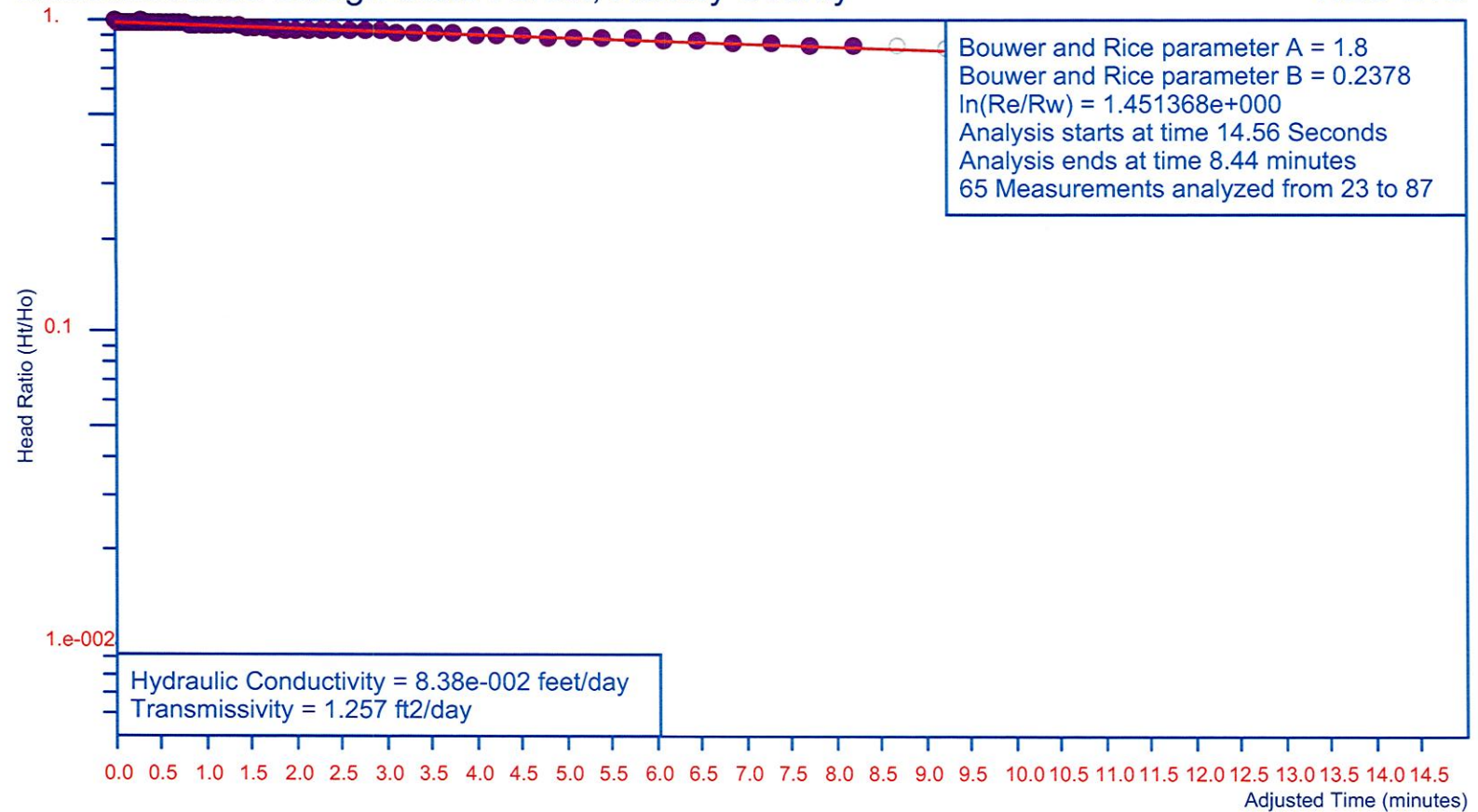


C-139 Basin Study 10/22/09

Bouwer and Rice Graph

Okaloacoochee Slough State Forest, Hendry County

HES-24S



Project Number: 38617509 for SFWMD
Analysis by Starpoint Software

Ho is 0.459 feet at 14.56 Seconds

Bouwer and Rice Automatic Parameter Estimation

C-139 Basin Study

Site Name: Okaloacoochee Slough State Forest,
 Location: Hendry County
 Test Date: 10/22/09
 Client: SFWMD
 Project Number: 38617509
 Import File: E:\HendryCountyWells\Slugs\W-3Shallow-In.txt

