldos     |                |
|   |                            | Prominent           |                |

| <b>Pumps</b>     |                                   |                     |                |
|------------------|-----------------------------------|---------------------|----------------|
| <b>Equipment</b> |                                   | <b>Manufacturer</b> | <b>Comment</b> |
| Mechanical Seals | Tungsten carbide/Tungsten Carbide | Alpha Seal          |                |
|                  |                                   | A.W. Chesterton     |                |
|                  |                                   | John Crane          | Type 1         |
|                  |                                   | Burgmann            | Type M-3       |
| Pump Strainer    |                                   | Hayward Mfg.        |                |
|                  |                                   | SST Mfg.            |                |

| <b>Valves</b>    |  |                     |                |
|------------------|--|---------------------|----------------|
| <b>Equipment</b> |  | <b>Manufacturer</b> | <b>Comment</b> |
| Air Valve        | Includes Air Release, Air/Vacuum and Combination | Val-Matic           |                |
|                  |  | A.R.I.              |                |
|                  |  | Cla-Val             |                |
| Altitude Valve   |  | Singer              |                |

| <b>Valves</b>             |                               |                     |   |
|---------------------------|-------------------------------|---------------------|---|
| <b>Equipment</b>          |                               | <b>Manufacturer</b> | <b>Comment</b>                                    |
|                           |                               | Cla-Val             |   |
| Duck Bill Check Valve     |                               | EVR                 |   |
|                           |                               | Red Valve           |   |
| Electric Valve Actuator   | Modulating and Non-modulating | Limitorque          |   |
|                           |                               | Rotork              |   |
|                           |                               | Auma                |   |
| Backflow Preventer        |                               | Watts               |   |
| Ball Valve                | PVC                           | Chemline            |   |
|                           |                               | Ipex                |   |
| Butterfly Valve           | Adjustable Seat Required      | Clow                |   |
|                           |                               | Dezurik             |   |
|                           |                               | Henry Pratt Company |   |
|                           |                               | Singer              |   |
|                           |                               | Val-Matic           |   |
| Check Valve               |                               | APCO                |   |
|                           |                               | Golden Anderson     |   |
|                           |                               | Val-Matic           |   |
| Flexible Disc Check Valve |                               | Val-Matic           | <b>Swing Flex Check Valve</b>                     |
| Gate Valve                | Process Valve                 | AVK                 |   |
|                           |                               | Clow Canada         |   |
|                           |                               | Dezurik             |   |
|                           |                               | Mueller             |   |
|                           |                               | Watts               |   |
| Globe Valve               | Process Valve                 | Jenkins             | <b>≤ 75mm Fig. 106A</b>                           |
| Globe Valve - Angle       |                               | Jenkins             | <b>≥ 75mm Fig. 142</b><br><b>≤ 75mm Fig. 108A</b> |
| Knife Gate Valve          | For use in wastewater only    | Orbinox             |   |
|                           |                               | Stafsjo             | <b>MV-A or BV-A as required</b>                   |

| <b>Valves</b>                                  |  |                     |  |
|--|--|---------------------|--|
| <b>Equipment</b>                               |  | <b>Manufacturer</b> | <b>Comment</b>   |
|  |  | Trueline            | <b>F8112</b>   |
|  |  | Val-Matic           |  |
| Mud Valve                                      |  | BNW                 |  |
|  |  | Clow Canada         |  |
|  |  | Dezurik             |  |
|  |  | Val-Matic           |  |
| Plug Valve                                     |  | Dezurik             |  |
|  |  | Milican             |  |
|  |  | Homestead           | <b>Eccentric Plug Valve</b>                                  |
|  |  | Val-Matic           |  |
| Automatic Hydraulically Actuated Control Valve | Includes pressure reducing and pressure reducing/pressure sustaining valves. | Cla-Val             |  |
|  |  | Dezurik             |  |
|  |  | Golden Anderson     |  |
|  |  | Singer              |  |
| Relief Valve                                   | Includes backpressure relief   | Singer              |  |
|  |  | Val-Matic           |  |
|  |  | Cla-Val             |  |
| Sluice Gates                                   |  | B.N.W. Mfg.         | <b>Series 77</b>   |
|  | For use in wastewater only   | Dynamic             |  |
|  | For use in wastewater only   | Fontaine            |  |
|  | For use in wastewater only   | Orbinox             |  |
| Surge Anticipator Valve                        |  | Golden Anderson     |  |
|  |  | Cla-Val             |  |
| Tilted Disc Check Valve                        |  | APCO                | <b>Supplied with bottom or top mounted dash-pot control.</b> |
|  |  | Val-Matic           |  |
| Inflow Preventer                               |  | Val-Matic           | Floodsafe  |

