

SYSTEM CURVE DATA
Project No. 13870 - Cattail Creek SPS (off site)

Eq. 1 - Friction head in feet / 100 feet pipe ,

(sheet 1 of 2)

$$f = 0.2083 (100/C)^{1.85} \times q^{1.85} / d^{4.8655}$$

where: C-Factor, C = as designated below

Flowrate, q = as designated below (GPM)

Pipe Dia., d = 5.993 in.

(6" SDR21)

Equivalent length of Pipe, L = 6,338 LF

Total Static Head = 66 LF

Eq. 2 - Total Dynamic Head

Total Dynamic Head = Dynamic Head + Static Head

$C = 130$					
Flowrate q (GPM)	Eq. Length of Pipe L (LF)	Friction Head f (FT/100 LF)	Dynamic Head (FT)	Static Head (FT)	Total Dynamic Head (FT)
0	6,338	-	-	66.0	66.0
50	6,338	0.03	1.9	66.0	67.9
100	6,338	0.11	6.7	66.0	72.7
200	6,338	0.38	24.2	66.0	90.2
270	6,338	0.66	42.1	66.0	108.1
300	6,338	0.81	51.2	66.0	117.2
350	6,338	1.07	68.0	66.0	134.0

$C = 140$					
Flowrate q (GPM)	Eq. Length of Pipe L (LF)	Friction Head f (FT/100 LF)	Dynamic Head (FT)	Static Head (FT)	Total Dynamic Head (FT)
0	6,338	-	-	66.0	66.0
50	6,338	0.03	1.6	66.0	67.6
100	6,338	0.09	5.8	66.0	71.8
200	6,338	0.33	21.1	66.0	87.1
270	6,338	0.58	36.7	66.0	102.7
300	6,338	0.70	44.6	66.0	110.6
350	6,338	0.94	59.3	66.0	125.3

SYSTEM CURVE DATA
Project No. 13870 - Cattail Creek SPS (off site)

Eq. 1 - Friction head in feet / 100 feet pipe ,

(sheet 2 of 2)

$$f = 0.2083 (100/C)^{1.85} \times q^{1.85} / d^{4.8655}$$

where: C-Factor, C = as designated below

Flowrate, q = as designated below (GPM)

Pipe Dia., d = 5.993 in.

(6" SDR21)

Equivalent length of Pipe, L = 6,338 LF

Total Static Head = 81 LF

Eq. 2 - Total Dynamic Head

Total Dynamic Head = Dynamic Head + Static Head

$C = 130$					
Flowrate q (GPM)	Eq. Length of Pipe L (LF)	Friction Head f (FT/100 LF)	Dynamic Head (FT)	Static Head (FT)	Total Dynamic Head (FT)
0	6,338	-	-	81.0	81.0
50	6,338	0.03	1.9	81.0	82.9
100	6,338	0.11	6.7	81.0	87.7
200	6,338	0.38	24.2	81.0	105.2
270	6,338	0.66	42.1	81.0	123.1
300	6,338	0.81	51.2	81.0	132.2
350	6,338	1.07	68.0	81.0	149.0

$C = 140$					
Flowrate q (GPM)	Eq. Length of Pipe L (LF)	Friction Head f (FT/100 LF)	Dynamic Head (FT)	Static Head (FT)	Total Dynamic Head (FT)
0	6,338	-	-	81.0	81.0
50	6,338	0.03	1.6	81.0	82.6
100	6,338	0.09	5.8	81.0	86.8
200	6,338	0.33	21.1	81.0	102.1
270	6,338	0.58	36.7	81.0	117.7
300	6,338	0.70	44.6	81.0	125.6
350	6,338	0.94	59.3	81.0	140.3

SYSTEM CURVE DATA

Project No. 13870 - Cattail Creek SPS (on site)

Eq. 1 - Friction head in feet / 100 feet pipe ,

(sheet 1 of 2)

$$f = 0.2083 (100/C)^{1.85} \times q^{1.85} / d^{4.8655}$$

where: C-Factor, C = as designated below

Flowrate, q = as designated below (GPM)

Pipe Dia., d = 6.27 in.

