

APPENDIX A

Basic Statistics - Elements

Zone	Variable	No. Data	Original 1.5m Assays			
			Mean	Std Dev	Minimum	Maximum
All	CA	69478	0.102	0.332	0.005	20
	CO	69478	107.835	24.338	0.5	450
	CR	69478	1358.174	801.121	0.5	6320
	FE	69478	5.087	1.607	0.005	40.8
	NI	69478	0.27	0.098	0	1.59
	PD	69478	0.021	0.08	0.001	5.01
	PT	69478	0.012	0.033	0.002	1.935
	S	69478	0.082	0.115	0.005	2.61
	SG	69478	2.578	0.09	0.71	3.92
1	CA	2528	0.225	0.517	0.005	7.8
	CO	2528	96.172	18.225	0.5	150
	CR	2528	1672.351	1227.882	0.5	5430
	FE	2528	4.528	1.052	0.005	11.7
	NI	2528	0.245	0.056	0	0.632
	PD	2528	0.012	0.035	0.001	0.935
	PT	2528	0.009	0.027	0.002	0.663
	S	2528	0.065	0.05	0.005	0.46
	SG	2528	2.608	0.079	2.28	3.21
2	CA	2530	0.183	0.534	0.005	8.73
	CO	2530	100.052	16.529	0.5	204
	CR	2530	1534.466	901.862	0.5	4940
	FE	2530	4.704	1.052	0.005	14.5
	NI	2530	0.249	0.05	0	0.626
	PD	2530	0.013	0.065	0.001	1.64
	PT	2530	0.009	0.027	0.002	0.758
	S	2530	0.068	0.083	0.005	1.43
	SG	2530	2.605	0.099	2.21	3.57
3	CA	23353	0.069	0.183	0.005	11.3
	CO	23353	111.971	24.148	0.5	422
	CR	23353	1304.583	611.625	0.5	5510
	FE	23353	5.14	1.59	0.005	32.2
	NI	23353	0.277	0.111	0	1.43
	PD	23353	0.028	0.12	0.001	5.01
	PT	23353	0.016	0.046	0.002	1.935
	S	23353	0.103	0.145	0.005	2.61
	SG	23353	2.561	0.101	0.71	3.92
