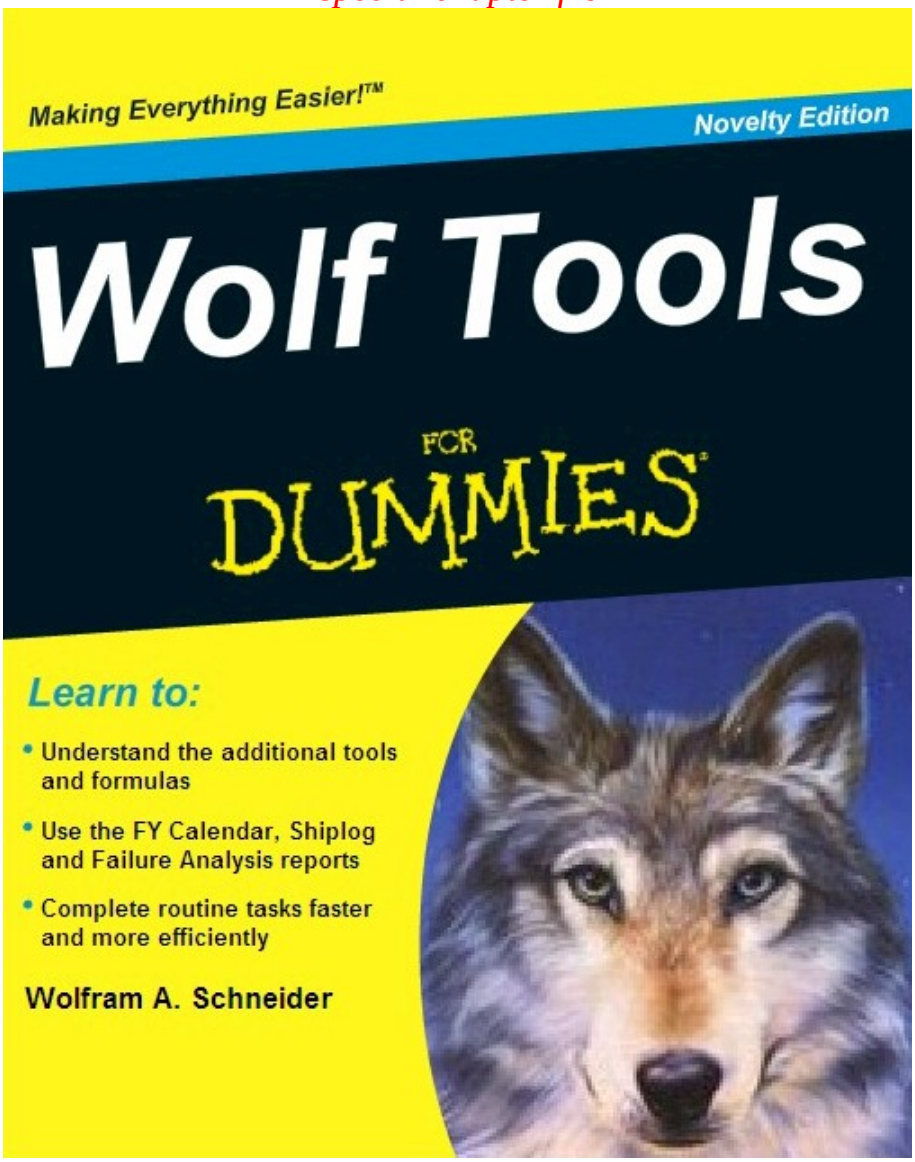
A special chapter from

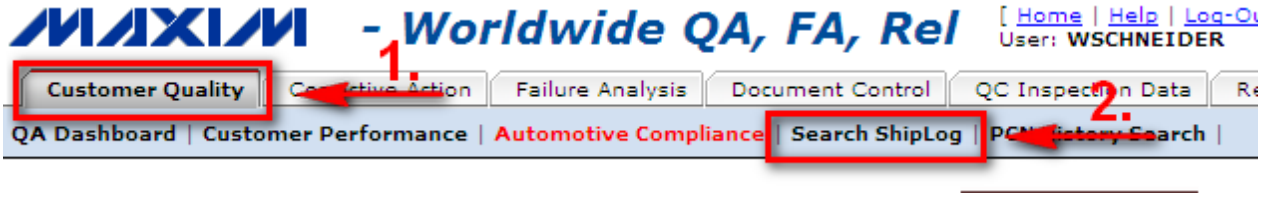


How to create a ppm graph

August 15, 2012

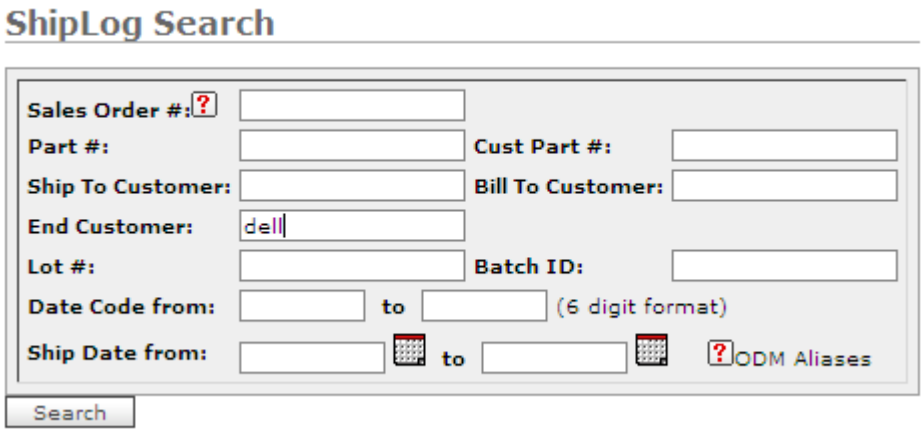
1. Getting the shiplog data

Go to the *Customer Quality* webpage and select *Search ShipLog*.



