



GSPC Requirements the Network

Graphic Statistical Process Control

by MeltLab Systems

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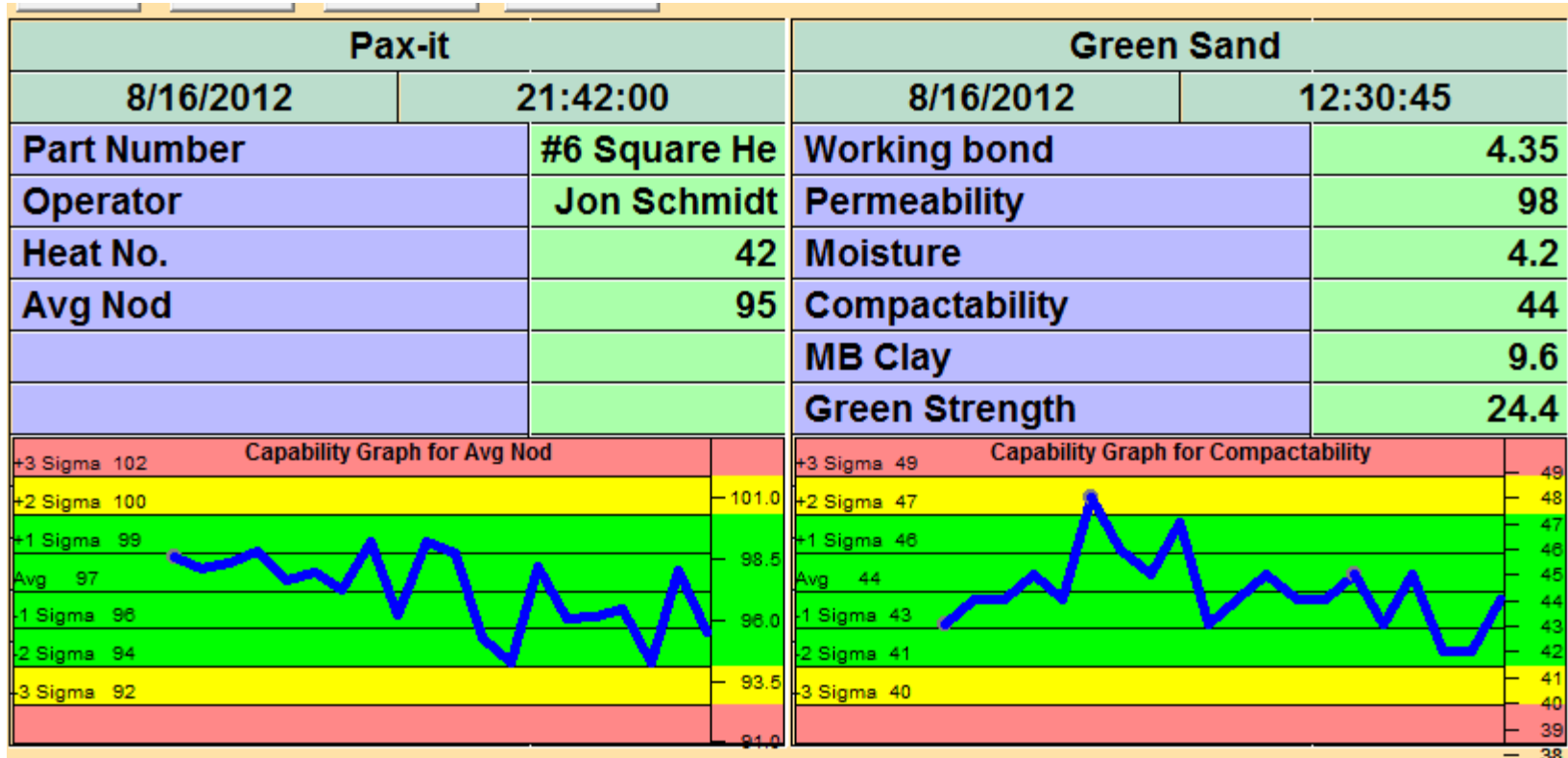
Fast • Accurate • Comprehensive

Graphic Statistical Process Control

- GSPC maintains up to a 2 year data base on line of recent process tests. Older tests can be archived.
- They are maintained in three separate data bases:
 - Historical – the full data base
 - Short Term – the 20 most recent tests of a process
 - Most Recent – the last test of a process
- This permits rapid display of configured data and graphs without input from the user.

