



WM-MRS10 RECYCLING SYSTEM



OPERATIONS MANUAL

RGF Environmental Group, Inc
1101 West 13th Street, Riviera Beach, Florida 33404
(561)-848-1826 • FAX (561)-848-9454



Contents

Overview	1
Shipment Inspection.....	1
Pre-Installation Checklist.....	1
Important	2
Section 1–The WM-MRS Recycle System	3
1.0 The WM-MRS Recycle System.....	3
1.1 System Integration	3
Typical System Integration	4
1.4 Terminology (Glossary)	5
Section 2 - Installation	7
2.1 Installation Requirements.....	7
2.2 Installation Procedure for the WM-MRS Recycle System.....	7
2.2.1 Equipment Placement	7
2.2.2 Main Drain Return Line.....	7
2.2.3 WM-MRS Tank.....	7
Section 3 - System Startup.....	11
3.0 Start up Procedure	11
WM-MRS SYSTEM.....	12
3.1 System Operation	13
Section 4 – Preventive Maintenance Schedule.....	15
4.0 Required Tools and Supplies	15
4.1 Daily Maintenance.....	15
4.1.1 Hydrocarbon Accumulator	15
4.1.2 Coalescing Centrifugal Separator	16
4.1.3 Polish Filter Gauges	16
4.3 Weekly Maintenance	16
4.3.1 Trenches, Sumps, Pits, and Clarifiers	16
4.3.2 Polishing Filters	17
4.4 System Winterizing	17
Section 5 – General Theory	19
5.0 General Theory	19
Coalescing Centrifugal Separator.....	19
Process System	19
Supply Header.....	20
Continuous Flow Control System (CFC System).....	20
CFC Pump.....	20
Section 6 – Controlling Water Quality	21
6.0 Controlling Water Quality	21
6.1 pH / Alkalinity	21
6.1.1 pH.....	21
Controlling pH:.....	22
6.1.2 Total Alkalinity	22
6.2 Oxidizers	23
6.2.1 Oxypuck	23



6.2.2 Ozone	23
6.2.3 Ultra-Violet Light	23
6.3 Cleaning Agents	24
6.3.1 Enviro-Blaster	24
6.3.2 Water Conditioner-1 (WC-1)	24
6.4 Dissolved and Suspended Solids	24
6.4.1 Total Dissolved Solids (T.D.S.)	24
6.4.2 Total Suspended Solids (T.S.S.)	25
Section 7 – Engineering Diagrams	27
7.0 Outline	27
7.1 System Layout	28
7.2 Plumbing & Instrumentation	29
7.3 Electrical Wiring Diagram	31
Section 8 - Trouble Shooting	33
8.1 Flow	33
8.2 Electrical	34
8.3 Chemical	35
9.0 Replacement Parts	37
Filters And Parts	37
Chemicals	37
Pumps And Parts	37
Valves And Unions	37
Misc. Parts	37
10.0 System Warranty	39
11.0 Product Registration and Return Forms	45
11.1 Warranty Request From	45
11.2 Warranty Validation Form	45
11.3 Installation / Start-up Record	45
11.4 Client Questionnaire	45

Overview

Shipment Inspection

Immediately upon receipt of the **Recycle System**, you are responsible as the purchaser to take the shipping containers off the truck and inspect the equipment, storage tanks, and parts for damage.

IF ANY VISIBLE DAMAGE TO THE EQUIPMENT IS EVIDENT:

- Notify the driver for the courier company **immediately** and write on the Bill of Lading what is damaged or missing.
- Call **RGF** immediately at (561)-848-1826 or **FAX** (561)-848-9454 a copy of the Bill of Lading with damage or missing items to **RGF**.

Pre-Installation Checklist

Remove the **RGF PACKING SLIP** and the **BILL OF LADING**. Verify the condition and presence of all the parts and components found on the pallets and skids. Remove the **LOOSE PARTS CHECKLIST** from inside of the **LOOSE PARTS BOX** and verify the condition and presence of all the parts and components within the box. If any of the items are missing, please contact your distributor immediately or **RGF** at (561)-848-1826 or **FAX** (561)-848-9454.



Important

- ALL OPERATING PROCEDURES, CAUTIONS, AND WARNINGS SHOULD BE ADHERED TO WHEN OPERATING THE WM-MRS® SYSTEM AND WHEN USING THE RECYCLED WATER PROCESSED THROUGH THE SYSTEM.
- ALL OSHA GUIDELINES SHOULD BE FOLLOWED AND MATERIAL SAFETY DATA SHEETS (M.S.D.S.) FOR ALL CHEMICALS BEING USED TO TREAT THE RECYCLED WATER SHOULD BE POSTED BY THE OWNER OR OPERATOR OF THE SYSTEM IN A CONSPICUOUS PLACE FOR ALL PERSONS COMING INTO CONTACT WITH THE SYSTEM.
- PERSONAL PROTECTIVE EQUIPMENT SHOULD BE USED BY ALL PERSONS UTILIZING CHEMICALS WHEN MAINTAINING AND OPERATING THE SYSTEM TO AVOID PERSONAL INJURY.
- ENSURE ALL AREAS SURROUNDING THE SYSTEM ARE ADEQUATELY VENTILATED.
- PRECAUTIONS SHOULD BE TAKEN TO AVOID ADDING EXCESSIVE CHEMICALS TO THE RECYCLING SYSTEM. (REFER TO SECTION 6.0, CONTROLLING WATER QUALITY)

ADDITIONAL SAFETY PRECAUTIONS ARE LISTED THROUGHOUT THE MANUAL.

Section 1–The WM-MRS Recycle System

1.0 The WM-MRS Recycle System

Congratulations on the purchase of your new WM-MRS Recycle System, the most advanced water recycling system available today. This manual contains information on system installation, start-up, operation and maintenance. It also provides data on controlling water quality, training bulletins, and the theory behind how the Recycle System operates. In order to perform installation, start-up and maintenance procedures easily and correctly, it is important to become familiar with each system component. Make this manual a working part in your system operation.

1.1 System Integration

The RGF line of Recycle systems was designed as modular units, to suit various treatment technologies. **RGF** has several individual components that may be integrated together as shown in Figure 1.1. The composition of your waste stream will determine how your distributor or system integrator will add additional components to the standard system. If additional components have been added, become familiar with the components names and functions and where they will fit into the waste streams flow (refer to the individual component or systems operations manual for operation and maintenance). Below is typical system integration for the oil/water separator system.

Sections 1.2 and 1.3 contain specifications and general flow diagrams for the particular model that you have purchased. Additional components will be referred to in the Terminology and remaining sections.

Typical System Integration

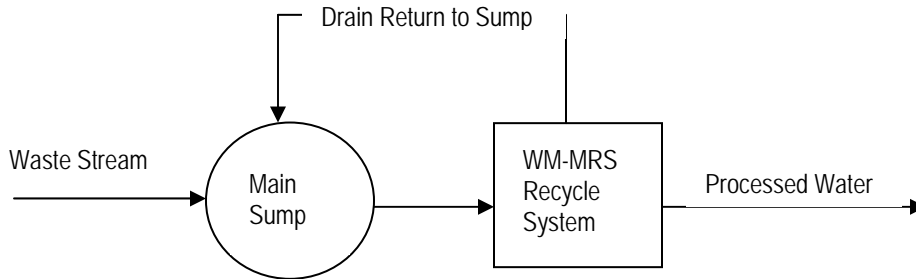
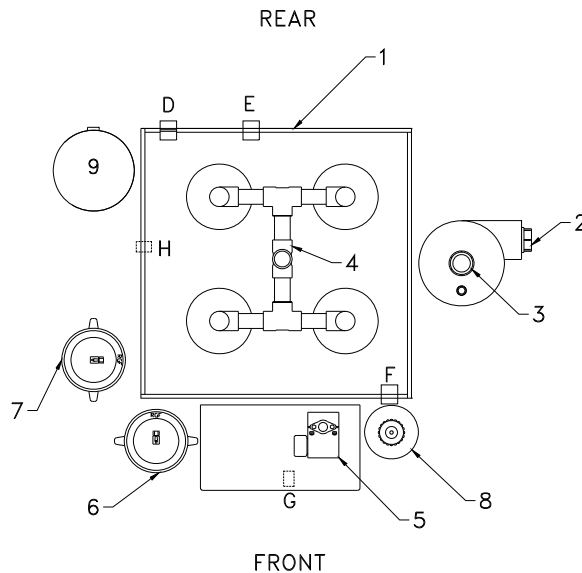


Figure 1.1



System Flow Diagram

- 1.) WM-MRS Poly Tank
- 2.) Waste Water Inlet from Main Sump
- 3.) Coalescing Centrifugal Separator Product Port
- 4.) Pressurized 4 Bag Filter Inlet Manifold
- 5.) CFC Recirculation/Process Pump
- 6.) Supply Outlet Polish Filter #1
- 7.) UV Recirculation Polish Filter #2
- 8.) CO3P Chamber
- 9.) Hydrocarbon Accumulator

1.4 Terminology (Glossary)

The following terms correspond with the components indicated in the previous flow diagrams.

1) WM-MRS POLY Tank

A square poly tank that supports the Polish Filters, Coalescing Centrifugal Separator, Hydrocarbon Accumulator, CO3P Chamber, Pressurized 4 bag filter and Control Panel.

2) Wastewater Inlet

A 1-1/2" PVC inlet pipe which directs the incoming wastewater from the sump to the Coalescing Centrifugal Separator Inlet Port.

3) Coalescing Centrifugal Separator Product Port

Once the waste water enters the top side of the separator, the solids separate to the outside of the vessel while the product water exits the top product port.