Enter the *Ship To Customer*, *End Customer* "or *Part #* for which you want to create your ppm graph. You also may enter the time frame for the ship dates or the datecode range. (Note: the template used later covers 12 months or datecodes, but it can be adjusted.)

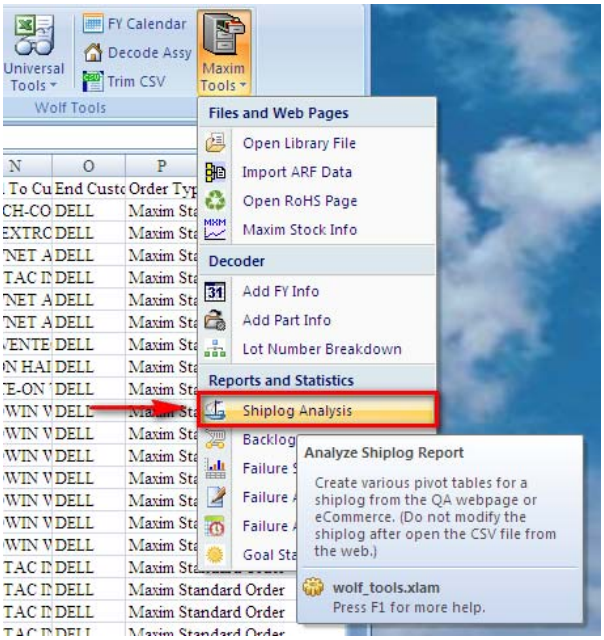
In this example the ppm graph will be created for a specific End Customer.



After clicking *Search* the shiplog will be displayed on the webpage. Now export the data to Excel.

Sublot Qty	Ship To Customer	Bill To Customer	End Customer	Order Type
5000	SILITEK ELECTRONIC (GZ) CO LTD	LITE-ON TECHNOLOGY CORPORATION	DELL	Maxim Standard Order
5000	SILITEK ELECTRONIC (GZ) CO LTD	LITE-ON TECHNOLOGY CORPORATION	DELL	Maxim Standard Order
2500	MITAC COMPUTER(SHUN-DE) LTD	MITAC INTERNATIONAL CORPORATION	DELL	Maxim Standard Order
2500	MITAC COMPUTER(SHUN-DE) LTD	MITAC INTERNATIONAL CORPORATION	DELL	Maxim Standard Order
2500	MITAC COMPUTER(SHUN-DE) LTD	MITAC INTERNATIONAL CORPORATION	DELL	Maxim Standard Order

Running *Shiplog Analysis* in Wolf Tools …

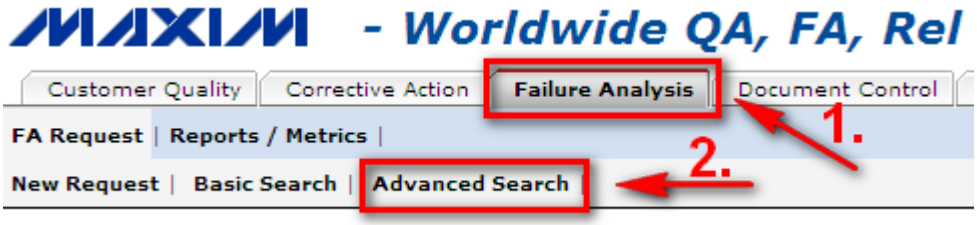


… is analyzing the data and creating several Pivot Tables.

	A	B	C	D	E	F
1	***Part***					
2						
3	End Customer	(All)				
4	Ship To Customer	(All)				
5	Bill To Customer	(All)				
6	Order Type	(All)				
7						
8	Sum of Ship Qty	Month				
9	Part Number	2009-10	2009-11	2009-12	2010-01	2010-02
10	78M6612-IMR/F/PD					
11	78M6613-IMR/F/PD					
12	78M6613-IMR/F/PL2					
13	DS1339U-33+T&R	3000			3000	3000
14	DS1388Z-33+T&R					
15	DS1556WP-120+	2000	3000	5000	3000	3000
16	DS1557WP-120+					
17	DS1682S+T&R					
18	DS1815R-10+T&R		3000			
19	DS1816R-10+T&R					
20	DS1816R-5+T&R		6000			
21	DS1818R-10+T&R			3000		
22	DS1818R-5+T&R	3000				
23	DS1922L-F5#					
24	DS1990A-F3+					

