



Submission Transmittal Cover


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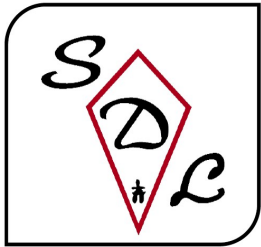
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Camp Facilities Plan

Prepared For:



Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

Public Works and Government Services Canada

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Project:

EW699-222278/001 – Coral Harbour Remediation Project

Coral Harbour, Nunavut

Document History:

The Document Author is authorized to make the following types of changes to the document without requiring that the document be re-approved:

- Editorial, formatting, and spelling
- Clarification

To request a change to this document, contact the Document Author or Owner.
Changes to this document are summarized in the following table in reverse chronological order (latest version first).

Revision	Date	Created by	Short Description of Changes
1	July 9, 2024	Jonathan Markiewicz	Updated Camp Layout. Plan, Photos and Facilities List

Approval / Acknowledgements / Acceptance

Prepared By:

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July 9, 2024



Name and Title

Date

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(please print)

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July 9, 2024

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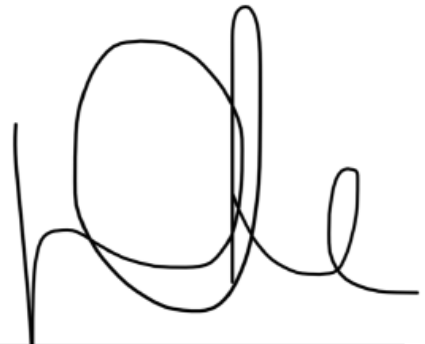
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July 9, 2024



Name and Title

Date

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Client Acceptance:

Name and Title

Date

Signature

(please print)

All aspects of the work will be conducted in accordance with:

- ✓ Local / Provincial / Federal Legislation, Permits and Regulations, as applicable
- ✓ Site Specific Health and Safety Plan (HASP)

NOTE: All site personnel must read and acknowledge review of the HASP, prior to start of any work. Refer to Sign-off Sheet – MEHS # 24 – 1.

NOTE: Always refer to local legislation for specific requirements.

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1 INTRODUCTION

The Camp Facilities Plan (CFP) provides a description of our proposed means and methods for installing, operating and maintaining the temporary camp in Coral Harbour, Nunavut for the duration of the remediation project. This plan is written in conformity with the *Specifications Section 01 54 00 – Camp Facilities*.

The CFP will cover the following topics:

- Camp equipment and materials
- Camp Layout Plan
- Camp Siting Plan
- Camp facilities services
- Waste stream management
- Health and safety measures
- Camp Rules

The following are related submittals to be submitted to PSPC on a later date:

- Appendix F - CAMP LICENSES, PERMITS, AUTHORIZATIONS

2 CAMP EQUIPMENT AND MATERIALS

The Project Team will deliver, install and maintain a temporary camp at Coral Harbour supplied by subcontractor Matrix Camps, Logistics and Aviation Management. The camp will be capable of supporting 15 people at any time, including camp workers.

2.1 Building List

The camp will be a combination of Weatherhaven units and Heli-portable Fly Units. Weatherhaven units are insulated, tension-fabric units that are effective in any climate. These structures can be manufactured to any size to support a variety of camp activities. These structures are easily expandable if additional space is required, and internal layouts are fully customizable.

The hard-wall fly units are hard-walled pre-built structures light enough to be transported by helicopter or a skid steer. The structures are single rooms insulated with 6-inch foam walls. A simple plug and play power system allows for quick power supply. The hard-wall fly units will be used for housing crew members and for office workspaces. These units adhere to spacing and storage requirements laid out in *Specifications Section 01 54 00 1.6*. Sleeper units will be divided into separate male and female units as required.



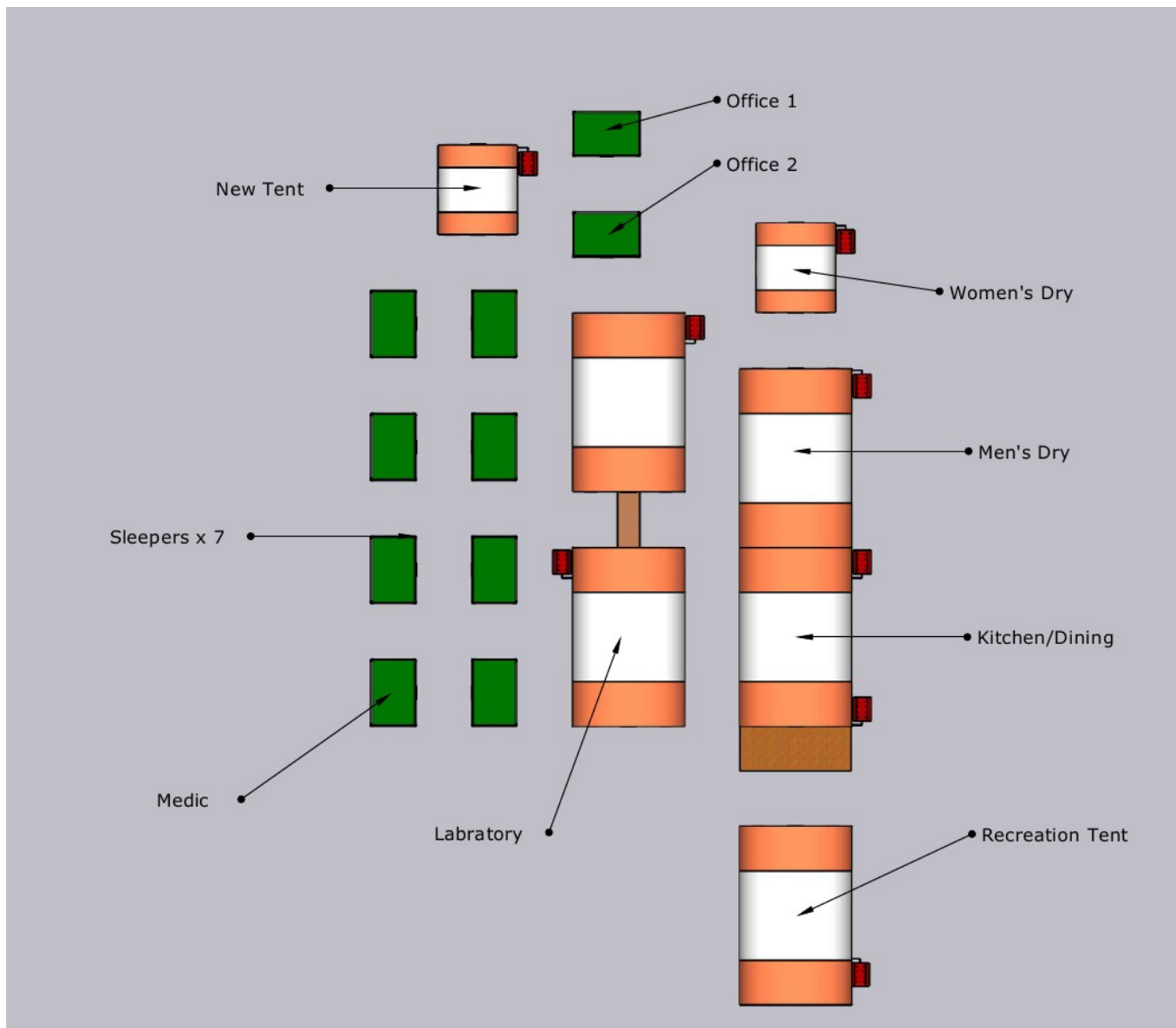
Figure 1: Actual Camp Facility (August 13, 2023).

The following table summarizes the quantity and type of building comprising the Coral Harbour campsite.

Facility	Quantity	Size and Type	Description
2-Person Sleeper Units	4	10' by 12' Fly Unit	2 beds per unit
Single Sleepers	4	10' by 12' Fly Unit	1 bed and 1 desk per unit. Occasional use of 2 nd bed.
Kitchen / Dining / Showers / Laundry / Water Treatment	1	20' by 50' Weatherhaven Unit	Kitchen and dining separated by divider wall from showers and laundry facilities.
Rec Room	1	20' by 20' Weatherhaven Unit	Complete with TV, DVDs, video games, board games, couches and refreshment station
First Aid	1	10' by 12' Fly Unit	One side sleeper for medic. Other side medical treatment area with bed, oxygen station, level 3 first aid kit, AED, lockable filing and prescription cabinets, etc.
Laboratory	1	16' by 16' Weatherhaven Unit	Work area for lab crew with fridge, freezer, lab equipment, etc.
Office	1	10' by 12' Fly Unit	Will contain desks, chairs, filing cabinets, printer/scanner/copier, etc.
Controlled Access Unit	1	20' by 32' Weatherhaven Unit	Complete with heater for drying work clothes, benches, baskets and hangers.
Toilet Block	1	14' by 16' Weatherhaven Unit	Separate male and female washroom facilities.
Generator Building	1	8' by 16' Stick-built building	Housing for generator, main electrical panels, and small tool crib.
4-Person Sleeper	1	14' by 16' Weatherhaven Unit	Additional

2.2 Camp Layout Plan

A as-built layout for the camp is shown below. All structures will be at minimum spaced 3-m apart to adhere to the fire code. The camp will be surrounded by an electric bear fence to protect occupants from polar bears and other wildlife. The camp footprint is approximately 70m by 55m, including the bear fence.



The office and laboratory spaces will be equipped with all required equipment as listed in Specifications Section 01 54 00. A full list of laboratory equipment is available in Appendix A.

2.3 Camp Access

The camp will be situated adjacent to an existing access road (see location details below). If required, a temporary access road into the camp will be constructed for vehicle access. Any temporary access roads will be constructed, maintained and deconstructed at project completion as per *Specifications Section 01 14 00* and the Access Road Management Plan, to be submitted at a later date.

2.4 Water Management

The Project Team plans to source water from the municipality, with an alternate local reservoir, located 1km Northeast from the airport strip, used by the old military encampment.

Potable Water will be transported to the camp using the Hamlet's owned and Operated water truck. As a backup, The Project Team will collaborate with Coral Harbour for water deliveries from a local water truck.

Should water be extracted from the reservoir with a dedicated pump that meets DFO's Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater. Water will be pumped directly to Camp holding tanks and/or a water tank depending on suitable extraction locations determined during the Camp setup phase. The Project Team will sample and test all pretreatment water sources before and throughout camp operations to confirm feasibility/compliance of the pump and treat approach.

The camp will be equipped with dedicated potable water holding tanks. The pump system with we battery powered and located south of the local reservoir. The camp will be fed with treated water using an Ultra-Violet treatment system manufactured by Viqua, specifications provided in Appendix C. Drinking sources will be tested to confirm potability before use. Weekly tests will be conducted thereafter. Drinking water will be sampled as follows:

- Initial source water sampling (once per project year)
- Initial Post Treatment sampling (camp start up, each year)
- Regular QAQC post treatment sampling (weekly during camp operation)

Sampling and testing of potable water will be as described above and in the Health Canada Guidelines for Canadian Drinking Water Quality (GCDWQ). The chemicals to be tested for are described in the Methodology to Complete Sampling and Testing Requirements (Submittal 015). If required to improve taste, the use of mechanical filters, filter cartridge or granular activated carbon cartridges can be added to pretreat the influent before being treated by the UV system.

The Project Team will supply bottled drinking water for project start-up procedures and in case of emergencies.