4) Pressurized 4 Bag Filter Inlet Manifold

Once the product water exits the separator, it enters into the 4 Bag Filter manifold Assembly splitting the waste steam up into the four 100 micron filtering bags.

5) CFC Recirculation/Process Pump

The 1/2 HP CFC pump is used to push the water through the polish filters supplying the supply outlet as well as a recirculation path.

6) Recirculation Polish Filter #2

This Polish Filter's main job is to continuously polish the water from the poly storage tank then direct it through the ozone venturi and re-enter the tank for a continuous recirculation.

7) Supply Outlet Polish Filter #1

This Polish Filter's main job is to polish the water from the poly storage tank and direct it to the supply outlet.

8) CO3P Chamber

This chamber produces ozone, which is mixed in to the recycled water through the venturi. The chamber also produces an Ultraviolet light, which is a sterilizer used to UV destruct organics and excite ozone and hydrogen peroxide in the Catalytic Oxidation Process (CO3P) as the water passes through the chamber.

9) Hydrocarbon Accumulator

The accumulator is attached to the side of the WM-MRS aluminum frame and collects the free oils that are purged from the top of the CCS.

Section 2 - Installation

PLEASE READ THE INSTALLATION PROCEDURE COMPLETELY BEFORE
INSTALLING AND OPERATING THE UNIT.

2.1 Installation Requirements

The **WM-MRS Recycle System** must be installed in compliance with the following procedures in order for the warranty to be activated. The purchaser is responsible for providing the required utilities (i.e. water, electricity, and drainage) to the system and connecting them according to local codes. If the system must be modified by **RGF** or the distributor in order to meet the requirements of local codes, the purchaser will be required to pay the modification costs.

2.2 Installation Procedure for the WM-MRS Recycle System

NOTE:

**MAKE SURE TO USE TEFLON TAPE OR TEFLON PASTE ON ALL
THREADED CONNECTIONS AND PVC GLUE ON ALL SLIP CONNECTIONS.**

2.2.1 Equipment Placement

Place the equipment on a concrete pad location as desired. Allow a minimum of 2' clearance between walls for access.

2.2.2 Main Drain Return Line

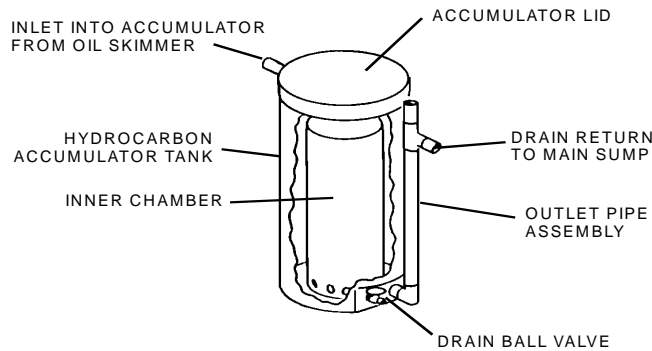
A main drain return line should be imbedded in the equipment pad prior to system installation. If not, one should be plumbed to accommodate drain return lines from the components of the system. This return line should be readily accessible so that the drain lines can be plumbed into a common manifold and fed into the Main Drain Return Line.

2.2.3 WM-MRS Tank

Make the following connections to the WM-MRS. Note: All supplied fittings and parts can be found in the loose parts box(s).

HYDROCARBON ACCUMULATOR

- A. Attach the supplied 3/4" drain valve assembly to the 3/4" drain connection on the bottom of the accumulator.
- B. Plumb the Accumulator Outlet assembly to the main drain return line. (Fig. HCA-1)
- C. Assemble the Accumulator Inlet.



(Fig. HCA-1)

DRAIN VALVE CONNECTIONS

- A. Plumb the system drains i.e. (CCS-1, PD-1, PD-2, HA-1 and TD-1) to a main drain return line.

INLET CONNECTIONS

- A. Plumb a 1-1/2" line from the main sump to the Inlet on the C.C.S.
- B. Run the 3/8" tubing from the purge valve at the top of the C.C.S vessel to the inlet of the Hydrocarbon Accumulator
- C. Open purge valve approximately 1/4 turn. (Fig. CCS-1 Section 5-1).

OUTLET CONNECTION

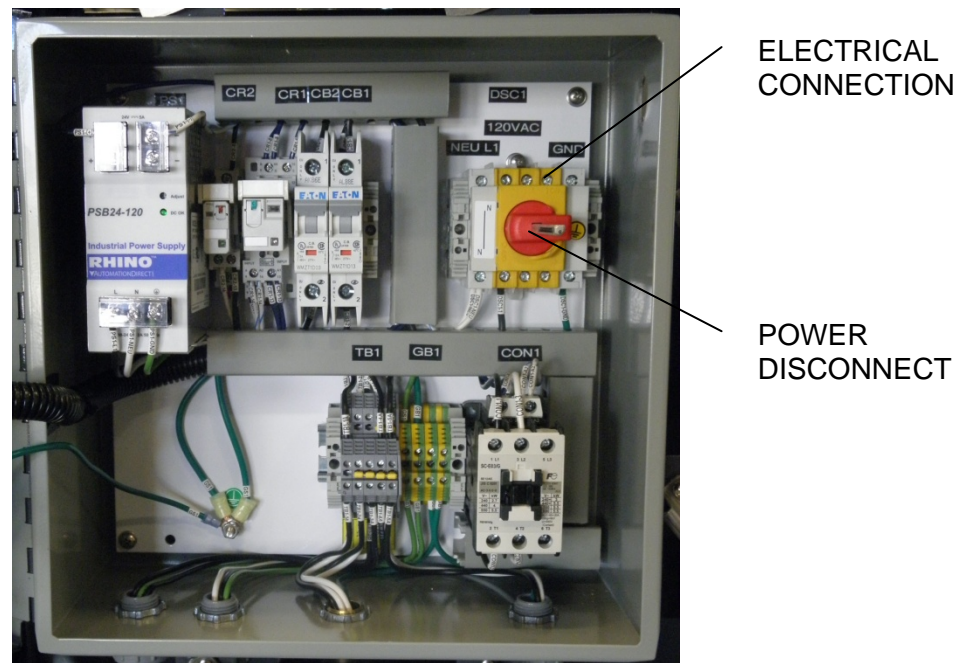
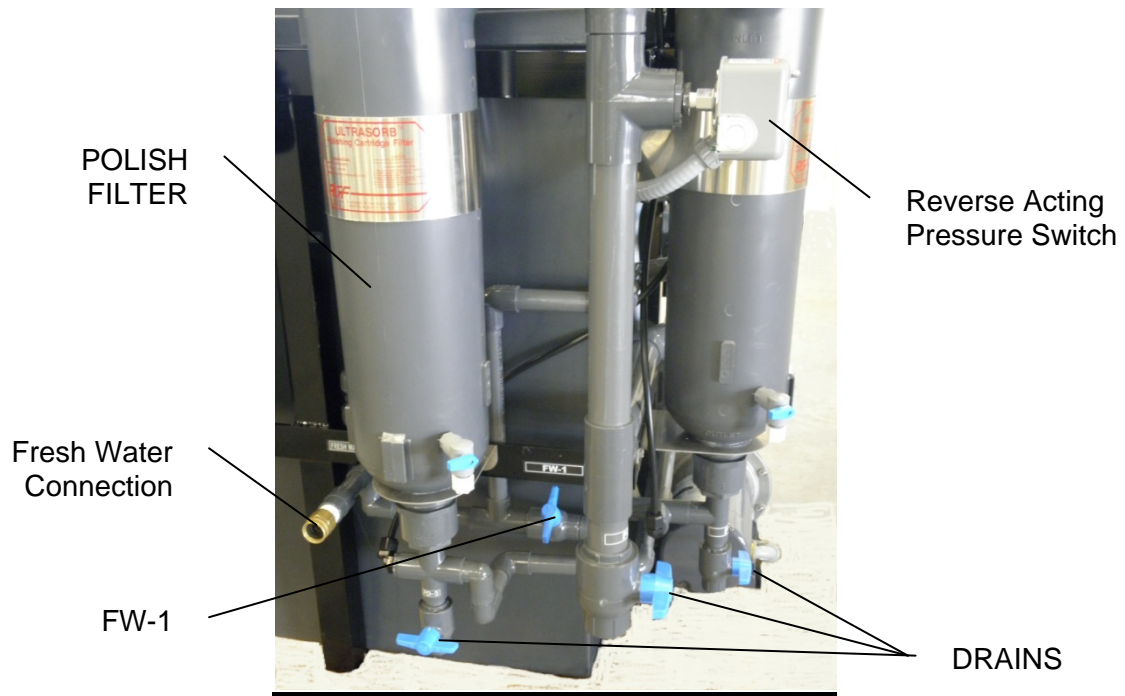
- A. Plumb a 3/4" outlet pipe from WM-MRS to the pressure washer.

FRESH WATER CONNECTION

- A. Plumb a 3/4" pipeline from the fresh water to the fitting, on the unit, labeled Fresh Water (Ref. P&ID in Section 7 of this Manual).