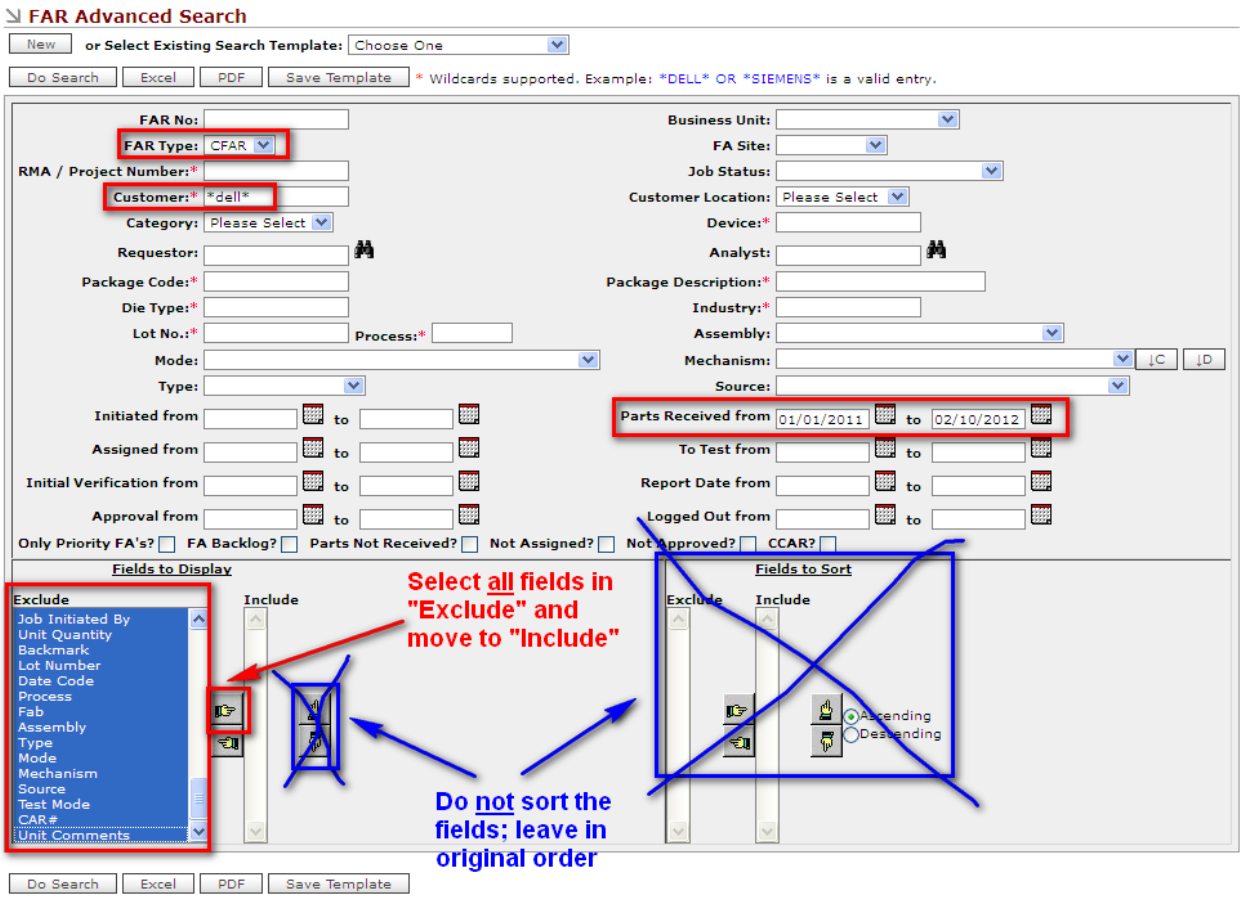
2. *Getting the Failure Signature data*

Go to the *Failure Analysis* webpage and select *Advanced Search*.

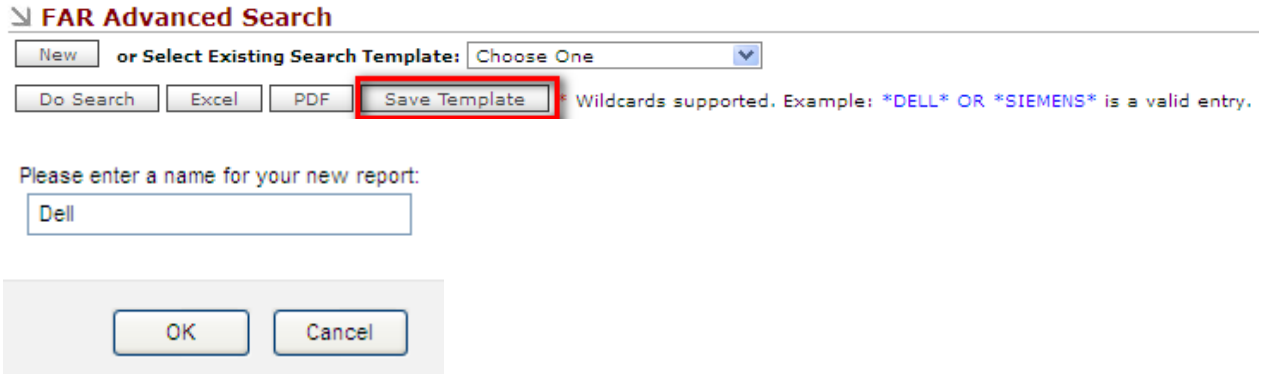


Select "CFAR" and enter the same parameters that you used in the shiplog (*Customer* or *Device*). You need to enter a time frame since leaving the time frame blank only extract partial data. Although there are different time frame options, it is recommended to use *Parts Received from*.