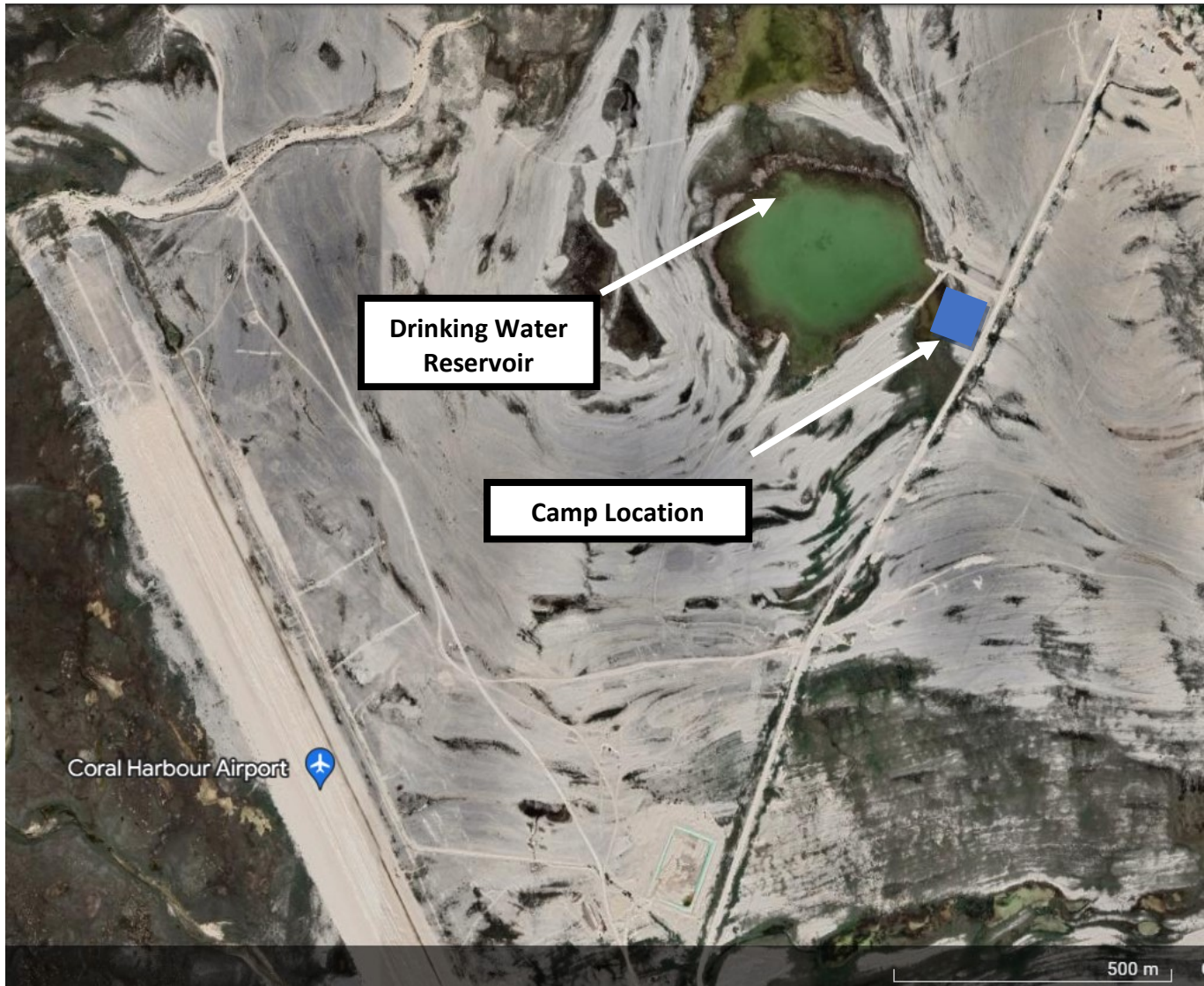
2.5 Waste Management

Greywater from the camp will be stored in bladder bags or poly holding tanks and then directed to a discharge pit. As permitted by the Water License (1BR-COR2325) greywater will be managed using a discharge pit. Like at other remote sites, an infiltration pit will be excavated 30-m from the camp or any open water or water course; then the greywater is allowed to drain into the ground. The pit is protected and covered during use and backfilled at the end of the project. If required, the Project Team will ask for permission to use the local sewage lagoon and contract a local septic tanker truck to transport waste waters. All wastewater treatment, disposal and closure procedures will be followed as per *Specifications Section 01 35 43 – Environmental Procedures*.

The camp will utilize pacto toilets which will allow for the incineration of black water and solid human waste via the camp incinerator. All food waste will be incinerated as well. The incinerator for the disposal of solid wastes will be an A200X by Fire Lake. The incinerator will be offset (downwind) from the camp to reduce interaction with emissions. The incinerator will be operational throughout the day, periodically burning solid waste and garbage as required. Should some of the waste need to be stored before incineration, a bear proof container will be placed near the incinerator for storage. Burning will take place on days when winds are light and blowing away from the camp and operators in accordance to the Burning and Incineration of Solid Waste guideline (Department of Environment, Government of Nunavut).

3 CAMP SITING PLAN

The camp will be located adjacent to an existing roadway and close to the intended water source (see figure below). The approximate location of the camp site in Northing and Easting coordinates is 64.19981N, -83.33938E. This centrally locates the camp among the areas of environmental concern (AECs), approximately 1km from the active airstrip while maintaining safe distance from active work sites. Crews will be able to easily access the campsite if required during daily work activities in this location. The majority of the work zones will be within walking distance, though site trucks will be the preferred method of transportation on existing roadways. With the exception of the established roads or construction access road, travel on Transport Canada's land will be avoided.



Based on information provided at the time of creating this plan, the camp is not believed to be located within 50 meters of any archaeological sites indicated by the Client. If the planned camp location is within 50 meters of an archaeologically significant site, the *Project Team* will work with the Client to determine an appropriate relocation site for the camp.

4 CAMP OPERATIONS

4.1 Camp Crew and Capacity

The camp will have a maximum capacity of 19 occupants with an estimated average occupancy of <10 people. Personnel at the camp will be comprised of:

- 5-6 Milestone Staff
- 2 PWGSC representatives
- 2 camp staff

PWGSC construction representatives (PCRSs) will be situated in single rooms while Milestone staff will occupy the double bed units. Additional rooms will be provided to accommodate representatives of the project authority, the Departmental Representative, PWGSC's construction representative shift change overlap as well as visitors, on occasion. Extra beds will be stored at the camp to temporarily convert single rooms into doubles to accommodate additional occupants. If required, The *Project Team* will utilize local lodging options in Coral Harbour to temporarily house short-term visitors when the camp occupancy is maximized. This is being done to minimize the size of the camp and costs and maximize local economic benefit to the community while complying with the specifications for camp. The majority of *The Project Team's* labourers and operators are local to the community and therefore have their own lodging.

The camp staff will consist of a camp manager and a certified cook. Camp staff will be Matrix staff and will lodge within the camp. The camp cook will also be a registered medic and will double as the camp first aid representative. Camp staff will assist with meal preparation, cleaning, laundry and any maintenance including snow removal.

Crew rotation will occur approximately every 3 weeks for *Project Team* and subcontractor staff. Workers will be allowed a minimum of 10-days of rest between shifts at the site. Shift change arrangements will be dependent on frequency of flights into the local airport. Crew will be transported from the Coral Harbour airport to the campsite by site trucks provided by Milestone.

4.2 Communications

Iridium Satellite phones will be the primary communication method during camp build. Once the camp is built, the 2 Satellite phones will be used as emergency only phones. All necessary amenities for a full communication system will be provided including:

- Internet
- Satellite TV
- Camp documents server
- Landlines
- 2-way handheld radios

Satellite internet will be provided at the camp using Starlink. Starlink's commercial internet provides high-speed internet with 1TB of data per month.

4.3 Fuel Usage

All fuels required to complete the on-site remediation activities can be locally sourced through the community fuel reserves governed by the territory of Nunavut. Diesel consumption for the camp for the duration of the project is estimated to be 94,000 liters. This does not include vehicle and equipment fuel consumption.

Generators used to power the camp will be located at least 30 meters away from any sleeping facilities or open water body.

Fuel will be stored in designated double-walled fuel cubes. Secondary containment trays or spill pallets will be supplied for fuel cubes, generators, and other stationary fuel consuming equipment. Spill kits containing absorbent pads, socks and powders will be located at all refueling stations.

A Fuel Management Plan is included with the HASP.

4.4 Meals

Three meals per day will be provided to all camp occupants. Meals will be prepared by Matrix's certified camp cook in the kitchen unit and served in the dining area. Breakfast and dinner will be served in the dining area before and after shifts, and bagged lunches will be provided in the morning. Snacks and drinks will be available all day. All eggs and dairy products will be Grade "A", beef will be Grade "A", pork will be Grade "I", and fowl will be "utility" or better. Meals will be provided for camp occupants and visitors.

A Food Safety Plan will be provided by Matrix and posted in the camp kitchen. The plan will cover HACCP procedures, cleaning procedures, check logs and a cleaning checklist. The camp manager will assist with meals and cleaning as required.

An example of a weekly rotating menu is shown in Appendix B.

4.5 Cleaning and Laundry

Camp facilities and shared spaces will be kept in tidy and sanitary conditions. The Matrix camp crew will ensure shared spaces are cleaned daily including the rec room, washroom facilities, dining area and kitchen. The crew will also ensure facilities including generators, heaters, sewage systems, water lines, garbage disposal containers, appliances and furniture are clean and in good operating condition. Repairs will be made as necessary.

All beds will be provided with three blankets, two sheets, one bath towel, one face cloth, two pillows and two pillowcases. Sheets and pillowcases will be changed and washed weekly or when sleeper unit occupancy changes. Kitchen attire shall be cleaned daily. Camp and personal laundry will be separate from PPE and work clothing laundry.

4.6 Provisions for PWGSC's Construction Representative (PCRs)

The provisions for the PCR will match or exceed those outlined in Section 01 54 00 – 1.7 Departmental Representative's and PWGSC's Construction Representative Site Office. They will be provided with their own office trailer and sleeping quarters outfitted with all the required amenities to perform their tasks. This includes but is not limited to:

- Office furniture as specified
- Lighting, power and backup power
- 2 Satellite phone lines
- 2 Mobile coms radios
- Multiple Function Centre (printer, scanner, copier, fax) with consumable supplies
- A fridge for sample storage

It should be noted that during Project Meetings when increased PWGSC presence is expected for a short 1 or 2 day duration that additional accommodations will be provided in camp or in Coral Harbour as practical.

The details of the field laboratory will be as specified in Section 01 54 00 – 1.8 and are summarized in Appendix A.

4.7 Camp Decommissioning and Shut Down Procedures

The camp facility will be winterized between the 2023 and 2024 work seasons. Matrix personnel will winterize and shut down the camp completely during this period. All piping and holding tanks will be emptied of any water to prevent line bursts. Perishables and wastes in the camp will be appropriately disposed. Matrix will board up all windows and ensure doors are secured before leaving the site.

Final shut down of the camp facility will be completed after the work scope has been completed in 2024. The final shut-down will follow the same procedure as the winter demobilization. All Temporary lodging will be provided at local inns as required for members completing the camp demobilization.

5 HEALTH, SAFETY AND AUTHORIZATIONS

5.1 Camp Rules

The camp will operate in strict accordance with the rules outlined in Specification Section 01 54 00 1.15 Camp Facility Rules. Camp rules will be distributed among all who come to the camp and will be posted in common areas such as the kitchen and rec room and will be reviewed during mandatory orientation seminars. This includes but is not limited to:

- No drugs or alcohol whatsoever
- Tampering with any safety or electrical equipment is prohibited
- No smoking in any camp buildings; and smoking only in designated areas – clean up butts and other waste
- Fighting, violence, stealing, vandalism and or harassment of any form will be met with zero tolerance
- Possession of a firearm is restricted solely to the wildlife monitors while they are on duty
- Only authorized persons allowed in camp; a list of authorized persons will be maintained by the camp supervisor
- A curfew of 11pm to 7am
- All emergency procedures will be followed by all occupants in the event of emergency. All occupants will gather at the designated muster area (TBD upon camp construction)
- Sign-in / sign-out log to track whereabouts of personnel.

Breaking any camp rules could result in immediate dismissal and removal from the Site. The project team will enforce Milestone's company policies while in camp.

A designated smoking area will be determined within the camp and will be in accordance to Federal, Territorial, and local regulations and guidelines. The smoking area will be at least 10 meters from any shared building or accommodation units and away from any flammable material storage areas.

An example of the camp rules signage that will be posted is included in Appendix E.

5.2 Camp Security and Wildlife Safety

A visitors log will be used for all people (workers included) coming and going from the camp with their intended destination and time of departure and return. Site security and/or surveillance will be in effect when the camp is not occupied, typically during normal work hours and during winter shut down.