(6" DIP)

Equivalent length of Pipe, L = 187 LF

Total Static Head = 66 LF

Eq. 2 - Total Dynamic Head

Total Dynamic Head = Dynamic Head + Static Head

$C = 120$					
Flowrate q (GPM)	Eq. Length of Pipe L (LF)	Friction Head f (FT/100 LF)	Dynamic Head (FT)	Static Head (FT)	Total Dynamic Head (FT)
0	187	-	-	66.0	66.0
50	187	0.03	0.1	66.0	66.1
100	187	0.10	0.2	66.0	66.2
200	187	0.35	0.7	66.0	66.7
270	187	0.62	1.2	66.0	67.2
300	187	0.75	1.4	66.0	67.4
350	187	1.00	1.9	66.0	67.9

$Q_d =$

$C = 130$					
Flowrate q (GPM)	Eq. Length of Pipe L (LF)	Friction Head f (FT/100 LF)	Dynamic Head (FT)	Static Head (FT)	Total Dynamic Head (FT)
0	187	-	-	66.0	66.0
50	187	0.02	0.0	66.0	66.0
100	187	0.08	0.2	66.0	66.2
200	187	0.31	0.6	66.0	66.6
270	187	0.53	1.0	66.0	67.0
300	187	0.65	1.2	66.0	67.2
350	187	0.86	1.6	66.0	67.6

SYSTEM CURVE DATA
Project No. 13870 - Cattail Creek SPS (on site)

Eq. 1 - Friction head in feet / 100 feet pipe ,

(sheet 2 of 2)

$$f = 0.2083 (100/C)^{1.85} \times q^{1.85} / d^{4.8655}$$

where: C-Factor, C = as designated below

Flowrate, q = as designated below (GPM)

Pipe Dia., d =

(6" DIP)

Equivalent length of Pipe, L =

187 LF

Total Static Head =

81 LF

Eq. 2 - Total Dynamic Head

Total Dynamic Head = Dynamic Head + Static Head

$C = 120$					
Flowrate q (GPM)	Eq. Length of Pipe L (LF)	Friction Head f (FT/100 LF)	Dynamic Head (FT)	Static Head (FT)	Total Dynamic Head (FT)
0	187	-	-	81.0	81.0
50	187	0.03	0.1	81.0	81.1
100	187	0.10	0.2	81.0	81.2
200	187	0.35	0.7	81.0	81.7
270	187	0.62	1.2	81.0	82.2
300	187	0.75	1.4	81.0	82.4
350	187	1.00	1.9	81.0	82.9

$Q_d =$

$C = 130$					
Flowrate q (GPM)	Eq. Length of Pipe L (LF)	Friction Head f (FT/100 LF)	Dynamic Head (FT)	Static Head (FT)	Total Dynamic Head (FT)
0	187	-	-	81.0	81.0
50	187	0.02	0.0	81.0	81.0
100	187	0.08	0.2	81.0	81.2
200	187	0.31	0.6	81.0	81.6
270	187	0.53	1.0	81.0	82.0
300	187	0.65	1.2	81.0	82.2
350	187	0.86	1.6	81.0	82.6



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JOB CATTAIL CREEK
SHEET NO. _____ OF _____
CALCULATED BY KH DATE 7/31/18
CHECKED BY _____ DATE _____
SCALE _____

• SYSTEM CURVE

6,338

BASED ON : 187 LF 6" D.I.P (on-site) & 6,254 6" SDR21 PVC (off-site)

* DESIGN POINT

STATIC HEAD = 36 ft

Common FM HEAD = 30 ft. MIN / 45 ft. MAX

C = 120/130 (ON-SITE/OFF-SITE)

Flow	(On-Site)	H _L (ft)	H _L (ft)	STATIC (= STATIC + Common) (ft)		TDH (ft)	
				MIN	MAX	MIN	MAX
50	0.1	1.8	1.8	66	81	67.9	82.9
100	0.2	6.6	6.6	66	81	72.8	87.8
200	0.7	23.8	23.8	66	81	90.5	105.5
* 262 270	1.1 1.2	39.3 41.5	42.1	66	81	108.7 106.4	121.4 123.0
300	1.4	50.5	50.5	66	81	117.9	132.9
350	1.9	67.1	67.1	66	81	135.0	150.0

C = 130/140 (ON-SITE/OFF-SITE)

Flow	(On-Site)	H _L (ft)	H _L (ft)	STATIC (= STATIC + Common) (ft)		TDH (ft)	
				MIN	MAX	MIN	MAX
50	0	1.6	1.6	66	81	67.6	82.6
100	0.2	5.8	5.8	66	81	72.0	87.0
200	0.6	20.8	20.8	66	81	87.4	102.4
* 262 270	0.9 1.0	34.3 36.2	36.7	66	81	103.2 101.2	116.2 118.2
300	1.2	44.0	44.0	66	81	111.2	126.2
350	1.6	58.5	58.5	66	81	126.1	141.1