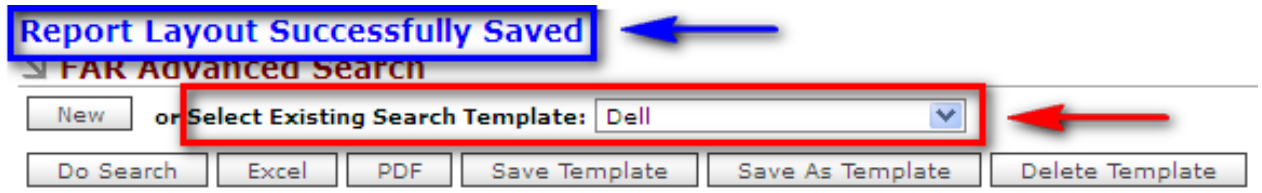
Make sure to include all fields in *Fields to Display*, because Wolf Tools requires all data fields. Do not sort these fields since Wolf Tools requires them in the original order.



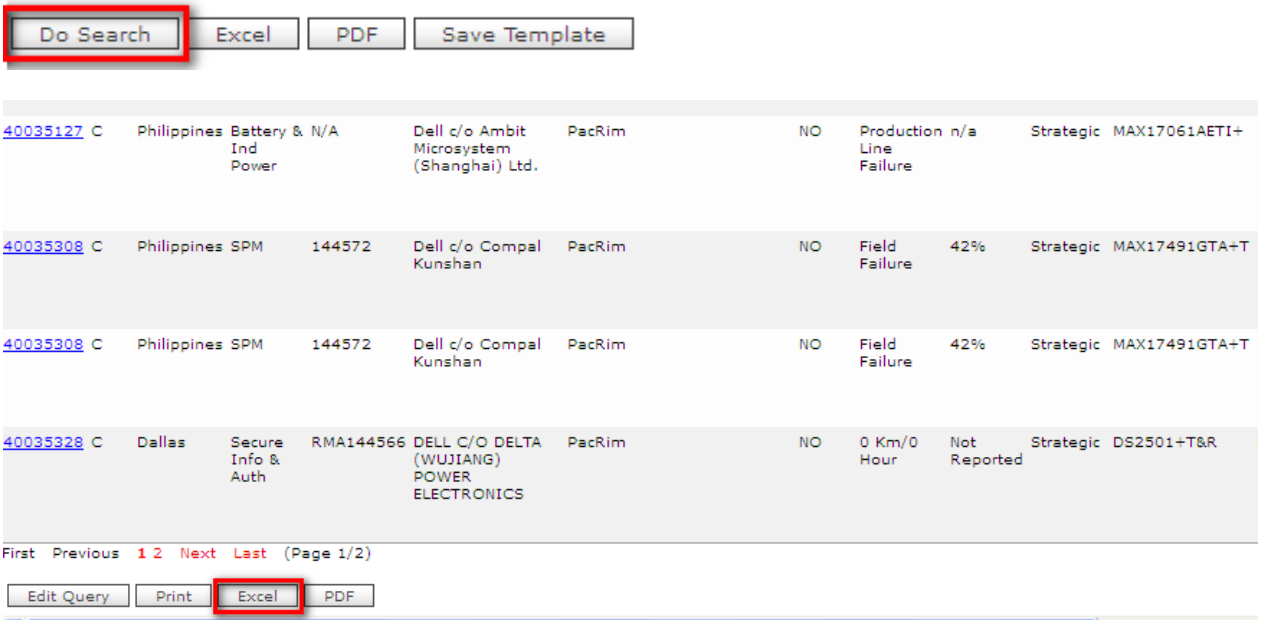
If you use these search parameters more often, consider to *Save Template*.



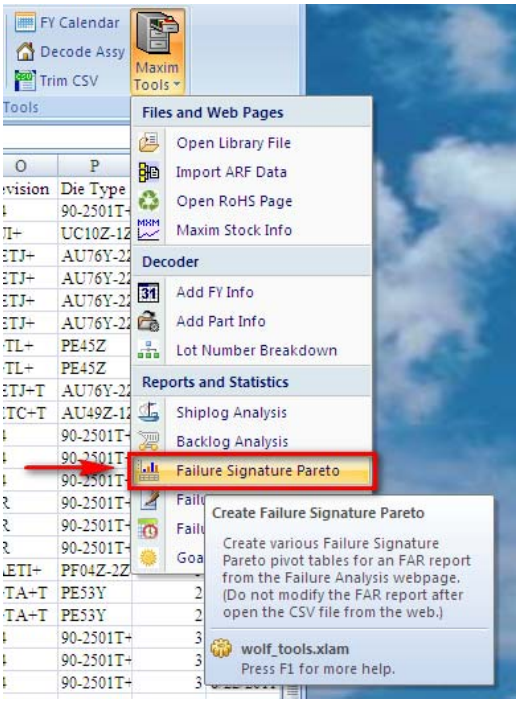
Once the Template is saved, you can use it quickly for future searches.



After clicking *Do Search* the Failure Analysis report will be displayed on the webpage. Now export the data to Excel.