Local wildlife monitors will be present onsite with access to a vehicle and firearms. A 55-m by 70-m electric polar bear fence will be installed around the perimeter of the camp with a 10-m vehicle gate for access to the camp. The electric fence will be 7000V predator fencing suitable for polar bear deterrence. An alarm system will be installed and tested regularly should the main deterrent fence fail, or the wildlife monitors are not patrolling the camp. All garbage and wastes stored outside the main encampment complex will be kept in bear-proof storage containers and incinerated promptly to avoid attracting wildlife.

5.3 Emergency Procedures

All camp occupants and visitors will be oriented to the camp's emergency procedures as well as Milestone's Health and Safety Plan (HASP). The emergency procedures will cover locations of fire extinguishers, first aid kits and eye wash stations within the camp. All visitors will be made aware of emergency exits and emergency muster points. The camp will be fitted with a functional fire alarm and firefighting system in strict accordance with the rules outlined in Specification Section 01 54 00 1.1.5.6 , and Milestone staff will be trained to use fire extinguishers.

The camp staff will include a designated, trained medic. The medic will be situated in camp during the day. Milestone superintendents will also be first aid certified.

All first aid kits will be easily accessible and kept stocked with appropriate supplies for a camp of 5-15 people. All work trucks will also contain a fire extinguisher and first aid kit. Names and Qualification of the Site “First Aid” Personnel will be posted on the camp Health and Safety board.

6 PERMITS, LICENSES AND AUTHORIZATIONS

Regulatory compliance for the Camp can be broadly broken down into two components, during construction/tear-down and during operations. However, many documents cover both components, as such the following is a compiled list of the regulations and guidelines the *Project Team*, and its camp operator Matrix will be adhering to throughout the project.

- Land Use Permit (01-600-24)
- Water License (1BR-COR2325)
- National Fire Code of Canada, 2015.
- Workers' Safety and Compensation Commission (WSSC) – Northwest Territories and Nunavut Code of Practice :
 - Camp Set Up and Maintenance
 - First Aid
 - Cannabis
 - Personal Protective Equipment (PPE)
- Northern Land Use Guidelines – Volume 6: Camp and Support Facilities, 2011
- Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities, 2002, revised April 2011.
- Environmental Tobacco Smoke Work Site Regulations (R-027-2003).
- Consolidation of Fire Prevention Act, (R.R.N.W.T. (Nu) 1990,c.F-12; as amended by R-008-2018).
- Spill Contingency Planning and Reporting Regulations (R-068-93).
- Fisheries Act (R.S.C., 1985, c. F-14).
- Guidelines for Canadian Drinking Water Quality (Health Canada, September 2020).
- Fisheries Act, Wastewater Systems Effluent Regulations (SOR/2012-Technical Document for Batch Waste Incineration (EC, 2010).
- Guideline for Burning and Incineration of Solid Waste (Department of Environment, Government of Nunavut 2012)

Copies of any applicable Camp permits, licenses, authorizations will be consolidated within Appendix F, as received, and maintained on site in a physical copy.

Appendix A

Geotechnical Laboratory Equipment List

The geotechnical lab on site will be equipped with the following equipment:

- One (1) forced convection bench top laboratory oven with digital controls, stainless steel interior and suitable for effective drying of soil samples.
- One (1) 1.5" sample splitter.
- One (1) 6" Proctor Mould for the Standard Proctor Test: ASTM 698
- One (1) Standard Proctor Hammer.
- One (1) rack of sieves: 200 mm metric sieves, or equivalent. Sieve sizes: 0.075, 0.150, 0.425, 1.18, 2.36, 4.75, 9.5, 25.0, 50.0, 75.0 and 100.0 mm.
- One (1) wash sieve, lid and pan.
- Pans and Tares:
 - Two (2) each 13" x 9" x 2"
 - Two (2) each 26" x 18" x 3.5"
 - Two (2) each 9.3" x 5.3" x 2.7"
 - 100 paper plates - 200 mm min. diameter.
 - 100 aluminum pie plates - 200 mm min. diameter (for use in oven).
- One (1) brass sieve brush and one soft sieve brush.
- One (1) precision grade electronic scale with an accuracy and readability to 0.1 g and a minimum capacity of 40 kg.
- One (1) polyethylene tarp for sample splitting: 1.8 m x 1.8 m minimum size.
- One (1) 115 V / 60 Hz portable sieve shaker with timer and minimum 1/3 hp motor drive. This unit must be capable of securing a minimum of eleven full size 200 mm sieves
- One (1) pair of oven mitts.
- One (1) metal scoop.
- One (1) leveling rod.
- One (1) rubber mallet.
- One (1) scrub bucket.

Appendix B

Weekly Meal Rotation Example



MATRIX

Camps | Logistics | Aviation Management

SAMPLE MENU

WEEK

Version: 1

Document ID: CAT-05-110

BREAKFAST

Buffet Service	Daily Breakfast Special		
Hot & Cold Cereal	Fruit Platter	Eggs to Order	Pancakes & French Toast
Toaster Station	Yogurt	Bacon, Ham & Sausage	Grilled Potatoes

AVAILABLE AT ALL MEALS

Fresh Fruit Bowl. (Apples, Oranges & Bananas)	
Cheese & Pickle Tray	Scratch Made Breads
Cookies Squares, Pastries & Muffins	Sandwich Station

LUNCH	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
	Soup	Soup	Soup	Soup	Soup	Soup	Soup
	Cream of Broccoli	Sweet Potato & Lentil	Chicken Rice	Cream of Mushroom	Hearty Winter Veg	Minestrone	Tomatoes Macaroni
	Bagged Lunches Available 24/7						
	Packaged Leftovers						

SUPPER	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1
	Beef Stew	Sweet & Sour Meatballs	Polynesian Pork	Butter Chicken	Fish	Chicken Cordon bleu	Steak Night
	Entrée #2	Entrée #2	Entrée #2	Entrée #2	Entrée #2	Entrée #2	Entrée #2
	Farmers Sausage	Chicken Pot Pie	Beef Tacos	BBQ Pulled Pork	Jerk Chicken Fajitas	BBQ Chicken Wings	Shepard's Pie
	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree
	Summer Vegetable Pasta	Vegetarian Ribs	Quinoa and Black Beans	Spaghetti Squash	Portabella Mushroom Burgers	Vegetarian Meatloaf	Zucchini Patties
	Vegetable # 1	Vegetable # 1	Vegetable # 1	Vegetable # 1	Vegetable # 1	Vegetable # 1	Vegetable # 1
	Creamed Onions	Carrots	Mashed Turnip	Curried Cauliflower	Broccoli & Cheese	Mixed Vegetables	Grilled Tomatoes
	Vegetable # 2	Vegetable # 2	Vegetable # 2	Vegetable # 2	Vegetable # 2	Vegetable # 2	Vegetable # 2
	Green Beans	Brussels Sprouts	Stir Fried Celery	Peas	Creamed Corn	Butternut Squash	Minted Peas
	Starch # 1	Starch # 1	Starch # 1	Starch # 1	Starch # 1	Starch # 1	Starch # 1
	Spanish Rice	Fried Rice	Garlic Noodles	Basmati Rice	Chips	Egg Noodles	Stuffed Potatoes
	Starch # 2	Starch # 2	Starch # 2	Starch # 2	Starch # 2	Starch # 2	Starch # 2
	Mashed Potatoes	Roasted Potatoes	Rice	Roasted Potatoes with East Indian Spices	Spicy Fried Noodles	Italian Roasted Potatoes	Alfredo Pasta
	Salads	Salads	Salads	Salads	Salads	Salads	Salads
	Tossed Salad	3 Bean Salad	Layered Asian Salad	Citrus Salad	Coleslaw	Spinach Salad	Caesar Salad
	Dessert	Dessert	Dessert	Dessert	Dessert	Dessert	Dessert
	Rice Pudding	Banana Cream Pie	Coconut Cake	Apple Crip	Peach Napoleon	Fruit Flan	Tiramisu

SAMPLE MENU
WEEK

Version: 1

Document ID: CAT-05-110

BREAKFAST

Buffet Service	Daily Breakfast Special		
Hot & Cold Cereal	Fruit Platter	Eggs to Order	Pancakes & French Toast
Toaster Station	Yogurt	Bacon, Ham & Sausage	Grilled Potatoes

AVAILABLE AT ALL MEALS

Fresh Fruit Bowl. (Apples, Oranges & Bananas)	
Cheese & Pickle Tray	Scratch Made Breads
Cookies Squares, Pastries & Muffins	Sandwich Station

LUNCH	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
	Soup	Soup	Soup	Soup	Soup	Soup	Soup
	Cajun Gumbo	Greek Lemon Chicken	Tomato Macaroni	Clam Chowder	Split Pea	Beef Barley	Cream of Potato
	Bagged Lunches Available 24/7						Packaged Leftovers

SUPPER	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1
	Beef Roulade	Fried Chicken	Meat Lasagna	Arctic Char	Pork Tenderloin	Roasted Ham	Beef Roast
	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1	Entrée #1
	Chili	Pork Souvlaki	Seafood Bundles	Cabbage Rolls	Philly Beefsteak Melt	Stroganoff Meatballs	Chicken Fingers
	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree	Vegetarian Entree
	Green Curry Stir Fry	Stewed Okra & Tomatoes	Tomato Stroganoff	Grilled Eggplant Schnitzel	Tofish & Chips	Toasted Quinoa Tabbouleh	Salsa Roja Black Bean Tacos
	Vegetable # 1	Vegetable # 1	Vegetable # 1	Vegetable # 1	Vegetable # 1	Vegetable # 1	Vegetable # 1
	Braised Cabbage	Sweet Potatoes Fries	Zucchini	Broccoli	Bok Choy	Asparagus	Mash Turnips
	Vegetable # 2	Vegetable # 2	Vegetable # 2	Vegetable # 2	Vegetable # 2	Vegetable # 2	Vegetable # 2
	Mashed Cauliflower	Peas with Butter Roasted Almonds	Potato Skins	Honey Glazed Carrots	Stir Fry Vegetable	Lemony Spring Greens	Creamed Onions
	Starch # 1	Starch # 1	Starch # 1	Starch # 1	Starch # 1	Starch # 1	Starch # 1
	Spaetzle Noodles	Sweet Potatoes Fries	Rice	Wild Rice Casserole	Rice	Scalloped Potatoes	Garlic Mashed Potatoes
	Starch # 2	Starch # 2	Starch # 2	Starch # 2	Starch # 2	Starch # 2	Starch # 2
	German Potato Salad	Rice	Potato Skins	Scalloped Potatoes	Spicy Roasted Potatoes	Perogies	Roasted Baby Potatoes
	Salads	Salads	Salads	Salads	Salads	Salads	Salads
	Tossed Salad	Quinoa and Chickpea	Tomato & Cheese	Spinach & Apple	Caesar	Mixed Green	Coleslaw
	Dessert	Dessert	Dessert	Dessert	Dessert	Dessert	Dessert
	Apple Kutchen	Carmel Pot	Crème Brulee	Strawberry Angel Food Cake	Mixed Berry Cobbler	Banana Crème Pie	Sachertorte

Appendix C

Details of Potable Water Treatment System



PRO Series



PRO10

PRO20

PRO30

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PREFACE

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About VIQUA – a Trojan Technologies Business

We believe clean water is an invaluable resource. That's why, for more than a quarter of a century, we have led the development of water treatment solutions using environmentally friendly ultraviolet (UV) light. Today, VIQUA has the largest installed base of UV systems in operation on the planet, and many of our innovations define the industry standards for safeguarding our water from the damaging effects of microbial contamination.

From offices and facilities in eight countries, the 800 employees of Trojan are united by an unwavering commitment to deliver advanced water treatment solutions that make water safety a reality worldwide.

VIQUA is an ISO9001:2008 registered company specializing in the design, manufacture and sale of ultraviolet systems for:

- household drinking water
- light commercial drinking water
- point-of-use treatment
- point-of-entry treatment

VIQUA has over 600,000 systems installed worldwide and VIQUA systems can be found in almost every country in the world. Applications of VIQUA systems include rain water harvesting, ground water treatment, disaster relief, humanitarian aid, medical devices and bottled-water refill stations.

