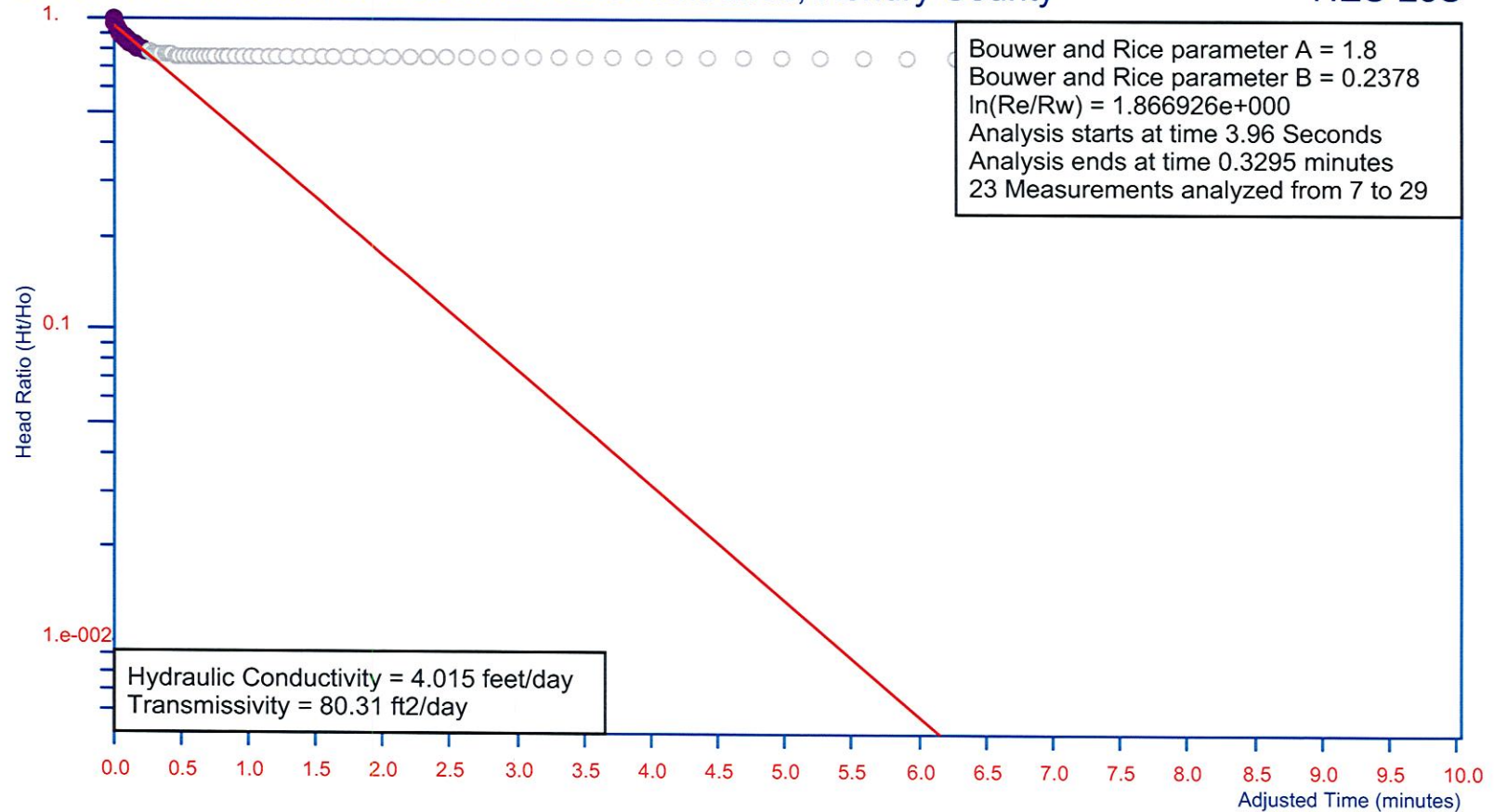


C-139 Basin Study 10/28/09

Bouwer and Rice Graph

CR 835 ROW south of McDaniel Ranch Entrance, Hendry County

HES-28S



Project Number: 38617509 for SFWMD
Analysis by Starpoint Software

Ho is 9.41 feet at 3.96 Seconds

Bower and Rice Automatic Parameter Estimation**C-139 Basin Study**

Site Name: CR 835 ROW south of McDaniel Ranch Entrance,
 Location: Hendry County
 Test Date: 10/28/09
 Client: SFWMD
 Project Number: 38617509
 Import File: E:\HendryCountyWells\Slugs\W7-ShallowIn.txt

Well Label: HES-28S
 Aquifer Thickness: 20. feet
 Screen Length: 2. feet
 Casing Radius: 1. Inches
 Effective Radius: 3. Inches
 Bower and Rice Parameter A: 1.8
 Bower and Rice Parameter B: 0.2378
 Radius of Influence of Test: 1.617 feet