Running *Failure Signature Pareto* in Wolf Tools …



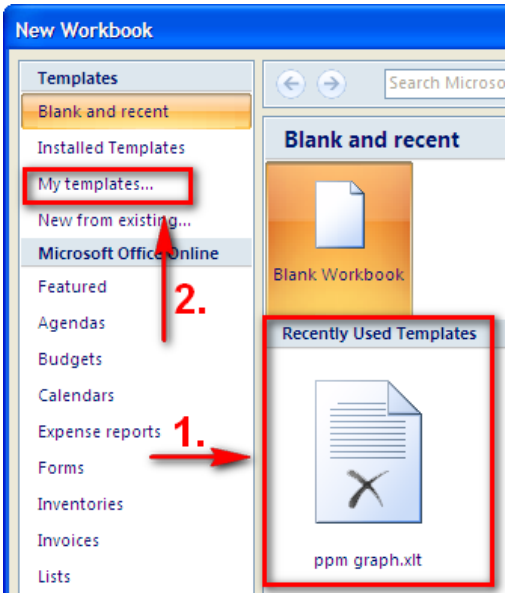
… is analyzing the data and creating several Pivot Tables.

	A	B	C	D	E	F	G	H	I	J	K	L
1	***FAR Count***											
2												
3	FAR Type	(All)										
4	FA Site	(All)										
5	Category	(All)										
6	Failed Point	(All)										
7	Cust. Location	(All)										
8	Customer	(All)										
9	Device	(All)										
10	Bus. Unit	(All)										
11	Fab	(All)										
12	Assembly	(All)										
13												
14	Count of FAR	Month										
15	Root Part	2011-01	2011-02	2011-03	2011-04	2011-05	2011-07	2011-08	2011-11	2011-12	2012-01	Grand Total
16	DS2501	1					4	2				7
17	MAX9736	1	1	1	1					1		5
18	MAX8655									3	1	4
19	MAX17491							1	1			2
20	MAX17030			1								1
21	MAX17061							1				1
22	MAX9724					1						1
23	MAX17806									1		1
24	MAX15050									1		1
25	MAX1786	1										1
26	Grand Total	3	1	2	1	1	4	4	1	6	1	24
27												

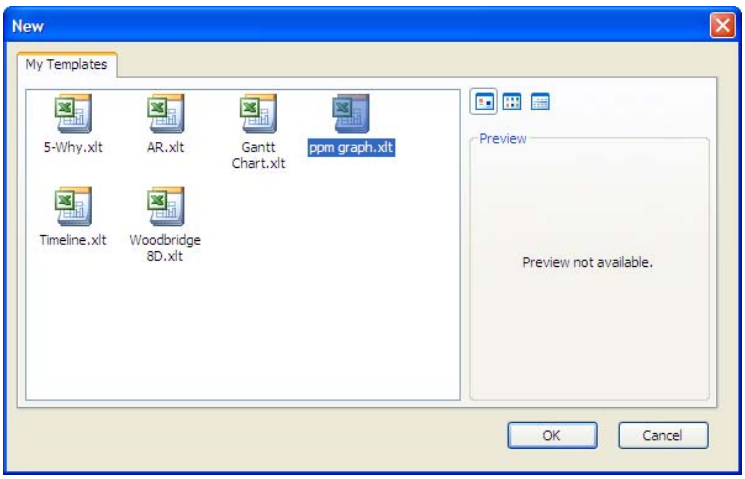
3. Getting the "ppm graph" template

Select a *New* Template in the Excel menu.

The "ppm graph" template is either under *Recently Used Templates* …



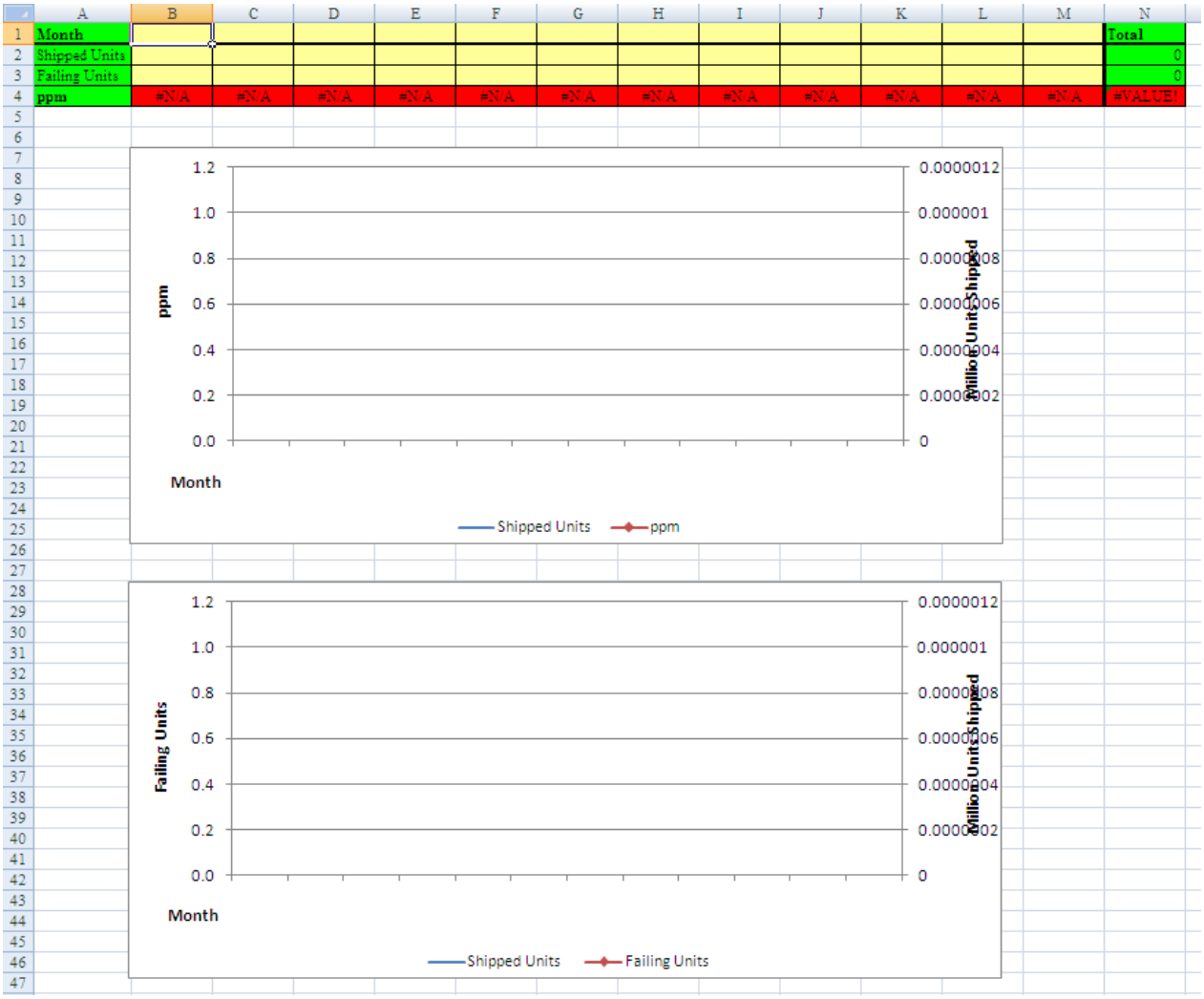
… or if you don't see it listed there, then click on *My Templates*.