Scope

This document highlights the features and specifications of the PRO10, PRO20, and PRO30 systems. These PRO products are NSF Standard 55 Class A certified and are ideal for regulated markets and light commercial applications.

1.0 PROJECT & SYSTEM DESCRIPTION

1.1 Project Description

Project Name		Guidelines
Maximum flow rate		10, 20, or 30 GPM
Design dose		40, 80, or 120 mJ/cm ²
Operating pressure		15 psi (103 kPa) - 125 psi (862 kPa)
Ambient air temp.		0°C (32°F) - 40°C (104°F)
Ambient water temp.		2°C (35.6°F) - 40°C (104°F)
Hardness		120 ppm (7 grains / gallon) max.*
Manganese content		0.05 ppm max.*
Iron content		0.3 ppm max.*
UVT		75% min.*

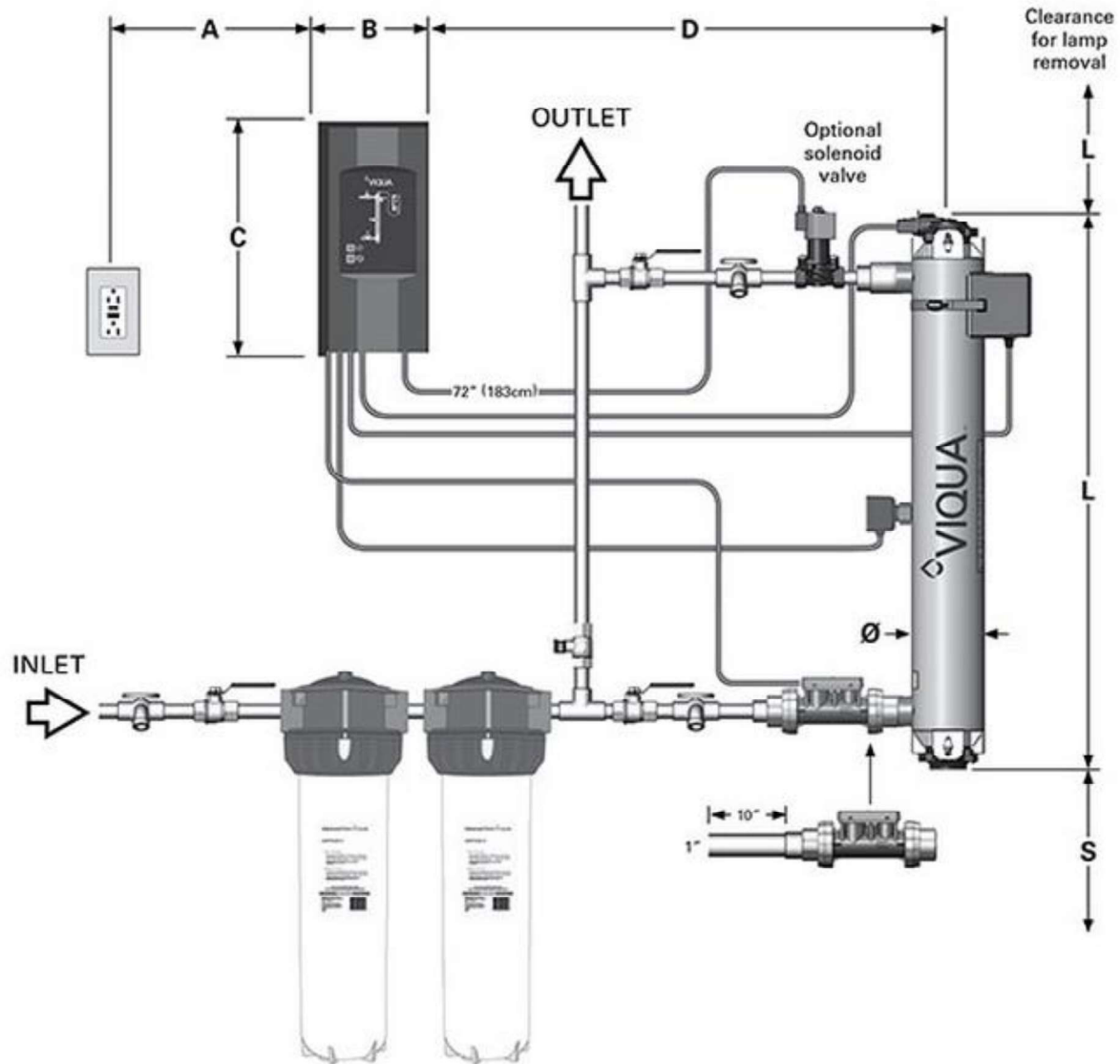
*after pretreatment

1.2 System Description

Model	PRO10	PRO20	PRO30
Quantity			
Chamber			
Material	316L SST		
Dimensions	21.4" x 4" (55 x 10 cm)	31" x 4" (78 x 10 cm)	41" x 4" (103 x 10 cm)
Inlet & outlet ports	Combo 1-1/4" MNPT, 1" FNPT		
UL Certified burst pressure	300 psi (2.067 MPa)		
Orientation	Vertical		
Integrated flow restrictor	10 GPM (38 lpm) max.	20 GPM (76 lpm) max.	30 GPM (113 lpm) max.
Electrical			
Power Supply	13" x 6.5" (33 x 16.5 cm)		
Voltage	100 - 240 V AC		
Frequency	50 - 60 Hz		
Max. current	2.5 Amps	2.5 Amps	2.5 Amps
Max. power consumption	120 Watts	160 Watts	230 Watts
Lamp power	100 Watts	140 Watts	200 Watts
Spare Parts	Quantity	Optional Accessories	Quantity
Lamps		COMMcenter™	
Sleeves		Solenoid valve	
UV sensors		4-20 mA Interface	
Flowmeters			
CoolTouch™ Fans			

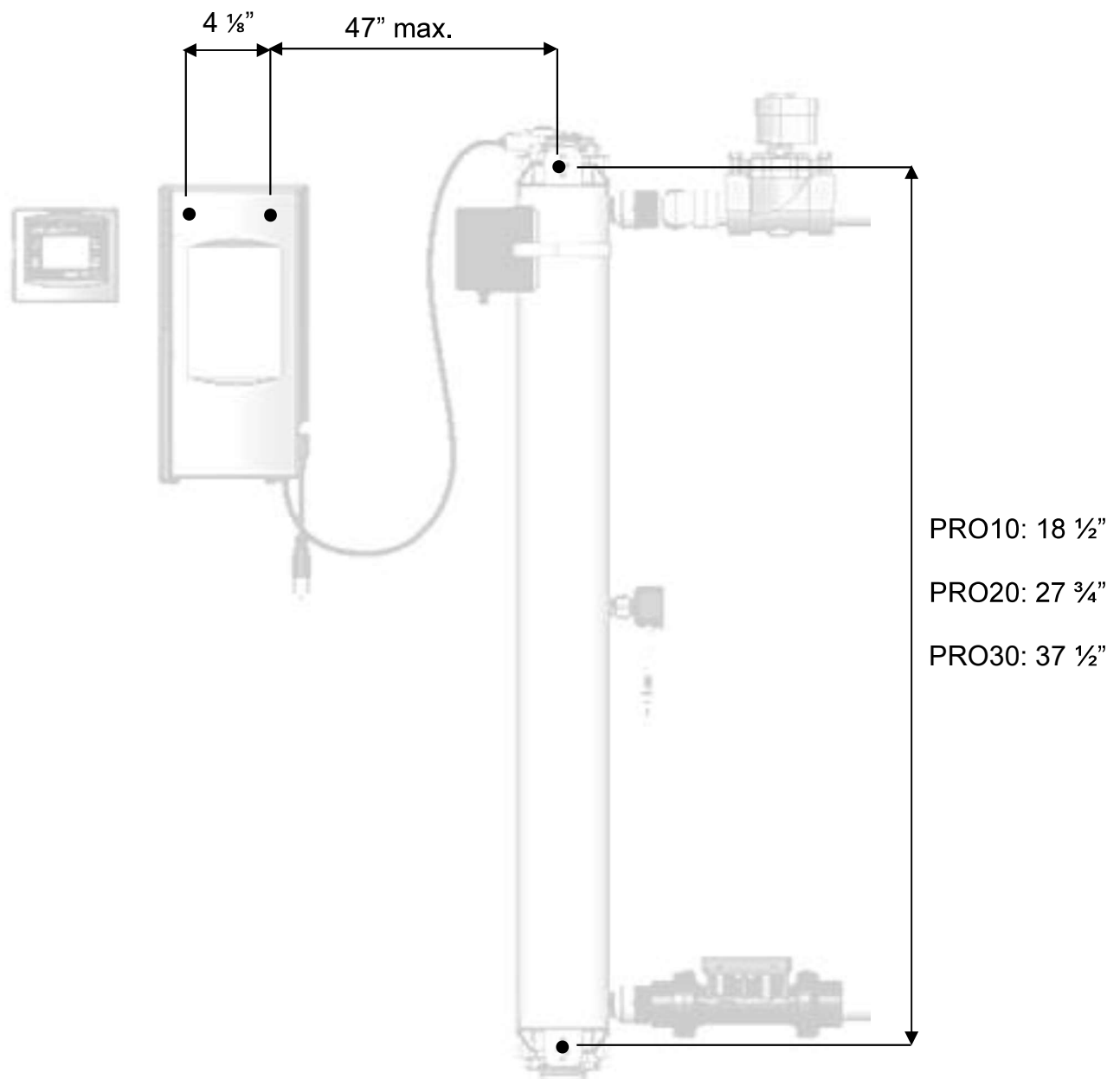
2.0 PRODUCT DRAWINGS

2.1 Install Diagram

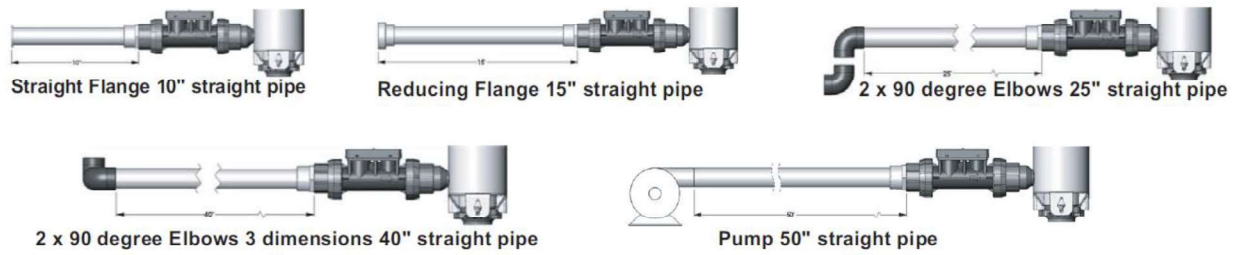


Item	L	S (min.)	Ø	A (max.)	B	C	D (max.)
PRO10	21.4" (55 cm)	12" (30 cm)	4" (10 cm)	72" (182 cm)	6.5" (16.5 cm)	13" (33 cm)	48" (122 cm)
PRO20	31" (78 cm)	12" (30 cm)	4" (10 cm)	72" (182 cm)	6.5" (16.5 cm)	13" (33 cm)	48" (122 cm)
PRO30	41" (103 cm)	12" (30 cm)	4" (10 cm)	72" (182 cm)	6.5" (16.5 cm)	13" (33 cm)	48" (122 cm)

