

REC'D MAR 19 2002

**INSTALLATION, OPERATION &
MAINTENANCE INSTRUCTIONS
JOHNSTON VERTICAL PUMPS**

**PROJECT: NORTHEAST ADVANCED POLLUTION
CONTROL FACILITY IMPROVEMENT**

**CITY OF CLEAR WATER , FLORIDA
PROJECT NO. 99-0072-UT
VERTICAL TURBINE PUMPS
SPECIFICATION SECTION 11213**

**HIGH SERVICE PUMPS
EP-4, EP- 8 JOHNSTON SERIAL NO. 01JA1084A,B
EP-2, EP-3, EP-6, EP- 7 JOHNSTON SERIAL NO.
01JA1085A,B,C,D**

**CUSTOMER: WESTRA CONSTRUCTION CORP.
P.O. 439-004**



JOHNSTON PUMP COMPANY

800 Koomey Road • Brookshire, Texas 77423

Telephone: Main (281) 934-6009

Parts/Service: JPCO SALES & SERVICE CENTER

3400 MEADOR DR. MOBILE, AL 36607

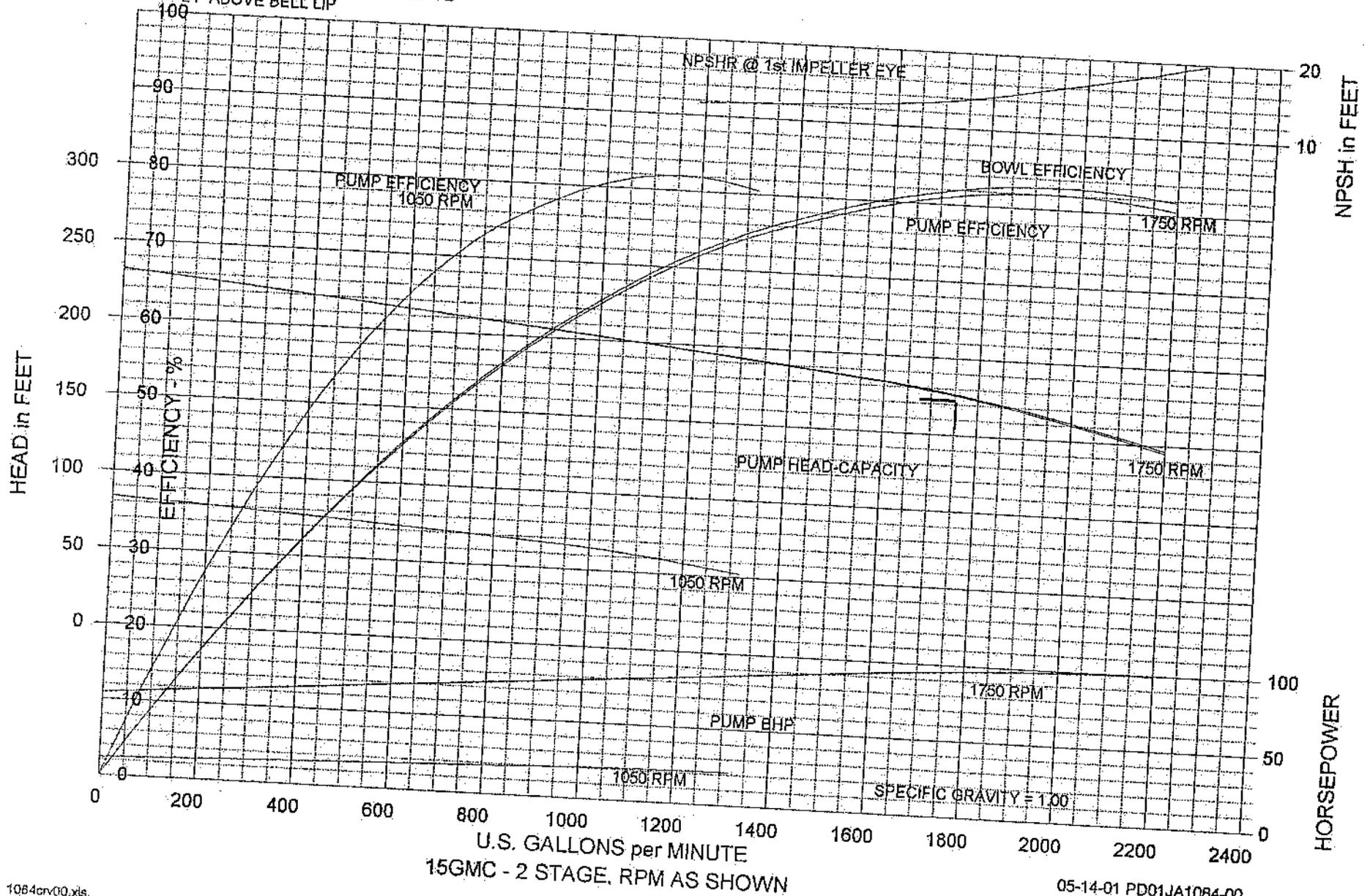
PHONE:(251) 479-5121 FAX:(251) 867-9274



Johnston Pump Co.
 800 Koomey Road
 Brookshire, TX 77423

Westra Construction, P.O. 439-004, Project #439
 for City of Clearwater, Florida - N.E. Advanced Pollution Control Facility
 High Service Pumps EP-4 & -8
 Johnston S.O. Number: 01JA1084