4	CA	18100	0.085	0.216	0.005	20
	CO	18100	111.096	27.614	0.5	450
	CR	18100	1688.168	899.128	0.5	6320
	FE	18100	5.315	1.709	0.005	40.8
	NI	18100	0.279	0.108	0	1.59
	PD	18100	0.021	0.062	0.001	2.93
	PT	18100	0.012	0.028	0.002	0.852
	S	18100	0.087	0.111	0.005	1.42
	SG	18100	2.576	0.063	2.04	3.8
5	CA	12324	0.09	0.308	0.005	9.7
	CO	12324	106.883	23.732	0.5	356
	CR	12324	1300.768	747.025	0.5	5140
	FE	12324	5.12	1.894	0.005	34.3
	NI	12324	0.275	0.095	0	0.988
	PD	12324	0.02	0.036	0.001	0.751
	PT	12324	0.012	0.022	0.002	0.729
	S	12324	0.083	0.105	0.005	0.83
	SG	12324	2.583	0.087	2.19	3.61

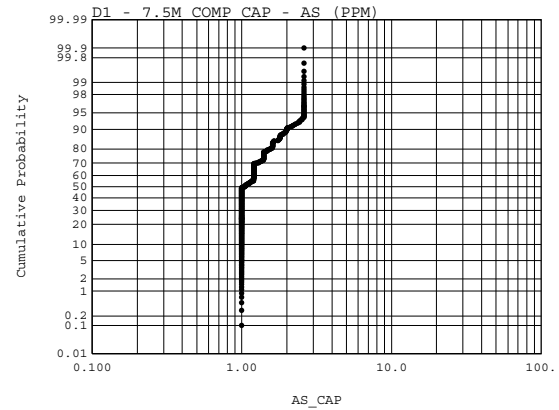
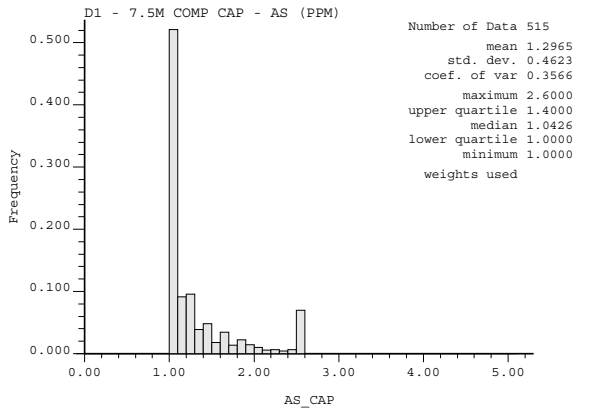
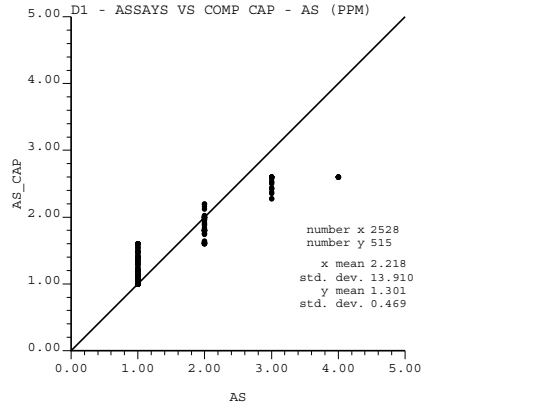
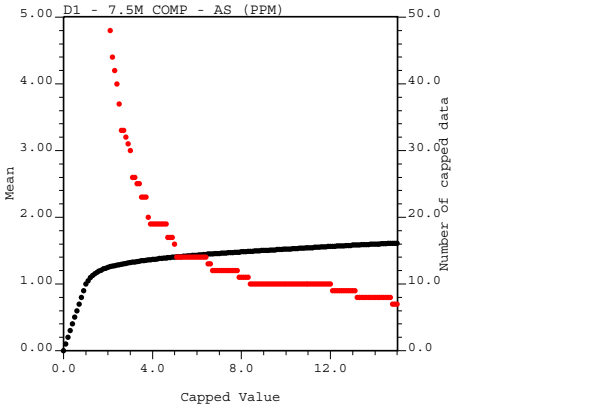
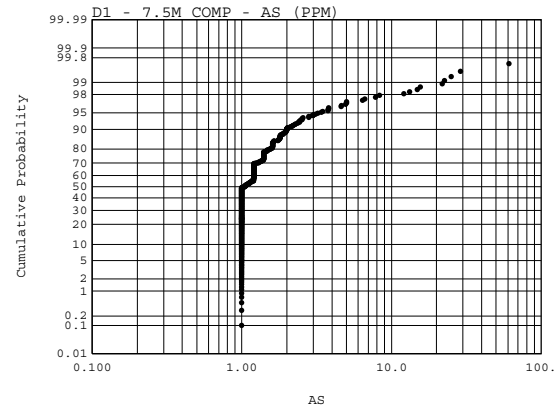
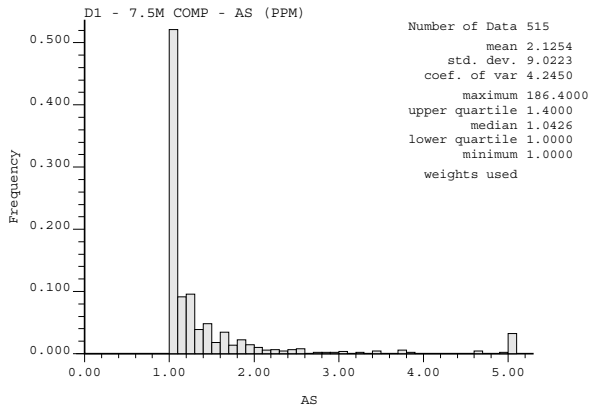
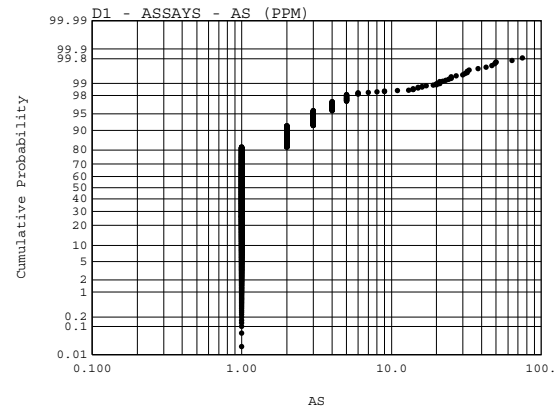
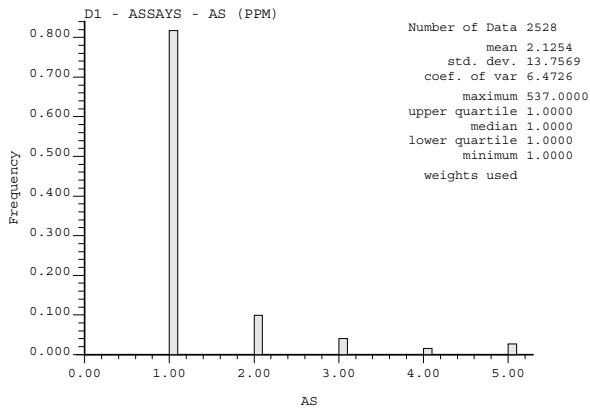
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
6	CA	4891	0.193	0.599	0.005	9.97
	CO	4891	101.89	21.252	0.5	376
	CR	4891	921.816	617.876	0.5	4490
	FE	4891	4.891	1.274	0.005	13.05
	NI	4891	0.254	0.076	0	0.909
	PD	4891	0.015	0.04	0.001	0.949
	PT	4891	0.011	0.023	0.002	0.374
	S	4891	0.049	0.059	0.005	0.66
SG	4891	2.586	0.091	2.08	3.14	
7	CA	5752	0.127	0.486	0.005	11.2
