

Engineering Data Sheet

6001

Product: ContamAway II Plus™ Mini Series Aqueous Waste Treatment and Water Recycling System

Product Description

The ContamAway II Plus™ Mini Series unit is a small flow, intermittent use, multipurpose, factory packaged aqueous waste treatment plant that is designed to:

- ◆ Remove free oils/fuels (i.e., insoluble hydrocarbons)
- ◆ Remove gross settleable solids
- ◆ Remove fine suspended solids (to 1 micron)
- ◆ Remove chemically and mechanically emulsified oils, and
- ◆ Remove volatile and semi-volatile organic compounds, PCBs, pesticides, BOD/COD/TOC, dissolved organics, and heavy metals to near non-detect levels
- ◆ Recycle the treated water

Product Application

In addition to decon water, the unit will successfully treat stormwater runoff, hydroblast waters, tank and equipment washwaters, ground dewatering liquids, underground storage tank residuals, and contaminated site groundwater. ContamAway II Plus™ Mini Series units are ideal for contractors, car and truck dealerships, machine shops, maintenance facilities, airport terminals, taxi and bus garages, equipment rental shops, rail yards, and most manufacturing companies.

Product Usage

Routine plant operation is entirely automatic and fail-safe. Improper operation is virtually impossible. Routine maintenance consists of two activities:

1. The replacement of either of the 5 micron filter cartridges, or
2. The replacement of the tri-media adsorber when the adsorptive capacity has been reached as determined by periodic sampling and testing.

For many applications, the filter cartridges and adsorber will last for several months before requiring change out. WaterSmart Environmental, Inc. stocks the replacement items in inventory for overnight shipment, if necessary.

Treated water is collected in a 500-gallon capacity storage tank for recycling. A factory mounted pressure washer completes the Mini Series system.

The ContamAway II Plus™ Mini Series product line requires absolutely no chemicals for either heavy metals removal or for disinfection.

Heavy metals are removed through media adsorption technology rather than chemical precipitation. Differences

in raw water quality do not matter when adsorption technology is selected for heavy metals removal.

Our research has established that suspended solids in the flow stream rather than biological growths cause the so-called plugging of granular activated carbon contactors. Backwashing activated carbon always reduces its treatment capacity because of the associated disruption of its adsorption profile. Media plugging can easily be minimized by removing particulate matter down to 5 micron in size upstream from the adsorption device. The ContamAway II Plus™ Mini Series product line follows this design approach.

Principal Features

- ◆ User friendly. Maintenance requirements are specifically identified. No guesswork necessary.
- ◆ Extended run times between maintenance procedures. Each system component is intentionally oversized to maximize service cycle.
- ◆ No chemicals required. Raw wastewater may vary considerably without any change in effluent quality.

System Description - Summary

The ContamAway II Plus™ Mini Series product line accomplishes treatment through filtration and adsorption technologies. The first treatment vessel is called a **5-micron cartridge filter T-01**. This unit removes suspended solids. The 5-micron cartridge filter effluent is further treated by tri-media adsorption consisting of OrganoSorb™ over granular activated carbon over MetalSorb™. The treated water is collected in a storage tank for subsequent recycling. The above design maximizes the useful life of the tri-media adsorber that is the most expensive component of the treatment system. The 5-micron cartridge filter and the tri-media adsorber must be replaced when their useful capacity has been reached. See attached drawings S-1780 and S-1781.

System Description - Complete

The ContamAway II Plus™ Mini Series product line is always fed from a sump. The use of a screened intake 12" or so above the sump floor:

1. Permits an accumulation of coarse sludge within the sump
2. Prevents the introduction of coarse solids into the downstream treatment unit
3. Permits free oils to accumulate at the surface

The pump used for liquid transfer is a shallow well jet pump with a 25-foot suction lift capability. If the pump en-

counters excessive pressure it will shut down. The 5-micron cartridge filter then needs replacement.