MINIMUM REQUIRED SUBMERGENCE
 = 24" ABOVE BELL LIP

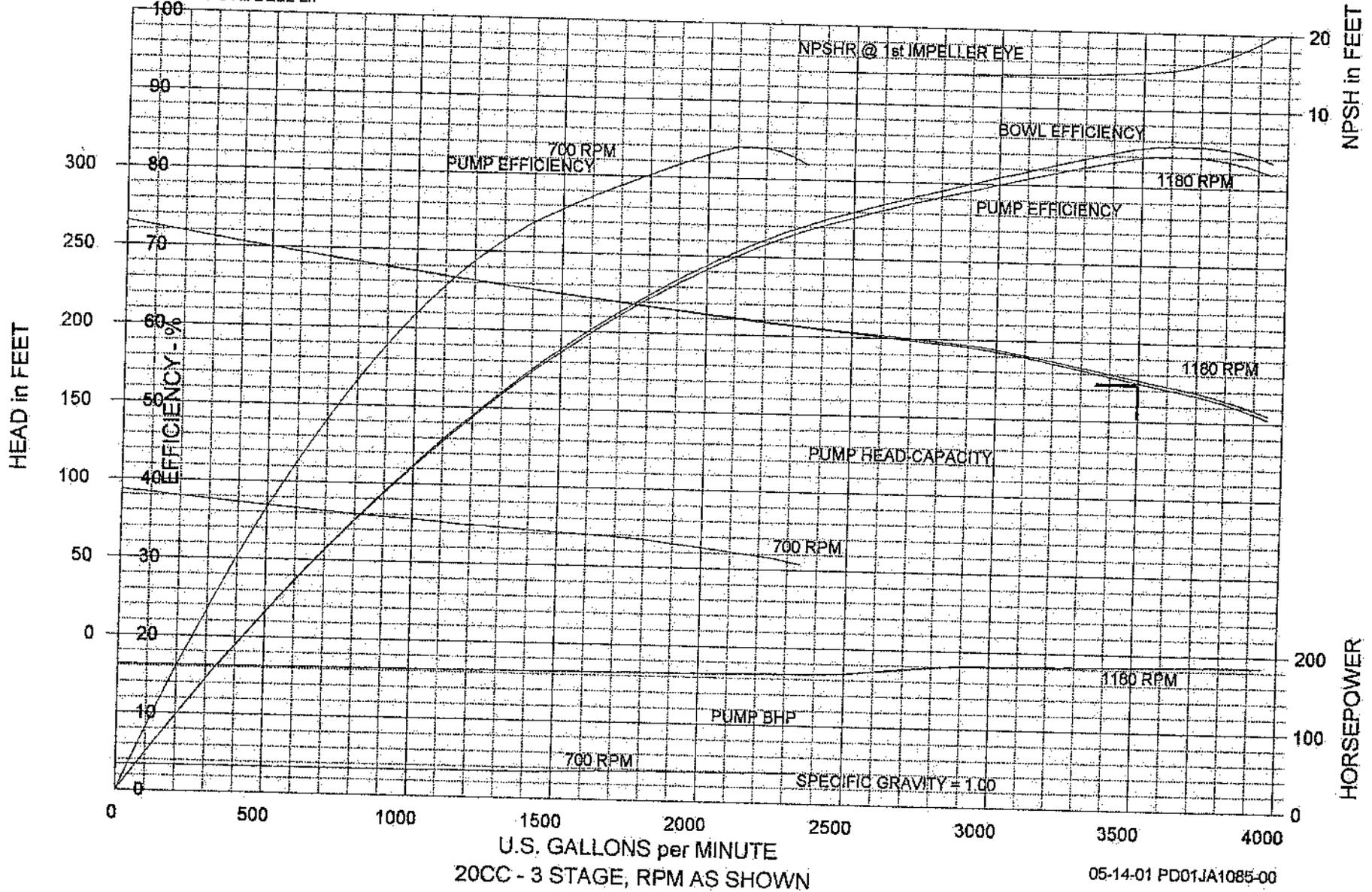




Johnston Pump Co.
 800 Koomey Road
 Brookshire, TX 77423

Westra Construction, P.O. 439-004, Project #439
 for City of Clearwater, Florida - N.E. Advanced Pollution Control Facility
 High Service Pumps EP-2, -3, -6, -7
 Johnston S.O. Number: 01JA1085

MINIMUM REQUIRED SUBMERGENCE
 = 42' ABOVE BELL LIP



REC'D FEB 26 2002

TABLE OF CONTENTS

OPERATION & MAINTENANCE MANUAL

CLEARWATER-NEAPCF INTERNAL RECYCLE PS

CONTRACTOR

WESTRA CONSTRUCTION CORP.
1263 12th AVENUE EAST
PALMETTO, FL. 34221
(941) 723-1611

MANUFACTURERS REPRESENTATIVE

ELLIS K. PHELPS & CO.
2152 SPRINT BLVD.
APOPKA, FL. 32703
(407) 880-2900

MANUFACTURERS WARRANTY SHOP FOR PARTS & SERVICE

S.A.S. INC.
2152 SPRINT BLVD.
APOPKA, FL. 32703
(407) 886-3131

MAINTENANCE SUMMARY FORM

1. EQUIPMENT: Clearwater-NEAPCF Internal Recycle PS
2. MANUFACTURER: Flygt Model CP 3400
3. WEIGHT OF EQUIPMENT OVER 100 POUNDS: Pumps 6270 lb. Each
4. NAMEPLATE DATA: 135 Hp, 1030 Impeller, 3 Phase, 60 Hz, 460 Volt
5. MANUFACTURERS REPRESENTATIVE:
Ellis K. Phelps & Co.
2152 Sprint Blvd.
Apopka, FL. 32703
(407) 880-2900
- 5A. MANUFACTURERS WARRANTY SHOP:
S.A.S. Inc.
2152 Sprint Blvd.
Apopka, FL. 32703
(407) 886-3131

6. MAINTENANCE REQUIREMENTS:

<u>Maintenance Operation</u>	<u>Frequency</u>	<u>Lubrication</u>	<u>Comments</u>
A. Visual Inspection	Once Yearly		
B. Inspect Oil Qty. & Cond-Change Oil	Once Yearly	Any Ordinary SAE 10W30 Motor Oil	
C. Inspect Impeller & Wear Ring	Once Yearly		
D. Remove Equipment For Overhaul	Every 3 Years		Send To Flygt Service Center

PRODUCT

Serial No. 3400.735		Performance curve No. 0151046		Motor module/type 63-1030		Voltage (V) 43-44-10FA		Voltage (V) 460	
Base module 000		Impeller No. 581 90 17		Gear type		Gear ratio		Imp.diam/Blade angle 505	
								Water temp °C 24	

TEST RESULTS

Pump total head H (ft)	Volume rate of flow Q (USGpm)	Motor input power P (kW)	Voltage U (V)	Current I (A)	Overall efficiency η (%)
75.77	0.0	80.52	460	177.1	0.00
62.91	2583.8	76.69	460	172.7	39.99
57.32	5431.6	84.80	460	180.6	69.26
46.83	7780.7	87.20	460	182.8	78.83
37.03	10226.8	91.46	460	187.7	78.11
28.26	12153.8	90.78	460	186.8	71.37
15.92	13982.0	84.74	460	180.2	49.55

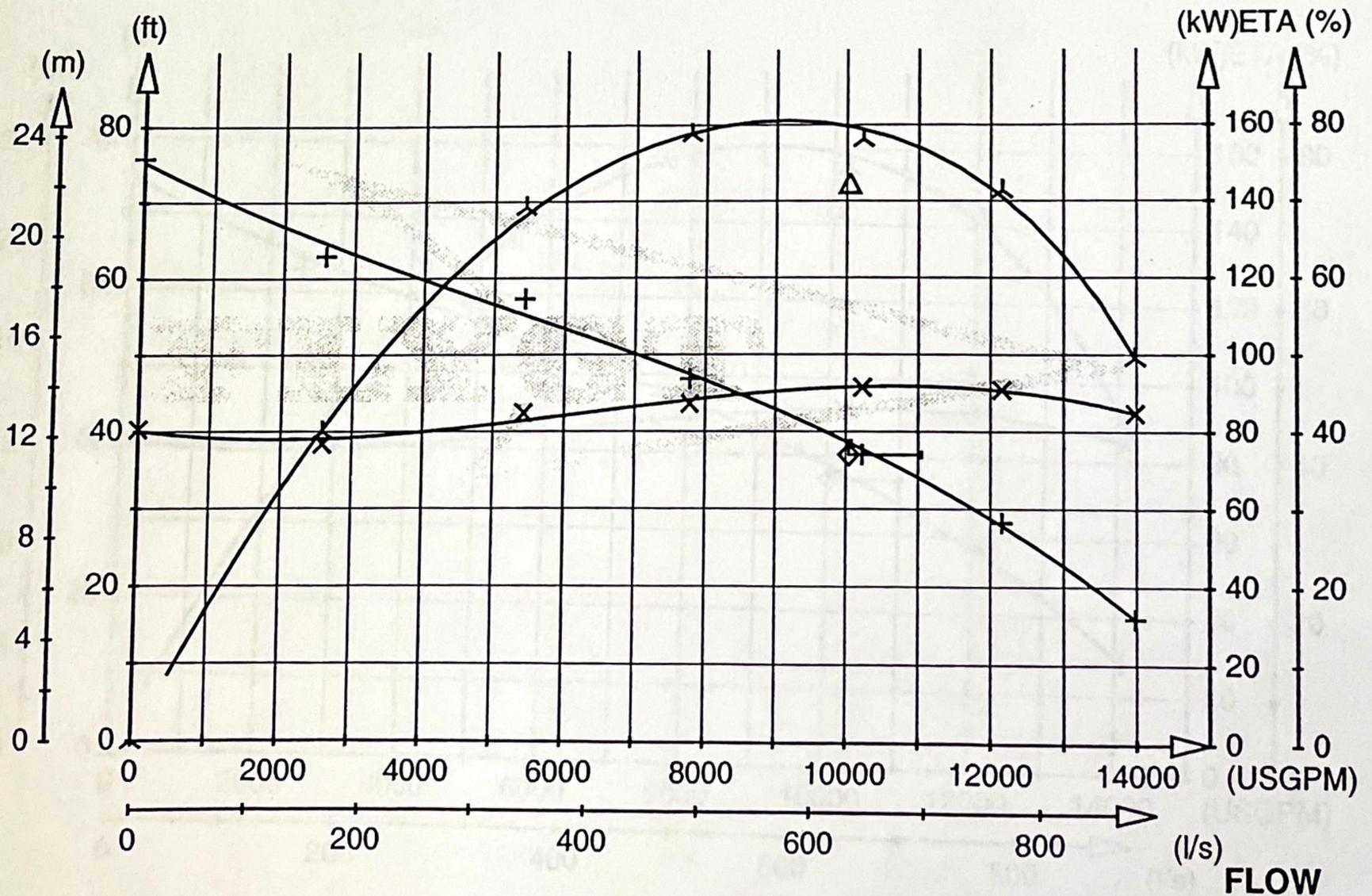
Accepted after HI	Test facility Lindas Sweden	Test date Q2 01-08-28	Time 09:50	Chief tester 1358 <i>[Signature]</i>
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PLOTTED TEST RESULTS