2.2 Mounting Diagram

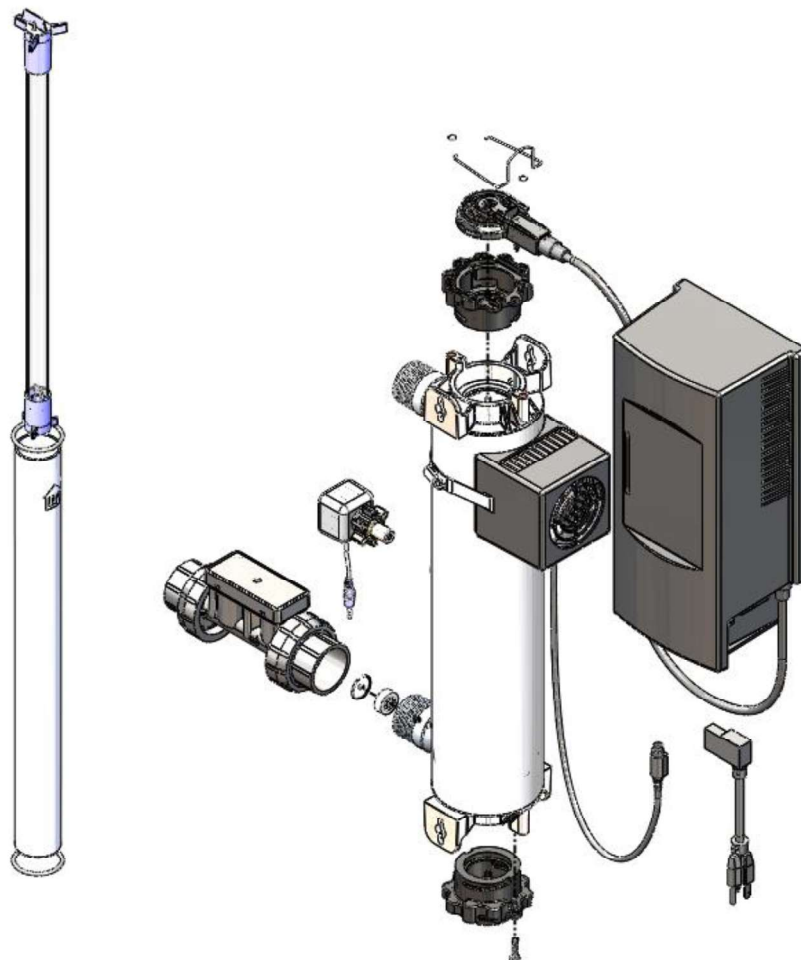


2.3 Flow Meter Installation Option



Note: Flow Meter Sensor must be mounted in the following orientation with the LED facing up. Ensure all air is purged from the piping and Flow Meter Sensor. All straight length to the Flow Meter Sensor must be 1.00" in diameter.

2.4 Exploded View

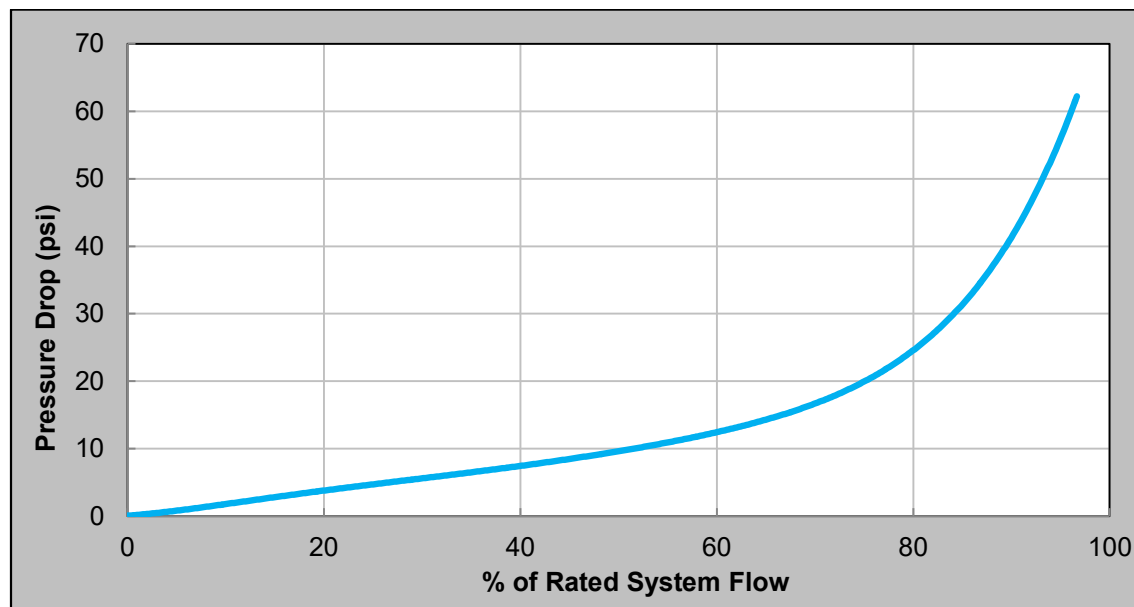


Refer to .pdf and .step files for engineering drawings and part numbers.

3.0 SYSTEM OVERVIEW

3.1 Pressure Drop

The pressure drop across the system is proportional to the flow through the system.

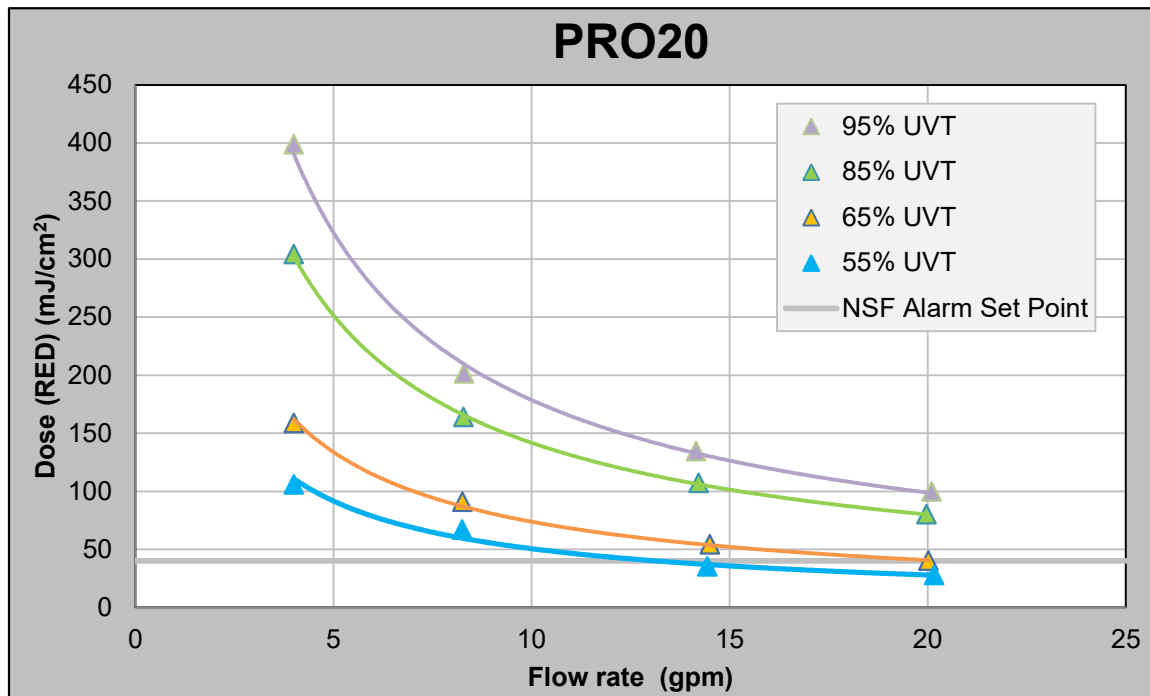
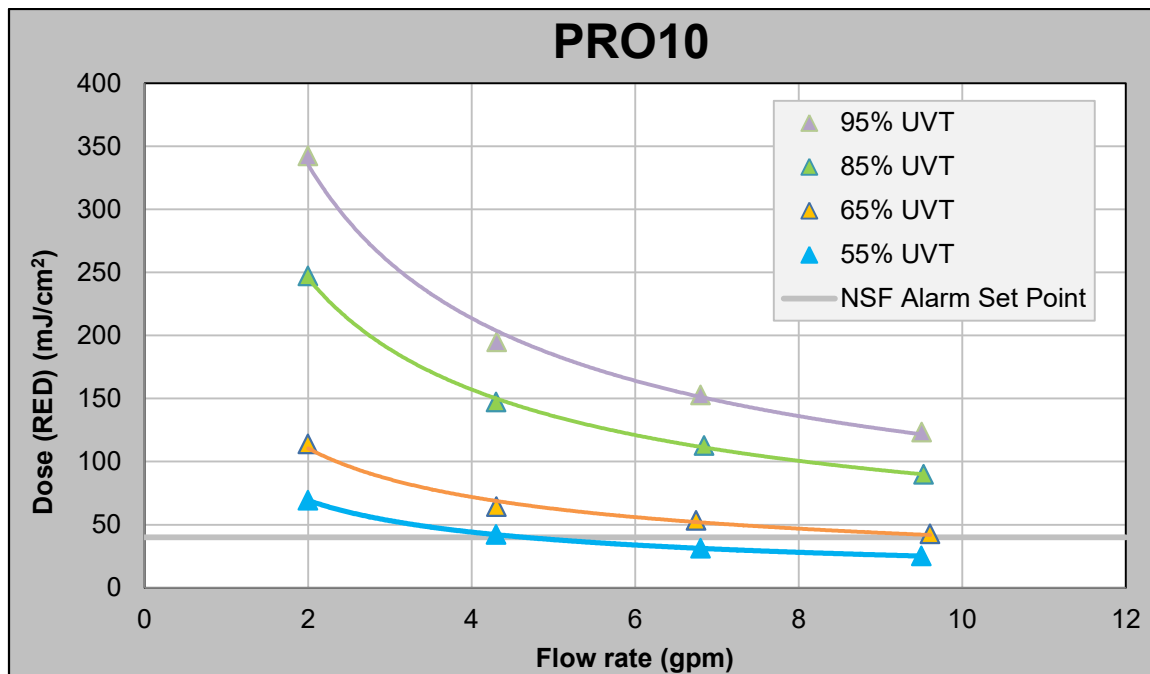


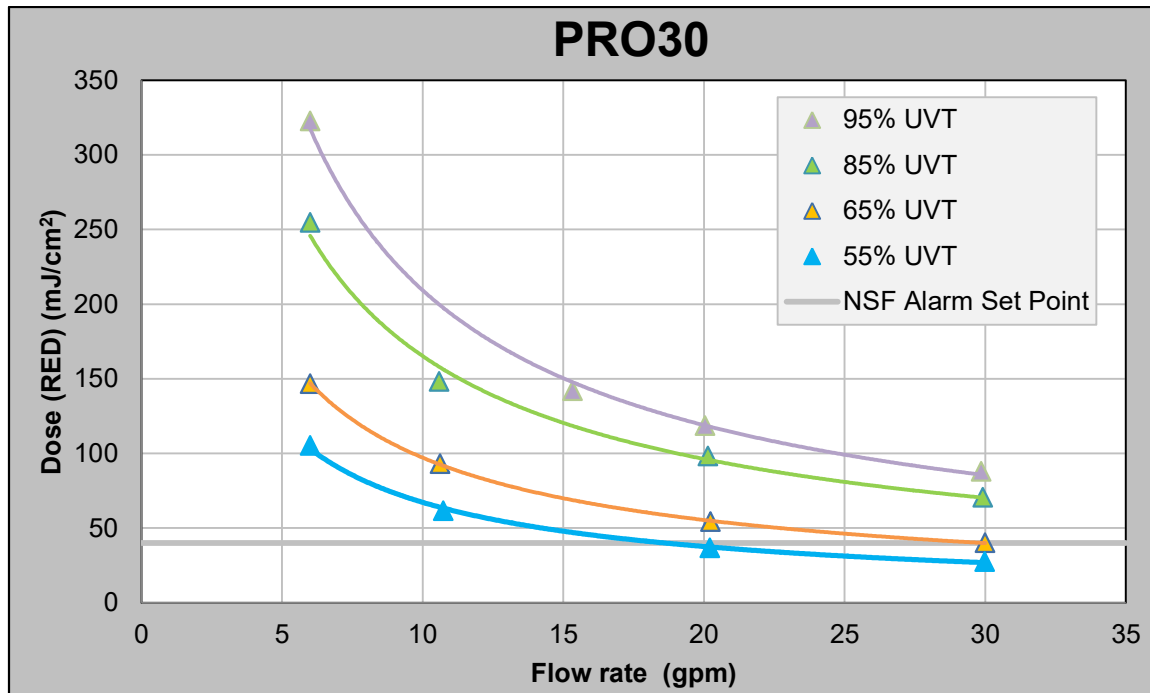
3.2 Dose Curves

Flow rate, UVT, and required UV dose conditions dictate which system is appropriate for a given location.