ELECTRICAL CONNECTION

- A. Connect system to 120vac 20 amp electrical service (Read Electrical Engineering drawing in Sec. 7 of this manual). **DO NOT TURN POWER ON UNTIL INSTRUCTED TO DO SO. DAMAGE TO THE EQUIPMENT CAN OCCUR.**



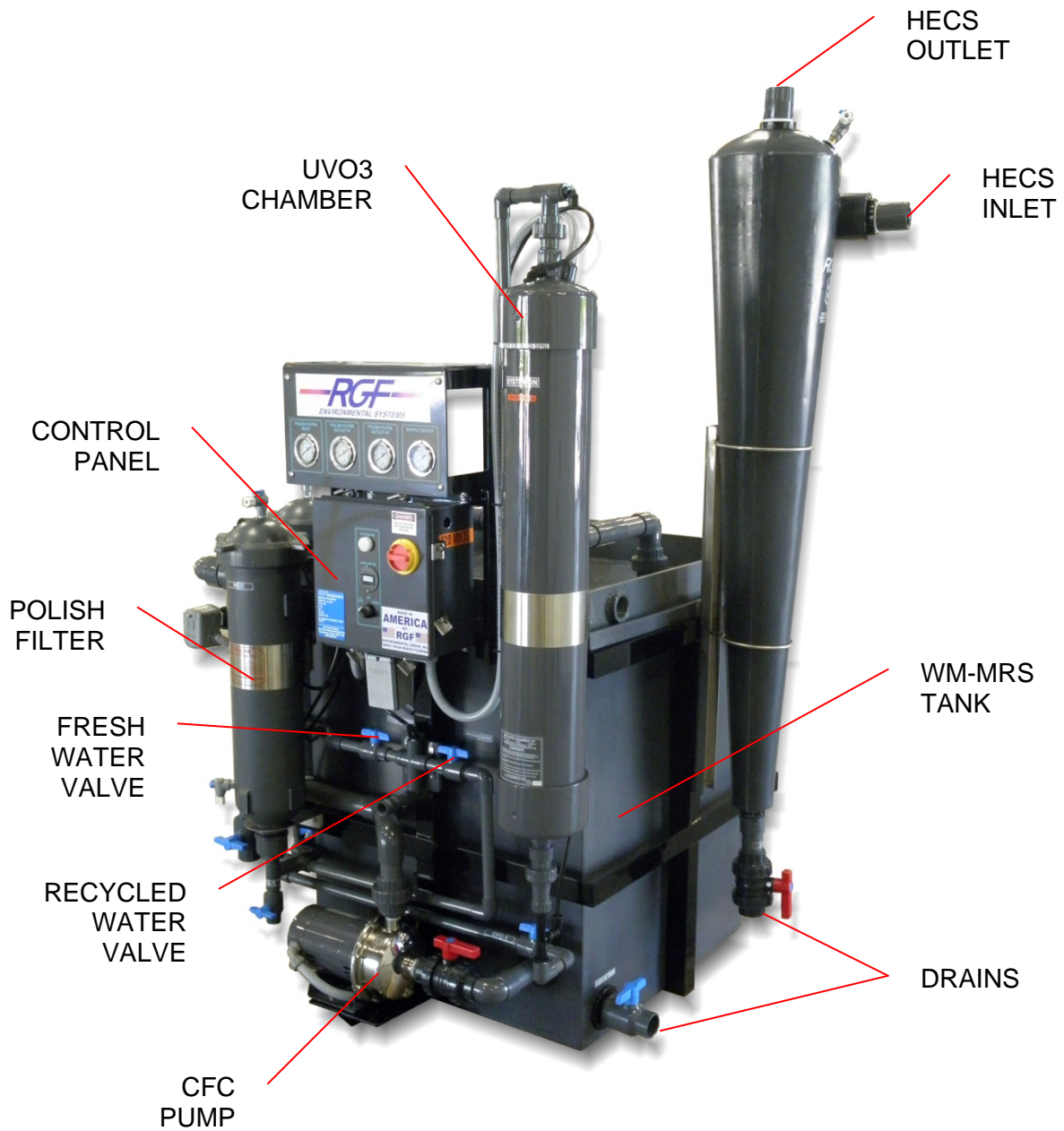
Section 3 - System Startup

3.0 Start up Procedure

Perform the following steps to prepare the WM-MRS for startup.

1. Ensure all drain valves are shut (i.e. HA-1, PD-1, PD-2, PD-3 AND TD-1. Open isolation valves (i.e. PF-1 and CFC-1.). Open the CCS-1 valve 1/4 turn (this will allow the solids to be flushed out of the separator continually). Fill the compartment of the tank with fresh water approximately 3/4 full.
2. Check the Fresh water float valve on the tank to ensure it is free to swing
3. Ensure all filters are installed and the lids are hand tight.
4. Recheck all unions to ensure they are not missing o-rings and are all hand tight.
5. Turn the Recycled Water Manual valve (SH-1) and the Fresh Water Manual valve (FW-2) below the Control Panel to the OFF position.
6. Open the purge valves on top of the polish filter housings to release trapped air.
7. Open the fresh water valve (FW-1). Allow the system to fill until water starts streaming from the purge valves then return the fresh water valve to close and close all of the purge valves.
8. The CFC System Pump will prime if the system is full of water.
9. POWER CAN NOW BE APPLIED TO THE SYSTEM COMPONENTS. Start the CFC system by holding the CFC SYSTEM PRIME LEVER up (refer to Fig.CFC-1) until the CFC is pressurized, then release. The lever should remain in the up position, but should be loose (i.e. - you should be able to lightly tap the lever and move it). If the lever does not stay in the up position then the CFC system is not properly primed. Recheck the system valves to ensure they are properly opened and then re-bleed the CFC pump. Once the CFC system is properly started, the Aux. System light and the CO3P Chamber indicator should be illuminated indicating that power has been applied to the CFC system. At this point the CFC pumps will run continuously. In the event that the system loses power, or the CFC pump loses prime the pressure lever will shut off the pump to prevent damage to the equipment.
10. THE POWER TO THE FEED SUMP PUMP CAN NOW BE TURNED ON. The water will start flowing through the C.C.S and continuing through the pressurized bag filter. Adjust the CCS-1 valve so that the flow does not exceed the capacity of the WM-MRS.
11. Fill out and return the warranty validation form & startup record.

WM-MRS SYSTEM



3.1 System Operation

The WM-MRS operates on a pressured flow principal. The feed sump pump supplies the wastewater to the C.C.S and bag filters. The CFC pumps supply the pressure to the various components and finally to the supply header.

The waste stream flows from the wash pad into a sump basin where it is then pumped to the C.C.S. The waste stream is introduced to a vortex condition where the heavier solids are slung to the outside of the vessel where they fall to the bottom, and oils float to the top and are purged off and accumulated in the hydrocarbon accumulator. The product water exits out the top of the C.C.S.

The waste stream then enters the manifold of the Pressurized bag filters where the water splits into four streams and is pushed into four 100 micron bags.

Once the water is in the tank the CFC pump processes the water through the two polish filters. Polish filter #1 supplies water to the supply header for washing and polish filter #2 supplies water to the venturi where the CO3P Chamber introduces ozone into the water that is continuously circulated through the CFC system.

Fresh water is introduced into the system for back flushing the supply polish filter #1 and supplying fresh water to the supply header if needed. A float valve is also in line with the fresh water supply to maintain a level of operation in the WM-MRS tank.

The system is equipped with a clean out drain to remove accumulated solids.



• **POLISHING FILTER**

- 1) Before servicing be sure to RELIEVE THE PRESSURE on the Polishing Filter(s) by using the drain valve and bleed valve or PERSONAL INJURY COULD RESULT!!!
- 2) *RGF* Filters have been lab tested and time tested - COPY FILTERS HAVE BEEN KNOWN TO BREAK UP OR DISSOLVE, THEREBY PLUGGING OTHER PARTS OF THE UNIT CAUSING EXCESSIVE PRESSURE AND EQUIPMENT DAMAGE!!!



• **CFC SYSTEM PUMP:**

- 1) Proper priming of the CFC System Pump is essential to the operation of the pump. Improper priming of the pump will cause poor performance and eventual pump failure.
- 2) DO NOT OPERATE the CFC System Pump if the Storage Tank is emptied or DAMAGE TO THE PUMP WILL RESULT.

Section 4 – Preventive Maintenance Schedule

The following section is developed to keep the **WM-MRS Recycle System** in top working order. It is **NECESSARY** to follow the maintenance procedures below precisely as stated. The lack of maintenance, in the long run, will reduce productivity and can be both costly and time consuming. It is recommended that this format be copied and incorporated as a regular work routine.



Turn off all power, and release pressure before servicing the system. **All gauges must read zero!**

4.0 Required Tools and Supplies

- | | | |
|---------------------------------|--|--|
| ✓ Hammer | ✓ Adjustable End Wrench | ✓ pH Test Strips |
| ✓ Garden Hose For Back Flushing | ✓ Square Head Shovel For Digging Out Trench Valley | ✓ Garbage Bag For Proper Filter Disposal |
| ✓ Garden Hose Nozzle | ✓ #1 Flat Head Screw Driver | |
| ✓ Rubber Boots And Gloves | ✓ Proper Safety Equipment | |

4.1 Daily Maintenance

4.1.1 Hydrocarbon Accumulator

- a. Remove the lid to the Hydrocarbon Accumulator and check the volume of the accumulated oils. If there is a considerable amount of oils present (1" thick layer or more), then the Waste Oil Reservoir has reached its capacity and the waste oil must be removed as stated below.
- b. Remove the accumulated oils from the Hydrocarbon Accumulator by draining the excess water out of the bottom of the accumulator using the tank drain valve HA-1. Drain the oil off by placing a 5-gallon can or drum under the drain valve and draining the oil off.

4.1.2 Coalescing Centrifugal Separator

- A. Fully open the Separator DRAIN VALVE (CCS-1) during operation of the sump pump to flush solids from the drain of the separator, then reset to the cracked open position.

