

Note: Only SP1, SP3 plotted.

[illegible]

County of Santa Clara - Department of Environmental Health
 SOIL PERCOLATION TEST RECORD MEASUREMENTS (Electronic Version by Chris Dy, R.E.S.)

COUNTY APPLICANT: RE CHENCO		FILE #: 85-552	PERMIT #: 14-014
LOCATION: Old Santa Cruz Hwy (San Antonio) #121		APPLICANT: NOVA SURFACING	
CONTACT PERSON: CHEN, JAY, E.	PHONE: 850-595-1245	DATE: 10/4/2017	

HOLE #1 DEPTH: 12"

TIME	TEST	START	FINISH	AMIN	AMIN	INCH	MPH
1:30	1:30	1:30	1:30	0	0	0	0
1:48	1:48	1:48	1:48	0	0	0	0
1:56	1:56	1:56	1:56	0	0	2.50	6
2:37	2:37	2:37	2:37	0	0	2.50	6
3:33	3:33	3:33	3:33	0	0	2.50	6
4:23	4:23	4:23	4:23	0	0	2.50	6
5:13	5:13	5:13	5:13	0	0	2.50	6
6:46	6:46	6:46	6:46	0	0	2.50	6

HOLE #2 DEPTH: 18"

TIME	TEST	START	FINISH	AMIN	AMIN	INCH	MPH
1:30	1:30	1:30	1:30	0	0	0	0
1:47	1:47	1:47	1:47	0	0	3.00	8
2:38	2:38	2:38	2:38	0	0	3.00	8
3:48	3:48	3:48	3:48	0	0	3.00	8
4:18	4:18	4:18	4:18	0	0	3.00	8

HOLE #3 DEPTH: 12"

TIME	TEST	START	FINISH	AMIN	AMIN	INCH	MPH
1:30	1:30	1:30	1:30	0	0	0	0
1:48	1:48	1:48	1:48	0	0	0	0
1:53	1:53	1:53	1:53	0	0	0	0
2:13	2:13	2:13	2:13	0	0	0	0
2:40	2:40	2:40	2:40	0	0	0	0
3:13	3:13	3:13	3:13	0	0	0	0
4:18	4:18	4:18	4:18	0	0	0	0
5:13	5:13	5:13	5:13	0	0	0	0
6:46	6:46	6:46	6:46	0	0	0	0

HOLE #4 DEPTH: 12"

TIME	TEST	START	FINISH	AMIN	AMIN	INCH	MPH
1:30	1:30	1:30	1:30	0	0	0	0
1:48	1:48	1:48	1:48	0	0	0	0
1:53	1:53	1:53	1:53	0	0	0	0
2:13	2:13	2:13	2:13	0	0	0	0
2:40	2:40	2:40	2:40	0	0	0	0
3:13	3:13	3:13	3:13	0	0	0	0
4:18	4:18	4:18	4:18	0	0	0	0
5:13	5:13	5:13	5:13	0	0	0	0
6:46	6:46	6:46	6:46	0	0	0	0

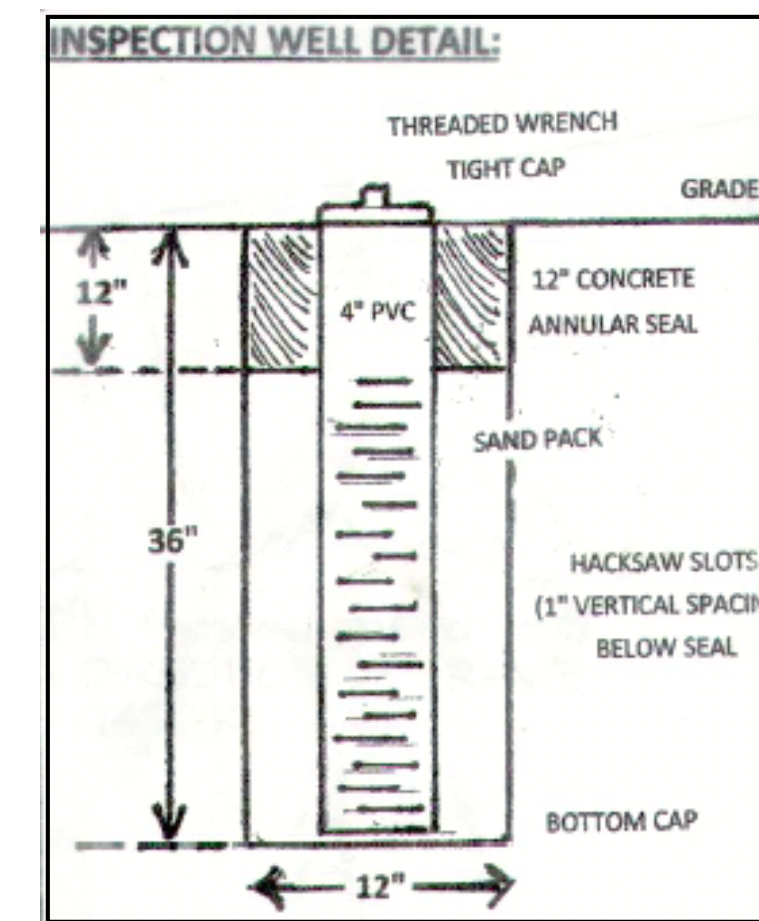
HOLE #5 DEPTH: 12"