Design Pt. 270 gal @ 124 ft

* 8/16/18
* 11/29/18

Performance curves

Submersible sewage pump

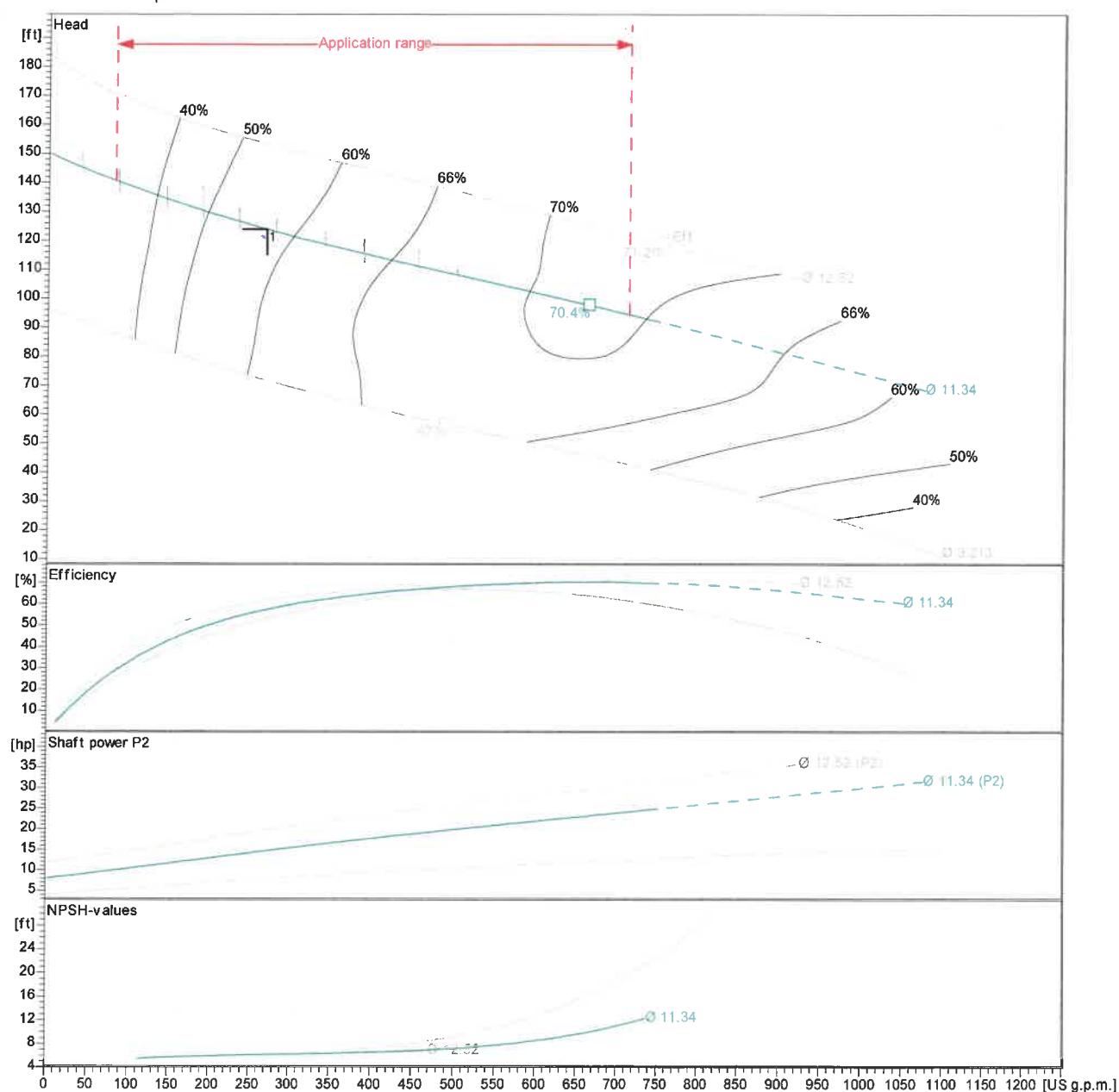
FA 10.65E

with motor

FK 202-4/27

Power data referred to: Water, pure [100%]; 68°F; 62.315lb/ft³; 1.0768E-5ft²/s

Tolerance as per ISO 9906 / Annex A.2



Pump			Duty point data		
Impeller Ø	designed	11 ^{5/16} inch	Volume flow	270	US g.p.m.
Nominal speed	1740	rpm	Head	124	ft
Frequency	60	Hz	Shaft power P ₂	14.8	hp
Impeller type	Single-channel		Pump efficiency	57.4	%
Motor			Pow er input P ₁		hp
Rated power	25	hp	Required pump NPSH	6.2	ft
Sel. explosion protection	--		Speed	1725	rpm