	CO	5752	98.496	16.058	0.5	221
	CR	5752	851.974	506.658	0.5	4690
	FE	5752	4.732	1.124	0.005	15.9
	NI	5752	0.247	0.048	0	0.909
	PD	5752	0.007	0.032	0.001	1.16
	PT	5752	0.006	0.014	0.002	0.376
	S	5752	0.031	0.036	0.005	0.44
SG	5752	2.605	0.105	2.17	3.34	

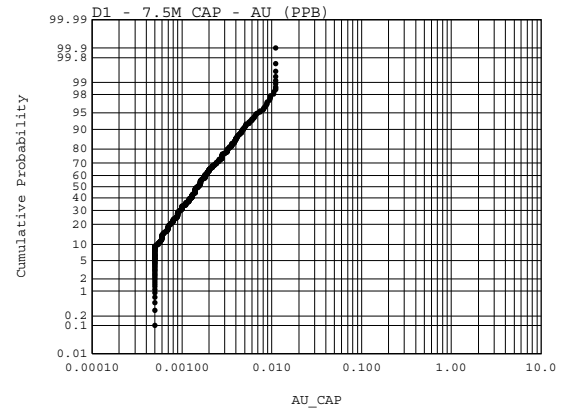
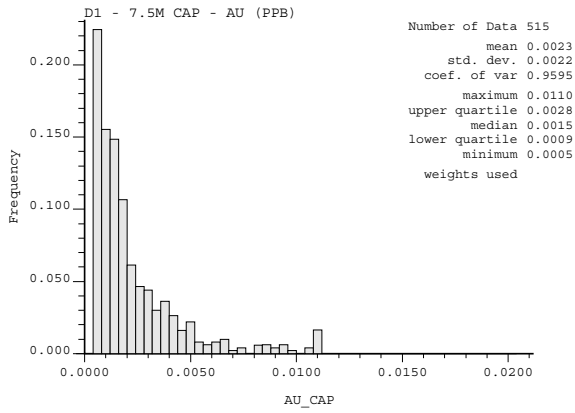
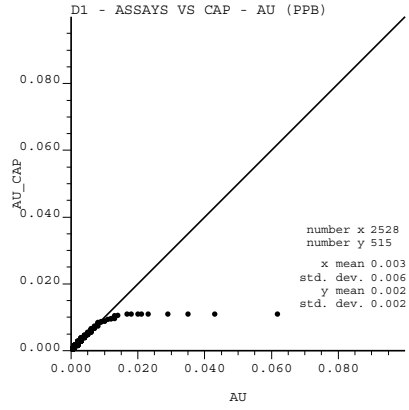
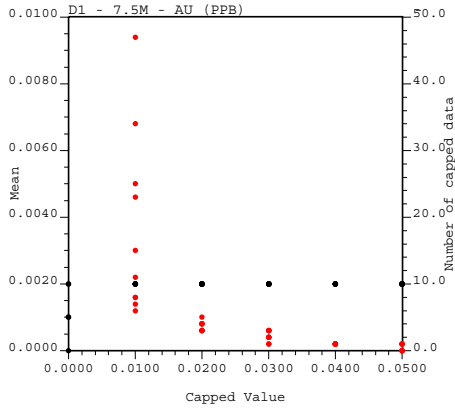
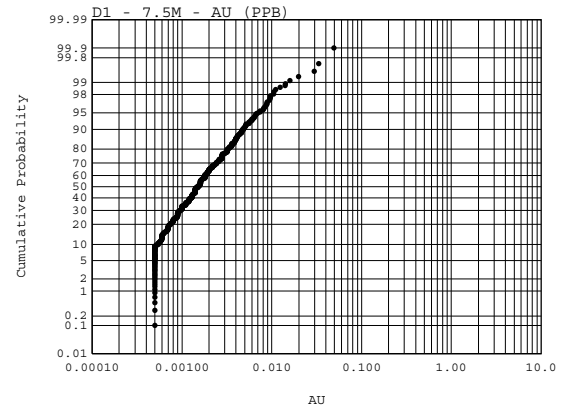
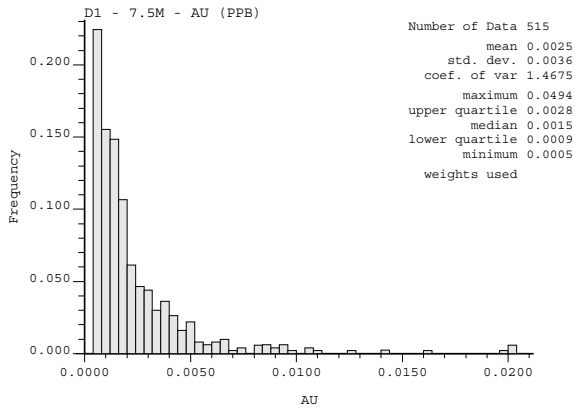
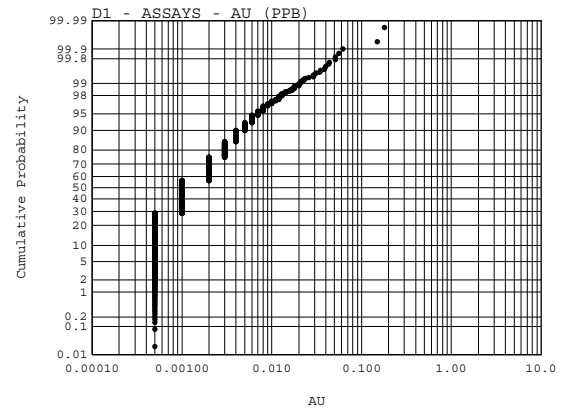
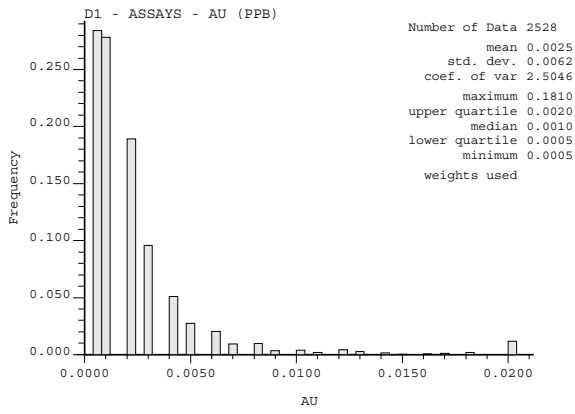
Zone	Variable	7.5 m Composites				
		No. Data	Mean	Std Dev	Minimum	Maximum
All	CA	12705	0.102	0.241	0.005	6.09
	CO	12705	107.835	17.521	0.5	236.957
	CR	12705	1358.173	754.537	0.5	5922.179
	FE	12705	5.087	1.1	0.005	13.497
	NI	12705	0.27	0.087	0	1.072
	PD	12705	0.021	0.05	0.001	1.695
	PT	12705	0.012	0.022	0.002	0.677
	S	12705	0.082	0.106	0.005	1.733
	SG	12705	2.578	0.074	2.265	3.093
1	CA	515	0.225	0.442	0.005	6.09
	CO	515	96.172	14.694	3.99	137.625
	CR	515	1672.352	1173.269	43.257	4855.573
	FE	515	4.528	0.819	0.166	7.314
	NI	515	0.245	0.048	0.01	0.537
	PD	515	0.012	0.021	0.001	0.364
	PT	515	0.009	0.018	0.002	0.319
	S	515	0.065	0.048	0.005	0.283
	SG	515	2.608	0.065	2.39	2.841
2	CA	481	0.183	0.409	0.01	4.221