TIME	TEST	START	FINISH	AMIN	AMIN	INCH	MPH
1:30	1:30	1:30	1:30	0	0	0	0
1:51	1:51	1:51	1:51	0	0	0	0
2:03	2:03	2:03	2:03	0	0	0	0
2:13	2:13	2:13	2:13	0	0	0	0
2:40	2:40	2:40	2:40	0	0	0	0
3:13	3:13	3:13	3:13	0	0	0	0
4:18	4:18	4:18	4:18	0	0	0	0
5:13	5:13	5:13	5:13	0	0	0	0
6:46	6:46	6:46	6:46	0	0	0	0

HOLE #6 DEPTH: 12"

TIME	TEST	START	FINISH	AMIN	AMIN	INCH	MPH
1:30	1:30	1:30	1:30	0	0	0	0
1:51	1:51	1:51	1:51	0	0	0	0
2:03	2:03	2:03	2:03	0	0	0	0
2:13	2:13	2:13	2:13	0	0	0	0</

Flow for 5 BR = 600 gpd
Application rate for 57 MPI perc rate = 0.4 gpd/sq. ft
Dispersal Field Size = 600 gpd/0.4 gpd/sq. ft = 1,500 sq. ft
Dual Dispersal Fields proposed, each 20 ft x 75 ft (1,500 sq. ft).
Dripline Specifications: Emitter Spacing 2 ft, Line Spacing 2 ft
Infiltrative Area Per Emitter = 4 sq. ft. / Emitters per field: 375
Dripline Loops: 5 per field, 150 ft length emitter line each loop.
Plus 6 ft blank tubing for loop & connect fittings.
Burial Depth: 12 inches emitter, 24" supply lines.
Slope in Dispersal Field: 14 to 19%
Dripline Model: Geoflow Wasteflow PC 0.5 gph.

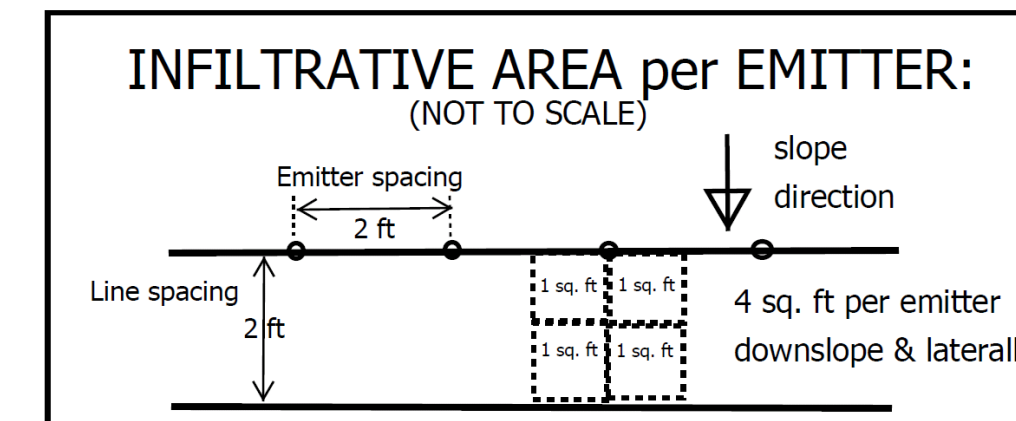


Entire Dripfield Area shall be fenced off during construction to minimize disturbance.