Measured point: + = Q/H
X = Q/P
Duty point: \diamond = Q/H
 \square = Q/P
 Δ = Q/ETA overall
Calculated point: λ = Q/ETA overall
1

TOTAL HEAD

INPUT POWER



PRODUCT

Serial No. 3400.735		Performance curve No. 0151045		Motor module/type 63-1030		Voltage (V) 43-44-10FA		Voltage (V) 460			
Base module 000		Impeller No. 581 90 17		Gear type		Gear ratio		Imp.diam/Blade angle 505		Water temp °C 24	

TEST RESULTS

Pump total head H (ft)	Volume rate of flow Q (USGpm)	Motor input power P (kW)	Voltage U (V)	Current I (A)	Overall efficiency η (%)
75.28	0.0	80.73	461	176.8	0.00
62.91	2465.8	77.28	461	171.9	37.86
57.35	5347.5	85.19	460	180.5	67.92
47.44	7593.4	87.18	461	182.9	77.95
37.04	10219.6	92.13	460	186.6	77.50
28.53	12096.0	91.43	461	187.4	71.21
14.29	14095.4	84.96	461	180.4	44.73

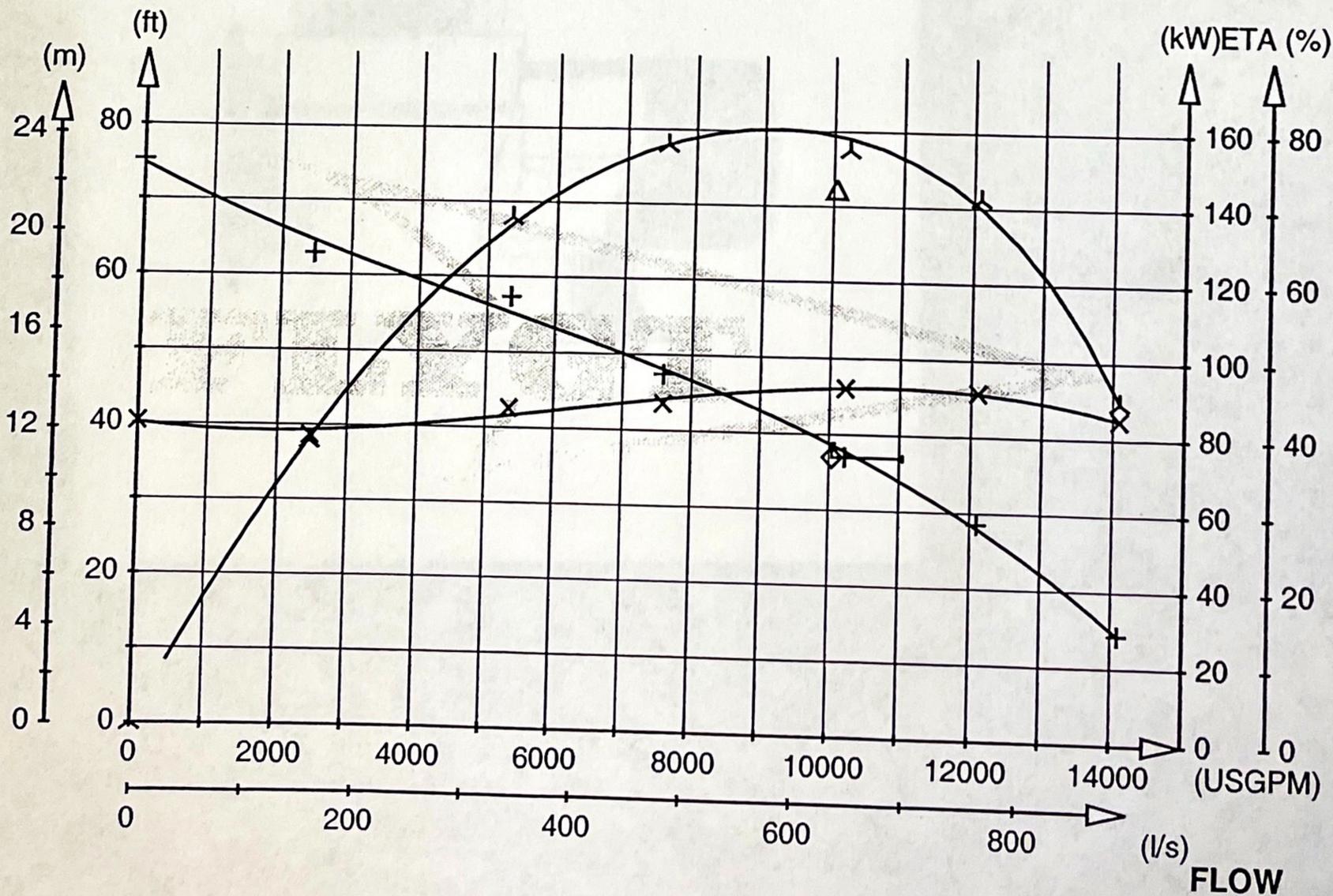
Accepted after HI	Test facility Lindas Sweden	Test date Q2 01-08-28	Time 12:11	Chief tester 1358 <i>Tomy hlv</i>
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PLOTTED TEST RESULTS

Measured point: + = Q/H
X = Q/P
Duty point: \diamond = Q/H
 \square = Q/P
 Δ = Q/ETA overall
Calculated point: \wedge = Q/ETA overall
1

TOTAL HEAD

INPUT POWER



OPERATION AND MAINTENANCE MANUAL

S.O. 1-5200-39165

INDEX SHEET

Item No.: 3 Service: Effluent Pumps
 Quantity: 3
 Pump Size & Type: 16 x 14 x 21 - PWOV Model: 250 Frame: F9-N

PUMP DATA

Vibration Note	52-125-014	
Bulletin	52B5514-03	
Dimension Print	1PW-39165-03	3-1
Parts & Material List	2PW-39165-03	3-2
Engineering Data	4PW-39165-03	3-3
Curve: 6900 PGM @ 67' TDH	P-39165-3	3-4
Mechanical Seal - Chesterton #880	72030, 4 pages	3-5, 3-5a-c
Shafting - Parrish #V61	Page #10	3-6
Shafting Instructions	IMI-482, See Item #1	
Lifting Instructions	52x11202, 2 pages	3-7, 3-7a
Paint Procedure	PP-7, 4 pages	3-8, 3-8a-c
Pump Instruction Book	52x2346	

MOTOR DATA - CONTINENTAL ELECTRIC

Dimension Outline	C-56434B	3-9
Motor Data	Printed	3-10
Parts List	C73205	3-11
General Operating Instructions	C-45972-2, 2 pages	

SPECIAL FEATURES - PUMP

Pedestal & Elbow.
 Performance test, Customer approval before shipment.
 Rotation & Discharge Position: CW, #5.
 Chesterton #880 Mechanical Seal.