Trial	Adjusted Time (minutes)	Head (feet)	Head Ratio	Hyd. Con. (feet/day)	Flow to Well (Meters3/Day)
7	0.	9.41	1.	--	
8	1.1e-002	9.171	0.9746	10.92	19.08
9	2.2e-002	8.978	0.9541	9.97	17.06
10	3.3e-002	8.801	0.9353	9.463	15.87
11	4.4e-002	8.651	0.9193	8.921	14.71
12	5.5e-002	8.5	0.9033	8.631	13.98
13	6.6e-002	8.374	0.8899	8.249	13.17
14	7.7e-002	8.259	0.8777	7.908	12.45
15	8.8e-002	8.179	0.8692	7.436	11.59
16	9.9e-002	8.122	0.8631	6.94	10.74
17	0.11	8.086	0.8593	6.434	9.917
18	0.121	8.002	0.8504	6.252	9.536
19	0.132	7.925	0.8422	6.073	9.173
20	0.143	7.854	0.8346	5.899	8.832
21	0.154	7.79	0.8278	5.726	8.502
22	0.165	7.728	0.8213	5.57	8.205
23	0.1767	7.675	0.8156	5.383	7.875
24	0.1892	7.624	0.8102	5.192	7.545
25	0.2023	7.577	0.8052	4.999	7.219
26	0.2163	7.531	0.8003	4.806	6.899
27	0.2312	7.489	0.7959	4.61	6.58
28	0.2468	7.447	0.7914	4.425	6.28
29	0.2635	7.411	0.7876	4.23	5.975

Arithmetic Means:

Hydraulic Conductivity 6.729 feet/day
 Transmissivity 134.6 ft²/day

Geometric Means:

Hydraulic Conductivity 6.478 feet/day
 Transmissivity 129.6 ft²/day

Sensitivity Analysis:

Hydraulic Conductivity 5.315 feet/day
 Transmissivity 106.3 ft²/day

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W					
1	High K Estimator Spreadsheet				Test Well Specs - "d" not used in confined case																							
2	English Units																											
3					Depth to Bottom of Screen (from toc):				66					Best Fit		Confined - High-K Hvorslev Model												
4	General Test Data				Screen Length (b):				2					Time		Type Curve												
5	Site Location:				Hendry Co.				Depth to Static Water Level (from toc):				6.25					Correlation Ratio		C_D		K _r = $t_d^* r_c^2 \ln[b/(2r_w^*) + (1+(b/(2r_w^*))^2)^{0.5}]$						
6	Date:				10/28/2009				Top of Screen to Water Table (d):				57.75					t_d*/t*		0.9		t* $2bC_D$						
7	Time:								Radius of Well Screen (r _w):				0.083					0.667				Bracketted quantity 36.590						
8	Test Designation:				HES-28D				Nominal Radius of Well Casing (r _{nc}):				0.500					computed from ratio		Le =		72.45 ft						
9	Static Level:				6.25 ft				Effective Casing Radius (r _c = (r _{nc} ² -r _{tc} ²) ^{0.5}):				0.500					nominal		Le =		93.75 ft						
10	Initial Water Level								Modified Screen Radius (r _w [*]):				0.055					% difference		23%		K _r = 1.67E-01 ft/sec 1.44E+04 ft/day 4.39E+03 m/day 5.08E+00 cm/sec						
11	Change (H₀):				0.41 ft				Aspect Ratio (b/r _w [*]):				36.563															
12	Start Time for Test:				3.96 sec				Formation Thickness (B):				150					Modulation Factor =		1.500		Unconfined - High-K Bouwer and Rice Model						
13																												
14																												
15					Time		Pressure														K _r = $t_d^* r_c^2 \ln[R_e/r_w^*]$							
16					in		Head		Test		Deviation		Test		Normalized		Dimensionless		C_D =		Adjusted		t* $2bC_D$					
17					seconds		in feet		Time		From Static		Time		Head		Time		0.9		Time		ln(R _e /r _w [*]) = 3.342 A = 2.661 B = 0.422					
18					0.66		5.323		-3.3		-0.927		-3.3		-2.289		0		1		0		first term $1.1/(\ln((d+b)/r_w^*))$ 0.157					
19					1.32		4.505		-2.64		-1.745		-2.64		-4.309		0.1		0.995151		0.1500		second term $(A+B*(\ln((B-(d+b)/r_w^*))) / (b/r_w^*))$ 0.142					
20					1.98		5.122		-1.98		-1.128		-1.98		-2.785		0.2		0.98121		0.3000		ln[(B-(d+b))/r _w [*]] 6.000					
21					2.64		5.719		-1.32		-0.531		-1.32		-1.311		0.3		0.959093		0.4500		Cannot exceed 6. See Butler (1997) - p.108.					
22					3.3		5.998		-0.66		-0.252		-0.66		-0.622		0.4		0.929716		0.6000							
23					3.96		6.345		0		0.095		0		0.235		0.5		0.893983		0.7500							
24					4.62		6.593		0.66		0.343		0.66		0.847		0.6		0.852784		0.9000							
25					5.28		6.655		1.32		0.405		1.32		1.000		0.7		0.806982		1.0500							
26					5.94		6.571		1.98		0.321		1.98		0.793		0.8		0.757411		1.2000							
27					6.6		6.414		2.64		0.164		2.64		0.405		0.9		0.70487		1.3500							
28					7.26		6.250		3.3		0.000		3.3		0.000		1		0.650115		1.5000		K _r = 1.55E-01 ft/sec 1.34E+04 ft/day 4.07E+03 m/day 4.72E+00 cm/sec					
29					7.92		6.164		3.96		-0.086		3.96		-0.212		1.1		0.593861		1.6500							
30					8.58		6.124		4.62		-0.126		4.62		-0.311		1.2		0.536775		1.8000							
31					9.24		6.115		5.28		-0.135		5.28		-0.333		1.3		0.479472		1.9500							
32					9.9		6.135		5.94		-0.115		5.94		-0.284		1.4		0.422521		2.1000		13361.826					