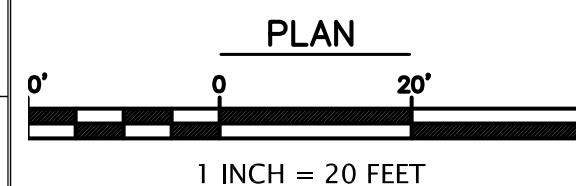
ELECTRICAL BUILDING PERMIT REQUIRED

All PVC is Sch. 40
(unless otherwise specified)

A drip dispersal type septic system design was selected due to poor water absorption observed in soils below 2 ft depth. The perc. test data and plot plans for these failed tests are on file w/ DEH.



	Work	Frequency
Inspection	- Conduct routine visual observations of drip field, downslope area and surroundings for wet areas, pipe leaks or damage, soil erosion, drainage issues, abnormal vegetation, gophers or other problems. - Conduct routine physical inspections of system components, including valves, filters, and headworks box(es). - Perform special inspections of drip field at time of any landscaping work or other digging in drip field area. - Perform inspections of dosing pump(s) and appurtenances (per O&M manual and Performance Evaluation Guidelines, Part 5 of this Manual). - Record observations.	Every 6 to 12 months.
Maintenance	- Manually remove and clean filter. - Clean and check operation of pressure reducing valves. - Clean flush valves and vacuum release valves.	- Clean filter every 6 months. - Other maintenance annually.
Water Monitoring & Sampling	- Measure and record water levels in dispersal field monitoring wells, as applicable, per permit requirements. - Obtain and analyze water samples from dispersal field monitoring wells, as applicable, per permit requirements.	According to permit conditions, if applicable.
Reporting	- Report findings to DEH per permit requirements. - Standard report to include dates, monitoring well and other data collected, work performed, corrective actions taken, and performance summary. - Report public health/water quality emergency to DEH immediately.	According to permit conditions, typically every 1 to 2 years, depending on system size, usage, history, location.



<u>ANNUAL SEPTIC & PUMP TANKS INSPECTION REQUIRED:</u>	<u>ON-SITE WATER TIGHTNESS TESTING</u>
1) Access risers & lids in good condition.	(REQUIRED PRIOR TO SEPTIC TANK & PUMP TANK USE)
2) Structural Integrity - probe interior walls/baffles, inlet/outlet T-pipes.	1. FILL TANK TO TOP OF RISER 1 INCH FROM LID
3) Check Tuf-Tite effluent filter and clean if needed.	2. LET TANK SIT FOR 1 HOUR
4) Septic tank liquid level - should be at outlet invert in tank.	3. OBSERVE WATER LEVEL IN RISER BEFORE AND AFTER 1 HR PERIOD
5) Pump tank electrical & signal wires in good condition.	4. IF LEVEL HAS FALLEN , INSPECT FOR LEAKS
6) Pump tank proper operation of float switches.	5. REPAIR ANY LEAKS AND REPEAT TEST
<i>SEPTIC TANK SHALL BE PUMPED OUT WHENEVER SOLIDS or FLOATING</i>	
<i>MATERIAL EXCEED 30% OF TANK VOLUME OR ENCRONCH ON INLET/OUTLET T's.</i>	
MINIMUM SEPTIC TANK PUMPING FREQUENCY IS 3 TO 5 YEARS	
<i>PUMP TANK to be pumped out when debris may encroach on pump intake.</i>	
<u>ONGOING MONITORING & REPORTING REQUIREMENTS:</u>	Construction Inspections Required w/ Designer & DEH:
<i>(must be performed by licensed professional or service provider)</i>	1. Layout Inspection - All components staked or painted
YEARS 1 - 4: Semi-annually // YEARS 5+ of operation: Annually	2. Open Trench Inspection - Components in & not covered
1) Record wastewater flow based on water meter readings or other method	3. Pump Test - Pumps, ^{hydraulic test} ~~sewer~~ test, and alarms operational.
2) Measurement and recording of water levels in inspection wells.	4. Septic & Pump Tank Water Tightness Testing.
3) Inspection of pump and valves operation, including squirt test.	5. Final Inspection - All components covered.
4) Inspection of dispersal fields for seepage, erosion, etc.	Owner Responsibility for Alternative Type Septic System:
MONITORING REPORT SHALL BE SIGNED BY LICENSED PROFESSIONAL AND SUBMITTED TO DEH IN ACCORDANCE WITH THE SYSTEM OPERATING PERMIT.	Owner will acknowledge that the property is served by an alternative pressure-dosed trench type septic system requiring an ongoing service contract, maintenance, and an annual DEH operating permit.