PWO PROCESS PUMPS
For Pulpy Solids and Corrosives
Construction Data



Supersedes all previous issues

Frame	F8-M & F9-M		F8-N & F9-N					
	9	10	11	12	13	14	15	16
Key No.								
Pump Size	12x10x17S	12x10x17	8x6x21	10x8x21	12x10x21	14x12x21	16x14x21	18x18x23
Casing								
Vent Tap ①	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"
Drain Tap ①	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1"
Suction Gauge Tap ①	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Discharge Gauge Tap ①	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Minimum Wall Thk.	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	7/8"	1.0"
Bolting-Number-Size	16-7/8"	16-7/8"	16-1.0"	16-1.0"	16-1.0"	16-1.0"	16-1.0"	16-1.0"
Stuffing Box Dim.-Std. Frame								
Bore (In.)	4 5/16"	4 5/16"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"
Depth (In.)	3 7/8"	3 7/8"	6"	6"	6"	6"	6"	6"
Seal Cage Width (In.)	1 1/16"	1 1/16"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Packing No. Rings-Size	5-1/2	5-1/2	6-3/4	6-3/4	6-3/4	6-3/4	6-3/4	6-3/4
Shaft Sleeve O.D. (Packing)	3 1/4"	3 1/4"	5 1/4"	5 1/4"	5 1/4"	5 1/4"	5 1/4"	5 1/4"
Shaft Sleeve O.D. (Mech. Seal)	3"	3"	5"	5"	5"	5"	5"	5"
Back Pressure (PSI) ②	15	15	23	15	15	15	15	15
Flush Connections	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Impeller								
No. Vanes	3	4	3	3	3	3	4	4
Inlet Area (Sq. In.)	113.1	113.1	50.3	78.5	113.1	153.9	210.0	254
Inlet Velocity/100 GPM (Ft./Sec.)	.29	.29	.64	.41	.29	.21	.15	.12
Maximum Dia. (In.)	16 15/16"	16 15/16"	21"	21"	21"	21"	21"	23 3/16"
Minimum Dia. (In.)	③	③	17	17	17	③	③	③
Maximum Sphere Size	2 7/8"	1 1/4"	3"	3 5/8"	3 5/8"	3 3/4"	1 1/2"	3 1/2"
Axial Clearance to Front Side Plate	.015-.025	.015-.025	.015-.025	.015-.025	.015-.025	.015-.025	.015-.025	.015-.025
WR ²		2825	2391			3670	14210	16324
Outlet Width (In.)	3 9/16"	3 9/16"	3"	3 5/8"	3 5/8"	3 3/4"	4 15/16"	6"
Shaft								
Under Sleeve Dia. (In.)	2 3/4"	2 3/4"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"	4 1/2"
At Coupling Dia. (In.)	2 3/8"	2 3/8"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"	3 1/2"
At Impeller Thd. Dia.	2 1/4-12	2 1/4-12	3 3/4-12	3 3/4-12	3 3/4-12	3 3/4-12	3 3/4-12	3 3/4-12
Span Brg. to Brg.								
F8 Frame (In.)	9"	9"	17 7/8"	17 7/8"	17 7/8"	17 7/8"	17 7/8"	17 7/8"
F9 Frame (In.)	12 1/32"	12 1/32"	23 1/32"	23 1/32"	23 1/32"	23 1/32"	23 1/32"	23 1/32"
Dia. Between Brgs.								
F8 Frame (In.)	3 5/8"	3 5/8"	6"	6"	6"	6"	4 7/8"	6"
F9 Frame (In.)	4 5/32"	4 5/32"	5 3/8"	5 3/8"	5 3/8"	5 3/8"	5 3/8"	5 3/8"
Bearing No.-Pump End	317	317	224	224	224	224	224	224
Bearing No.-Coupling End	5315	5315	5222	5222	5222	5222	5222	5222

- ① Casing taps are not desirable for corrosive service and only suction and discharge gauge taps are provided as standard. See Price Modifications CP 6.3.1, page 106 for price addition for other taps.
- ② Back pressure is determined at shut-off operation. Operation at other points along curve results in reduced back pressure. Total back pressure is determined by adding the suction pressure to the above indicated maximum back pressure to stuff box.
- ③ The impeller diameter in this size pump is machined on the bias rather than parallel to its centerline.