	CO	481	100.052	11.178	35.388	166.643
	CR	481	1534.466	855.248	471.694	4277.817
	FE	481	4.704	0.649	3.303	7.44
	NI	481	0.249	0.041	0.057	0.521
	PD	481	0.013	0.032	0.001	0.373
	PT	481	0.009	0.015	0.002	0.169
	S	481	0.068	0.072	0.005	0.738
	SG	481	2.605	0.08	2.434	2.99
3	CA	4111	0.069	0.111	0.005	3.033
	CO	4111	111.971	18.105	0.5	232.644
	CR	4111	1304.583	541.539	0.5	3917.613
	FE	4111	5.14	1.116	0.005	11.606
	NI	4111	0.277	0.098	0	1.072
	PD	4111	0.028	0.075	0.001	1.695
	PT	4111	0.016	0.03	0.002	0.677
	S	4111	0.103	0.134	0.005	1.733

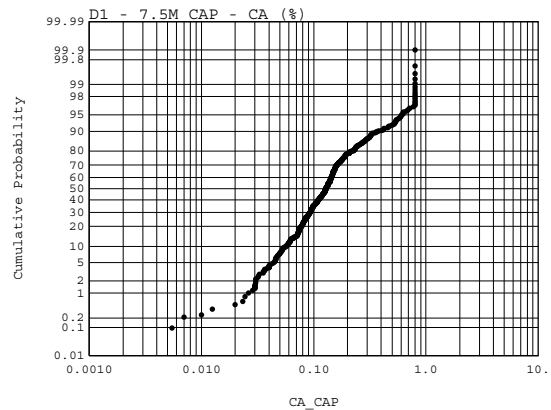
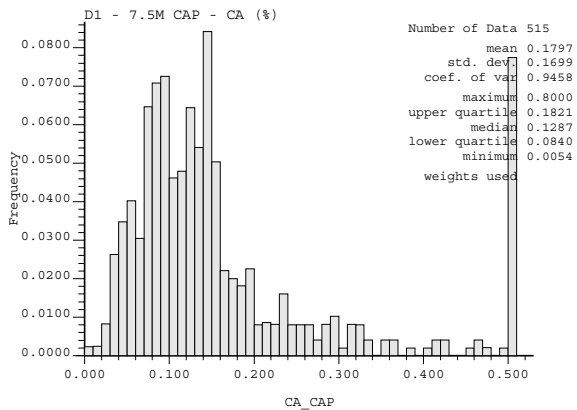
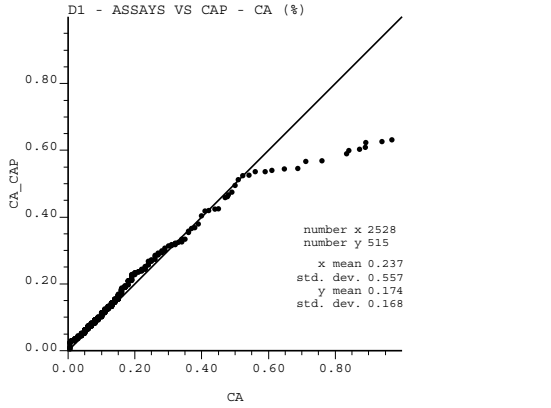
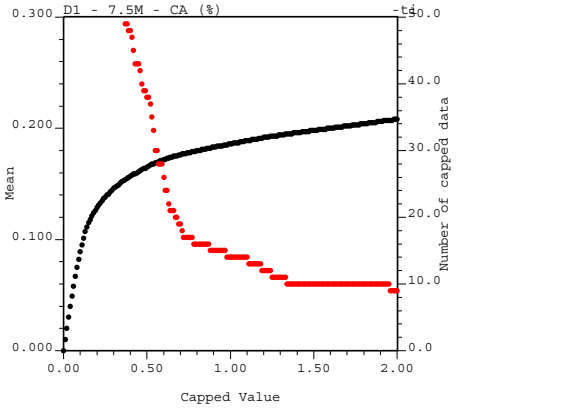
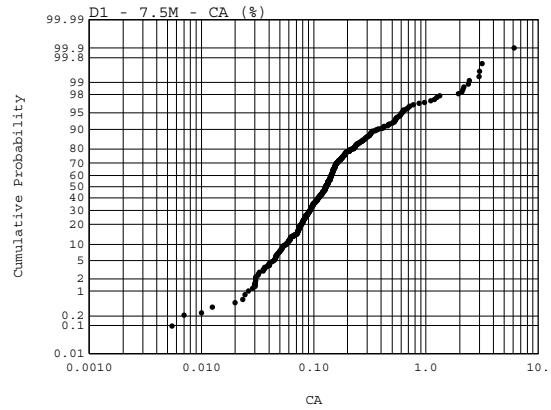
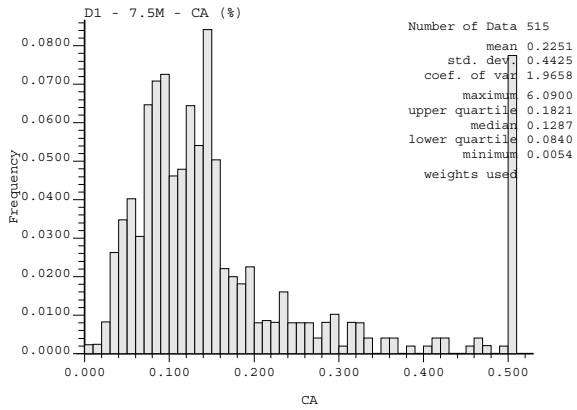
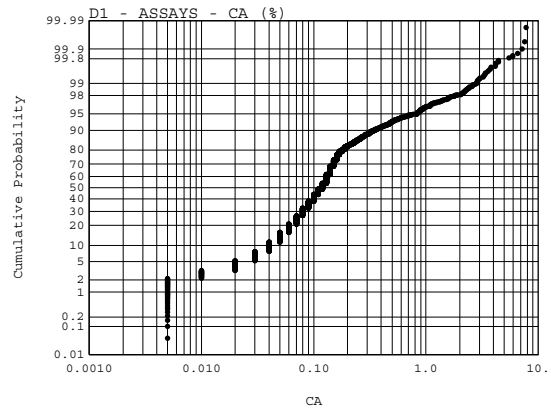
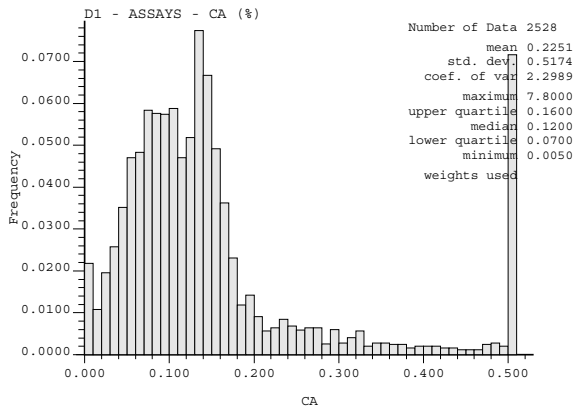
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
4	SG	4111	2.561	0.085	2.265	3.093
	CA	3263	0.085	0.122	0.005	2.775
	CO	3263	111.095	17.611	0.5	236.957
	CR	3263	1688.167	863.916	0.5	5922.179
	FE	3263	5.315	1.101	0.005	13.497
	NI	3263	0.279	0.095	0	1.051
	PD	3263	0.021	0.038	0.001	0.646
	PT	3263	0.012	0.019	0.002	0.31
	S	3263	0.087	0.102	0.005	0.971
SG	3263	2.576	0.045	2.353	2.868	
5	CA	2293	0.09	0.187	0.005	3.307