| <b>Ventilation/Heating Equipment</b> |                     |                     |                                  |
|--------------------------------------|---------------------|---------------------|----------------------------------|
| <b>Equipment</b>                     |                     | <b>Manufacturer</b> | <b>Comment</b>                   |
| Globe Valve                          |                     | Crane               | <b>Fig. 428 &amp; 465-1/2</b>    |
|                                      |                     | Jenkins             | <b>Fig 810 &amp; 677-A</b>       |
|                                      |                     | Val-Matic           |                                  |
| Check Valve                          |                     | Crane               | <b>Fig 137 &amp; 373</b>         |
|                                      |                     | Golden Anderson     |                                  |
|                                      |                     | Jenkins             |                                  |
| Radiator Valve                       |                     | Sarco               | <b>Type RP</b>                   |
| Three Way Valve                      |                     | Neo                 | <b>PR Lubricated Plug Valve.</b> |
|                                      |                     | Sarco               |                                  |
| Air Flow Control Valve               |                     | Fisher Control      |                                  |
|                                      |                     | Honeywell           |                                  |
|                                      |                     | Asco                |                                  |
|                                      |                     | North American      |                                  |
| Temperature Control Valve            |                     | Sarco               | <b>Trerice</b>                   |
| Strainer                             |                     | Hayward             |                                  |
|                                      |                     | Spirax-Sarco        | <b>Type BT, IF-125 or AF25</b>   |
|                                      |                     | SSI                 |                                  |
| Air Vents<br>(Recirculation System)  |                     | Armstrong           | <b>No. 1-AV</b>                  |
|                                      |                     | Spirax-Sarco        | <b>AE</b>                        |
| Hot Water Circulating Pump           |                     | S.A. Armstrong Ltd. | <b>Series 4300</b>               |
| Air Conditioning/Heating             |                     | Carrier Ltd.        |                                  |
|                                      |                     | Trane Canada Ltd.   |                                  |
| Fans                                 | Centrifugal         | Twin City           |                                  |
|                                      |                     | Canadian Blower     |                                  |
|                                      |                     | Greenbeck Fan Corp. |                                  |
|                                      | In-line Centrifugal | Twin City           |                                  |
|                                      |                     | Loren Cook Ltd.     |                                  |
|                                      | Direct Drive        | Loren Cook Ltd.     |                                  |

| <b>Ventilation/Heating Equipment</b> |  |                                |                |
|--------------------------------------|--|--------------------------------|----------------|
| <b>Equipment</b>                     |  | <b>Manufacturer</b>            | <b>Comment</b> |
|                                      | Heavy Duty Propeller                               | Canadian Blower                |                |
|                                      | Light Duty Propeller                               | Twin City                      |                |
|                                      |  | Canadian Blower                |                |
|                                      |  | Greenbeck Fan Corp.            |                |
|                                      | Ventilators  | Twin City                      |                |
| Fire Damper                          | Curtain Type                                       | Nailor Hart                    |                |
|                                      |  | American Warming & Ventilating |                |
| Motorized Damper                     | UL Standard 873 listed<br>CSA Class 4813 certified | Belimo                         |                |
|                                      |  | Honeywell                      |                |
| Access Door                          |  | Nail or Hart                   |                |
|                                      |  | American Warming & Ventilating |                |
|                                      |  | <b>Ruskin</b>                  |                |

| <b>Miscellaneous Equipment</b> |  |                     |                |
|--------------------------------|--|---------------------|----------------|
| <b>Equipment</b>               |  | <b>Manufacturer</b> | <b>Comment</b> |
| Automatic Samplers             |  | ISCO                |                |
|                                |  | Sigma               |                |
| Hatch Covers                   |  | Bilco               |                |
|                                |  | Emco                |                |
|                                |  | <b>Flygt</b>        |                |