Process Windows display

Two of possible 16 windows.



20 most recent records display

- Graphs are based on this data

Rec 5	Time	Record	Carbor	Silicon	Phospho	Sulphu	Mangan	Magnes	Lanthan	Nickel	Molybde
6/ 3/14	20:55:46	26429	3.68	1.93	.011	.009		.001	trace	.042	.001
6/ 3/14	20:04:31	26422	3.71	1.82	.009	.009		.001	trace	.042	.006
6/ 3/14	19:35:14	26417	3.92	1.91	.009	.008		.001	trace	.040	.001
6/ 3/14	18:36:13	26408	3.86	1.82	.006	.009		trace	trace	.045	.001
6/ 3/14	17:59:21	26399	3.73	1.80	.008	.008		trace	trace	.041	.001
6/ 3/14	17:38:38	26396	3.89	1.91	.009	.009		.001	trace	.041	.001
6/ 3/14	17:00:46	26389	3.80	1.80	.009	.009		.001	trace	.041	.001
6/ 3/14	16:25:51	26384	3.80	1.77	.007	.008		.001	trace	.041	.001
6/ 3/14	15:39:35	26378	3.77	1.87	.010	.009		.001	trace	.039	.002
6/ 3/14	15:09:37	26371	3.81	1.81	.006	.008		.001	trace	.041	.009
6/ 3/14	14:29:40	26365	3.78	1.86	.010	.013		.001	trace	.043	.026
6/ 3/14	14:01:44	26361	3.73	1.88	.012	.008		.001	trace	.043	.001
6/ 3/14	13:30:20	26357	3.98	1.80	.010	.007		.001	trace	.040	.001
6/ 3/14	12:29:38	26352	3.96	1.85	.007	.008		.001	trace	.041	.001
6/ 3/14	11:50:30	26348	3.88	1.86	.014	.010		.001	trace	.038	.001
6/ 3/14	11:15:37	26342	3.97	1.87	.009	.007		.001	trace	.043	.001
6/ 3/14	10:43:47	26335	3.94	1.86	.009	.008		.002	trace	.041	.001
6/ 3/14	10:16:13	26332	3.93	1.94	.006	.008		trace	trace	.040	.001
6/ 3/14	09:35:45	26322	4.00	1.78	.011	.009		.001	trace	.040	.001
6/ 3/14	09:03:42	26317	3.98	1.84	.007	.008		.001	trace	.042	.001

Process Windows Network load

- Pulls an index of all processes for date and time of most recent test of that process.
- Determines which process to be displayed in each window.
- Displays most recent set of tests, and graphs last 20 data points of set of tests if required.
- Refresh time can be set to 10 to 60 seconds.
- Low refresh time can put higher load on LAN
- These two data bases need to be in server Ram to prevent server thrashing.

Network Issues

- Overloaded Switch
 - Recommend Gigabyte level switch
 - Keep refresh times reasonable
- Watch Ram memory demands
 - Thrashing of server can occur with insufficient memory.
- Collisions can also cause switch overload problems – keep your nodes clean.

Graphic Analysis

- In order to do fast effective searches, Graphic Analysis pulls the entire data base into memory in 2 gulps – about 16 megabyte. The user can then do repeated search's on the same data base without going to the server for each new search.
- Note there is a separate data base for each major process such as chemistry, sand, brinell, etc.
- This program is usually available to only superintendents and above.

Major Network errors

- Overloaded switches sometimes drop requests for files, and somehow they get reported back to the computer as “*file does not exist*”.
- This has in the past resulted in the computer issuing a request to recreate the file based on that error. This can result in a loss of data.
- We have changed over to allowing files to only be created in the key programs and only if at the system manager level and only after querying the system manager for permission.
- We are adding code to basically kill the program on such an error to prevent data loss. This is an unfriendly thing to do, but so is loosing data.
- **Please make sure the network is strong.**