The tri-media adsorber consists of 1/3 OrganoSorb over 1/3 aqueous phase granular activated carbon over 1/3 MetalSorb™. The adsorber has 10 minutes EBCT (empty bed contact time). Lignite or coconut based carbons are used because they adsorb a wider range of molecular organics than bituminous based carbons. Data sheets on the OrganoSorb and MetalSorb™ products are attached.

The adsorber also removes chemically emulsified oils, TOC, BOD, TOX, VOC, and SVOC compounds. Because particles to 5 microns are removed upstream from the adsorbers, no backwashing of the carbon is ever necessary. If COCs (contaminants of concern) include anions such as cyanides, hexavalent chromium, selenium, and arsenic, their removal may be accomplished using a polishing An-Sorb™ adsorber.

Of significance to routine operation, no chemicals are required to achieve the effective removal of a broad spectrum of contaminants. Since raw characteristics can and do change, the associated requirement to continually adjust chemical dosage can impair performance. The absence of chemical addition translates into simple, reliable and easy operation.

The unit is equipped with an audible and visual alarm to indicate a high cartridge filter pressure or a treated water storage tank overflow condition.

Vapor Emission Control

The ContamAway II Plus™ Mini Series system is entirely enclosed which eliminates all vapor emissions to the atmosphere. No air monitoring is therefore necessary.

All equipment is skid mounted and factory piped, wired, and tested prior to shipment. Site installation consists of terminal connections and power feed only.

Quality Control

The ContamAway II Plus™ Mini Series is skid mounted, factory assembled, prepiped, prewired, and fully tested prior to shipment. It is available on a purchase or lease/rental basis as follows:

Purchase Option	
Model	CA2PM-05
Unit Price (Effective 1-1-06)	\$28,750.00
Replacement 5 Micron Filter Cartridge Set (# In Set)	\$156.00 (4)
Replacement Tri-Media Adsorber	\$4,575.00
Process Flow Schematic Drawing No.	S-1780
Equipment Layout Drawing No.	S1781

Selling Terms:

- ◆ 50% of contract amount with purchase order;
- ◆ 40% of contract amount upon completion of manufacturing and prior to shipment; and
- ◆ 10% of contract amount net 30 days from shipment date.
- ◆ Availability: Four (4) weeks after receipt of order (ARO) or after receipt of approved submittals (ARAS), whichever applies.

Lease/Rental Option	
Model	CA2PM-05
Monthly charge	\$3,371.00

Lease/Rental Terms:

- ◆ Three (3) month minimum charge payable with transmittal of fully executed lease/rental agreement.
- ◆ 50% of initial twelve (12) months lease/rental is applicable to purchase price any time during the lease period.
- ◆ Final equipment decontamination, if required is the responsibility of user.
- ◆ Availability: Four (4) weeks after receipt of order (ARO) or after receipt of approved submittals (ARAS), whichever applies.