SEPTIC & PUMP TANK:

2 tanks:
Both cast w/ baffles
and 24" Orenco
riser adaptors.
Pump tank cast
with separate
2" inlet knockout.

NOTES:

- 1). EXCAVATION SPECIFICATIONS:
LENGTH 9' - 0"
WIDTH 9' - 0"
DEPTH BELOW INLET 5' - 4"
- 2). DON CHAFIN PRE-CAST MAY MAKE CHANGES TO THE DESIGN AND OR TO THE DIMENSIONS WITHOUT NOTICE. PLEASE CONTACT DON CHAFIN PRE-CAST WHENEVER NECESSARY TO CONFIRM DESIGN CRITERIA.
- 3). CERTIFIED ENGINEERING IS AVAILABLE UPON REQUEST.
- 4). THIS IS ALSO AVAILABLE AS AN HD RATED ASSEMBLY
- 5). INTEGRAL TOP TO BODY DESIGN

NOTE: THIS TANK CAN BE CAST WITH ORENCO RISER ADAPTORS (24" OR 30") INSTEAD OF CONCRETE PLUGS. PLEASE ASK FOR DETAILS WHEN PLACING ORDER.

NOTE: INLET AND OUTLET PIPES ARE FITTED WITH WATER-TIGHT A-LOCK PIPE CONNECTIONS (STANDARD).

TOP VIEW
SCALE: 1/8" = 1'-0"

SIDE VIEW CUTAWAY
SCALE: 1/8" = 1'-0"

END VIEW
SCALE: 1/8" = 1'-0"

THE DON CHAFIN COMPANY
PRE-CAST DIVISION
7235 BOLSA RD.
HOLLISTER, CA 95023
831-630-1042
831-630-5763 FAX

**PRE-CAST CONCRETE WATER TIGHT
SEPTIC TANK
CAPACITY 1500 GALLONS
MODEL IPS1500**

**DON CHAFIN
PRE-CAST**

2/12/09

AX25RT Treatment System - Gravity Discharge

UNIT IS RATED FOR UP TO 6 BEDROOMS RESIDENTIAL USE.

NOTE: This unit provides 500 gallons emergency storage.

Filter Tank Dry Weight 999 lbs

*** Primary Tank - Top View**
1,500 GAL DON CHAPIN SEPTIC TANK

AX25 800 gal. Recirc. Tank - Top View

Design Notes

For residential strength waste up to 6 bedrooms.

Installation to be performed by an AdvanTex Authorized Installer only.

Start-up and service to be performed by an AdvanTex Authorized Service Provider only.

CUSTOM CONTROL PANEL:
VCOM-AXB1-PTBM2 (DRIP)
1-4 ZONES
DUAL VOLTAGE.

Control Panel Detail
Not To Scale

*** Primary Tank - Side View**

AX25 800 gal. Recirc. Tank - Side View

2" PVC GRAVITY DISCHARGE

Discharge Detail
Not To Scale

*** Primary Tank - End View**

AX25 800 gal. Recirc. Tank - End View

Discharge Chamber - End View

* 1,250 Gallons minimum capacity for 5 bedrooms
1,500 Gallons minimum capacity for 6 bedrooms.

UNAUTHORIZED CHANGES & USES

Orenco has prepared these drawings for use by the designer and others. Orenco will not be responsible for errors or omissions in drawings or for use of these drawings. It is the user's responsibility to ensure that the drawings meet the needs of the project and that the drawings are used in accordance with the design intent.