	CO	2293	106.883	16.28	0.5	213.99
	CR	2293	1300.769	700.492	0.5	3592.327
	FE	2293	5.12	1.193	0.005	12.61
	NI	2293	0.275	0.084	0	0.808
	PD	2293	0.02	0.025	0.001	0.29
	PT	2293	0.012	0.014	0.002	0.208
	S	2293	0.083	0.098	0.005	0.675
	SG	2293	2.583	0.068	2.386	2.911
6	CA	940	0.193	0.442	0.005	3.968
	CO	940	101.89	16.184	0.5	194.991
	CR	940	921.815	552.712	0.5	3455.58
	FE	940	4.891	1.007	0.005	7.272
	NI	940	0.254	0.069	0	0.764
	PD	940	0.015	0.026	0.001	0.211
	PT	940	0.011	0.015	0.002	0.129
	S	940	0.049	0.056	0.005	0.508
	SG	940	2.586	0.073	2.383	2.879
7	CA	1102	0.127	0.394	0.005	4.863
	CO	1102	98.496	12.802	0.5	144.654
	CR	1102	851.974	455.931	0.5	3035.95
	FE	1102	4.732	0.929	0.005	7.965
	NI	1102	0.247	0.041	0	0.543
	PD	1102	0.007	0.02	0.001	0.295
	PT	1102	0.006	0.009	0.002	0.093
	S	1102	0.031	0.034	0.005	0.336
	SG	1102	2.605	0.093	2.34	3.077

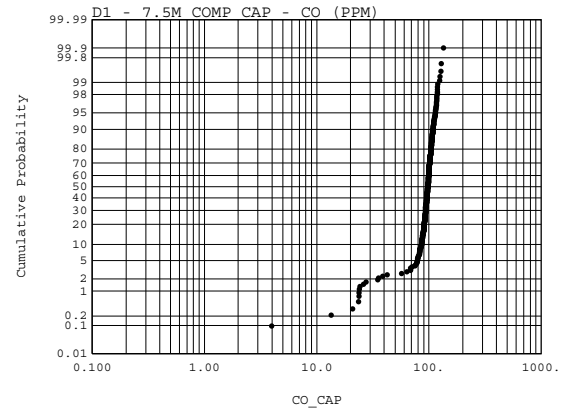
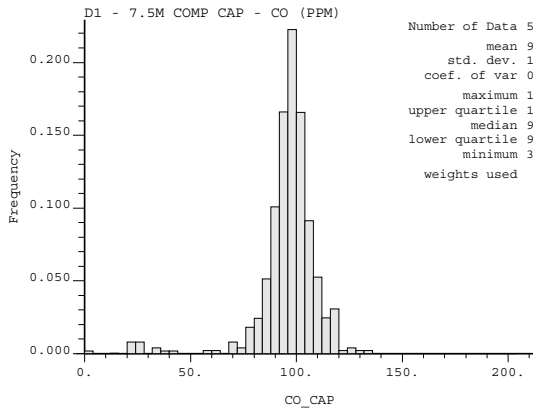
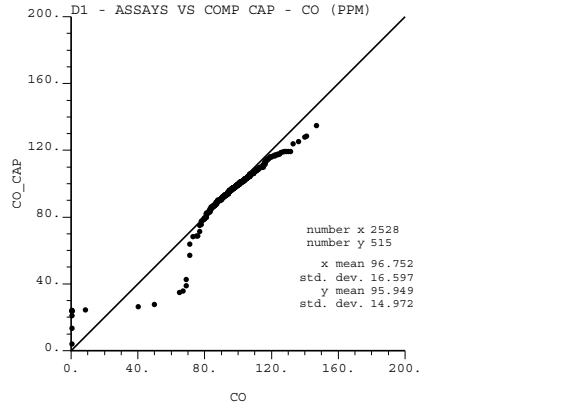
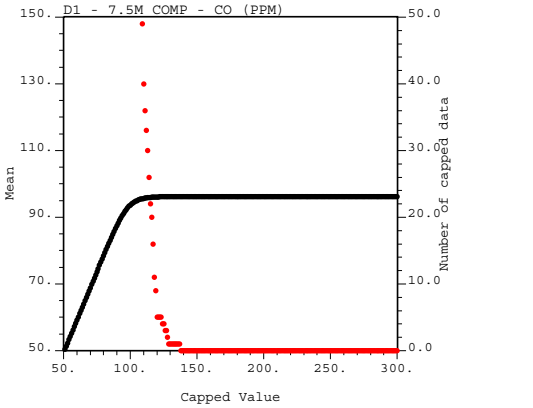
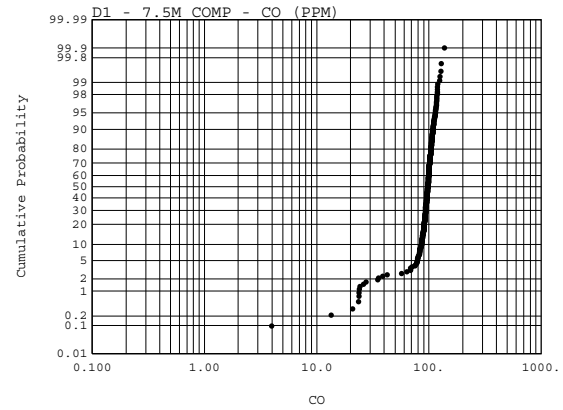
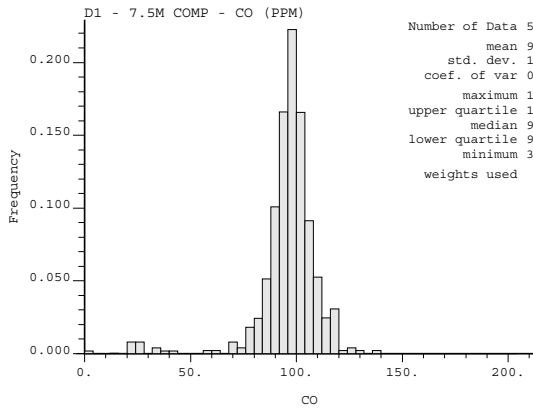
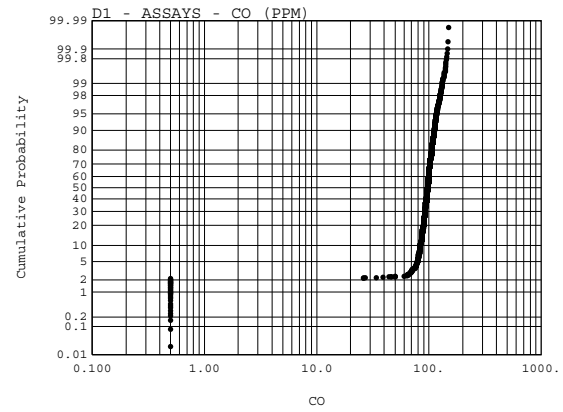
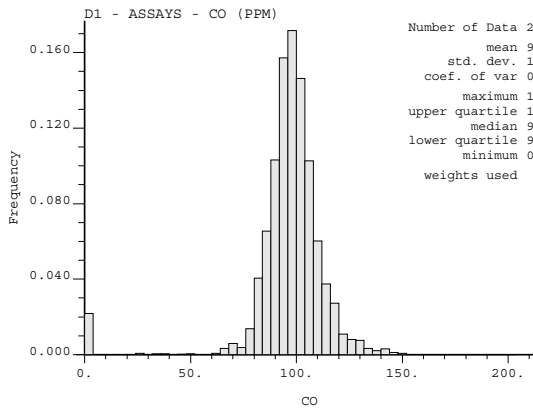
7.5 m Capped Composites						
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
All	CA	12705	0.088	0.128	0.005	1.4