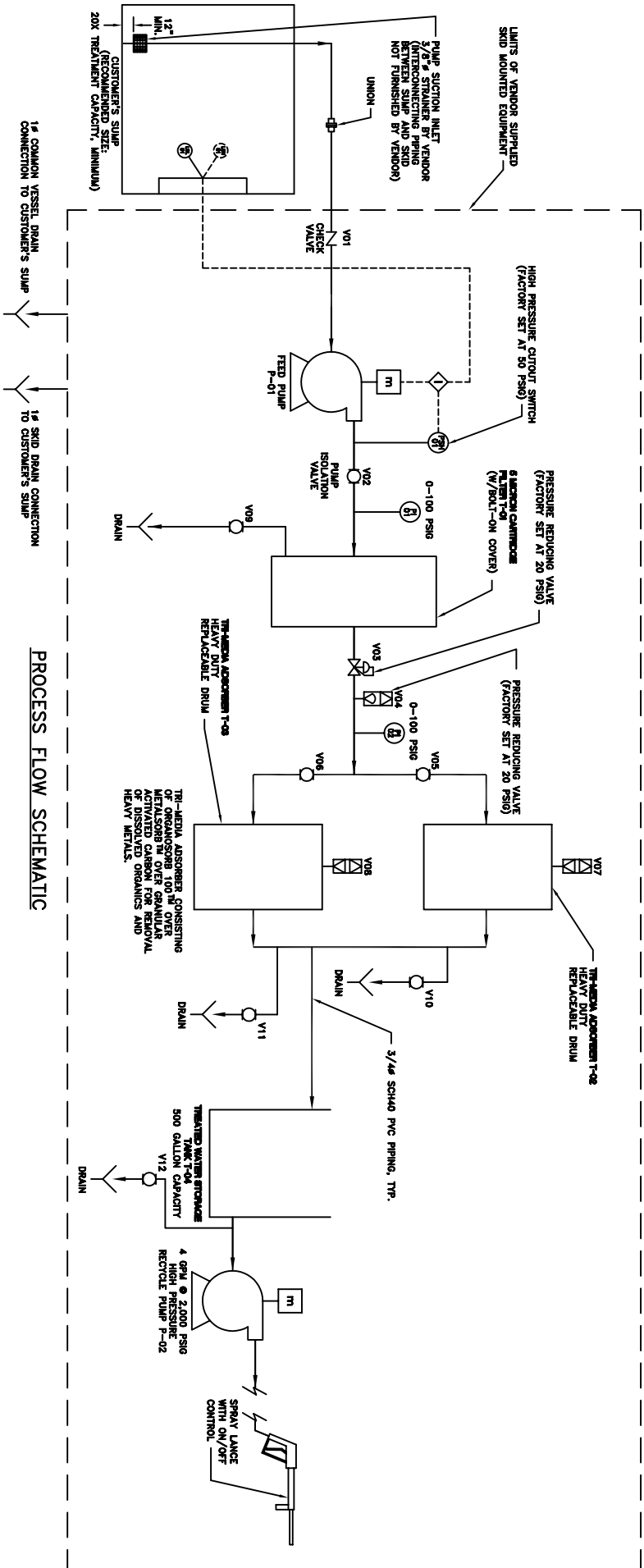
For Both Above Options

- ◆ Price includes Operation & Maintenance manuals.
- ◆ Plant start-up and operator training services are available at the rate of \$750.00/day (one factory trained representative) plus portal to portal expenses. No taxes, permit fees, chemicals, spare parts site labor, or technical services are included.
- ◆ All freight costs are excluded.



ENGINEERING DATA AND SPECIFICATIONS TABLE

MODEL NUMBERS	TREATMENT CAPACITIES	RECYCLE CAPACITIES	PIPE SIZES			PIPE MATERIALS	TOTAL OPERATING HORSEPOWER	REQUIRED POWER			TRI-MEDIA ADSORBER	WEIGHTS, LBS.		
			INLET CONNECTION	PROCESS FLOW	OUTLET CONNECTION			INDOOR INSTALLATION	OUTDOOR INSTALLATION	FEED PUMP		RECYCLE PUMP	QTY.	SIZE
CA2PM-05	5 GPM	4 GPM	1" FNPT	3/4"	3/4" FNPT	PVC	6	110/220V/1 PHASE	208V/3 PHASE	2	16" # x 48" H	300	2,500	6,100



PROCESS FLOW SCHEMATIC

LEGEND

- ROTARY VALVE
- ⊗ PRESSURE SWITCH
- ⊕ ELECTRIC MOTOR
- ⊕ LIQUID LEVEL SWITCH
- ⊗ COMBINATION ROTARY VALVE RELEASE VALVE
- ⊕ PRESSURE INDICATOR