Dose values such as those in the following graphs are calculated based on set-points. Set-point conditions are determined by third party verified bioassay testing completed in compliance with the 2006 UV Disinfection Guidance Manual (UVDGM).

Each of the PRO systems has a unique flow restrictor to limit flow rates to 10, 20, and 30 GPM for the PRO10, PRO20, and PRO30 systems respectively. These restrictors are found in the inlet port of the chamber and physically inhibit flow rates from exceeding maximum design flow.

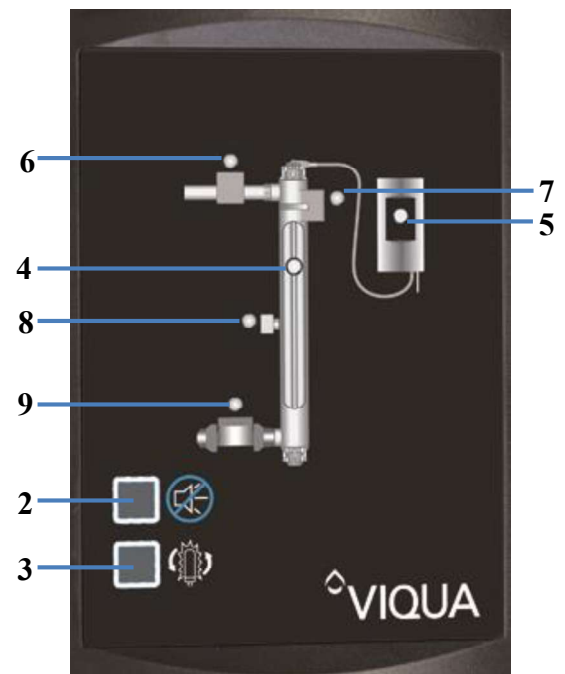




3.3 Controller Interface

The controller is equipped with the following features:

1. Audible alarm
2. Audible alarm mute
3. Replacement lamp counter reset
4. Lamp operation indicator
5. Controller operation indicator
6. Solenoid valve operation indicator
7. Fan operation indicator
8. Sensor reading indicator
9. Flow meter operation indicator



Firmware in the controllers monitors flow rate and sensor input for set point conditions. Controllers will enter audible and visual alarm if the sensor input is too low given the measured flow rate. Set points depend on the Adjustable Alarm Set Points (sec. 3.7.3).

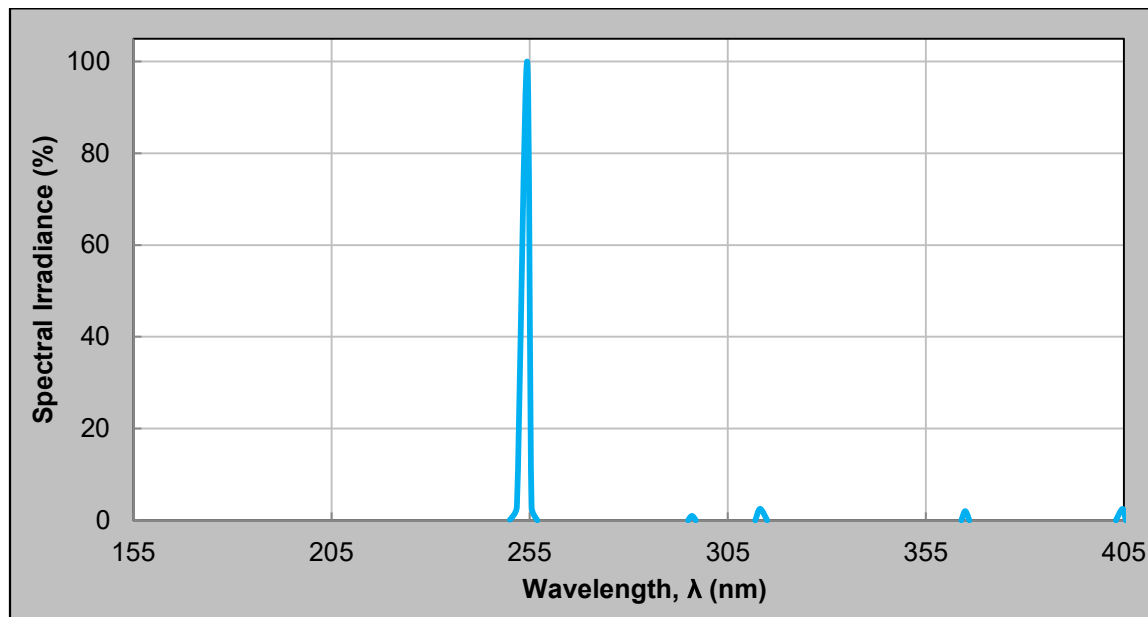
Features

- Continuously monitors and controls the system.
- Communicates minor and major audible alarms when conditions fall outside the NSF Standard 55 Class A prescribed operating range.
- Auto-ranging.
- Constant Current.

3.4 UV Lamp

3.4.1 Mercury Discharge Lamp Spectral Output

The lamp produces germicidal ultraviolet light (UV-C) at a wavelength of 253.7 nm. The absence of a peak at 185 nm is significant because it means no harmful ozone will be produced. VIQUA's PRO system amalgam lamps have a mercury content of less than 15 mg (IMERC registered).



VIQUA's amalgam lamps use a mercury amalgam matrix as opposed to mercury in its pure liquid form. Therefore, the mercury is contained as a secure, solid segment. Additionally, this segment is trapped in a compartment at the bottom of the lamp.

In the case of a broken lamp, this compartment would contain the mercury. Even if this compartment also broke open, the quartz sleeve prevents the mercury from coming in contact with water flowing through the chamber.

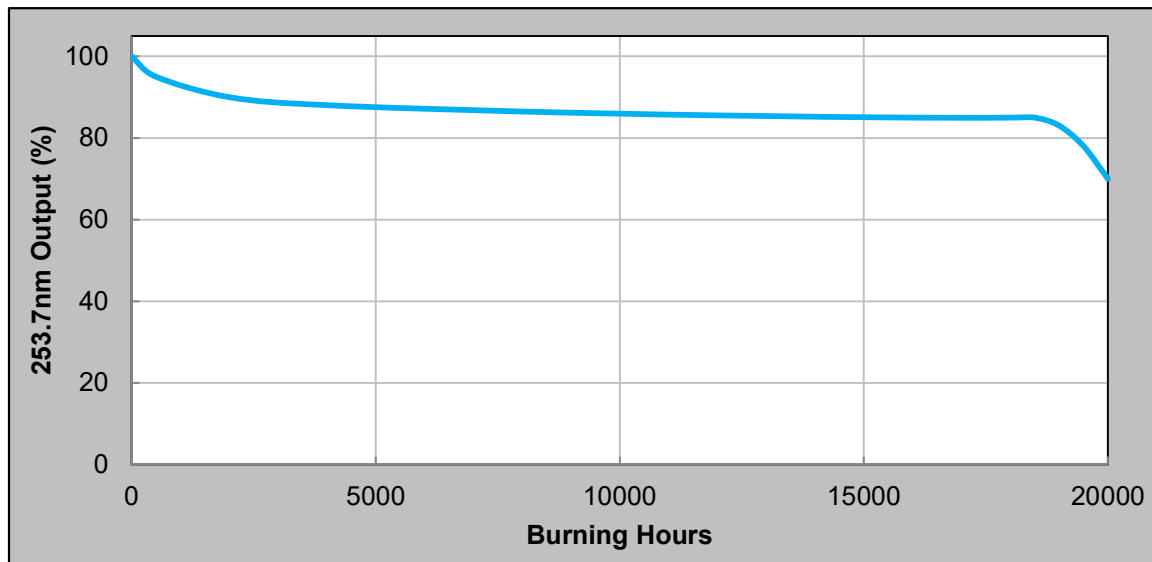


Features

- All electrical connections made at one end of the lamp.
- Lamp base features a diabolic barrier which prevents arcing between pins.

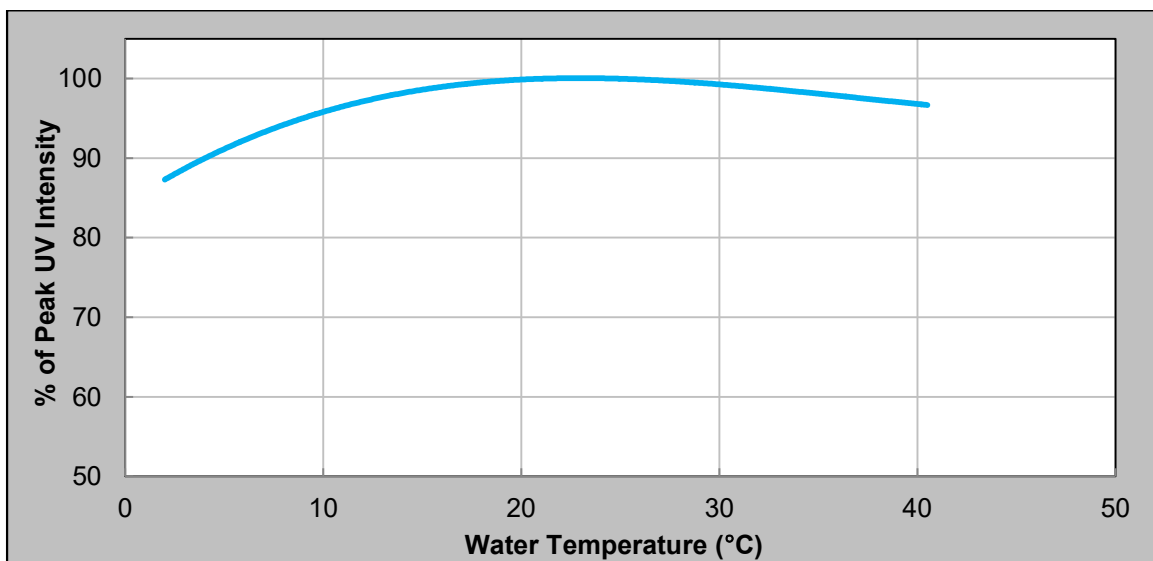
3.4.2 Degradation Chart

Amalgam lamps have a useful life of approximately 18,000 hours. They can provide adequate disinfection for up to two years and then require replacement.



3.4.3 Temperature Profile

VIQUA's lamps use a mercury amalgam mix to control the vapour pressure and produce a more stable output than conventional standard output lamps.



3.4.4 Quartz Sleeve

The UV lamp is enclosed by a quartz sleeve made of GE Type 214 or equivalent clear fused silica quartz.

Mineral deposits will form on the quartz, which inhibit the amount of light that can reach the water. The sleeve must be manually cleaned on a regular basis using a mineral acid such as a calcium, lime, and rust remover.

