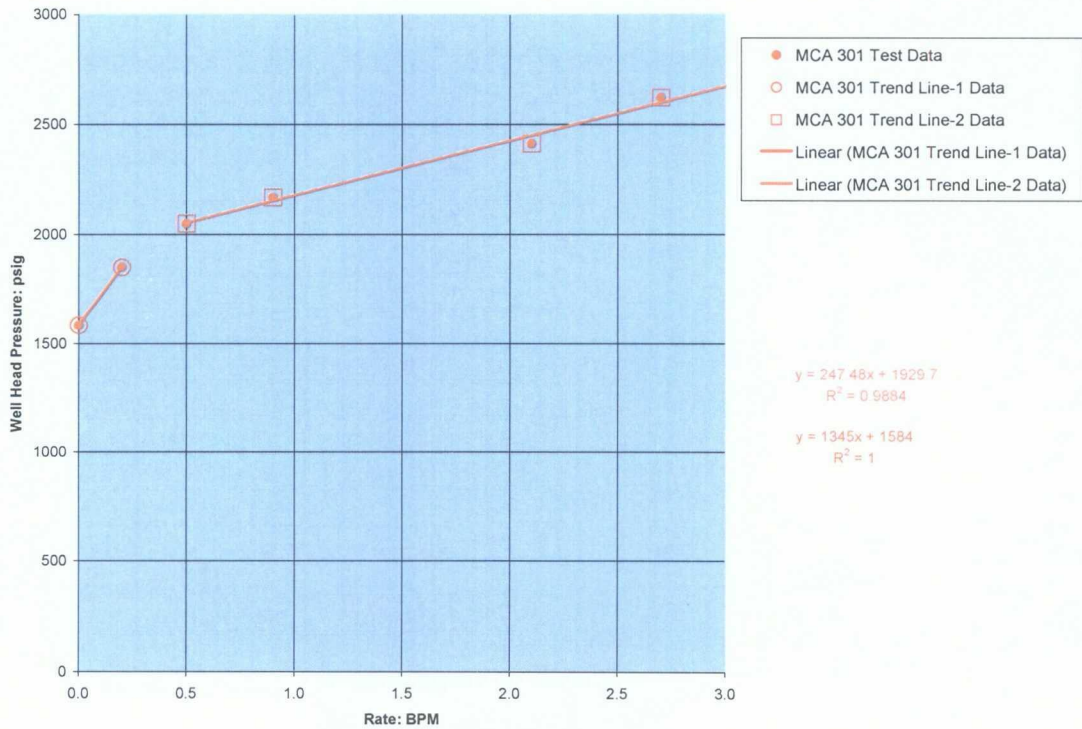


MCA Step Rate Test Summary

MCA 301

The following is a summary of the step rate tests for MCA 301. The post-step rate ISIP (2113#) suggests a gradient of approximately 1.0 psi/ft @ mid-perforation. Considering a produced water gradient of 0.44 psi/ft, maximum surface injection pressure would be approximately: $1.0 - 0.44 = 0.56$ psi/ft to top perforation....

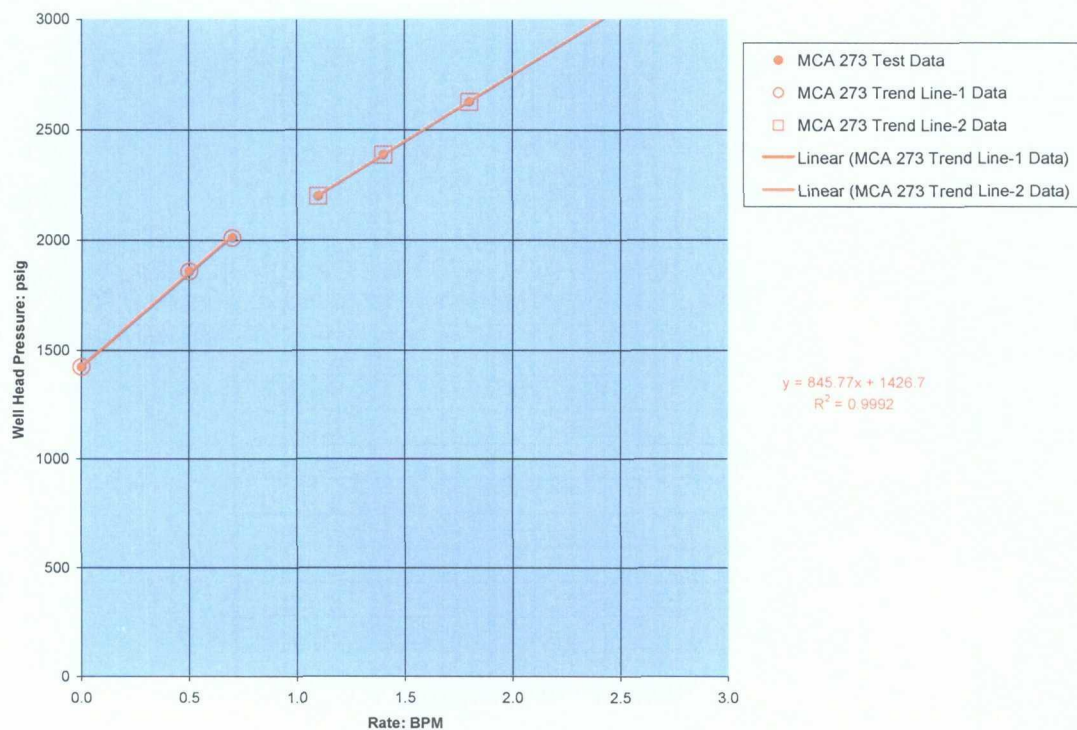
MCA 301			
01.20.10			
hr:min:sec	min.	psi	BPM
08:27:00	0.000	1613	0
08:41:00	14.000	1584	0
08:56:07	15.117	1853	0.2
09:10:25	14.300	2050	0.5
09:26:01	15.600	2169	0.9
09:41:44	15.717	2412	2.1
09:57:13	15.483	2622	2.7
	ISIP: psi	2113	0
	ISIP: psi/ft	1.00	