GULF CONSTRUCTORS INTERNATIONAL, INC.
P.O. 1632
S.O. 1-5200-39165-03
TAG: EFFLUENT PUMPS

ENG. DATA

4PW-39165-03

SPECIFIC GRAVITY OF 1.000



10929 S
FORM 1897-1
PRINTED IN U.S.A.

CURVE NO. P39165-3

PUMP PWOV

16X14X21

G.P.M.
6900.
CUSTOMER

FT. HD.
67.0
ORDER

R.P.M.
VAR

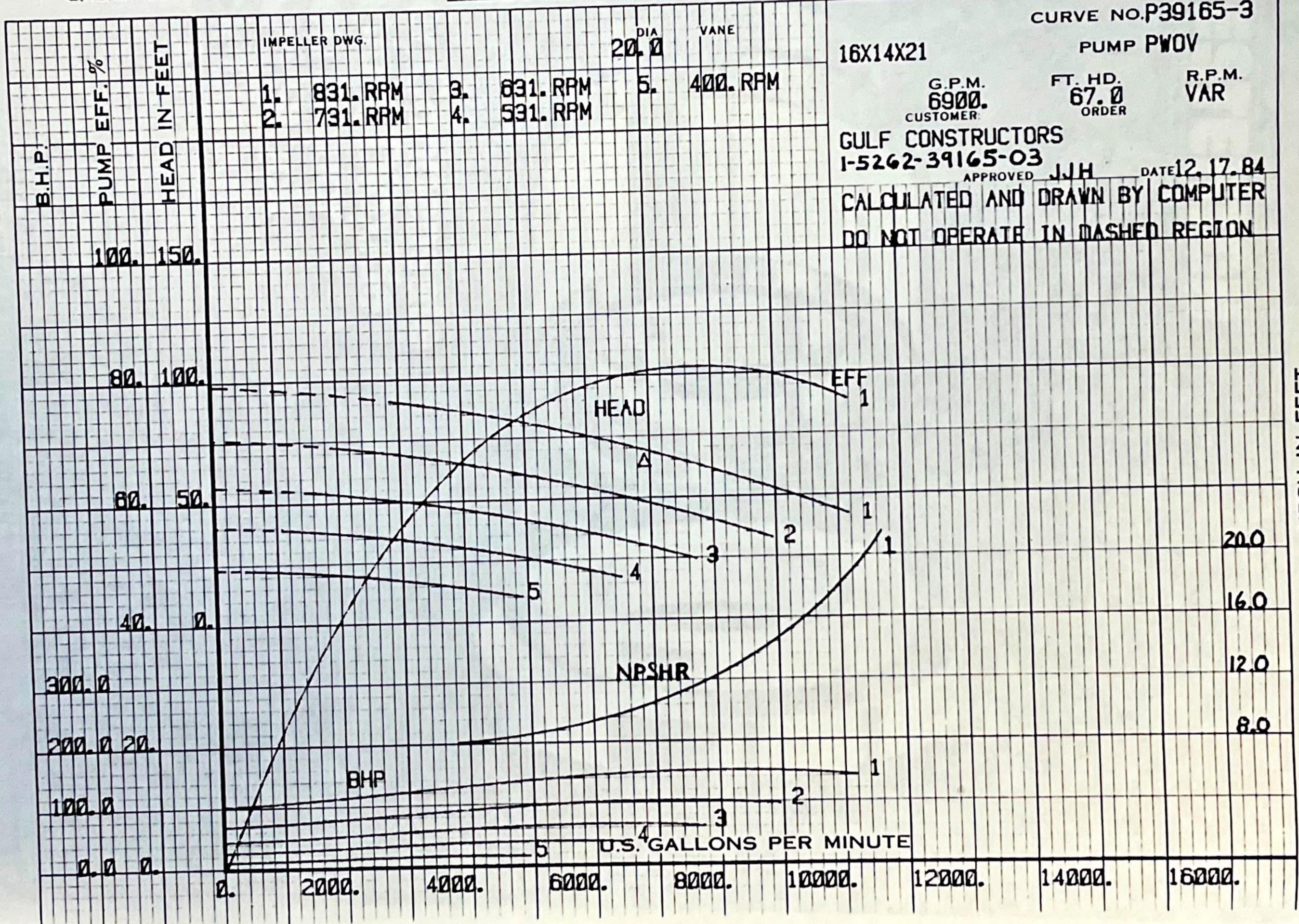
GULF CONSTRUCTORS
1-5262-39165-03

APPROVED JJH

DATE 12.17.84

CALCULATED AND DRAWN BY COMPUTER

DO NOT OPERATE IN DASHED REGION



NPSH IN FEET

OPERATING & MAINTENANCE INSTRUCTIONS
CITY OF CLEARWATER
NORTHEAST WRF CLARIFIERS 5-8 REHABILITATION
CITY PROJECT NO.: 12-0025-UT

SECTION 11310 – RETURN ACTIVATED SLUDGE PUMPS

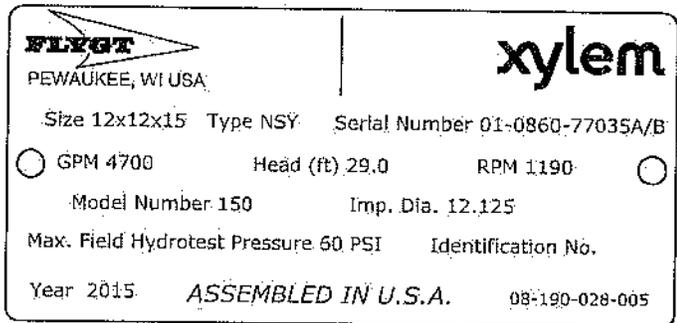
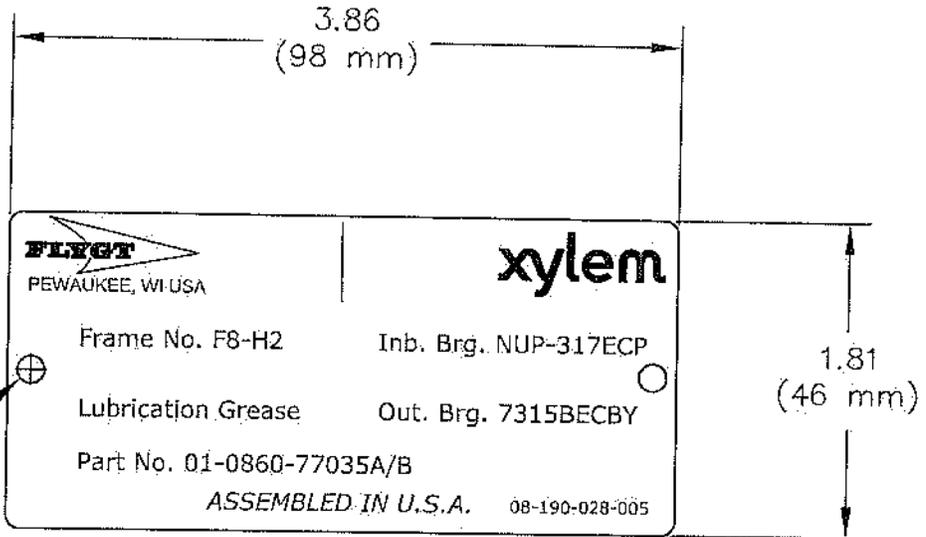
CONTRACTOR:
Poole & Kent Company of Florida
1715 W. Lemon Street
Tampa, FL 33606
(813) 251-2438

MANUFACTURER:
Xylem, Inc.
N28 W23240 Roundy Drive
Pewaukee, WI 53072-4069
(262) 436-0281

Xylem AC Series Pump Representative:

Hudson Pump & Equipment
A Division of Tencarva Machinery Company
3524 Craftsman Blvd.
Lakeland, FL 33803

For parts or service call:
(863) 665-7867



01	06-25-12 CBN	 PEWAUKEE, WI USA		NAME FRAME & RATING PLATE
CONFIDENTIAL-PROPERTY OF XYLEM FLYGT UNLESS OTHERWISE SPECIFIED				MATL 316L
1-PLC. DEC. ±.06 2-PLC. DEC. ±.03 3-PLC. DEC. ±.010		FOR TOLERANCES NOT SPECIFIED SEE 500-SERIES SHOP STANDARDS.		R: WT: F: BUL
DR: CBN 06-25-12 CH: CBN 06-25-12 AP:		SIMILAR TO		 THIRD ANGLE PROJECTION
SCALE NTS		SHEET 1 OF 1		PART NO. 