Well Label: HES-24S
 Aquifer Thickness: 15. feet
 Screen Length: 2. feet
 Casing Radius: 1. Inches
 Effective Radius: 3. Inches
 Bouwer and Rice Parameter A: 1.8
 Bouwer and Rice Parameter B: 0.2378
 Radius of Influence of Test: 1.067 feet

Trial	Adjusted Time (minutes)	Head (feet)	Head Ratio	Hyd. Con. (feet/day)	Flow to Well (Meters3/Day)
21	0.	0.462	1.	--	
22	1.1e-002	0.459	0.9935	2.149	0.2418
23	2.27e-002	0.459	0.9935	1.041	0.1172
24	3.52e-002	0.459	0.9935	0.6715	7.557e-002
25	4.83e-002	0.459	0.9935	0.4894	5.508e-002
26	6.23e-002	0.457	0.9892	0.6338	7.101e-002
27	7.72e-002	0.457	0.9892	0.5114	5.731e-002
28	9.28e-002	0.457	0.9892	0.4255	4.767e-002
29	0.1095	0.457	0.9892	0.3606	4.04e-002
30	0.1272	0.457	0.9892	0.3104	3.478e-002
31	0.1458	0.455	0.9848	0.38	4.239e-002
32	0.1657	0.457	0.9892	0.2383	2.67e-002
33	0.1867	0.455	0.9848	0.2967	3.31e-002
34	0.2088	0.455	0.9848	0.2653	2.96e-002
35	0.2323	0.455	0.9848	0.2385	2.66e-002
36	0.2572	0.455	0.9848	0.2154	2.403e-002
37	0.2835	0.453	0.9805	0.2518	2.797e-002
38	0.3115	0.459	0.9935	7.588e-002	8.54e-003
39	0.3412	0.455	0.9848	0.1624	1.811e-002
40	0.3725	0.455	0.9848	0.1487	1.659e-002
41	0.4057	0.457	0.9892	9.732e-002	1.09e-002
42	0.4408	0.457	0.9892	8.957e-002	1.004e-002
43	0.4782	0.457	0.9892	8.257e-002	9.251e-003
44	0.5177	0.457	0.9892	7.627e-002	8.545e-003
45	0.5595	0.455	0.9848	9.901e-002	1.105e-002
46	0.6038	0.455	0.9848	9.175e-002	1.024e-002
47	0.6508	0.455	0.9848	8.512e-002	9.496e-003
48	0.7007	0.453	0.9805	0.1019	1.131e-002
49	0.7533	0.453	0.9805	9.476e-002	1.052e-002
50	0.8092	0.453	0.9805	8.821e-002	9.798e-003
51	0.8683	0.45	0.974	0.11	1.213e-002
52	0.931	0.45	0.974	0.1026	1.132e-002
53	0.9973	0.448	0.9697	0.112	1.23e-002
54	1.068	0.446	0.9654	0.1198	1.31e-002
55	1.142	0.446	0.9654	0.112	1.224e-002
56	1.221	0.444	0.961	0.1181	1.285e-002

Okaloacoochee Slough State Forest,

57	1.305	0.444	0.961	0.1105	1.203e-002
58	1.393	0.442	0.9567	0.1152	1.249e-002
59	1.487	0.439	0.9502	0.1246	1.341e-002
60	1.587	0.437	0.9459	0.1272	1.363e-002
61	1.692	0.437	0.9459	0.1193	1.278e-002
62	1.803	0.433	0.9372	0.1304	1.385e-002
63	1.922	0.433	0.9372	0.1224	1.3e-002
64	2.047	0.433	0.9372	0.1149	1.22e-002