Click *ppm graph.xlt* to open the template.

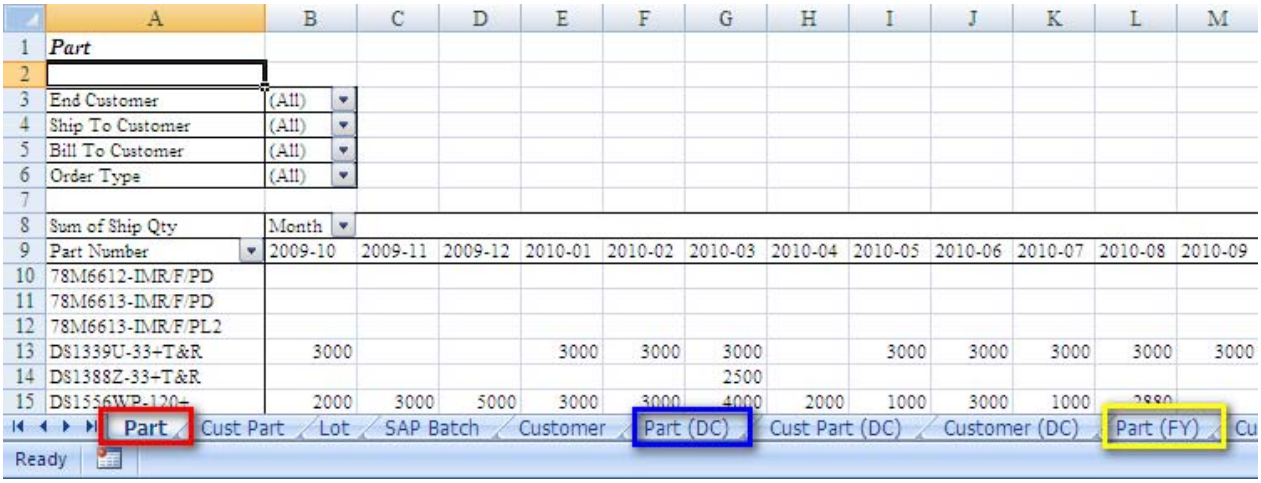
The yellow fields are for your data entry. Row 4 contains formulas and conditional formatting to allow a quick check that the entered data is in a valid numeric range. The template is set-up for a time frame of 12 months. Column N has formulas to calculate the total for the 12 month time frame.

You can easily adjust the template for more or less months by just adding or deleting some columns. If you add columns, make sure to also copy the formulas and conditional formatting in row 4. Other than adjusting the time frame, you should not modify anything in this template yet.

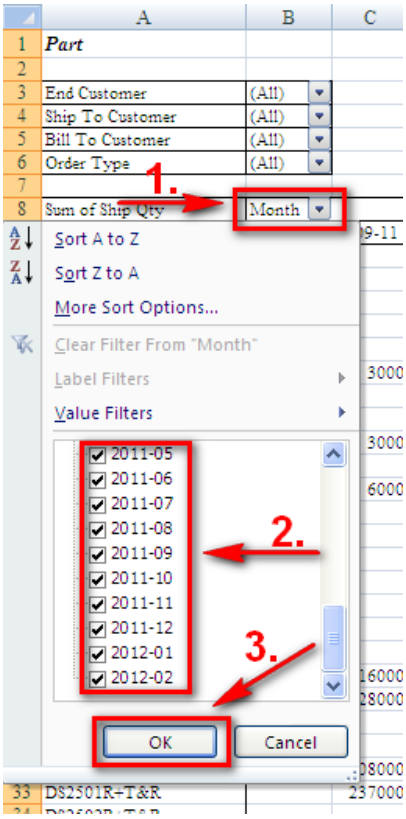


4. Creating the ppm graph

Go to your *shiplog* and select worksheet *Part* for the shipments per calendar month
(Note: in the next revision of Wolf Tools, you will also be able to create ppm charts for *Part (DC)* for the shipments per datecode or *Part (FY)* for the shipments per Maxim Quarter).