Model: NSY

Size: 12X12X15

Group: NSYF8H2

60Hz

RPM: 1190

Stages: 1

Job/Inq. No.: Clearwater Clarifier Rehabilitation, South RAS Pump House

Date: 01/20/2015

End User: City of Clearwater

Serial Number: 77035A/B

Sales Order No: 400699

Operating Conditions

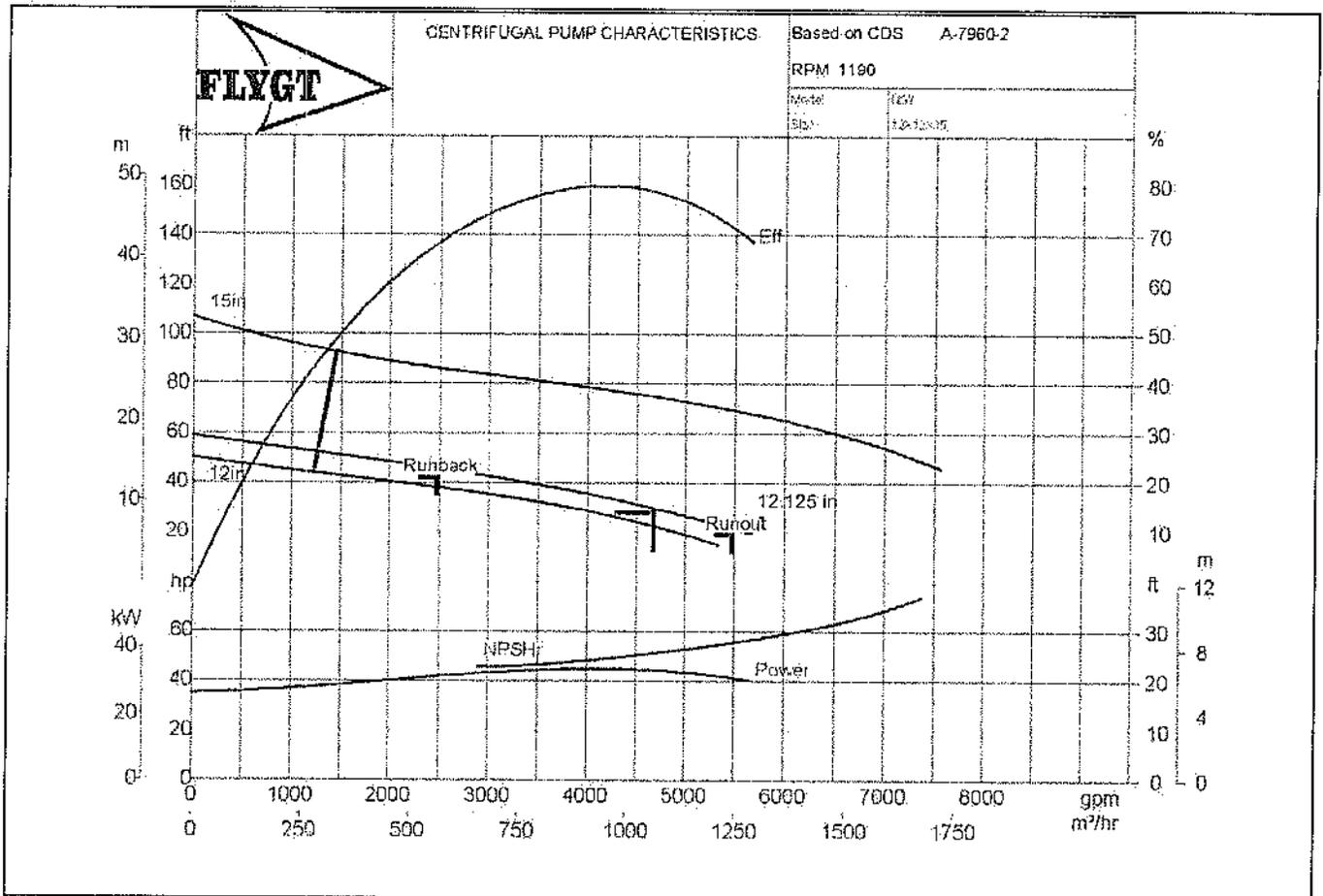
Liquid: Water
Temp.: 70.0 deg F
S.G./Visc.: 1.000/1.000 cp
Flow: 4,700.0 gpm
TDH: 29.0 ft
NPSHa: 0.0 ft
Solid size:

Pump Performance

Published Efficiency: 78.0 %
Rated Pump Efficiency: 78.0 %
Rated Total Power: 44.7 hp
Non-Overloading Power: 45.4 hp
Imp. Dia. First 1 Stg(s): 12.1250 in
NPSHr: 25.8 ft
Max. Solids Size: 4.5000 in
Suction Specific Speed: 7,162 gpm(US) ft
Min. Hydraulic Flow: 1,237.5 gpm
Min. Thermal Flow: N/A
Shut off Head: 58.8 ft
% Susp. Solids (by wtg):

Vapor Press:

Notes: 1. The Mechanical seal increased drag effect on power and efficiency is not included, unless the correction is shown in the appropriate field above. 2. Magnetic drive eddy current on power and efficiency is not included. 3. Elevated temperature effects on performance are not included. 4. Non Overloading power does not reflect v-belt/gear losses.



Performance Data

Curve 14.00

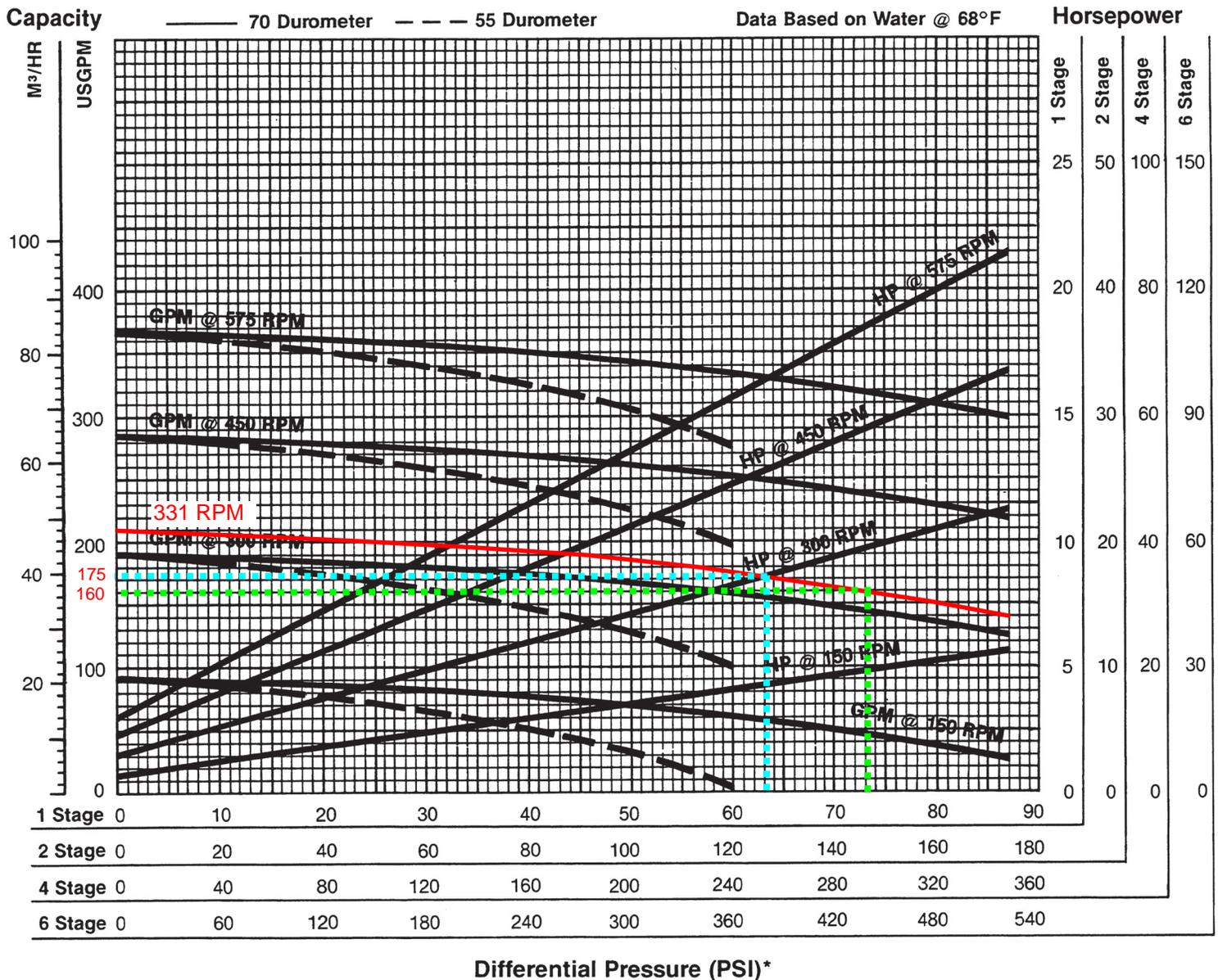
Element: 065

Models: 1F065, 2F065, 2G065, 4G065
 4H065, 6H065, 6J065

Use appropriate HP and pressure scales for the number of stages required.