4.1.3 Polish Filter Gauges

Daily, or if the inlet and outlet pressure difference on the Polishing Filters is greater than 10 psi, the filters need to be back flushed by the following procedure.

Back Flushing the Polishing Filter #1.

- A. Shut the main power to the WM-MRS **OFF**.
- B. Turn the three-way panel control valve to the off position.
- C. SHUT PF-1 and CFC-1. OPEN PD-2 and FW-1.
- D. Allow to back flush for several minutes.
- E. RE-OPEN valve PF-1 and CFC-1. SHUT valves FW-1 and PD-2.
- F. Turn the main power back on. Turn the three-way control valve to desired water supply

4.3 Weekly Maintenance

4.3.1 Trenches, Sumps, Pits, and Clarifiers

Weekly, or as required, the trenches, sumps, pits and clarifiers of the pad need to be checked for sediment level. The trenches' sediment level should not be more than half of the depth of the trench. Dig out the trench using a shovel, and dispose of the waste accordingly. The sumps and pits should be dug out if there is at least 1/4 of the depth full of sediment. The clarifiers should be removed and dug out on a weekly basis, or as required, regardless of the amount of sediment.

IMPORTANT:

Disconnect power to the Sump pump prior to cleaning the trenches, sump pits, and/or clarifiers. Dig out the trenches, sumps, pits and clarifiers as regularly as possible. Keeping them cleared of sediment build up will result in better water quality throughout the entire system. Allow ample time for solids to settle before returning the sump pump to operation

4.3.2 Polishing Filters

Weekly the Polishing Filters need to be removed and manually cleaned by the following procedure:

- A. Disconnect Main Power from WM-MRS.
- B. OPEN the Polishing Filters drain valves (PD-1 and PD-3).
- C. Allow to drain and relieve pressure. The Pressure Gauges Should Read “Zero”.
- D. Disconnect all of the air bleed lines from the lids.
- E. Remove the Polishing Filter Lids by turning them counterclockwise.
- F. Remove and manually clean the Polishing Filters using a fresh water hose to flush all debris from the filter and the inside of the filter housings. Replace filters to the housings.
- G. Replace the lids by turning clockwise; ensure the filter seals are in place on the housings.
- H. Replace all of the air bleed lines to the lids.
- I. SHUT the Polishing Filter drain valves (PD-1 and PD-3).
- J. Turn Main Power back on.

4.4 System Winterizing

The WM-MRS Recycle System is not designed to withstand freezing temperatures. If the system is located outside or in an un-insulated room where temperatures can reach freezing levels, the system will have to be drained to prevent damage to the tank, separation walls and pipes. Ensure that all water within the system is completely removed. Used compressed air to blow out any trapped water or add antifreeze to the system and run it through before draining.

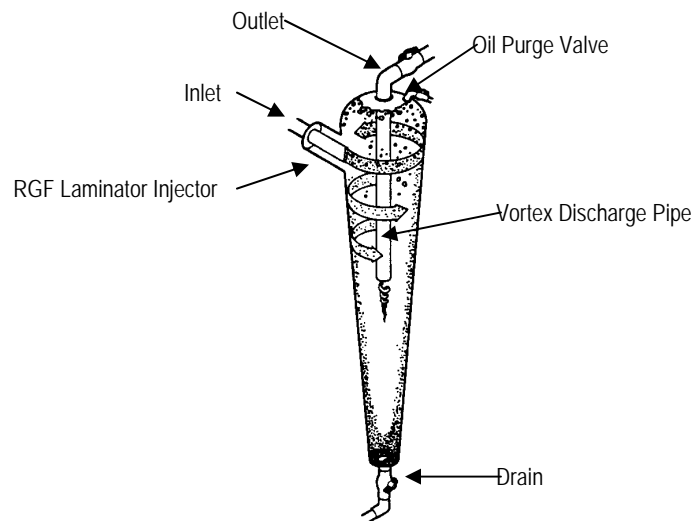
Section 5 – General Theory

5.0 General Theory

The Piping and Instrumentation Diagram in the Engineering Diagram Section outlines the path that the waste stream follows as it is recycled. The General Theory section explains each process of the recycling process. A comprehensive understanding of theory of the **WM-MRS Recycle System** should be achieved to assist in the proper installation, operation and maintenance of the system.

Coalescing Centrifugal Separator

From the main sump, the waste stream enters the Coalescing Centrifugal Separator where a centrifugal circular motion forces the solids to separate to the sides of the separator where they eventually fall to the bottom and are flushed out through the partially opened drain valve. Also, the separator aids in coalescing free oils to rise to the top where they are skimmed by the oil purge valve and placed into the hydrocarbon accumulator. The remaining waste stream exits the separator through the vortex discharge pipe and into the 4-bag filters of the system.



(Fig. CCS-1)

Process System

Once the water is in the tank the CFC pump processes the water through the two polish filters. Polish filter #1 supplies water to the supply header for washing and polish filter #2 supplies water to the venturi where the CO3P Chamber introduces ozone into the water that is continuously circulated through the CFC system.



Supply Header

The supply header comprises a manifold of piping and valves, which allows the operator to select the water source to be supplied to the wash equipment. The operator may select either wash or rinse water to be delivered to the wash equipment. Rinse water typically is municipally supplied 40-60 psig "tap" water. Recycled wash water will come from the storage tank and the CFC system:

Continuous Flow Control System (CFC System)

The CFC system consists of the CFC Pump, CO3P Chamber and venturi injector. The purpose of the system is to continuously provide recycled water at moderate supply header pressure and to continuously circulate water through the CFC System.

CFC Pump

The CFC Pump is a 1/2 Hp. centrifugal circulation pump that pumps the processed water from the storage tank to the Supply Header and through the CFC system.

Section 6 – Controlling Water Quality

6.0 Controlling Water Quality

Controlling the wastewater quality on the ®**System** is a very important process that can greatly enhance the quality of your recycled water. By controlling the pH level, Total Alkalinity, the amount of oxidizers and soaps that are used, you will be able to improve the quality of water in your system. There are many factors which control the water quality. These factors are listed below in order of their appearance in the following section:

6.1 pH / Alkalinity

6.1.1 pH

6.1.2 Total Alkalinity

6.2 Oxidizers

6.2.1 Oxypuck

6.2.2 Ozone

6.2.3 Ultra Violet Light

6.3 Cleaning Agents

6.3.1 Enviro-Blaster

6.3.2 Water Conditioner 1 (WC-1)

6.4 Solids

6.4.1 Total Dissolved Solids (T.D.S.)

6.4.2 Total Suspended Solids (T.S.S.)

6.1 pH / Alkalinity

6.1.1 pH

pH (potential hydrogen) is a relative measure to indicate how acidic or alkaline a substance is. Thus, it denotes the degree or strength of alkaline or acidity. Some acids or alkaline substances are stronger than others and, in order to compare them, the pH scale has been devised. The pH numerical index ranges from 1.0 (extremely acidic) to 14.0 (extremely alkaline). The midpoint of 7.0 indicates that the solution is neutral. That is, it is neither acidic nor alkaline. Pure distilled water is a neutral solution. Note: High pH tends to emulsify oils and reduce the efficiency of the unit, the use of high pH cleaners should be minimized.

The pH scale is a logarithmic scale and even though the difference from 0 to 14.0 doesn't seem very great, every unit on the pH scale is a difference of 10 times, and every two units is a difference of 100. For example, if you have an alkaline cleaning solution of 10.0 and increase it to 11.0, you are making that solution 10 times more alkaline. If you go up two degrees to a pH of 12.0, the solution becomes 100 times more alkaline, and so on.

Controlling pH:

To Raise pH

One chemical usually added to raise the pH level is Sodium Carbonate. How much to add is basically a trial and error operation, but a general rule of thumb that is good to follow is to **add 1/4 pounds of Soda Ash for every 1,000 gallons of water within the system**. After adding the Soda Ash, **wait for about an hour before re-checking the pH level**. Take whatever further action is indicated by the test.

To Lower pH

The chemical normally added to lower the pH level is called Muriatic Acid, which is actually a dilute form of the more hazardous hydrochloric acid and comes in liquid form. Another acid product is the so-called Dry Acid or Sodium Sulfate, which comes in a granular form. **Acid of any type should always be added directly to the water, NEVER the water to the acid! The amount of acid required is determined by performing an acid demand test with the water test kit.**

6.1.2 Total Alkalinity

Total Alkalinity is the measure of the total amount of alkaline chemicals in the water and **not** the same as pH. pH measures the **strength** of an alkaline (or acid), while alkalinity measures the **amount** of alkali's present. While pH and Total Alkalinity are not the same thing, **Total Alkalinity can have an effect on how fast or easily changes in pH can be accomplished.**

Controlling Alkalinity

For our purposes, the **Total Alkalinity should be kept at about 150 ppm**. In general, alkalinity has not been a problem for recycling, providing you are using a **neutral soap**. If you have a drum of water and introduce a scoop of alkaline clearer, you may change the pH and get a reading of 12. That does not mean that if you add a second scoop of cleaner, you will get a different reading - in fact, it will probably be identical. What will change is the Total Alkalinity.

6.2 Oxidizers

6.2.1 Oxypuck

RGF developed the Oxy Puck as an enhancement to our CO³P Catalytic Oxidation System. The Oxy Puck has all the characteristics of chlorine and hydrogen peroxide but none of the handling issues associated with these liquid odor/bacteria controllers.