Orenco Systems® Incorporated

Changing the Way the World Does Wastewater®

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Product Configuration Drawings

Drawn By: Ben Smith
Drawn For:

Project: AX25RT Model 1A
Title: NDW-ATX-RT-STD-17
Rev. A-07 **Date:** 4/22/2013

Scale: 1" = 2'-0"
Sheet: 1 OF 1

Scale: 1" = 2'-0"
Sheet: 1 OF 1

Scale: 1" = 2'-0"
Sheet: 1 OF 1

Emitter Spacing: 24"
Line Spacing: 24"

WASTEFLOW PC 1/2 gph

2" PVC SUPPLY/RETURN (24" Burial Depth)
PVC TEE
2" to 3/4" PVC T fitting
12" 3/4" PVC riser
PVC PIPE
GEOWORK LOCKSLIP ADAPTER (LTSLP-600)
GLUE INTO 3/4 INCH PVC
MANIFOLD CONNECTION (END FEED)
PVC RISER
512 WASTEFLOW SECTION
Not To Scale
OR-001-000000-1

HEADWORKS MANIFOLD:

HEADWORKS MANIFOLD DETAIL 2" PVC:

PLAN VIEW:

- 2" PVC Wye Fitting
- 2" / 3/4" PVC Coupler
- 3/4" PVC Female Threaded Adapter
- AIR VENT/VACUUM RELIEF VALVES (3)
- FIELD FLUSH VALVE (Geoflow Model APVBK100L)
- 2" PVC RETURN LINE
- 2" PVC SUPPLY LINE'S
- FILTER FLUSH VALVE (Geoflow SVLVB Solenoid)
- 2" PVC SUPPLY LINE'S
- 2" 1/2" T
- Vortex Filter (Geoflow AP4E-2F)
- 1/2" SAMPLE TAP
- 3 FT x 4 FT PLASTIC VALVE BOX (3' x 4')
- ZONE VALVES (2) (Geoflow SVLVB Solenoid)
- ZONE 2 (B)
- ZONE 1 (A)
- PRESSURE REGULATORS (2) (Geoflow PMR30-MF)
- CVS-20 CHECK VALVES (2)

GEOFLOW FITTINGS:

Air Vents (4):

1 on Return Line
3 in Headworks

APVBK100L

Solenoids (4)

4 in Headworks

SVLVB200 and SVLVB 200

Pressure Regulators (2):

4-16 GPM
PMR30MF
2 in Headworks

Spring Check Valves (4)

CV-S-20 2 in Headworks
1 in Pump Tank
1 on Return Line

1.5" and 2" Vortex

AP4E-2F 1 in Headworks

Item Number	Size (MPT)	Max. Flow rate (GPM)	Filtration (mesh)	Max. Pressure (psi)	Max. Pressure (ft. l.)	Width	Height	Flush Port (MPT)	Area of Filtration (inches ²)
AP4E-25F	3/4"	10	150	80	185	6.0"	6.0"	3/4"	28.4
AP4E-1F	1"	40	150	80	185	6.0"	7.0"	3/4"	28.4
AP4E-2F	2"	70	150	80	185	12"	16.0"	3/4"	60.8

* AP4E-25F 3/4" Inch Vortex Filter has been discontinued. Please use a larger filter for onsite wastewater applications. Replacement parts are still available.

When the headworks are installed, choose the filter with the larger screen area.

(150 mesh = 100 micron)

Geoflow, Inc. Tel 415-927-6000 / 800-828-3386 Fax 415-927-0120 www.geoflow.com

Product Sheet-2011 Filter VortexGeo201107.gsd

NOTE: Air Vent and Check Valve on Return Line in Plastic Valve Box with Air Vent upstream of Check Valve

Updated July 2014

Worksheet – Pump Sizing

Section 1 - Summary from Worksheet 1

Flow required to pump field	9.31	gpm
Flow required to flush field	1.85	gpm
Flow required to clean & flush field	5.16	gpm
Flow	2	VOLTS
No. of Zones	1	zones

800 gallons / day
0.4 gallons / sq. ft. / day

(NOT TO SCALE)

Oranco MF3LLN-57V

ELECTRICAL JUNCTION
BOX ABOVE GRADE

TANK RISERS TO GRADE

4" PVC INLET

2" PVC OUTLET

EMERGENCY STORAGE: 1.6 days@600 gpd **947 GAL.**
 Tank Volume @ FULL (1,645) - Tank Volume @ PUMP ON (698)

FLOAT SWITCH ELEVATIONS:
 HIGH WATER ALARM 27"
 PUMP ON 26"
 PUMP OFF 24"
DISTANCES FROM TANK BOTTOM

727 gal
698 gal
640 gal

DOSE VOLUME

Vol. Pump On (698) - Pump Off (640)