NOTE: Pressure limits rated at 87 psi/stage (70 Duro.) Some models have additional limits. Please consult factory before making final selection.

		RPM	150	300	450	575
		NPSH Required — (Ft.)	1.90	3.80	8.30	12.20
Minimum Recommended Motor HP	1 STG	5	10	15	20	
	2 STG	7½	15	20	25	
	4 STG	10	20	25	30	
	6 STG	15	25	40	50	
Drive End HP Must be added to HP value from curve.	F	0.38	0.76	1.10	1.50	
	G	0.53	1.10	1.60	2.00	
	H	0.90	1.70	2.60	3.30	
	J	1.00	2.00	3.00	3.90	



*(PSI × .069 = BAR) (PSI × .070 = kgf/cm²) (USGPM × .2271 = M³/HR) (HP × .746 = kW)

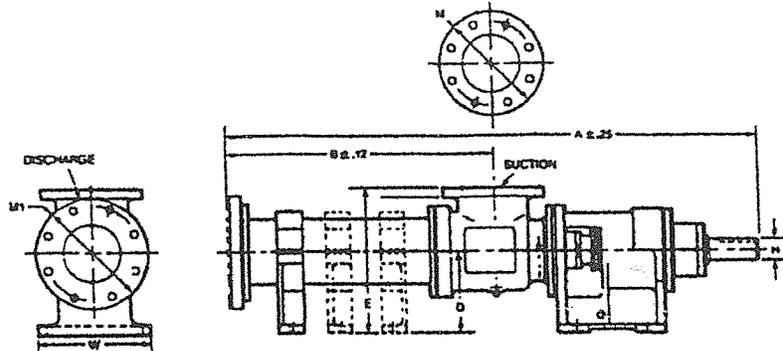


Always the Right Solution™

Section: Moyno® 2000
"G1" DIMENSION SHEET

Page: 1 of 2

Date: October 1, 2001



MODEL NO.	STANDARD PUMP DIMENSIONS						SUCTION FLANGE DATA		DISCHARGE FLANGE DATA		APPROX. WEIGHT LBS.
	A	B	D	E	H	W	SIZE	M	SIZE	M1	
1E008	38.88	13.00	6.00	11.50	1.88	8.00	4	9.00	4	9.00	300
2E008	47.00	21.12	6.00	11.50	1.88	8.00	4	9.00	4	9.00	320
4E008	63.50	37.62	6.00	11.50	1.88	8.00	4	9.00	4	10.00	375
6E008	79.50	53.62	6.00	11.50	1.88	8.00	4	9.00	4	10.00	425
1E012, 1E018E	42.00	16.12	6.00	11.50	1.88	8.00	4	9.00	4	9.00	300
2E012, 2E018E	53.12	27.25	6.00	11.50	1.88	8.00	4	9.00	4	9.00	325
4E012	75.62	49.75	6.00	11.50	1.88	8.00	4	9.00	4	10.00	380
6E012	97.88	72.00	6.00	11.50	1.88	8.00	4	9.00	4	10.00	435
1E022, 1E033E	43.31	17.19	6.00	12.50	1.88	8.00	6	11.00	6	11.00	330
2E022, 2E033E	56.19	30.06	6.00	12.50	1.88	8.00	6	11.00	6	11.00	370
4E022	82.94	56.81	6.00	12.50	1.88	8.00	6	11.00	6	11.00	500
1E036	46.09	19.50	6.00	13.00	1.88	8.00	6	11.00	6	11.00	400
2E036	60.59	34.00	6.00	13.00	1.88	8.00	6	11.00	6	11.00	465
1E050	51.53	24.93	6.00	13.00	1.88	8.00	6	11.00	6	11.00	490
2E050	71.34	44.74	6.00	13.00	1.88	8.00	6	11.00	6	11.00	515
6F012	102.38	72.50	7.00	13.50	2.12	10.00	6	11.00	4	10.75	605
4F022	86.69	56.81	7.00	13.50	2.12	10.00	6	11.00	6	12.50	675
6F022	112.19	82.31	7.00	13.50	2.12	10.00	6	11.00	6	12.50	735
1F036, 1F054E	48.62	19.62	7.00	14.00	2.12	10.00	6	11.00	6	11.00	490
2F036, 2F054E	63.12	34.12	7.00	14.00	2.12	10.00	6	11.00	6	11.00	560
4F036	92.12	63.12	7.00	14.00	2.12	10.00	6	11.00	6	11.00	760
1F050, 1F075E	53.94	24.94	7.00	14.00	2.12	10.00	6	11.00	6	11.00	520
2F050, 2F075E	73.75	44.75	7.00	14.00	2.12	10.00	6	11.00	6	11.00	610
4F050	113.50	84.50	7.00	14.00	2.12	10.00	6	11.00	6	11.00	835
1F065	54.11	23.62	7.00	15.50	2.12	10.00	8	13.50	8	13.50	580
2F065	71.98	41.49	7.00	15.50	2.12	10.00	8	13.50	8	13.50	700
1F090	60.71	30.21	7.00	15.50	2.12	10.00	8	13.50	8	13.50	620
2F090	85.21	54.71	7.00	15.50	2.12	10.00	8	13.50	8	13.50	785
6G022	116.88	84.75	9.00	16.00	2.38	11.50	6	11.00	6	14.00	915
4G036	97.06	64.94	9.00	16.00	2.38	11.50	6	11.00	6	12.50	920
6G036	125.81	93.69	9.00	16.00	2.38	11.50	6	11.00	6	12.50	1160
4G050	118.44	86.31	9.00	16.00	2.38	11.50	6	11.00	6	12.50	1020
6G050	158.19	126.06	9.00	16.00	2.38	11.50	6	11.00	6	12.50	1305
1G065, 1G098E	56.88	23.75	9.00	17.50	2.38	11.50	8	13.50	8	13.50	760
2G065, 2G098E	74.75	41.62	9.00	17.50	2.38	11.50	8	13.50	8	13.50	882
4G065	110.50	77.38	9.00	17.50	2.38	11.50	8	13.50	8	13.50	1210
1G090	63.38	30.25	9.00	17.50	2.38	11.50	8	13.50	8	13.50	805
2G090	87.88	54.75	9.00	17.50	2.38	11.50	8	13.50	8	13.50	960
1G115	62.25	29.12	9.00	17.50	2.38	11.50	8	13.50	8	13.50	825
2G115	85.62	52.49	9.00	17.50	2.38	11.50	8	13.50	8	13.50	1005

NOTE: All dimensions are in inches.