6.2.2 Ozone

Ozone is another oxidizer that exhibits outstanding purifying characteristics. Ozone is different than hydrogen peroxide in that it is not in a liquid form. Ozone is produced by a unique process developed by **RGF** in which a special chamber called the **CO³P Chamber** uses air as it's agent to produce the ozone. A simple look at the blue indicator light on the chamber assures ozone is being produced. The ozonated air is then bubbled inside of the storage tank or is vacuum dragged into the CO³P System by the Ozone Venturi, which agitates the water thus oxidizing it, which reduces B.O.D.'s and C.O.D.'s, removes odors, and improves water clarity.

6.2.3 Ultra-Violet Light

Ultra-Violet (UV) light is the third oxidizer used by **RGF** to complete the catalytic oxidation process (CO³P). UV light is a sterilizer, which kills organics by emitting ultraviolet light inside of the UV Catalytic Chamber. This ultraviolet energy is also used to excite the hydrogen peroxide and the ozone that is already in the water to enhance their individual oxidation potentials.

6.3 Cleaning Agents

In discharge systems the use of soaps or chemical additives is not recommended. If one must use detergents or additives they should be neutral pH., quick splitting verity and used sparingly. Cleaning Agents are added to open looped recycling water systems to help remove the oils and road film off of the equipment being cleaned. Cleaning agents contain surfactants, which help to relieve the surface tension of the water enabling the oils and particles to detach more readily from the equipment being cleaned. Some cleaning agents however, may cause the oils to emulsify, which will not allow for easy removal, which in turn may end up back on the equipment. In order to prevent this, the cleaning agents in consideration for use with the system should be formulated with low to moderate foaming and limited oil emulsifying properties while remaining a neutral pH cleaner. **RGF** recommends the following two cleaning agents to be used with your system.

6.3.1 Enviro-Blaster

RGF has developed a specially formulated cleaning compound for closed-looped recycling systems called **Enviro-Blaster** to use with your system. This cleaning compound is formulated to rapidly remove soil, grease and oil from machinery, vehicles, and heavy equipment. It has quick oil releasing properties, especially important for recycling an sewer discharging of wash water.

Enviro-Blaster can be purchased through your distributor or **RGF** at **1-561-848-1826** or **FAX 1-561-848-9454**.

6.3.2 Water Conditioner-1 (WC-1)

Water conditioners are a good addition to a recycling system because they help to maintain good water quality and help in releasing suspended solids. **RGF** has available a water conditioner that can do all of this and more, the **Water Conditioner 1 (WC-1)**. This water conditioner has many water quality improving abilities. It aids in the flocculation of suspended solids, reduces B.O.D. and C.O.D. loading, and helps to soften the water. WC-1 also inhibits corrosion on your system, providing more years of service and will help to lower the total suspended solids count, which will improve the color and clarity of your recycled water. Since WC-1 can provide all of these benefits, it should be made a regular part of the chemical additions to your system.

6.4 Dissolved and Suspended Solids

6.4.1 Total Dissolved Solids (T.D.S.)

T.D.S. represents the total conductive material actually dissolved in the water (refer to Section 11.0 Addendum's / Training Bulletin - TB 001). It is the same as salt or sugar dissolved in water and should not be confused with suspended solids or turbidity. Total dissolved solids can include both organic and inorganic materials. Inorganic materials can be soluble in many cases and add to T.D.S. Any chemical addition to the water will increase T.D.S. (except hydrogen peroxide). Water treatment chemicals often solve one problem but create another problem. While an addition of a flocking agent may remove suspended solids and turbidity, it may drastically increase T.D.S.

Eventually a solution with increasing T.D.S. will reach a level where it is considered to be saturated (i.e., it has reached its solubility constant). Saturation is when the addition of a soluble or dissolved solid reaches the maximum ability of the water to hold it in solution at a given temperature. When the T.D.S. level exceeds this level, the material comes out of solution and either settles or forms crystals, which is how rock candy is made.

T.D.S. is measured by a special conductivity meter, which works on the principle that "pure" water has no conductivity of electrical current. The addition of material such as T.D.S. increases the electrical conductivity, therefore; the higher the reading, the higher the T.D.S. level. Readings are in microsiemens - a unit of low electrical current.

6.4.2 Total Suspended Solids (T.S.S.)

T.S.S. represents the total amount of fine colloidal particles floating in a liquid, too small to settle out but, kept in motion by Brownian movement (refer to Section 11.0 Addendum's/Training Bulletins - TB 002). Brownian movement is the rapid vibratory motion of particles suspended in a liquid, caused by the bombardment of the particle by the moving molecules of the liquid. The velocity varies inversely with the size of the particles and also depends on the viscosity of the medium. T.S.S., unlike T.D.S. (Total Dissolved Solids), does not dissolve in water and are deemed important because these solids will create unsightly conditions, sludge deposits, and a demand for oxygen. Suspended solids can be organic or inorganic.

The standard way of testing wastewater for suspended solids is to filter the wastewater through a 0.45 μm (1 micron = 1 millionth of a meter) porosity filter. Anything on the filter paper after drying at a temperature of approximately 103°C is considered a portion of the suspended solids. Another way to measure suspended solids is by a device called a spectrophotometer. This device is used to measure photo metrically, the quantity of light of a particular wavelength (S.S. = 810 nm) that is absorbed by the suspended solids in solution.

Section 7 – Engineering Diagrams

7.0 Outline

7.1 System Layout

An engineered diagram of the Equipment Skid which indicates all of the inlet and outlet connections and dimensions of the skid, as well as location of major components.

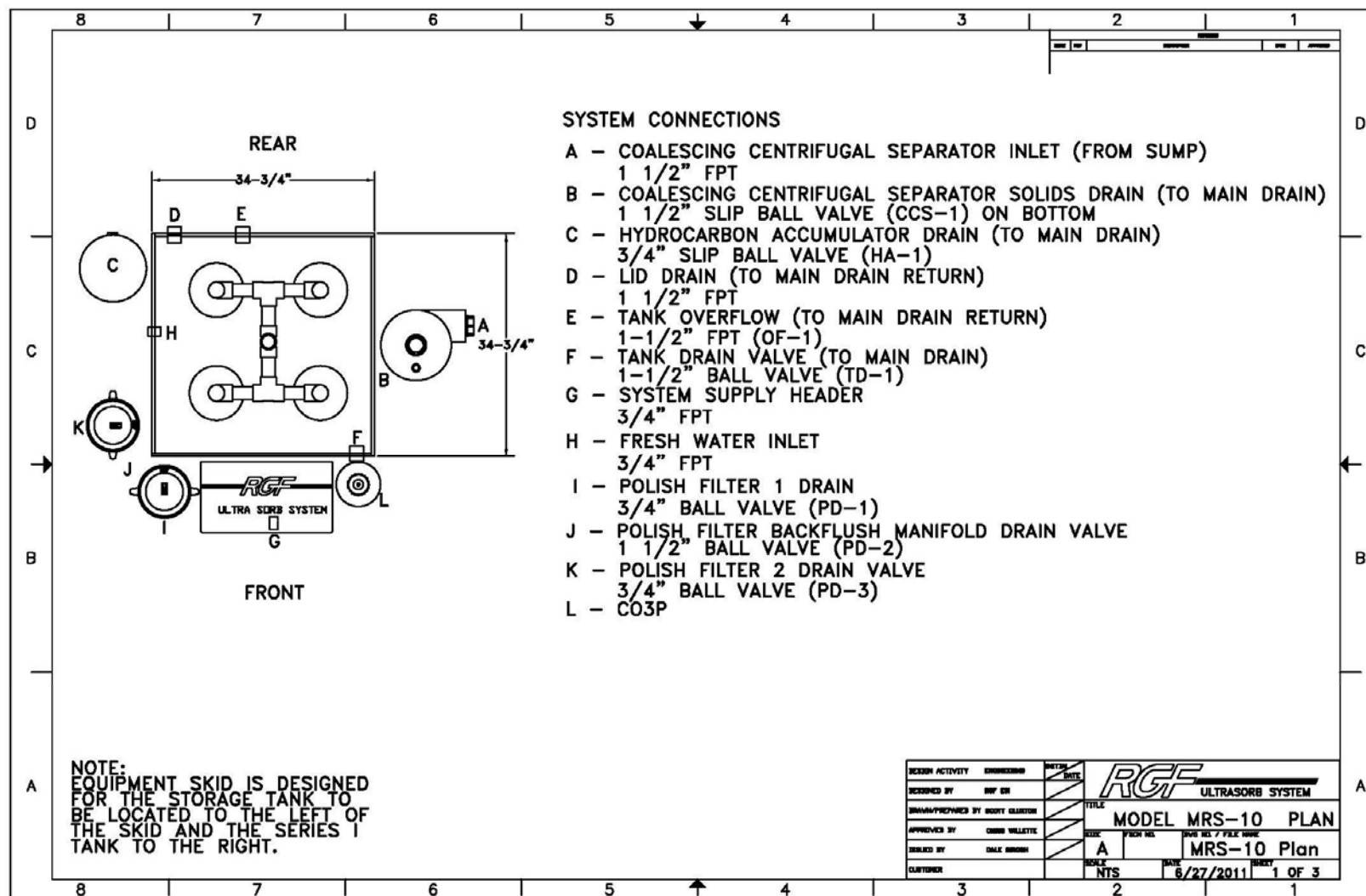
7.2 Plumbing & Instrumentation Diagram (P&ID)

An engineered diagram which indicates the flow path of the system outlining placement and nomenclature of valves, pressure gauges and unions.