Select the months for which you want to create your ppm graph. Remember that the ppm graph template covers 12 months as a default. You also can select a particular Customer if needed.



After clicking "OK", the pivot tables are adjusted to your selected time frame. It is important that you verify that the months are consecutive numbers and that no month is missing. Now copy the months (they are in format yyyy-mm) …

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	***Part***													
2														
3	End Customer	(All)												
4	Ship To Customer	(All)												
5	Bill To Customer	(All)												
6	Order Type	(All)												
7														
8	Sum of Ship Qty	Month												
9	Part Number	2011-01	2011-02	2011-03	2011-04	2011-05	2011-06	2011-07	2011-08	2011-09	2011-10	2011-11	2011-12	Grand Total
10	DS1339U-33+T&R		3000	3000		3000		3000		3000		3000	3000	21000
11	DS1388Z-33+T&R			2500	7500			7500		2500	5000	2500	7500	35000
12	DS1556WP-120+						200					240		440
13	DS1557WP-120+	5640	5280	6000	8045	2000	2000	2000	4560	5200	3200	3200	3640	50765
14	DS1682S+T&R						2500							2500
15	DS1816R-10+T&R		3000											3000
16	DS1990A-F3+						4							4
17	DS2432P-W01+3T	100000	52000	52000	112000		24000		36000	24000	48000	32000	36000	516000
18	DS2432P-W01+4T	48000	52000	72000	64000	76000	68000		64000	40000	80000	40000	96000	700000

… and paste into row 1 of the ppm graph template.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Month	2011-01	2011-02	2011-03	2011-04	2011-05	2011-06	2011-07	2011-08	2011-09	2011-10	2011-11	2011-12	Total
2	Shipped Units													0
3	Failing Units													0
4	ppm	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#VALUE!
5														

Go back to your *shiplog* file and scroll down to the end of the pivot table. Now copy the numbers in *Grand Total* …

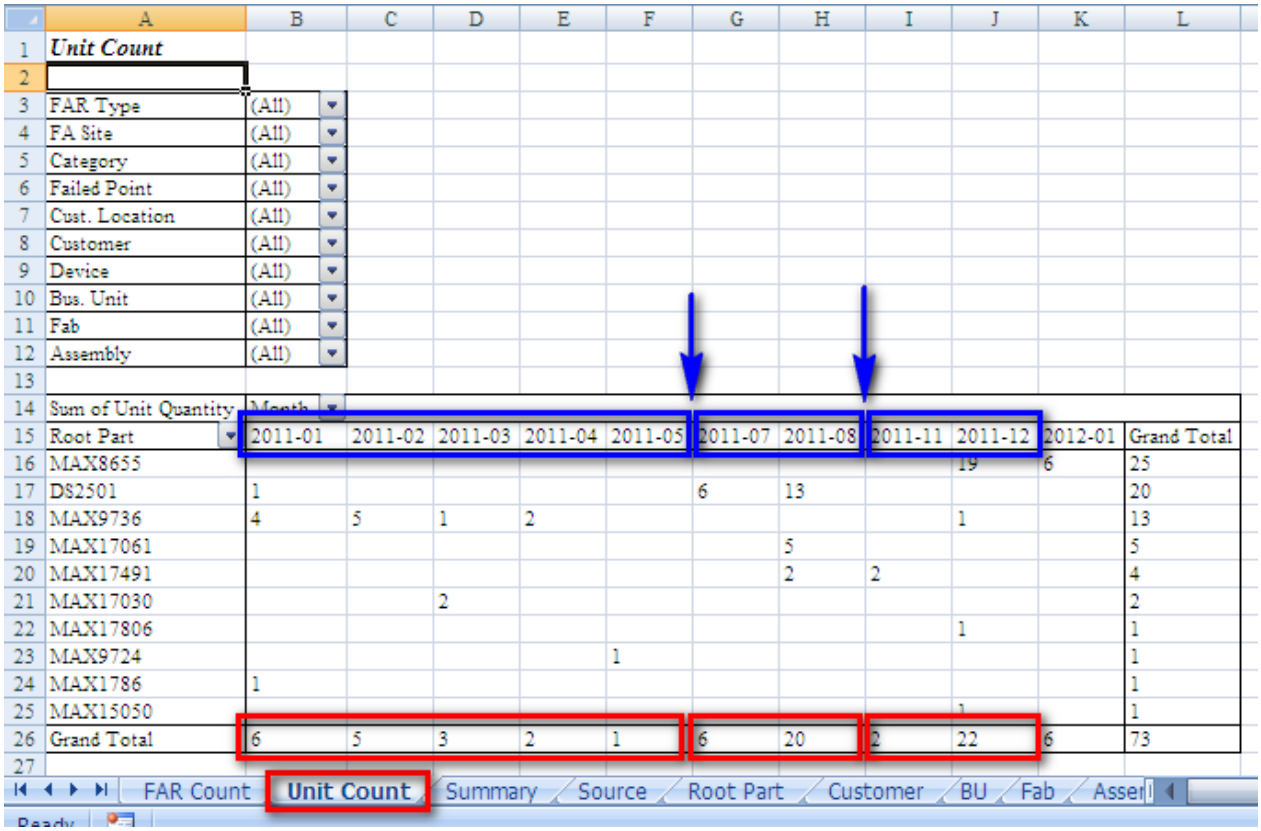
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
127	MAX8759ETI+									82				82
128	MAX8759ETI+T					2500	10000		8175	9243				29918
129	MAX8791GTA+T	5000	7500	2500										15000
130	MAX8792ETD+T	10000	5000	2500		5000		2500						25000
131	MAX8794ETB+T				7500	20000	10000	5000		17500	12500			72500
132	MAX8869EUE10+T			2500	2500	7500	2500	5000	7500	5000	15000		17500	65000
133	MAX889RESA+T				2500			2500		2500			2500	10000
134	MAX8903CETI+T	110000	40000	27500	10000	10000						52500	20000	270000
135	MAX8958EWW+						600							600
136	MAX8958EWW+T						2000		2000	2000	4000	8000	8000	26000
137	MAX9736AETJ+T									50000	155000	130000	115000	450000
138	MAX9736DETJ+T	5000			2500									7500
139	MXD1818UR22+T							2500						2500
140	Grand Total	1922766	1942100	1662344	1796379	4304866	4450012	5487610	4441825	1691382	2876553	3182230	2988660	36746727
141														