MCA 273

The following is a summary of the step rate tests for MCA 273. The post-step rate ISIP (2113#) suggests a gradient of approximately 1.0 psi/ft @ mid-perforation. Considering a produced water gradient of 0.44 psi/ft, maximum surface injection pressure would be approximately: $1.0 - 0.44 = 0.56$ psi/ft to top perforation....

MCA 273			
01.19.10			
hr:min:sec	min.	psi	BPM
12:39:11	0.000	1466	0
12:57:03	17.867	1424	0
13:09:53	12.833	1859	0.5
13:25:17	15.400	2012	0.7
13:39:24	14.117	2203	1.1
13:55:03	15.650	2388	1.4
14:08:55	13.867	2626	1.8
	ISIP: psi	2113	0
	ISIP: psi/ft	0.98	

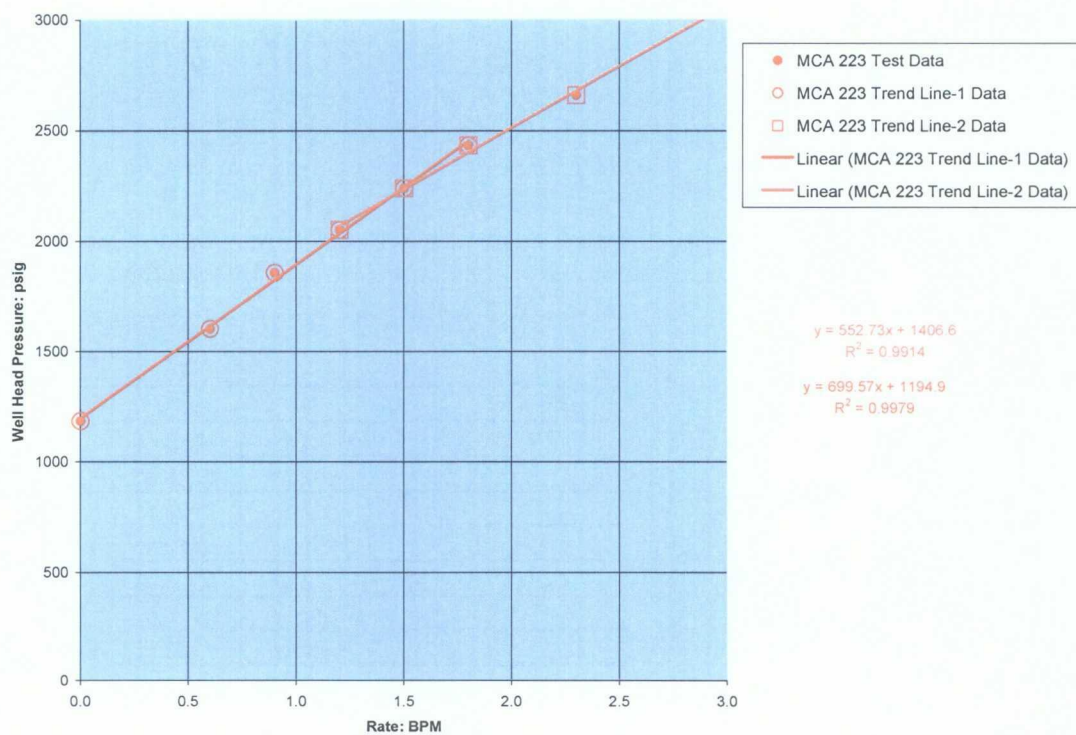


MCA 223

The following is a summary of the step rate tests for MCA 223. The post-step rate ISIP (2211#) suggests a gradient of approximately 1.05 psi/ft @ mid-perforation. Considering a produced water

gradient of 0.44 psi/ft, maximum surface injection pressure would be approximately: $1.05 - 0.44 = 0.61$ psi/ft to top perforation.

MCA 223			
01.19.10			
hr:min:sec	min.	psi	BPM
09:42:03	0.000	1182	0
09:56:00	13.950	1602	0.6
10:11:17	15.283	1857	0.9
10:26:24	15.116	2052	1.2
10:41:36	15.200	2240	1.5
10:56:48	15.200	2434	1.8
11:10:44	13.933	2659	2.3
	ISIP: psi	2211	0
	ISIP: psi/ft	1.02	



Step Rate Summaries

Well	Top Perforation	Maximum Surface Prs: psi
273	4040	2464
223	3900	2184
301	3820	2139

Well	KB	Completion Interval: RKB			Completion Interval: RMSL		
		top	btm	mid-perf	top	btm	mid-perf
273	3954	4040	4246	4143	-86	-292	-189
301	3970	3820	4151	3986	150	-181	-16
223	3938	3900	4120	4010	38	-182	-72