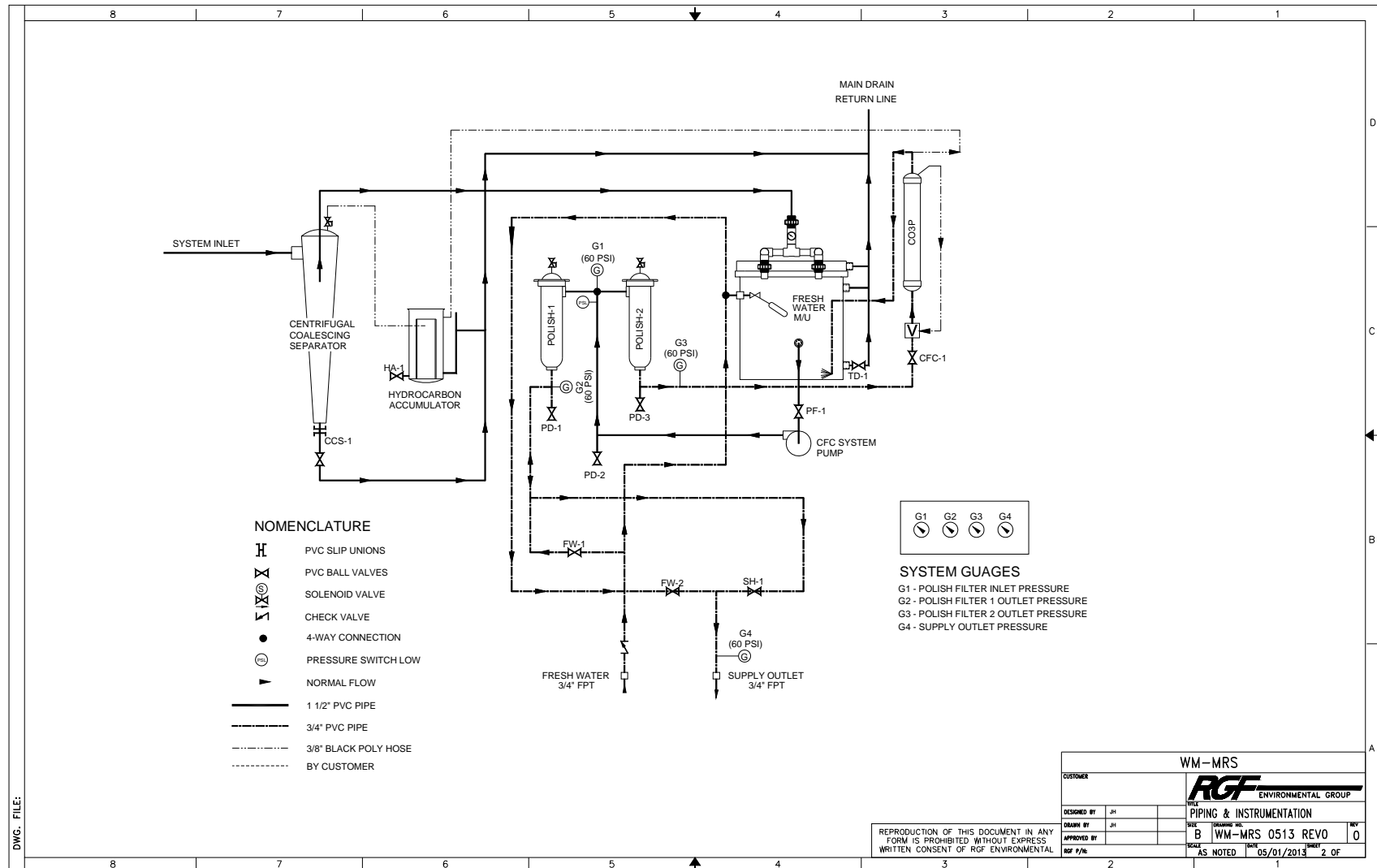
7.3 Electrical Diagram

An engineered diagram of the electrical connections and components associated with the system. This diagram is a very useful tool for the electrician when the installation is performed.

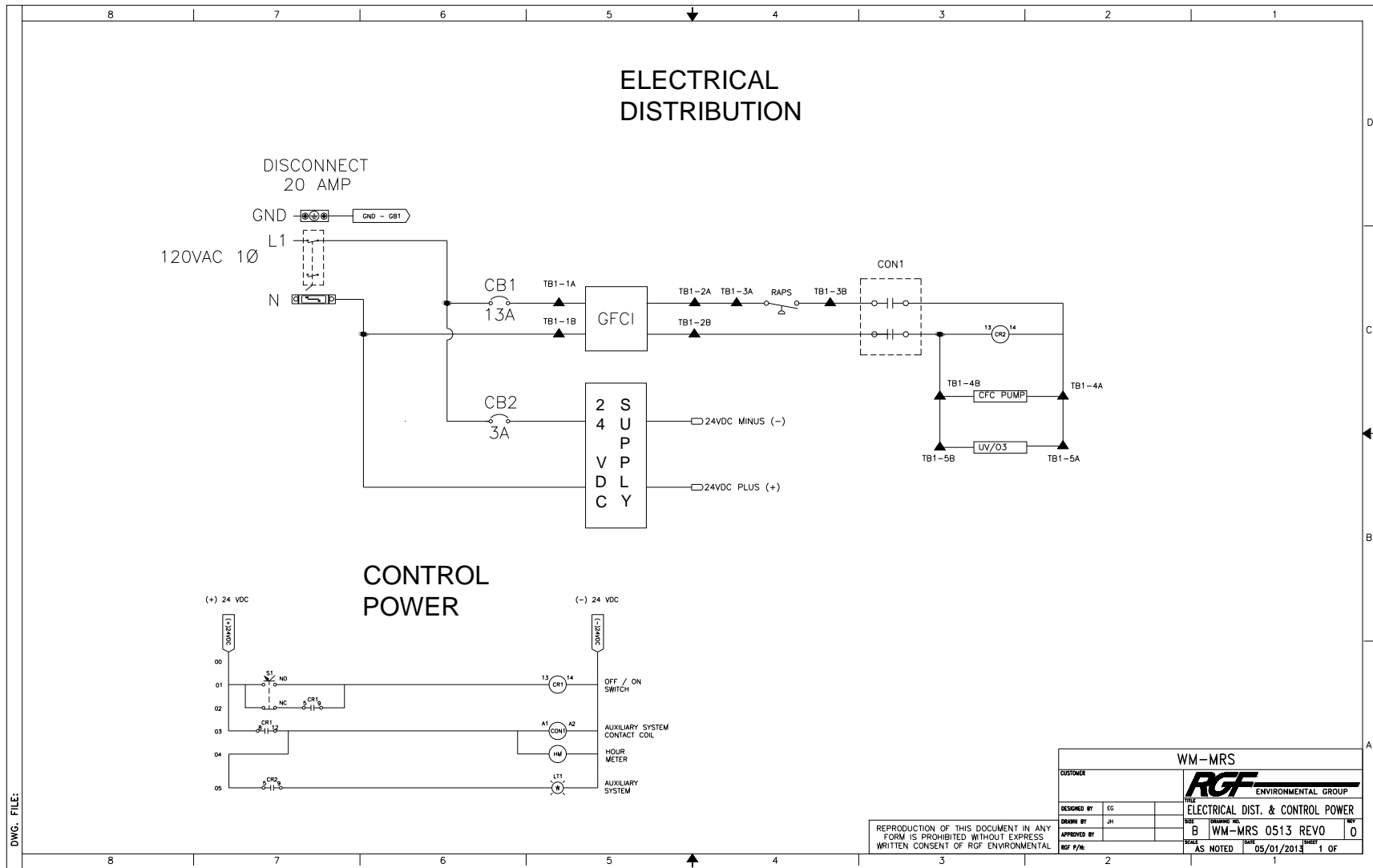
7.1 System Layout



7.2 Plumbing & Instrumentation



7.3 Electrical Wiring Diagram



Section 8 - Trouble Shooting

8.1 Flow

SYMPTOM	PROBABLE CAUSE	SOLUTION
WM-MRS TANK		
1. NO OR LOW FLOW THROUGH PROCESS SYSTEM	A) POLISH FILTERS ARE CLOGGED WITH PARTICULATE	A) PERFORM A POLISHING FILTER BACK FLUSH IN ACCORDANCE WITH PMS. IF THIS DOES NOT REMEDY PROBLEM THEN FILTERS ARE FOULED AND NEED TO BE REPLACED.
CFC SYSTEM		
CFC PUMP NOT OPERATING	A) POWER IS NOT APPLIED TO PUMP B) PUMP HAS LOST PRIME C) SYSTEM VALVE IS IMPROPERLY ALIGNED	A) VERIFY POWER IS APPLIED AT MAIN BREAKER. RESTART CFC SYSTEM BY HOLDING THE CFC PRIME LEVER IN THE UPRIGHT POSITION UNTIL PUMP PRESSURE REACHES APROX.21 PSI. THEN RELEASE B) CHECK WATER LEVEL IN STORAGE TANK. ENSURE UNOBSTRUCTED FLOW TO PUMP SUCTION. RE-PRIME PUMP ENSURING THAT PUMP CASING IS WATER FILLED. CONDUCT VALVE LINEUP WITH P&ID. C) CONDUCT VALVE LINEUP WITH P&ID.

8.2 Electrical

The system should be installed by a licensed electrician and should have a properly sized over current protection (i.e. circuit breaker) device installed upstream of the device. Electrical Troubleshooting should be conducted by an electrically trained individual after he has carefully reviewed the electrical drawing in Section 7.3. All indications should be considered: LED illumination, pump rotation and fluid flow.