Arithmetic Means:

Hydraulic Conductivity 0.2654 feet/day
 Transmissivity 3.981 ft²/day

Geometric Means:

Hydraulic Conductivity 0.1782 feet/day
 Transmissivity 2.673 ft²/day

Sensitivity Analysis:

Hydraulic Conductivity 0.118 feet/day
 Transmissivity 1.77 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):				90					Best Fit		Confined - High-K Hvorslev Model																																
4	General Test Data				Screen Length (b):				2					Time		Type Curve																																
5	Site Location:				Depth to Static Water Level (from toc):				3.5					Correlation Ratio		C_D		K _r = $t_d^* r_c^2 \ln[b/(2r_w^*) + (1 + (b/(2r_w^*))^2)^{0.5}]$																														
6	Date:				Top of Screen to Water Table (d):				84.06					0.141		0.9		t* $2bC_D$																														
7	Time:				Radius of Well Screen (r _w):				0.083									Bracketted quantity 36.590																														
8	Test Designation:				Nominal Radius of Well Casing (r _{nc}):				0.500					computed from ratio		Le = 1623.20																																
9	Static Level:				Radius of Transducer Cable (r _{tc}):				0.009					nominal		Le = 120.50		K _r = 3.52E-02 ft/sec																														
10	Initial Water Level				Effective Casing Radius (r _c = (r _{nc} ² - r _{tc} ²) ^{0.5}):				0.500					% difference		1247%		3.04E+03 ft/day 9.27E+02 m/day																														
11	Change (H₀):				Modified Screen Radius (r _w [*]):				0.055									1.07E+00 cm/sec																														
12	Start Time for Test:				Aspect Ratio (b/r _w [*]):				36.563																																							
13					Formation Thickness (B):				150					Modulation Factor =		7.100		Unconfined - High-K Bouwer and Rice Model																														
14																																																
15					Time				Pressure												K _r = $t_d^* r_c^2 \ln[R_e/r_w^*]$																											
16					in				Head												t* $2bC_D$																											
17					seconds				in feet																																							
18					0.66				4.419				0				0.919				0				1.249				0				1				0				ln(R _e /r _w [*]) = 3.431				A = 2.661			
19					1.32				4.280				0.66				0.780				0.66				1.060				0.1				0.995151				0.7100				B = 0.422							
20					1.98				4.238				1.32				0.738				1.32				1.003				0.2				0.98121				1.4200				first term $1.1/(\ln((d+b)/r_w^*))$							
21					2.64				4.189				1.98				0.689				1.98				0.936				0.3				0.959093				2.1300				0.149							
22					3.3				4.161				2.64				0.661				2.64				0.898				0.4				0.929716				2.8400				second term $(A+B*(\ln[(B-(d+b))/r_w^*]))/(b/r_w^*)$							
23					3.96				4.127				3.3				0.627				3.3				0.852				0.5				0.893983				3.5500				0.142							
24					4.62				4.092				3.96				0.592				3.96				0.804				0.6				0.852784				4.2600				ln[(B-(d+b))/r _w [*]] 6.000							
25					5.28				4.059				4.62				0.559				4.62				0.760				0.7				0.806982				4.9700				Cannot exceed 6.							
26					5.94				4.026				5.28				0.526				5.28				0.715				0.8				0.757411				5.6800				See Butler (1997) - p.108.							
27					6.6				3.993				5.94				0.493				5.94				0.670				0.9				0.70487				6.3900											
28					7.26				3.962				6.6				0.462				6.6				0.628				1				0.650115				7.1000				K _r = 3.35E-02 ft/sec							
29					7.92				3.931				7.26				0.431				7.26				0.586				1.1				0.593861				7.8100				2.90E+03 ft/day							
30					8.58				3.900				7.92				0.400				7.92				0.543				1.2				0.536775				8.5200				1.02E+00 cm/sec							
31					9.24				3.871				8.58				0.371				8.58				0.504				1.3				0.479472				9.2300											
32					9.9				3.842				9.24				0.342				9.24				0.465				1.4				0.422521				9.9400				2898.407							