	CO	12705	107.788	17.328	0.5	200
	CR	12705	1356.528	749.46	0.5	4100
	FE	12705	5.082	1.078	0.005	9.75
	NI	12705	0.27	0.085	0	0.875
	PD	12705	0.02	0.04	0.001	0.7
	PT	12705	0.012	0.019	0.002	0.34
	S	12705	0.081	0.102	0.005	0.85
	SG	12705	2.578	0.074	2.265	3.093
1	CA	515	0.18	0.17	0.005	0.8
	CO	515	96.167	14.68	3.99	135
	CR	515	1666.512	1160.004	43.257	4100
	FE	515	4.527	0.815	0.166	7
	NI	515	0.244	0.045	0.01	0.34
	PD	515	0.01	0.012	0.001	0.055
	PT	515	0.007	0.007	0.002	0.028
	S	515	0.065	0.046	0.005	0.21
	SG	515	2.608	0.065	2.39	2.841

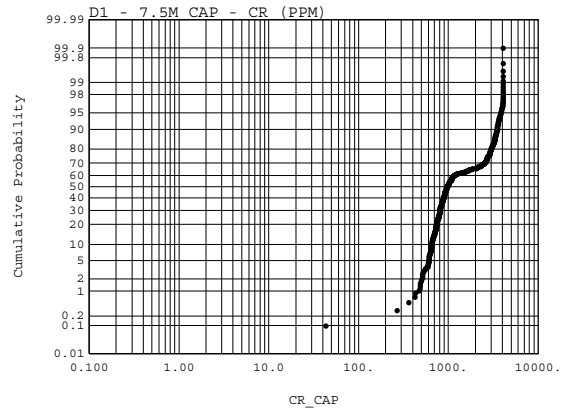
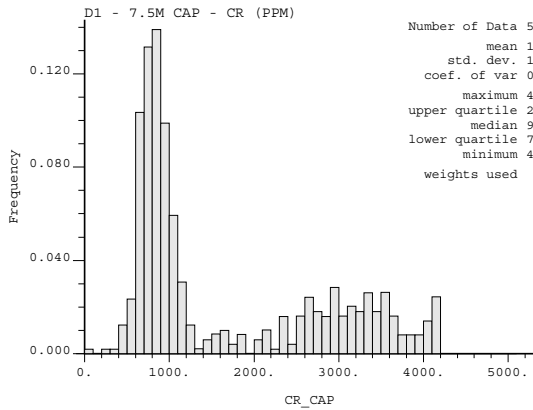
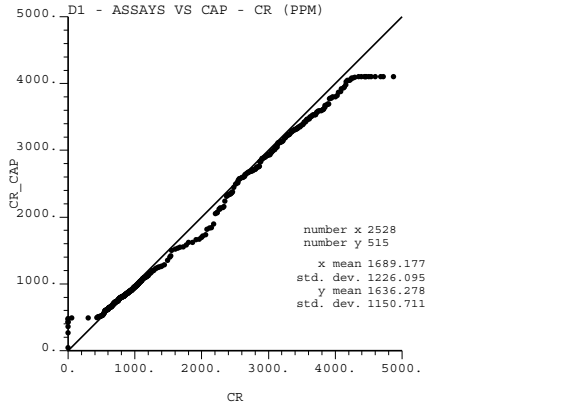
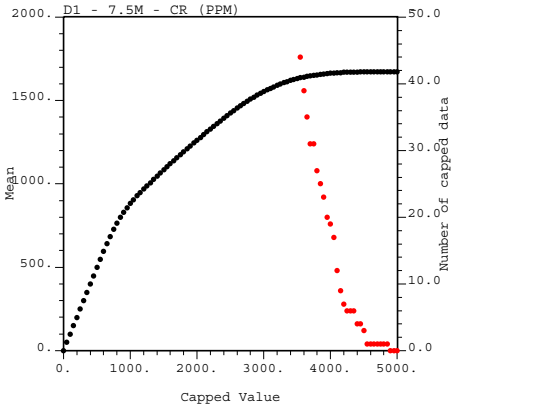
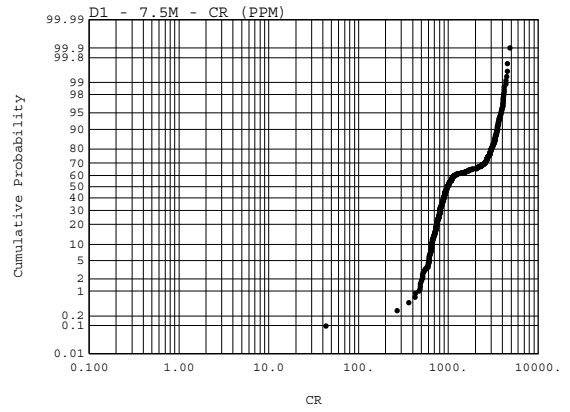
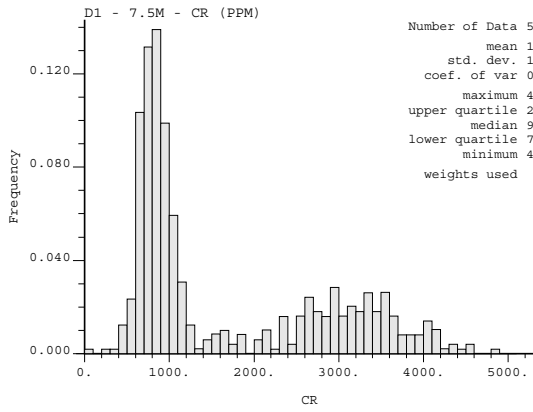
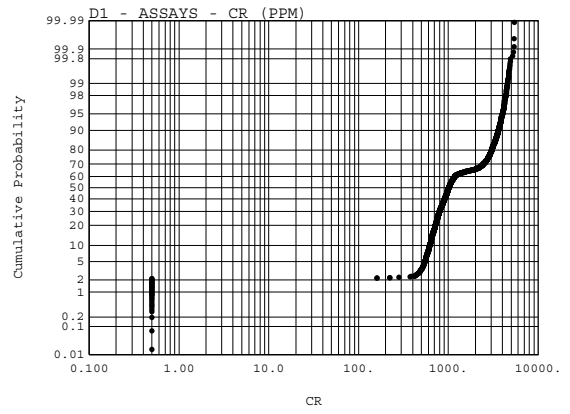
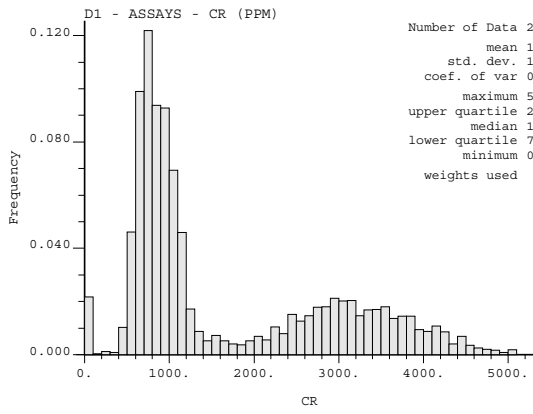
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
2	CA	481	0.12	0.128	0.01	0.5
	CO	481	99.825	10.384	35.388	125
	CR	481	1530.882	845.105	471.694	3750
	FE	481	4.7	0.636	3.303	6.8
	NI	481	0.249	0.037	0.057	0.35
	PD	481	0.009	0.013	0.001	0.045
	PT	481	0.007	0.006	0.002	0.022
	S	481	0.063	0.045	0.005	0.21
	SG	481	2.605	0.08	2.434	2.99
3	CA	4111	0.065	0.064	0.005	0.36
	CO	4111	111.938	17.923	0.5	200