SYMPTOM	PROBABLE CAUSE	SOLUTION
PROCESS SYSTEM		
1. INDICATOR LIGHTS NOT OPERATING	A) POWER IS NOT APPLIED B) LIGHT IS BLOWN OUT C) LOOSE WIRES D) BAD GROUND	A) VERIFY POWER IS APPLIED AT MAIN BREAKER. RESTART CFC SYSTEM BY HOLDING THE CFC PRIME LEVER IN THE UPRIGHT POSITION UNTIL PUMP PRESSURE REACHES APROX.21 PSI. THEN RELEASE B) CONSULT TECHNICIAN OR REMOVE 4X4 ELECT. BOX FROM REAR OF PANEL AND REPLACE LIGHT. C) CHECK ALL WIRE CONNECTIONS WITH MAIN POWER TURNED OFF AND TIGHTEN IF LOOSE. D) OPEN MAIN ELECT. BOX , CHECK GROUND STRIPS FOR LOOSE WIRE THEN TIGHTEN, IF NECESSARY

8.3 Chemical

The following troubleshooting table is based on the assumption that the WM-MRS has the optional Chemical Injection Pump installed, in which case Hydrogen Peroxide would be used as the primary oxidizing chemical.

SYMPTOM	PROBABLE CAUSE	SOLUTION
CHEMICAL		
1. EFFLUENT RECYCLED WATER SMELLS	A) OXYPUCK REQUIRED B) UV/O3 CHAMBER NOT OPERATING.	A) ADD OXYPUCK TO STORAGE TANK. B) SEE ELECTRICAL: UV/O3 CHAMBER NOT OPERATING.
2. EFFLUENT RECYCLED WATER IS VERY CLOUDY.	A) UV/O3 CHAMBER NOT OPERATING. B) THE WATER CONDITIONER (WC-1, OPTIONAL) HAS NOT BEEN ADDED OR RESIDUAL LEVEL IS LOW.	A) SEE ELECTRICAL: UV/O3 CHAMBER NOT OPERATING. B) INCREASE THE WC-1 INJECTION RATE.

NOTE:

If repeated attempts to reduce smell or clear up the recycled water fail to improve the water quality, or if the amount of soap needed to clean adequately rises to an unacceptable level, the water has become overburdened with dissolved and suspended solids. The system should be drained and the spent water disposed of in accordance with local, state and federal regulations.



9.0 Replacement Parts

The following is a list of commonly needed replacement parts. Have the **Model #** and **Serial #** of the unit ready when placing an order. Identify the part needed with the part # and description and call *RGF* or your local distributor to place an order.

PART #	DESCRIPTION
--------	-------------

Filters And Parts

FL-086	5" DIA. POLISHING FILTER (25 M)
FP-051	O-RING FOR POLY FILTER HOUSING
FL-009	50 M POLY FELT BAG FILTER

Chemicals

CE-029	OXYPUCKS
EB-55	ENVIRO-BLASTER - 55 GALLONS
WC-1-5	WC-1 WATER CONDITIONER - 5 GALLONS

Pumps And Parts

PU-131	1/2 Hp. CFC SYSTEM PUMP
PU-032	1/3 Hp. S.S. LIFT STATION SUMP PUMP (OPTIONAL)
PU-129Y	PERISTALTIC CHEMICAL INJECTION PUMP (OPTIONAL)

Valves And Unions

VA-006-1	3/4" PVC BALL VALVE
VA-006-4	1 1/2" PVC BALL VALVE
VA-022	1/2" BRASS FLOAT VALVE WITH FLOAT
PF-253	3/4" PVC UNION
PF-256	1 1/2" PVC UNION
VA-051	1/4" FPT X 3/8" TUBE 90 DEG PVC VALVE

Misc. Parts

PT-304	OZONE VENTURI
HF-023	1/4" O.D. POLYETHYLENE TUBING



10.0 System Warranty



ULTRASORB® System Limited Warranty

This warranty supersedes and replaces any warranty statements orally made by the Sales Person, Distributor, or Dealer or contained in written instructions or other Brochures or informational documents in relation to this product.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF

The Manufacturer Warrants, parts only for a period of twelve (12) months from the time of startup, not to exceed fourteen (14) months from the date of shipment, the new **ULTRASORB®** System to be free from defects in material and workmanship under the normal use and service when operated and maintained in strict accordance with the **ULTRASORB®** System operating instructions.

The Manufacturer's obligations under this warranty is being limited to repairing or replacing any part found to its satisfaction to be so defective, provided that such part is, upon request, returned to the Distributor or Manufacturer, with freight prepaid. This warranty does not cover parts damaged by decomposition from chemical action or wear caused by abrasive materials, nor does it cover damage resulting from misuse, abuse, or any other than its intended use, accident, neglect, or from improper operation, maintenance, installation, modification or adjustments.

This warranty does not cover parts or equipment used with the **ULTRASORB®** System that are not made by the manufacturer, since these items are covered by warranties from the respective manufacturer. The Manufacturer makes no warranty as to electrical apparatus or other materials not of its manufacturer.

The Manufacturer's sole responsibility shall be limited to repair or replacement of the equipment within the terms stated herein above.



The Manufacturer shall not be liable for consequential or punitive damages whether or not caused by manufacturer's negligence or resulting from any expressed or implied warranty or breach thereof. Consequential damages for the purpose of this agreement shall include, but are not limited to, the loss of use, income or profit, or loss of or damage to property occasioned by or arising out of in-operation, use, the operation, installation, repair, or replacement of the equipment or otherwise.

It is understood that any controversy or claim arising out of or relating to the **ULTRASORB® System Warranty** herein or the alleged breach thereof, shall be settled by arbitration in accordance with the rules of the Arbitration Association of America, Palm Beach County, Florida, and judgment upon the award rendered by the arbitrator(s) may be entered in any court barring jurisdiction thereof.

PROCESS PERFORMANCE WARRANTY

The Manufacturer Warrants that when installed and operated in accordance with the Manufacturer's written instructions, the **ULTRASORB®** System will remove dirt, oil, and grease from wash water. No other warranty expressed or implied should be considered valid. There are numerous operating conditions which will affect the efficiency of the **ULTRASORB®** System, thereby making any general water quality statement unrealistic.

WARRANTY SERVICE

In order to validate your warranty, fill out the **Warranty Validation Form** and return to **RGF** at the address below:

RGF WARRANTY DEPARTMENT
Outside of Florida (800) - 842 - 7771
In Florida (561) - 848 - 1826
FAX (561) - 848 - 9454

To obtain warranty service contact **RGF** and a warranty representative will help with the warranty problem and determine the status and a **Warranty Authorization Number** will be given at that time. Be prepared to answer specific questions on the problem at hand. If there are warranted parts that need to be returned, fill in the **Warranty Authorization Number on the Warranty Request Form** along with the items being submitted for warranty and a brief explanation of the problem or defect and return it and the part(s) to:

RGF Environmental Group, Inc
c/o Warranty Department
1101 W 13th Street
Riviera Beach, Florida 33404



ULTRASORB® System Limited Warranty Policy

RGF ENVIRONMENTAL GROUP, INC. ["Manufacturer"] Warrants the **ULTRASORB® System** to be free from DEFECTS in Material and Workmanship.

HOW LONG IS THE WARRANTY?

- For twelve (12) months from the date of initial startup of the system; not to exceed fourteen (14) months from the date of delivery.
- The Installation / Startup Record and Warranty Registration Form should be signed and dated by an authorized officer or employee of the customer and returned to RGF promptly to activate the warranty.

HOW DO I CONTACT RGF ENVIRONMENTAL GROUP ABOUT MY WARRANTY, A QUESTION, OR A COMPLAINT?

- A question or a complaint may be addressed directly by your local Distributor or dealer.
- If they cannot answer the question or complaint directly, then call or FAX the Warranty Department at RGF at:

RGF WARRANTY DEPARTMENT
Outside of Florida (800) - 842 - 7771
In Florida (561) - 848 - 1826
FAX (561) - 848 - 9454

ARE THERE ANY PARTS THAT ARE NOT COVERED BY THIS WARRANTY? **(That the Manufacturer will not repair or replace)**

- Parts that are damaged by decomposition from chemical action or wear caused by abrasive materials, nor does it cover damage resulting from misuse, abuse, any other than its intended use, accident, neglect, or from improper operation, maintenance, installation modification or adjustments.
- Parts not made by the Manufacturer, such as the electric pressure pump motor or other materials not of its manufacturer. However, RGF will process the claim with the pump or other manufacturer.

WHAT SHOULD BE DONE IN THE EVENT THAT THE EQUIPMENT IS DAMAGED BY SHIPPING?

- Immediately upon receipt of the system, the purchaser is responsible to take the shipping containers off of the truck and inspect the equipment and parts for damage.
- If there is any visible damage to the equipment:
 1. Notify the driver of the courier company immediately and write on the Bill of Lading what is damaged or missing.
 2. Call **RGF** immediately at **1 - (800) - 842 - 7771** outside of Florida, **1 - (561) - 848- 1826** in Florida, or **FAX 1- (561) - 848 - 9454**.

WHAT IF DAMAGE IS FOUND ON THE EQUIPMENT AFTER THE COURIER HAS LEFT?

- Claims for concealed shipping damage must be reported to the courier and a copy sent to RGF in writing via **FAX 1 - (561) 848 - 9454** or certified U.S. mail within fifteen (15) days from the date of delivery.

NOTE:

The courier company will not cover the damages if the foregoing steps are not adhered to.

STEPS THAT SHOULD BE TAKEN IF WARRANTY WORK OR REPLACEMENT IS NEEDED.