MINI SERIES
ContamAway II Plus™

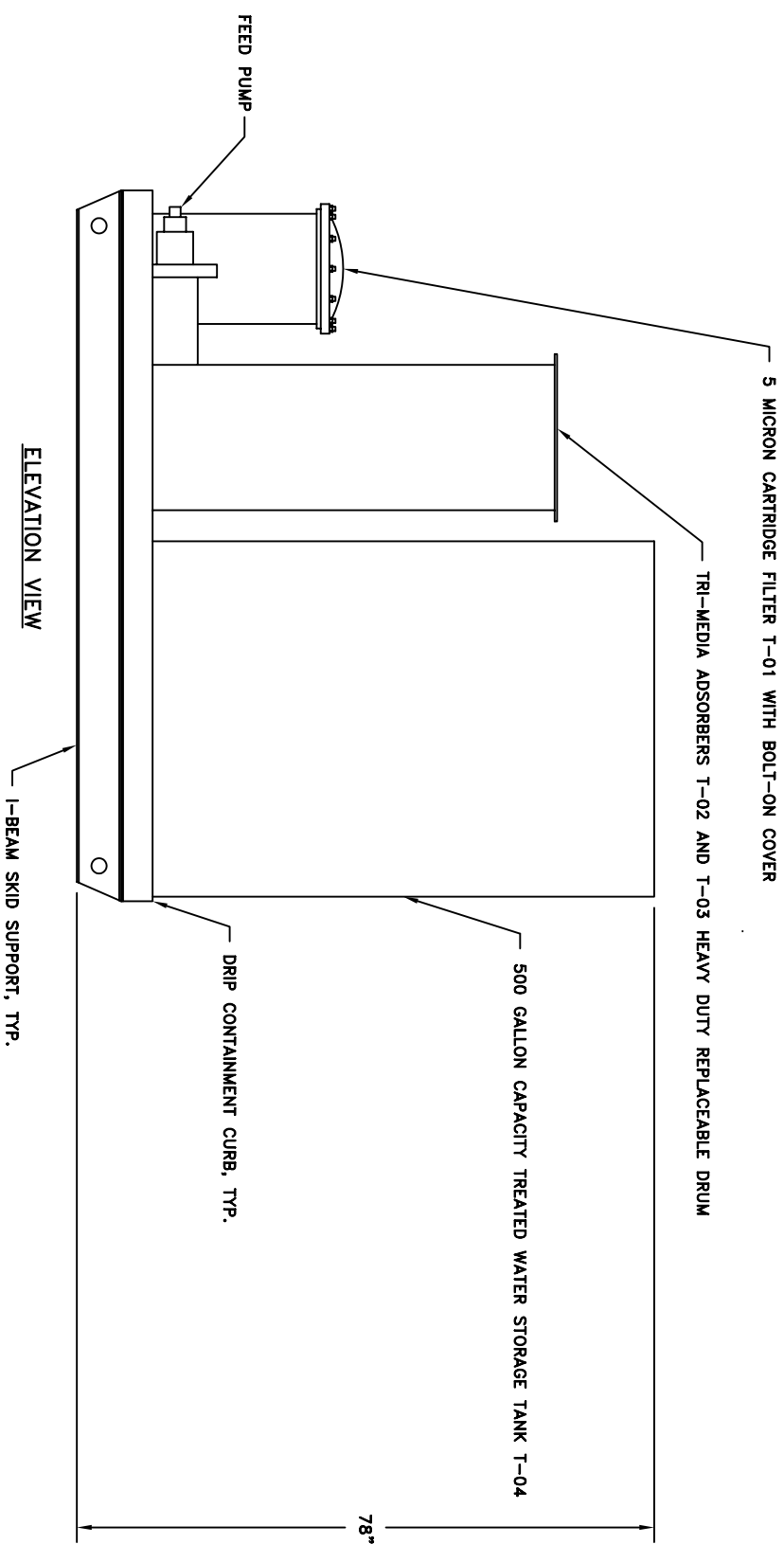
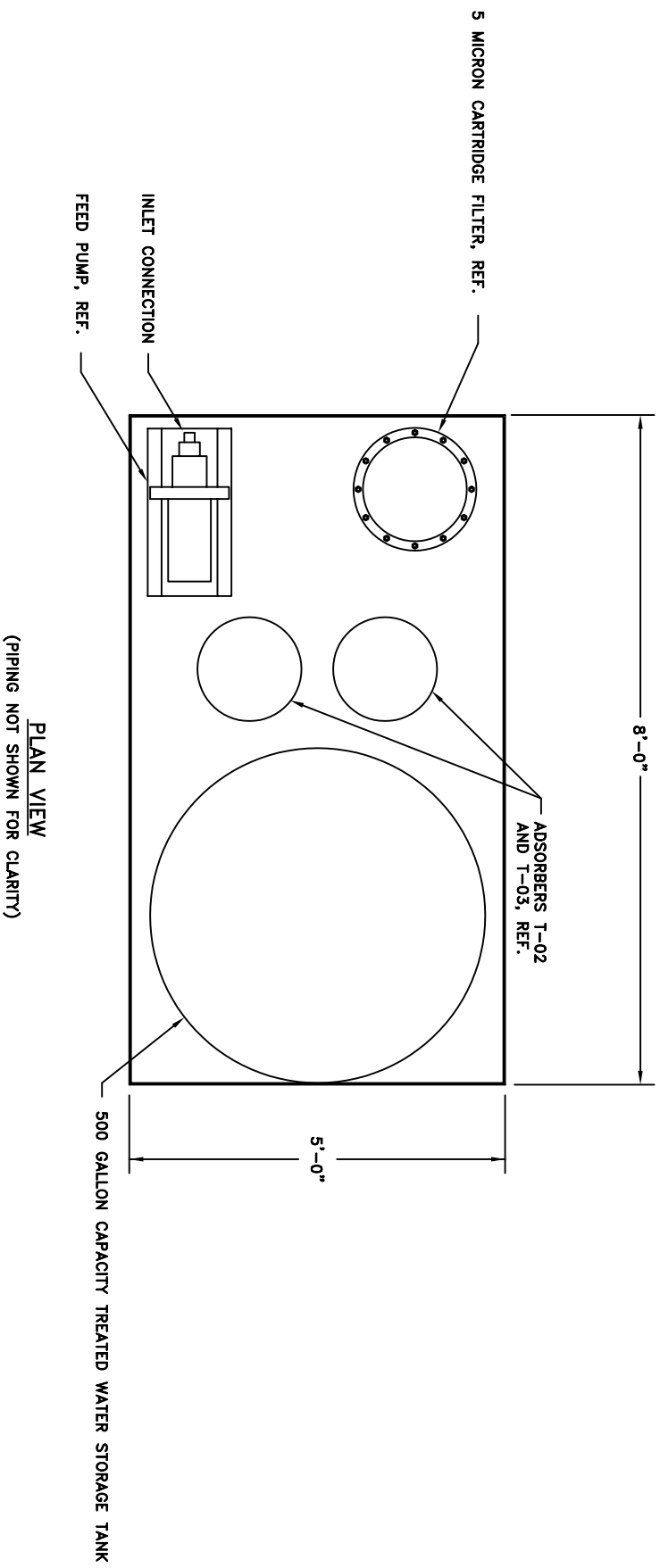
WASTEWATER TREATMENT AND REUSE INSTRUMENT DRAWING

WaterSmart Environmental, Inc.
 2400 West 12th Street, Suite 200
 Shawnee Mission, Kansas 66225

DATE: 1/17/00
 BY: [Signature]
 CHK: [Signature]
 DESIGNED BY: [Signature]
 DRAWN BY: [Signature]

REV. DATE DESCRIPTION BY CHK DATE

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MODEL CA2PM-05

MINI SERIES
ContamAway II Plus[™]

REV.	DATE	DESCRIPTION	BY	CHK

DO NOT SCALE DRAWING. USE DIMENSIONS ONLY.

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WaterSmart Environmental, Inc.
Post Office Box 26346
Shawnee Mission, Kansas 66225

TITLE
EQUIPMENT LAYOUT

JOB NO. 009

SCALE 1"=1'-0" DRAWN B.E.H. DWG. NO. S-1781
DATE 1/17/00 CHECKED C.G.S.

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