	CR	4111	1302.962	535.174	0.5	3200
	FE	4111	5.136	1.102	0.005	8.75
	NI	4111	0.276	0.097	0	0.875
	PD	4111	0.027	0.059	0.001	0.7
	PT	4111	0.016	0.027	0.002	0.34
	S	4111	0.102	0.127	0.005	0.85
	SG	4111	2.561	0.085	2.265	3.093
4	CA	3263	0.081	0.069	0.005	0.6
	CO	3263	111.067	17.442	0.5	200
	CR	3263	1686.802	859.381	0.5	3750
	FE	3263	5.309	1.066	0.005	9.75
	NI	3263	0.278	0.093	0	0.75
	PD	3263	0.02	0.031	0.001	0.285
	PT	3263	0.012	0.017	0.002	0.14
	S	3263	0.086	0.101	0.005	0.75
	SG	3263	2.576	0.045	2.353	2.868
5	CA	2293	0.079	0.099	0.005	0.6
	CO	2293	106.851	16.115	0.5	180
	CR	2293	1300.315	699.122	0.5	3300
	FE	2293	5.11	1.152	0.005	9.25
	NI	2293	0.275	0.083	0	0.625
	PD	2293	0.019	0.023	0.001	0.14
	PT	2293	0.012	0.012	0.002	0.065
	S	2293	0.082	0.095	0.005	0.45
	SG	2293	2.583	0.068	2.386	2.911
6	CA	940	0.167	0.298	0.005	1.4
	CO	940	101.709	15.516	0.5	140
	CR	940	920.307	547.303	0.5	2600
	FE	940	4.889	1.003	0.005	6.75
	NI	940	0.254	0.067	0	0.55
	PD	940	0.013	0.018	0.001	0.08
	PT	940	0.01	0.013	0.002	0.075
	S	940	0.049	0.054	0.005	0.33
	SG	940	2.586	0.073	2.383	2.879
7	CA	1102	0.097	0.179	0.005	0.9
	CO	1102	98.487	12.772	0.5	140
	CR	1102	849.559	447.022	0.5	2300
	FE	1102	4.731	0.926	0.005	7.2
	NI	1102	0.246	0.038	0	0.38
	PD	1102	0.007	0.015	0.001	0.11
	PT	1102	0.006	0.007	0.002	0.038