- Call your local distributor or RGF Warranty Department and notify them of the problem or malfunction. Be prepared to be very descriptive with the problem.
- If it is determined that a part has malfunctioned due to defect, a **Warranty Authorization Number** will be given for tracking the part. Fill out the **Warranty Request Form** along with the Warranty Authorization number and return it along with the defective part prepaid to:

**RGF Environmental Group, Inc
c/o Warranty Department
1101 W 13th Street
Riviera Beach, Florida 33404**

THINGS THAT SHOULD BE DONE TO HELP KEEP THE ULTRASORB SYSTEM RUNNING EFFICIENTLY.

- Read the Operations Manual thoroughly.
- Make sure all of the employees who operate the system are fully trained on the procedures for operating the system and follow preventive maintenance routines strictly.

- Do not run water that has contaminants through the system that it is not designed to remove.
- Make sure the system is operated in accordance with the Manufacturer's suggested instructions.
- Replace filters as recommended in the Operations Manual.
- Control the water quality in accordance with RGF's suggested guidelines.
- Keep sump pits, trenches, and weirs cleared of heavy sediment build up. Heavy solids build up will cause the sump pump to overheat and fail to operate properly. Failure to prevent this will void the sump pumps warranty. • Lack of a water clarifier (such as hydrogen peroxide, chlorine, WC-1, Ozone, etc.) will cause algae to grow resulting in plugged filters and foul smell.

WHAT SERVICE IS EXPECTED FROM THE DISTRIBUTOR?

- The Distributor will install, perform the initial startup, and train your personnel.

Should there be any questions relating to this warranty policy information, please feel free to contact our customer service representative at:

RGF Customer Service

Outside of Florida (800) - 842 - 7771

In Florida (561) - 848 - 1826

FAX (561) - 848 - 9454

or Write

**RGF Environmental Group, Inc.
c/o Customer Service Dept.
1101 W 13th Street
Riviera Palm Beach, FL 33404**

11.0 Product Registration and Return Forms

11.1 Warranty Request Form

11.2 Warranty Validation Form

11.3 Installation / Start-up Record

11.4 Client Questionnaire



**ULTRASORB® System
Warranty Request Form**

NOTE: THIS FORM MUST BE COMPLETED AND ACCOMPANY ALL RETURNED ITEMS

Warranty Authorization Number: W-_____

CUSTOMER: NAME _____
ADDRESS _____
PHONE _____ FAX _____

DISTRIBUTOR: NAME _____
ADDRESS _____
CONTACT _____

UNIT: MODEL _____
SERIAL # _____
DATE OF PURCHASE _____

ITEMS BEING SUBMITTED FOR WARRANTY:

PLEASE LIST THE PARTS AND GIVE A BRIEF DESCRIPTION OF THE PROBLEM.

ITEMS

1) _____
2) _____

DESCRIPTION (COMMENTS)

1) _____
2) _____
3) _____

SHIP TO: **RGF ENVIRONMENTAL GROUP, INC.**
c/o WARRANTY DEPTMENT
1101 W 13th STREET
RIVIERA BEACH, FLORIDA 33404
FAX 561-848-9454

(FOR RGF USE ONLY)

DATE ITEMS RECV'D _____
RECEIVED BY _____
REPLACEMENT PART SENT/WARRANTY APPROVED ☐ WARRANTY DENIED ☐



ULTRASORB® System Warranty Validation Form

To validate the Warranty for the system, this form must be read, signed and returned to:

***RGF Environmental Group, Inc
c/o Warranty Department
1101 13th Street
Riviera Beach, Florida 33404
FAX 561-848-9454***

1. I have inspected the system upon arrival for shipping damage and have reported any problems to the local distributor, the Courier Company, or *RGF* within the required time period.
2. I have been provided with training on the operation and procedures for the system by the distributor or *RGF* representative, during the installation and startup of the system.
3. I understand it is the customer's responsibility to:
 - Regularly monitor and maintain the water chemistry of the system and to utilize properly only any chemicals or cleaning agents that are compatible with the equipment.
 - To regularly clean out the sump pit and perform suggested preventive maintenance on the system in order to keep the system in good working order. I understand that failing to do so will adversely effect the efficiency of the system. I also understand, that it is my responsibility to properly dispose of the used filters, pit sediment, and any other by-products accordingly.
 - Protect the system from extreme (high/low) temperatures to prevent damage to the components and piping of the system.
 - Notify the local distributor or *RGF* Warranty Dept. immediately upon any malfunction of the system in order to receive warranted work or parts.
4. I understand that any controversy or claim arising out of or relating to the **ULTRASORB® System Warranty** herein or the alleged breach thereof, shall be settled by arbitration in accordance with the rules of the Arbitration Association of America, Palm Beach County, Florida, and judgment upon the award rendered by the arbitrator(s) may be entered in any court baring jurisdiction thereof.

I hereby acknowledge the above.

Customers Name _____

Address _____

Signature _____

Date _____



ULTRASORB® System Installation / Startup Record

Model Number _____ Installation Date _____
Serial Number _____ Start-Up Tech. _____
Distributor _____
Customer _____
Address _____
Phone () _____ FAX () _____ Contact _____

Names of Trainees	Position
Initials	
_____	_____
_____	_____
_____	_____
_____	_____

What is Being Cleaned _____ Hr's. Per Day _____

Washpad Design & Const. By? _____

Is the Washpad Satisfactory? Yes ____ No ____ If No, Explain _____

Was the Unit Missing Parts? Yes ____ No ____ If Yes, Explain _____

Did the Unit Have Shipping or Hidden Damage? Yes ____ No ____ If Yes, Explain _____

List Any Options/Modifications with this Unit. _____



ULTRASORB® System Installation / Startup Checklist

MAINTENANCE PROCEDURES, CHECK IF COVERED & APPLICABLE

- | | |
|---|---|
| <input type="checkbox"/> Overall System Description | <input type="checkbox"/> Sump Pump & Maintenance |
| <input type="checkbox"/> EPA & Sewer Rules | <input type="checkbox"/> Electrical, Shutoffs, Etc. |
| <input type="checkbox"/> Wash Pad Maintenance | <input type="checkbox"/> Centrifugal Separator |
| <input type="checkbox"/> Solids Cleaning Procedure | <input type="checkbox"/> Oil Accumulator |
| <input type="checkbox"/> Bleed Lines | <input type="checkbox"/> Coalescing Tubes |
| <input type="checkbox"/> Solids Grid | <input type="checkbox"/> Hydrocarbon Absorber II |
| <input type="checkbox"/> Filter Media | <input type="checkbox"/> Centrifugal Pump |
| <input type="checkbox"/> Hydrocarbon Absorber III | <input type="checkbox"/> Chlorinator |
| <input type="checkbox"/> Jet Pump and Switch | <input type="checkbox"/> Fresh Water Make-up |
| <input type="checkbox"/> TurboHydrozone | <input type="checkbox"/> Air Compressor |
| <input type="checkbox"/> Polishing Filters | <input type="checkbox"/> Pressure Gauges |
| <input type="checkbox"/> Pressure Tank | <input type="checkbox"/> 3 Way Control Valve |
| <input type="checkbox"/> Options: _____ | <input type="checkbox"/> Options: _____ |
| <input type="checkbox"/> Options: _____ | <input type="checkbox"/> Options: _____ |

CRITICAL FUNCTIONS AND PROCEDURE DISCUSSIONS

- | | |
|---|--|
| <input type="checkbox"/> Basic Water Chemistry;
pH, Alkalinity, TDS | <input type="checkbox"/> Operator Safety;
Clothing, Ventilation, Etc. |
| <input type="checkbox"/> Algae/Bacteria Control;
Chlorine, Hydrogen Peroxide | <input type="checkbox"/> Cleaning Agents; Enviro-
Control, Ultra-Safe |
| <input type="checkbox"/> Water Cycling, WC1 | <input type="checkbox"/> Water Management |
| <input type="checkbox"/> Water Testing; ETS Kit,
pH Paper, TDS Meter | <input type="checkbox"/> Recycled / Fresh Water |
| | <input type="checkbox"/> Where to Get Help; Manuals,
Distributor, RGF |

CUSTOMER HANDOUTS AND SUPPORT MATERIAL

- | | |
|--|---|
| <input type="checkbox"/> Operating Manuals | <input type="checkbox"/> Water Test Kit |
| <input type="checkbox"/> Maintenance Video | <input type="checkbox"/> Spare Parts List |

CUSTOMER EVALUATION OF START-UP TRAINING:

How Would You Rate Your Training? Good ____ Fair ____ Poor ____

General Comments _____

RGF Tech. Rep. Signature _____
Trainees Signature _____



ULTRASORB® System Client Questionnaire

Company Name _____
Contact Person _____
Location _____
Phone (____) _____

RGF Dealer/Salesman _____

Purchase Date (approx.) _____

Model _____ Serial Number _____

HOW WOULD YOU RATE THE FOLLOWING?

	GOOD	FAIR	POOR
General Operation	_____	_____	_____
Recycled Water Quality	_____	_____	_____
Quality of System	_____	_____	_____
Service & Support	_____	_____	_____
Warranty	_____	_____	_____
Installation / Training	_____	_____	_____
Safety	_____	_____	_____
RGF Dealer / Salesman	_____	_____	_____
Value	_____	_____	_____

Would you purchase another RGF System? Yes ____ No ____

Comments _____

Completed By: _____ Date _____

Please return this form to:

RGF Environmental Group, Inc
c/o Customer Service Dept.
1101 W 13th Street
Riviera Beach, FL 33404
Fax: 516-848-9454