Dosing alternates between Fields A & B

FLOAT POLE ASSEMBLY

58 GAL.

10 doses per day

5 to Field A

5 to Field B

PUMP: ZOELLER E4165

230 VOLTS	1 HP
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PUMP

4" PUMP PEDESTAL

FLOW RATE - From Geoflow Worksheet **5.2 gpm** (Includes Dosing & Field Flushing)

PRESSURE - From Worksheet & Calc. Below **74.8 ft**

Note: All PVC is Schedule 40. $f = L(Q/K)^{1.85}$ (SOURCE: COWA Manual, p. 154)

Pump Meeting Flow & Pressure Requirement for Lower Elevation Driffield A will also be sufficient to serve the upper Driffield B due to longer run and elevation.

A. Flush Line: Equivalent Length of Fittings = 374 ft 2" Solenoid in Headworks = 0 ft 8 x 90' 2" PVC Fittings = 8 x 5.5 ft = 44 ft

Return line length = 92 ft Check Valve (1) = 19 ft T Branch Runs (5) = 5 x 12 ft = 60 ft

Elevation Change: 9'ft (870 - 861 ft) T-Thru Runs (9) = 9 x 4 ft = 36 ft 5 x 3/4" 2" pipe expansion = 5 x 43 ft = 215 ft

B. Drifline Length of Longest Lateral (162 ft): 150 ft emitters + 6 ft blank tubing + 2 ft PVC to supply/return + 4 ft Equip. Length 90' 3/4" PVC (12). **The design point is under the performance curve. Therefore pressure and flow requirements will be met.**

C. Drip Components: Vortex Filter 0.2 psi x 0.5 ft (from Geoflow headloss chart) + 3" Solenoid headloss is zero. (From Geoflow headloss charts)

Equivalent Length Headworks Fittings is 1.2 ft (Gate Valve) + 13 ft (Check valve) + 2 ft (T-Branch) + 5.5 (90 Elbow) + 0.5 (Vortex) = 31.7 ft

Headloss due to Equivalent Length of Fittings = 32 ft (5.2 gpm/284.5)^{1.85} = 32 ft x 0.0002 = 0 ft

D. Supply Line: Length of Supply Line: 70 ft (5 ft in tank, 65 ft across manifold and to bottom of Field A)

Equivalent Length of Fittings: 5,822 ft (2 x 90 elbow in tank + past manifold (12 ft) / 4 x T-Branch 1 in manifold, 5 in Field A (60 ft) // 1 in Pump Tank: 5 ft 5 x Flow Reduction from 2" to 3/4" at Laterals (5750 ft) 5,822 ft (5.2 gpm/284.5)^{1.85} = 5,822 ft x 0.0002 = 1.2 ft

Lift in Pump Tank: 5 ft // (downhill run)

These design points (5.2 gpm @ 75 ft head) are labeled on the pump performance curve (attached) for the selected pump:

Zoeller 4165 Submersible Effluent Pump (230 V, 1 HP)

E165 / E4165	Single / Double	Non	230	1	10.2	1	60	80 / 87	36 / 39	2 or 3 & 5	4 & 6	UL and cCSAus
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Your Peace of Mind is Our Top Priority™

PUMP PERFORMANCE CURVE
MODELS 163A161 - 163A162 - 163A163 - 163A165

CURVE for Selected Pump w/ Cloud Outline

(Product information presented for reference only. Not for use in lieu of published Catalog technical specifications or for selection of components.)

TECHNICAL DATA SHEET
HIGH HEAD FLOW-MATE SERIES
Models 163A161, 163A162, 163A163, 163A165 Submersible Effluent Pumps
Model E4165 is the selected pump. Double-seal non-automatic.
PRODUCT SPECIFICATIONS

MOTOR	Horse Power	1/2 (163A161, 163A162) or 1 (163A163)
	Voltage	115 - 675
	Phase	1 or 3 Ph
	Hertz	60 Hz
	RPM	3650

[illegible][illegible]

~~WFPC16-2-24 WASTEFLOW PC 24"/.53gph or 2lph~~
~~WFPC16-2-16 WASTEFLOW PC 16"/.53gph or 2lph~~
~~WFPC16-2-12 WASTEFLOW PC 12"/.53gph or 2lph~~
 Alternative spacing, flow rates and diameters available upon request