… and paste into row 2 of the ppm graph template.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Month	2011-01	2011-02	2011-03	2011-04	2011-05	2011-06	2011-07	2011-08	2011-09	2011-10	2011-11	2011-12	Total
2	Shipped Units	1922766	1942100	1662344	1796379	4304866	4450012	5487610	4441825	1691382	2876553	3182230	2988660	36746727
3	Failing Units													0
4	ppm	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.00
5														

Go to your Failure Signature Pareto and select worksheet “Unit Count”

Select the months for the same time frame as in your shiplog. You also can exclude certain Failure Signatures (like No Trouble Found or Handling) in the Source field. Scroll down to the end of the pivot table and copy the numbers in “Grand Total” …

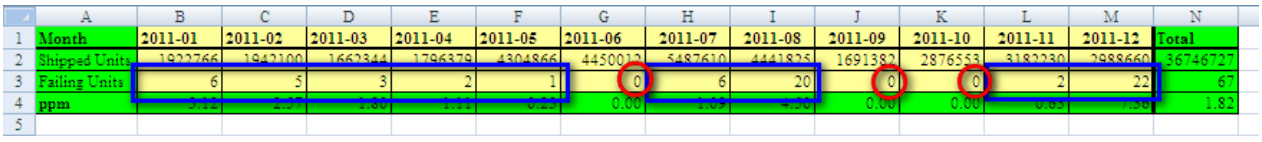


	A	B	C	D	E	F	G	H	I	J	K	L
1	***Unit Count***											
2												
3	FAR Type	(All)										
4	FA Site	(All)										
5	Category	(All)										
6	Failed Point	(All)										
7	Cust. Location	(All)										
8	Customer	(All)										
9	Device	(All)										
10	Bus. Unit	(All)										
11	Fab	(All)										
12	Assembly	(All)										
13												
14	Sum of Unit Quantity	Month										
15	Root Part	2011-01	2011-02	2011-03	2011-04	2011-05	2011-07	2011-08	2011-11	2011-12	2012-01	Grand Total
16	MAX8655									19	6	25
17	D82501	1					6	13				20
18	MAX9736	4	5	1	2					1		13
19	MAX17061							5				5
20	MAX17491							2	2			4
21	MAX17030			2								2
22	MAX17806									1		1
23	MAX9724					1						1
24	MAX1786	1										1
25	MAX15050									1		1
26	Grand Total	6	5	3	2	1	6	20	2	22	6	73
27												

FAR Count | Unit Count | Summary | Source | Root Part | Customer | BU | Fab | Asser

… and paste into row 3 of the ppm graph template. However, please be very careful that the months line up. It is very likely that your Failure Analysis data misses some months! Due to the error validation in row 4 you cannot leave a cell in row 3 blank, but you have to enter a 0 (zero) if there is no failure.

Note that in the example above, there is no data for months 2011-06, 2011-09 and 2011-10. Also, the data has an additional month 2012-01 which is not covered in the shiplog.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Month	2011-01	2011-02	2011-03	2011-04	2011-05	2011-06	2011-07	2011-08	2011-09	2011-10	2011-11	2011-12	Total
2	Shipped Units	1922766	1942100	1662344	1796379	4304866	4450012	5487610	4441825	1691382	2876553	3182230	2888660	36746727
3	Failing Units	6	5	3	2	1	0	6	20	0	0	2	22	67
4	ppm	3.12	2.57	1.80	1.11	0.23	0.00	1.09	4.50	0.00	0.00	0.63	7.62	1.82
5														

Now row 4 should change the color to green and you can see the graphs for "ppm" and the "Failing Units". If needed, you now can change the settings for the graphs.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Month	2011-01	2011-02	2011-03	2011-04	2011-05	2011-06	2011-07	2011-08	2011-09	2011-10	2011-11	2011-12	Total
2	Shipped Units	1922766	1942100	1662344	1796379	4304866	4450012	5487610	4441825	1691382	2876553	3182230	2988660	36746727
3	Failing Units	6	5	3	2	1	0	6	20	0	0	2	22	67
4	ppm	3.12	2.57	1.80	1.11	0.23	0.00	1.09	4.50	0.00	0.00	0.63	7.36	1.82