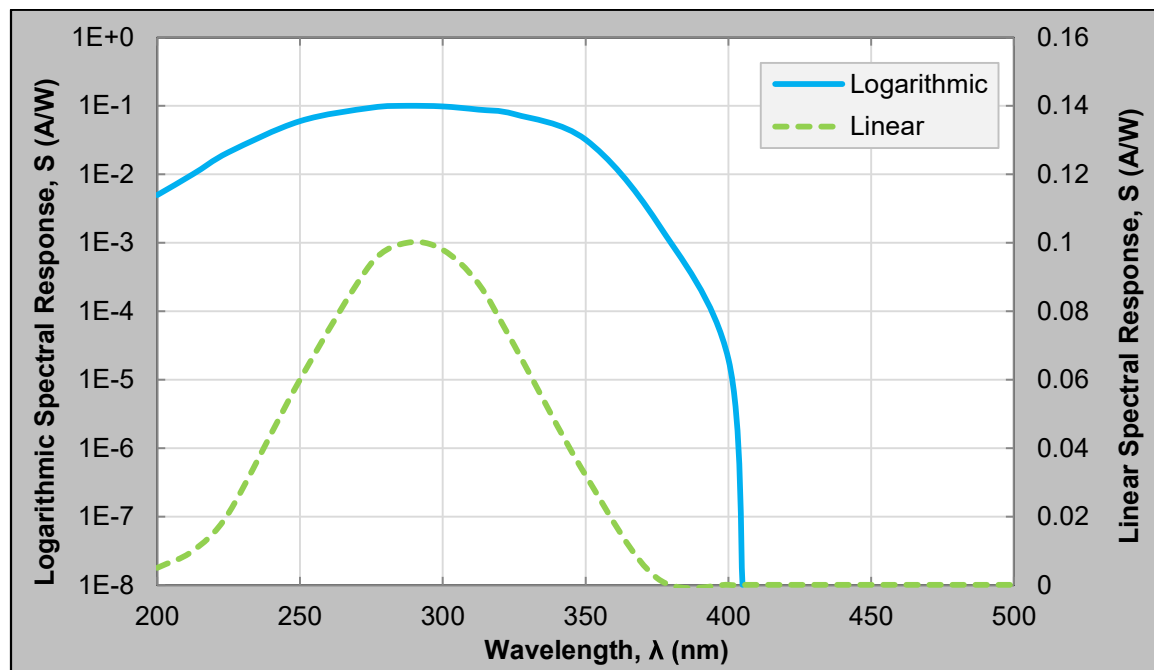
3.5 UV Sensor

Many factors influence a system's level of UV disinfection. Some of these factors include water quality (primarily UVT), lamp output, and quartz sleeve fouling. Rather than base set-points on any one of these factors, alarm set-points are based on the quantity of light that actually reaches the sensor. In this way, the UV sensor detects when the water is no longer being purified properly as a result of change in any influential factor. VIQUA's UV sensors reliably detect low UV output and identify the need for maintenance.



3.5.1 Sensor Response Curve

The sensor's photodiode detects the emitted germicidal 253.7 nm wavelength.



3.6 Flow meter

The flow meter measures the flow rate of water passing through the UV systems. The flow meter utilizes a paddle wheel and a flow detect arm to ensure reliable measurements.



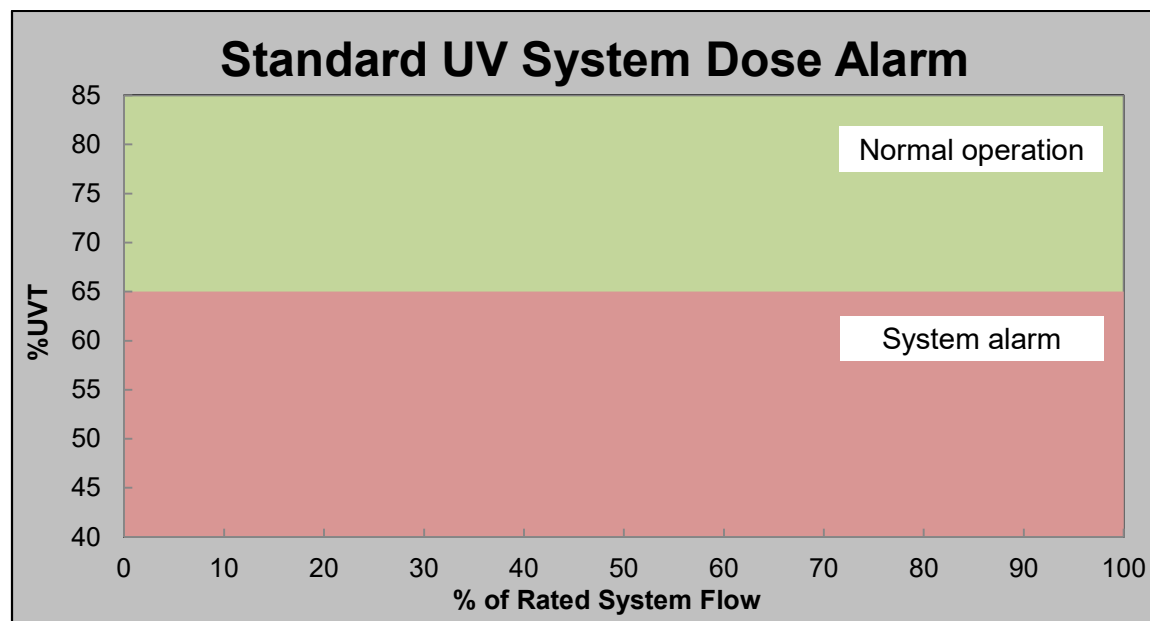
3.7 Product Features and Benefits

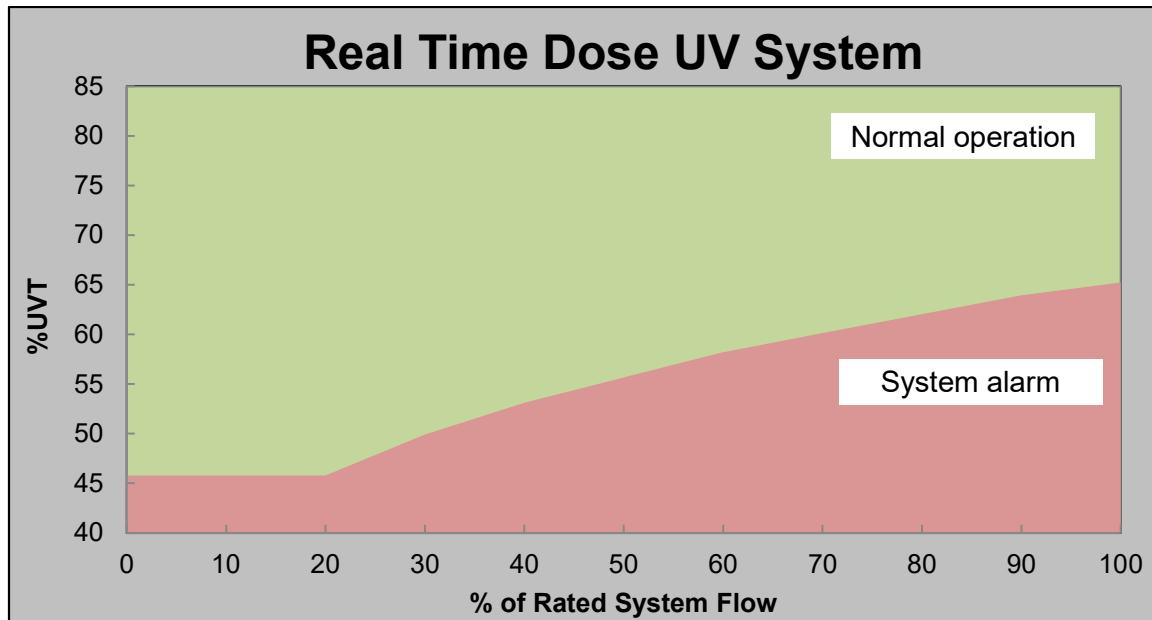
3.7.1 Real-Time UV Dose Monitoring

VIQUA's PRO systems come equipped with real-time UV dose monitoring which utilizes data from both the flow meter and the UV sensor.

Benefits

- More accurate assessment of true operating conditions.
- More time between maintenance.
- Lower probability of false alarms.



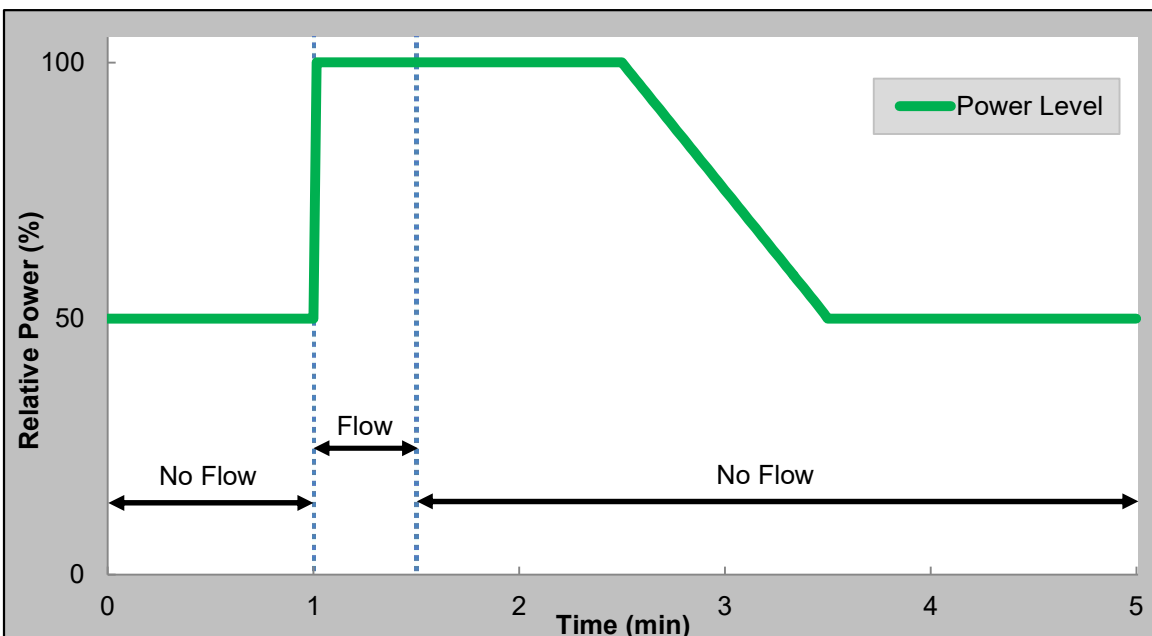


3.7.2 LightWise™ Technology

VIQUA's new LightWise™ technology allows the system's electronic controller to automatically reduce lamp power during periods of no water flow. The dimming capability ultimately reduces the rate of sleeve fouling.

Benefits

- Lower maintenance; up to 60% less maintenance.
- Lower energy consumption; estimated savings of 30%.
- Lower operating temperature; maintained below 40°C in typical no flow conditions.
- Increased electrical efficiency minimizes carbon footprint.



3.7.3 Adjustable Alarm Set Points

The PRO10, PRO20, and PRO30 systems are all capable of programmable low UV dose alarm set points of 40, 80, or 120 mJ/cm². After detecting a low UV dose, a visual and audible alarm will sound within the allowable response time (the time it takes for three void volumes to pass through the system, plus 3 seconds), as per NSF Standard 55 Class A protocol.

System	Dose Selection (mJ/cm ²)		
	40	80	120
PRO10	✓	✓	✓
PRO20	✓	✓	✓
PRO30	✓	✓	✓

Benefits

- Allows for system compliance with regional regulations.
- Ability to tailor low UV alarm set point to custom application.
- Reliable system response time to alarm situations.
- Visual and audible alarm activation.

3.8 Signals and Remote Capabilities

3.8.1 COMMcenter™

The COMMcenter™ provides live monitoring and records past performance. When a Mini-SD card is inserted into the system, information is recorded every minute. A 512 MB Mini-SD card should store 18 years-worth of information. Without the Mini-SD, the COMMcenter™ will store the last 40 alarms that have occurred in memory.



Features

- Displays real-time dose measurements.
- Notifies alarm situations and provides help screens to overcome the problem.
- Archives past performance, water quality changes, power failures, alarms, and lamp age.
- RJ45 Ethernet cable connection between COMMcenter™ and controller.
- 8 GB Micro-SD card and Mini-SD adapter kit (270302-R) sold separately.

3.8.2 Dry Contacts

The dry contact can be used to signal a remote device in event of the following major alarms:



- Lamp Fault
- Ballast (Controller) Fault
- UV Sensor Fault
- Low UV Fault

Connection Logic Chart

Wire	Output Terminal	UV System in Normal Operation	UV System in Major alarm/not powered on
RED	N.O. (Normally Open Contact)	The Electrical path between these contacts are closed	The Electrical path between these contacts are open
BLACK	COM. (Common)		
BLACK	COM. (Common)	The Electrical path between these contacts are open	The Electrical path between these contacts are closed
GREEN	N.C. (Normally Closed Contact)		

3.8.3 4-20 mA Interface

An optional 4-20 mA interface allows the user to read the current output by the UV sensor or the flow meter. The interface can be used to send information to other monitoring systems.