Always the Right Solution™

OPERATION & MAINTENANCE MANUAL

PROJECT: Clearwater NE Wastewater

ENGINEER: (Direct)

CUSTOMER: City of Clearwater
Marshall Street WWTP
1605 Harbour Dr.
Clearwater, FL 34615

PURCHASE ORDER NUMBER: 28288

EQUIPMENT MANUFACTURER: Moyno Inc.
1895 West Jefferson St.
Springfield, OH 45506

MANUFACTURER SALES ORDER NO.: AS4015801

SCOPE ID#: M087162201

LOCAL SALES REPRESENTATIVE: Carl Eric Johnson Inc.
2171 Tucker Industrial Road
Tucker, GA 30084

PH: 770-491-9000
FAX: 770-491-9024

Contact: Bev Garner

November 6, 2001

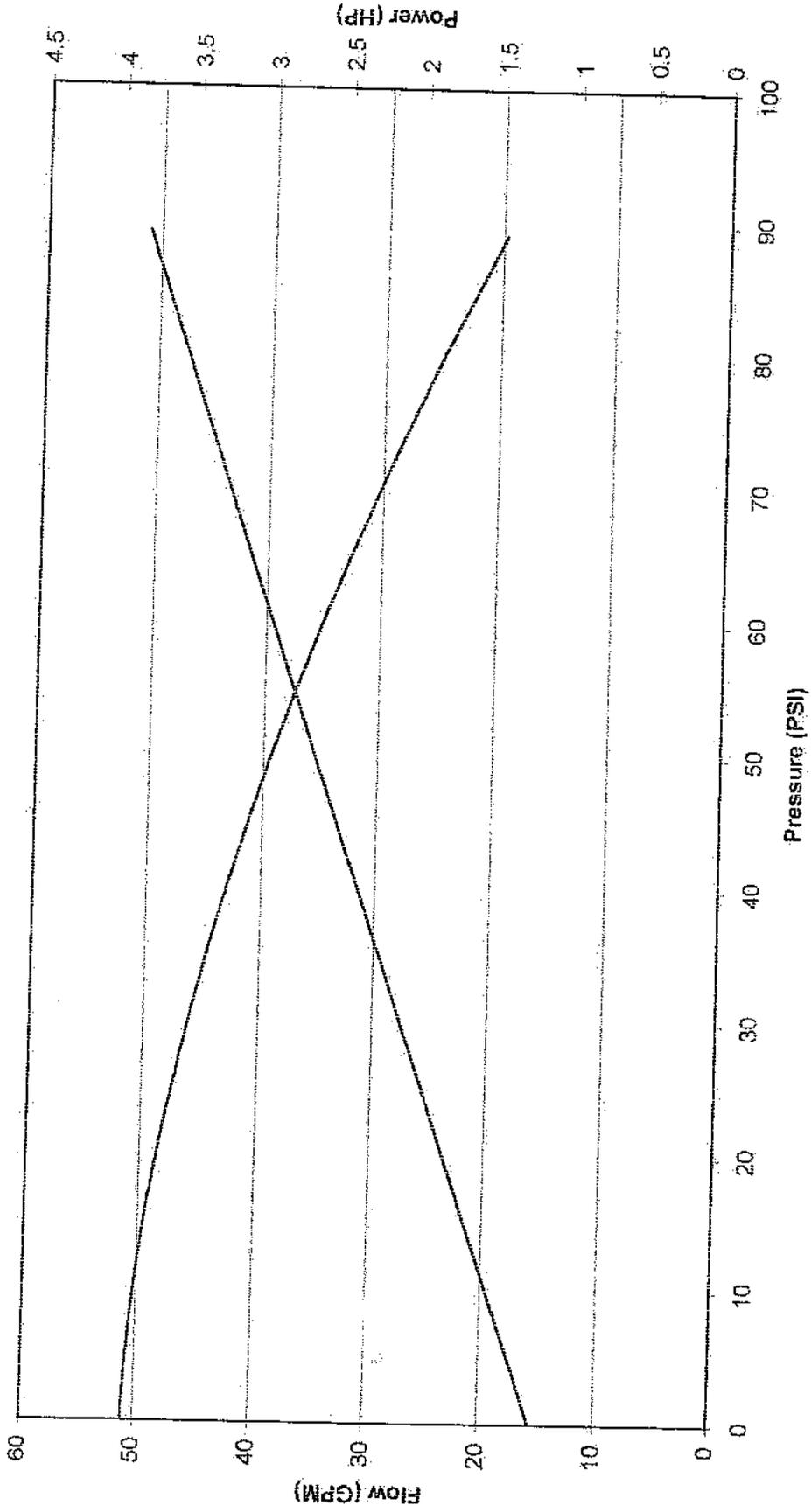
EQUIPMENT LIST: Sludge Pump

<u>ITEM</u>	<u>QTY</u>	<u>EQUIPMENT</u>	<u>DESCRIPTION</u>
1	1	Moyno 2000 Series Model: 1E022G1 CDQ DAA One Stage Progressing Cavity Pump	Conditions of Service: Inlet: 6" 125# FF Flange Discharge: 6" 125# FF Flange Rotor: Alloy Steel, Chrome Plated Stator: Nitrile Casting: Cast Iron Bearings: Greased Tapered Roller Shaft Seal: John Crane Type 5625 Double Mechanical Seal Code: 1/XF551058 Lubrication: Grease or Water Nameplate: Stainless Steel Surface Preparation: Factory Finish Gear Joints: Grease lubricated, crowned gear type
2	1	Baldor AC Motor Premium Efficient Severe Duty	HP: 5 Frame: 184TC Phase/Cycle/Voltage: 3/60/230/460 RPM: 1750 Service Factor: 1.15 Enclosure: TEFC Insulation Class: F
3	1	Nord Reducer	Model: SK272-180TC Ratio: 2.17:1 RPM: 780 Class: III
4	1	Belt & Pulley	Type: Low Speed, 235 RPM
5	1	Right hand brake bent steel	Configuration: In Line skid base
6	1	Guard	Type: Low Speed for belt & Pulley

Moyno Pump Model: 1E022CDQ3DAA

DESIGN POINT:
40 PSI
235 RPM
100 CP

Prepared for: City of Clearwater, FL
Material: Sludge pump



— Flow (GPM) At 235 RPM

- - - Power (HP) At 235 RPM

S.O. #14-116
EP-5A

DATE: 5/02/2014

APPROVAL SPECIFICATIONS

OPEN SCREW PUMP

LOCATION: Clearwaters, FL
Northeast WRF Improvements

Detail Specifications each Unit as follows:

PART 1 – General

1.0 Design Parameters each unit

A.	Number of Pumps	5
B.	Pump Capacity, gal/min	22,153
C.	Lift, feet	13.25
D.	Pump Diameter, inches	84
E.	Number of Flights	3
F.	Flight Thickness, inches	5/16"
G.	Torque Tube Diameter, inches	42
H.	Torque Tube Wall Thickness, inches	0.375
I.	Minimum Lower Bearing Diameter, inches	8.75
J.	Minimum Upper Bearing Diameter, inches	9
K.	Rotational Speed, rev/min	31
L.	Minimum Gear Reducer Torque Rating, inch-lb	317,540
M.	Motor Size, hp	125
N.	Total Weight of Screw, Lbs.	14,600

PART 2 – Products

2.1 SPIRAL SCREW

- A. Spiral screw is fabricated of ASTM A36 steel. Each spiral screw has an outside diameter as noted in paragraph 1.0.D. with the number of flights as noted in paragraph 1.0.E. Flights are die formed and have a minimum thickness as noted in paragraph 1.0.F. Flights are helical shaped and continuously welded on both sides to the torque tube. There is no more than one flight butt weld per pitch, and all flight butt welds are full penetration joints.