4.0 CERTIFICATIONS

All PRO systems are tested and certified to NSF Standard 55 Class A, UL, CE, RoHS, and Low Lead standards.



5.0 WARRANTY

VIQUA warrants the system components to be free from defects in material and workmanship for the time specified in the table below. During this time, VIQUA will repair or replace, at its option, any defective parts covered by the warranty.

Component	Warranty
UV Chamber	ten (10) years from the date of purchase
Electrical (controller) and Hardware Components	five (5) years from the date of purchase
UV Lamps, Sleeves, and UV Sensors	one (1) year from the date of purchase



VIQUA QUALITY PRINCIPLES

VIQUA is a sustainable business that designs and builds industry-leading UV systems. Our products are used worldwide in applications that help improve quality of life by disinfecting water using UV.

VIQUA utilizes quality materials and processes to ensure each product meets applicable user safety, disinfection, and environmental protection requirements. VIQUA's product development process ensures comprehensive product validation and certification.

VIQUA manufactures each UV disinfection system to very high quality standards. Each system is subjected to rigorous functional testing prior to shipment.

VIQUA is an ISO9001:2015 registered company.

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www.viqua.com

A200X SPECIFICATIONS

PRIMARY CHAMBER

CHAMBER CAPACITY	200 LBS WASTE AT 33 LB/FT ³
CHAMBER VOLUME	6.3 FT ³
DOOR DIMENSION	18" X 24"
REFRACTORY	3", 2,800°F, 126 LB/FT ³
JACKET MATERIAL	ALUMINIZED STEEL
HEIGHT TO DOOR	30"
HEIGHT TO TOP OF CHAMBER	32"

SECONDARY CHAMBER

CHAMBER VOLUME	1.5 FT ³
HEIGHT TO TOP OF AFTERBURNER	5' 9"
REFRACTORY	3", 2,800°F, 126 LB/FT ³
JACKET MATERIAL	ALUMINIZED STEEL
RETENTION AND TEMPERATURE LIMITS	UP TO 1/8 SECOND UP TO 1600°F (CONSULT FACTORY WITH APPLICATION DETAILS. DATA/DESIGN MAY CHANGE PER OPERATING NEEDS)

STACKS

STACK	(1) 14" DIA. 5' LONG STAINLESS STEEL
STACK CAP	(1) 14" DIA. STAINLESS STEEL

BURNERS

MODEL: GAS	(2) J83 W/ SAFETY CONTROLS
MODEL: OIL	(2) AF BECKETT BURNERS
OPERATION	DIGITAL TIMER AND TEMPERATURE CONTROLLED. CYCLES PRIMARY BURNER AS NEEDED.

GENERAL

EXTERNAL PRIMARY DIMENSIONS	2' 2" W X 2' 8" L X 3' 4" H
EXTERNAL OVERALL DIMENSIONS (STANDARD)	2' 2" W X 2' 8" L X 15' 5" H
ELECTRICAL SERVICE	STANDARD: 115 V, 60 HZ, 20 AMP EXPORT MODELS: 220 V, 50 HZ, 10 AMP
GAS SERVICE BASED ON MAXIMUM RATING OF BOTH BURNERS	1,600,000 BTU/HR NATURAL GAS 7" W.C. LIQUID PROPANE 11" W.C.
GAS/FUEL CONSUMPTION (IF CONSTANT OPERATION AND NO BURNER CYCLING ON AND OFF)	NATURAL GAS 326 CFH LIQUID PROPANE 3.55 GPH FUEL OIL 3.15 GPH
TOTAL WEIGHT	2,000 LBS (APPROXIMATELY)
PAD REQUIREMENTS (MINIMUM SUGGESTED OR CONSULT FACTORY)	12' W X 14' L X 4" THICK IF SHELTERED 6' W X 8' L X 4" THICK IF NOT SHELTERED
PAINT	1,200° PRIMER, 1,200° PAINT

CHARGING RATE

PATHOLOGICAL	VARIES BY WASTE PROPERTIES AND OPERATING METHODS. TYPICAL BURN RATE OF 45-75 LBS/HR
--------------	---

AIR FLOW

MINIMUM REQUIRED OPENING IN ENCLOSED BUILDING FOR AIR FLOW	22 FT ²
--	--------------------

Appendix D

Details of Camp waste Incinerator Unit

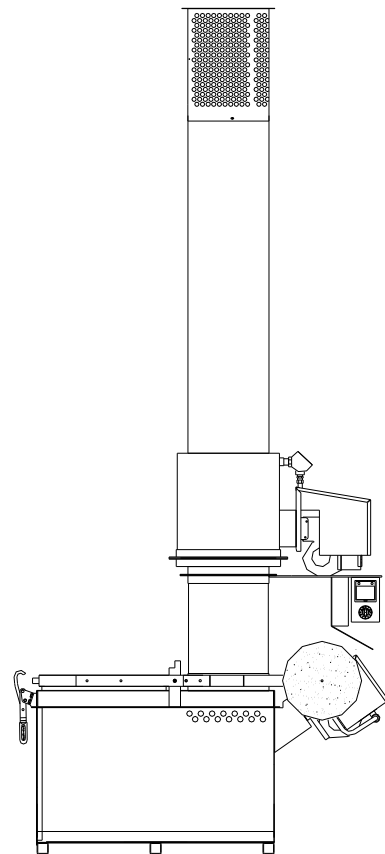


Model A200X **Incineration System**

Unique Design Compliant with Air Quality Regulations

- ☐ Recirculating flue gases assure clean operation.
- ☐ Built by specialists in incinerator systems.
- ☐ Designed for safe, easy operation with simple to use controls.
- ☐ Includes many benefits of high-priced systems, yet within the budgets of small facilities.
- ☐ 200 pound rated load capacity.
- ☐ Easy to use... Set timers and walk away. Thermocouple controls temperature.
- ☐ Available with LP, Natural Gas, or Oil burners. Afterburner is standard.

**LOWEST OPERATING COST IN THE
INDUSTRY!**



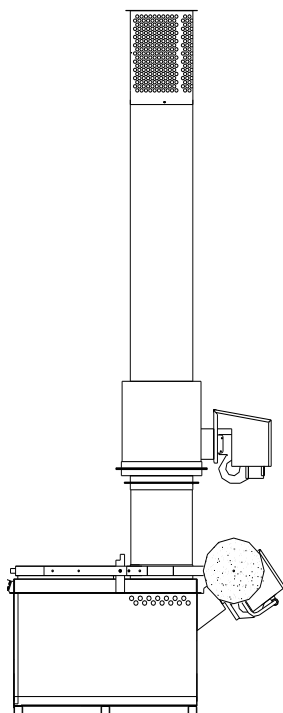
*One simple solution to solid/liquid waste disposal
Immediately eliminates potential to spread diseases*

Firelake Mfg. LLC

919 Cottontail Trail, Mt. Crawford, VA 22841

866-252-3757 www.firelakeincinerators.com

Benefits and Features of the A200X Series



- Concave refractory bottom specifically designed to insure burnout and total destruction of solid and liquid wastes.
- Secondary chamber with burner.
- Insulated, refractory-lined chambers and stacks for durability, energy retention, and emissions control.
- High temperature refractory lined chamber walls.
- Factory assembled, aluminized steel jacket lined with high-temperature refractory.
- Factory cured chambers and stacks.
- Assembly on-site can be done with common farm equipment.
- Counter-balanced fill door.
- Manual set burn time and automatic shut off.
- Burn times are adjustable by operator to meet varying loads.
- Choice of fuels: LP, Natural Gas, or Fuel Oil.
- Stack Test Data available on many models.
- We provide permit and compliance assistance at no cost.

Specifications Summary

A200X Propane, Natural Gas, or Diesel Fired Incineration System complete with two burners, thermocouple and control, secondary burn chamber, stainless and / or refractory lined stack and chambers, and manual operating timer.

WASTE CHAMBER				INSTALLATION Must be installed in accordance with local codes and ordinances, subject to regulatory agencies. Outside installation is recommended with a simple metal roof or three-sided metal shelter, providing a minimum of four foot clearance from any combustible roof materials. Minimum of 18” clearance is required for penetration of combustible roof materials. Inside installations may have special insurance requirements.		
Chamber capacity						
(Type 4 waste-pathological)	200 lbs	91 kg				
Chamber volume (approximate)	6.3 cu. ft.	.18 cu. m.				
Chamber size (inside)	Width	20”	51 cm			
	Height	22”	56 cm			
	Length	36”	91 cm			
Door opening	18”W x 24”L	46 cm x 61 cm				
Height to door	30”	76 cm				
Overall dim’s w/stack 140”H x 42”Wx 65”L 3.5m x 107 cm x 165cm						
Suggested min. slab size (l x w x thick) 8’ x 6’ x 4” 1.8 m x 2.4m x 10cm						
STACK				GENERAL Electrical service Standard – 115 volt, 60 HZ, 20 amp Also available – 220 volt, 50 HZ, 10 amp BURNERS LP or Natural or Diesel burner(s) with spark ignition and flame safety shut-off. OPERATION Manual timer with thermocouple control TOTAL WEIGHT 1350 lbs. (approximate) 600 kg		
Diameter	2 burner system	14”	35.5 cm			
Material	14 gauge (2 mm) lined Aluminized Steel and/or unlined stainless steel					
REFRACTORY THICKNESS						
Primary	3.0”(2800F)	7.6 cm				
Secondary	1.5”(2800F)	3.8 cm				
Stack	1.5”(2800F)	3.8 cm				
APPROX. FUEL CONSUMPTION		A200 LP	A200 NATURAL GAS			A200 Diesel
Upper burner		0.83 GPH	83 CFH			0.5 GPH
Lower burner		3.0 GPH	275 CFH	2.5 GPH		

* Fuel consumption approximate. Actual fuel use depends on BTU content of waste.

Firelake Mfg. LLC

919 Cottontail Trail, Mt. Crawford, VA 22841

866-252-3757

www.firelakeincinerators.com

Appendix E

Camp Rules Poster



CAMP RULES

Coral Harbour Remediation Project

Camp Rules are for the safety and well being of all occupants, worker and visitors. Camp Rules will be followed by all occupants, workers and visitors for the duration of their stay. Breaking any rules could results in immediate dismissal and removal from the project on the first available flight out of the community.

The Rules are:

Illegal drugs and alcohol	None allowed on the project site whatsoever
Smoking	No smoking in any camp buildings; Smoking only in designated outdoor areas – clean up butts and other waste.
Tampering / Vandalism	Tampering with any camp systems, safety or electrical equipment is prohibited.
Violence and Harassment	Fighting, violence, stealing, vandalism and or harassment of any form will be met with zero tolerance.
Firearms	Possession of a firearm is restricted solely to the wildlife monitors while they are on duty.
Wildlife	Do not Feed wildlife. Report all wildlife sightings immediately to wildlife monitors and to your supervisor.
Authorized Persons	Only authorized persons allowed in camp; A list of authorized persons will be maintained by the camp supervisor.
Housekeeping	The camp and work areas are to be maintained in a clean and orderly manner. All wastes are to be disposed of in waste receptacles. Keep stairways, doors, access ways, and ladders clear of materials. Report and Cleanup all spills immediately.
Emergency procedures	All emergency procedures will be followed by all occupants in the event of emergency. All occupants will gather at the designated muster area (TBD upon camp construction – sign will be posted).
Sign-in	Sign-in / sign-out log to track whereabouts of personnel including after designated work hours.
Curfew	A curfew of 11pm to 7am .
PPE	All personnel entering work areas must wear these minimum requirements: full length pants, shirt, CSA safety boots, CSA hard hat, CSA safety glasses, and reflective vest/outerwear. Additional specific PPE may be required in some work area – to be reviewed with your work supervisors.
Health and Safety Orientation	All new occupants and visitors of the camp are to complete the orientation seminar upon first arrival and sign-off the Health and Safety Plan.

Contacts:

Camp Manager	
Site Superintendent	

Appendix F

Applicable Permits, Licenses and Authorizations