	S	1102	0.029	0.024	0.005	0.105
	SG	1102	2.605	0.093	2.34	3.077

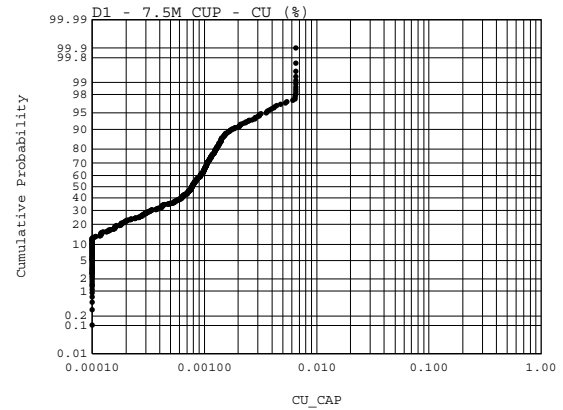
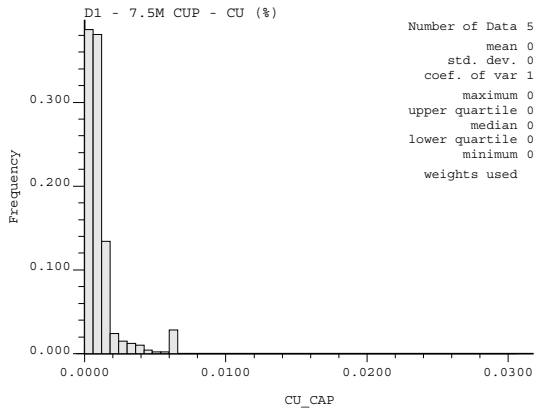
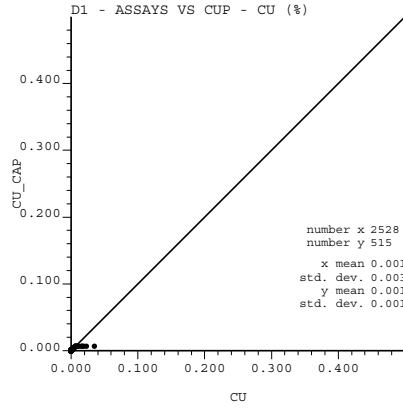
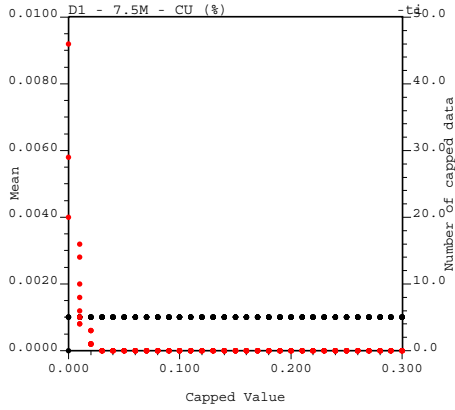
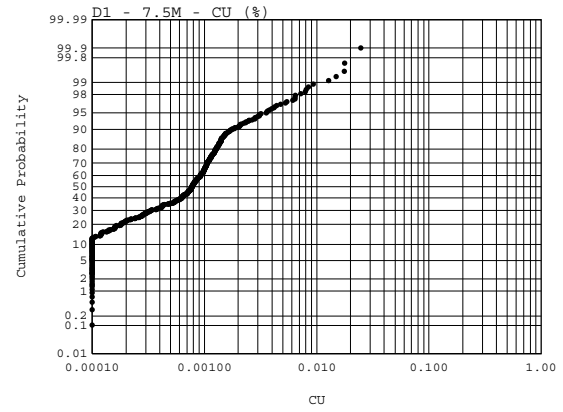
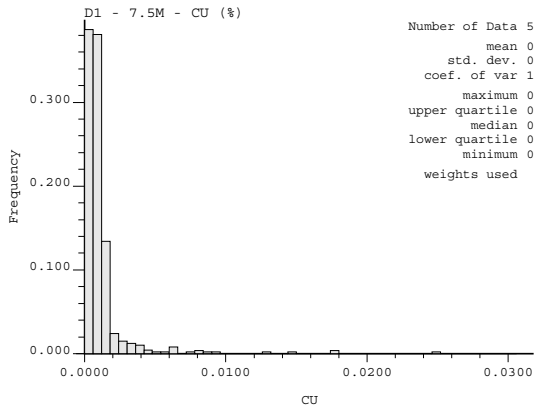
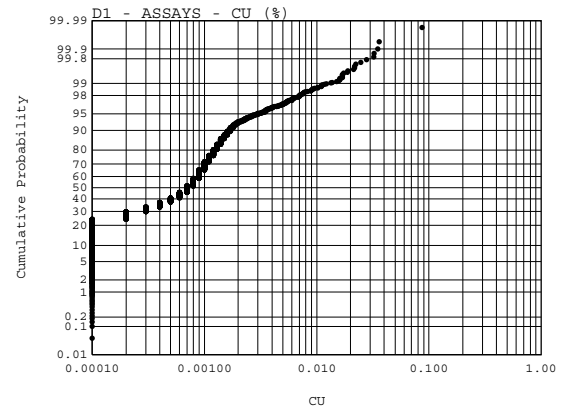
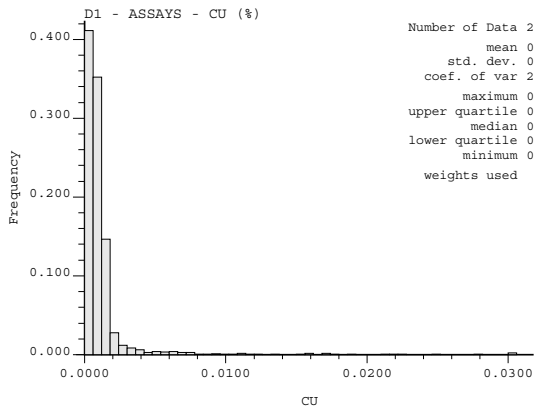


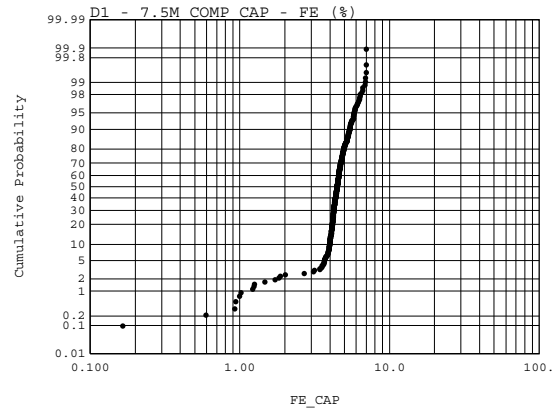
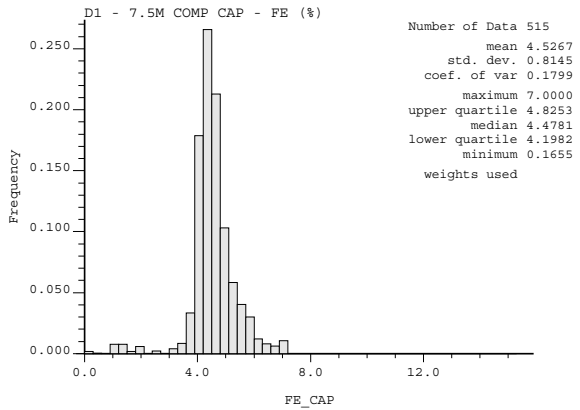
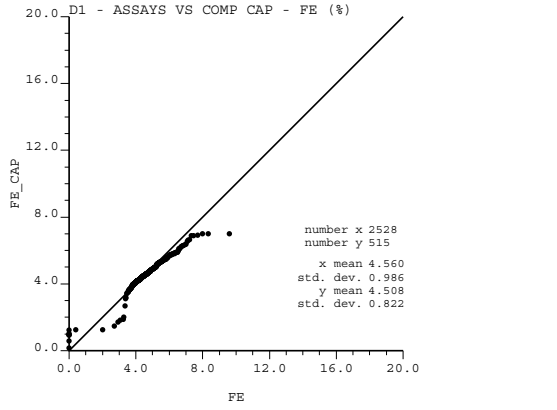
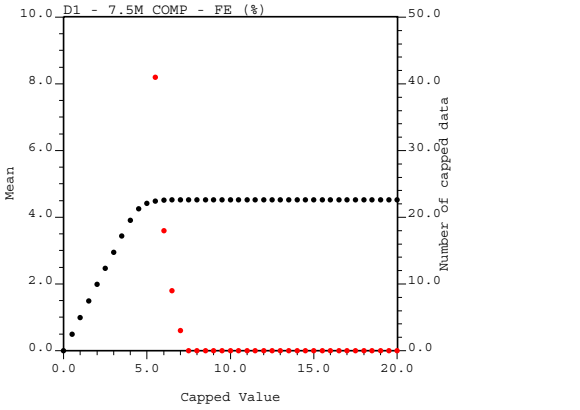
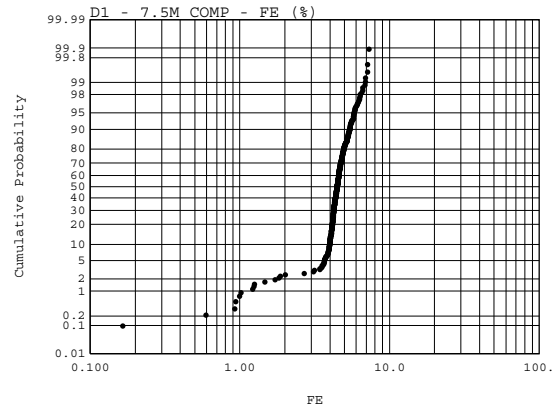
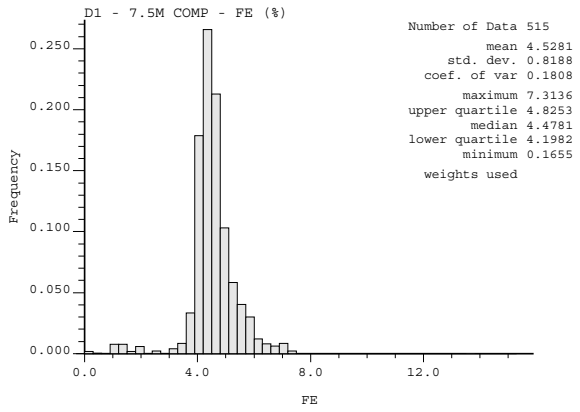
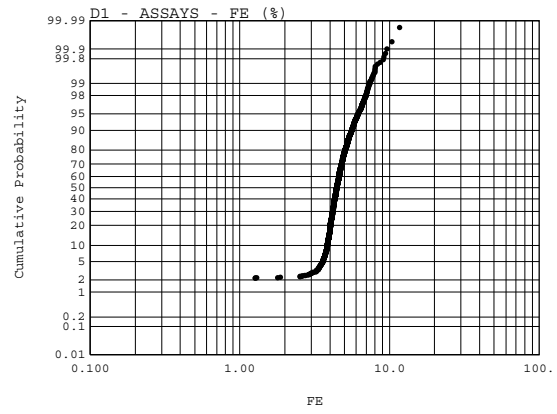
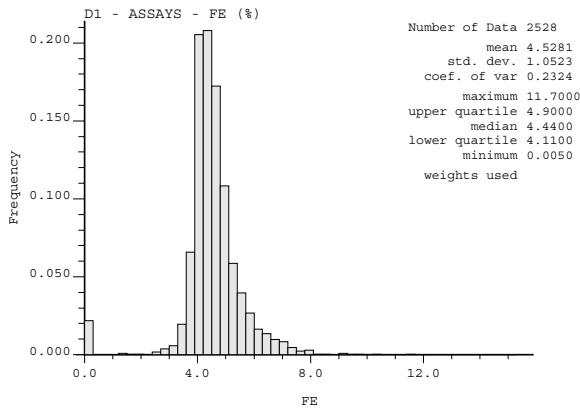


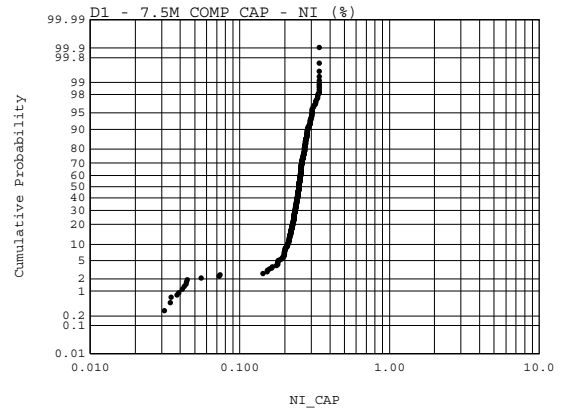
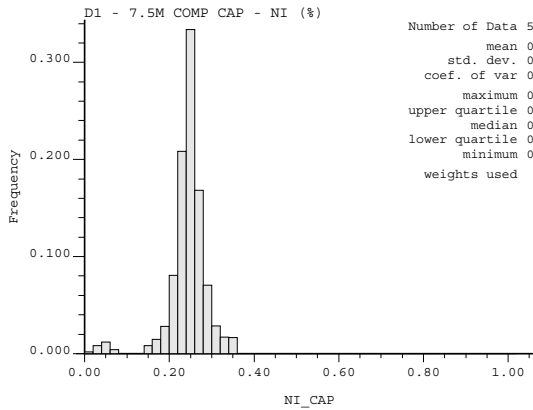
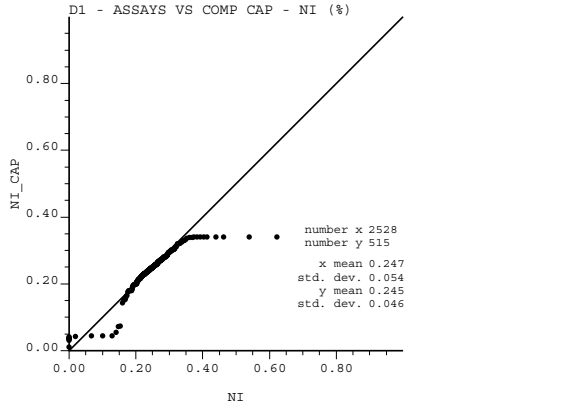
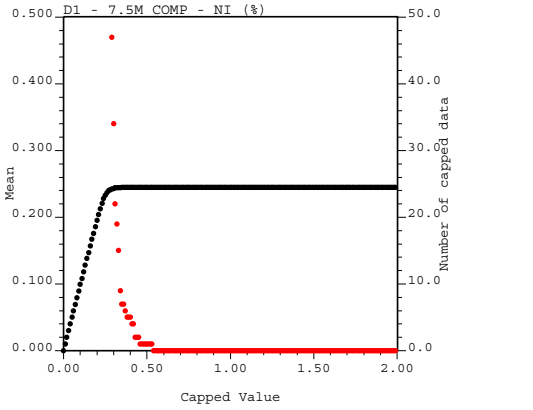
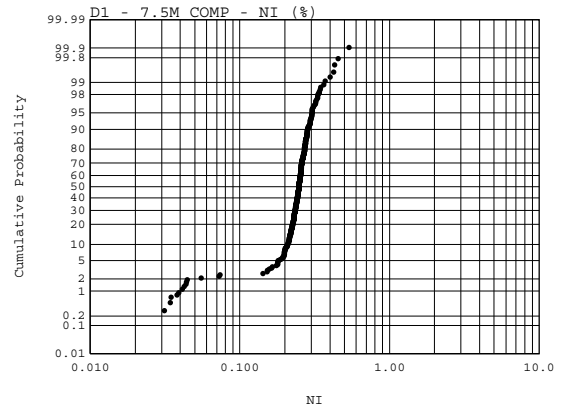
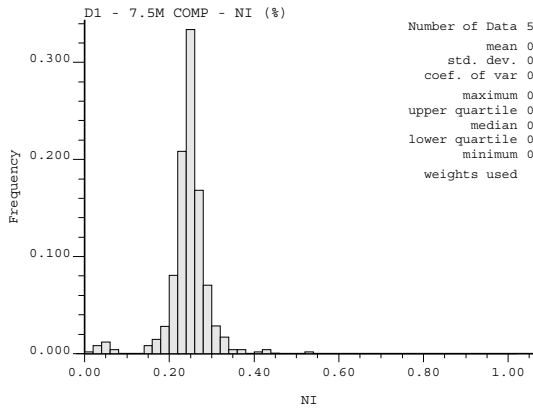
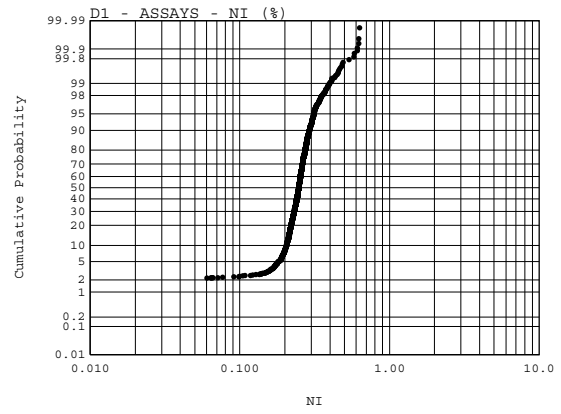
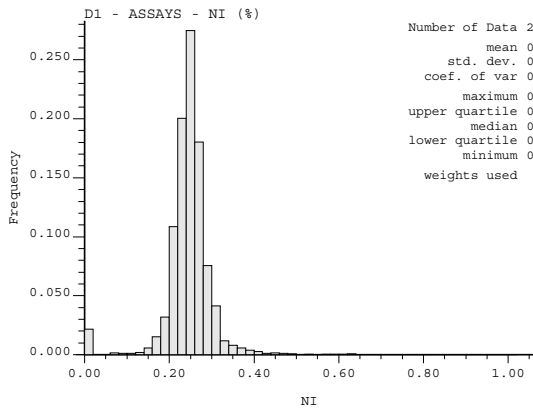


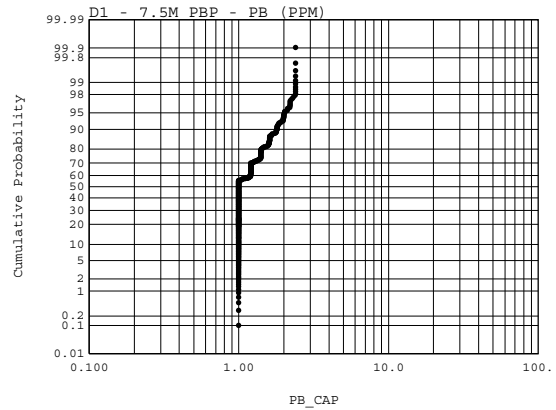
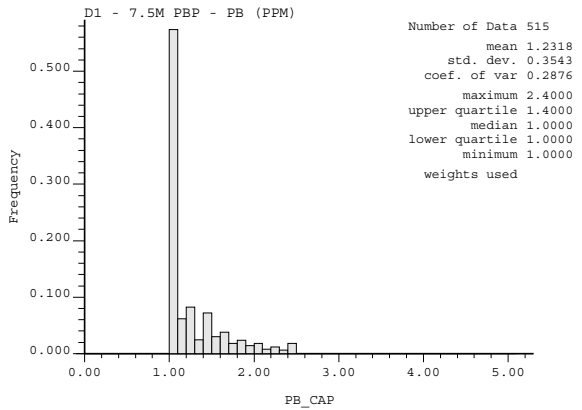
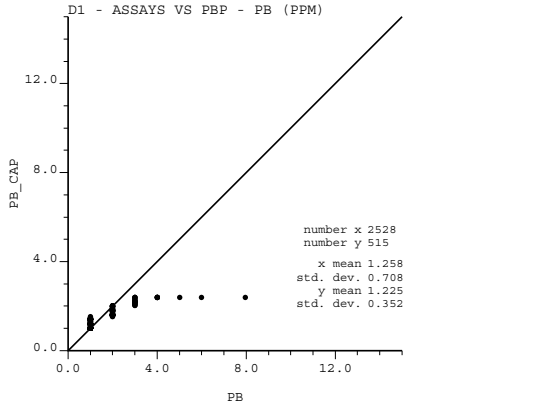
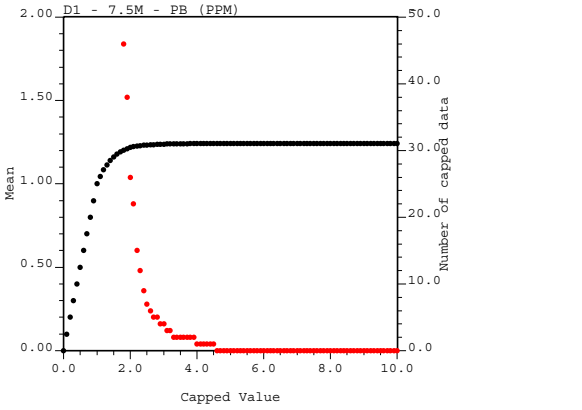
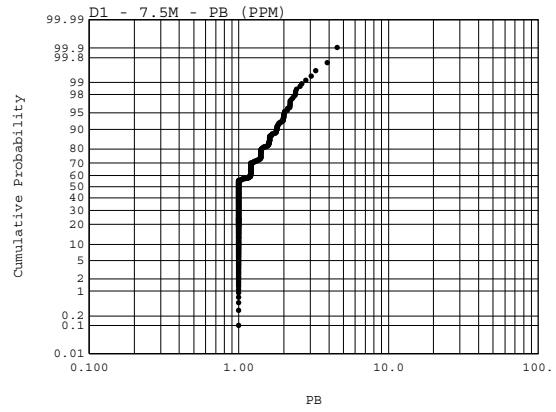
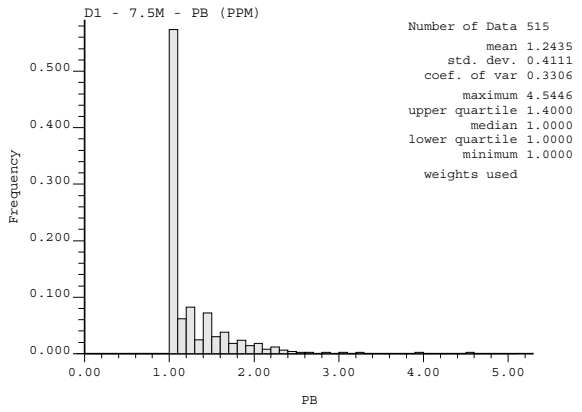
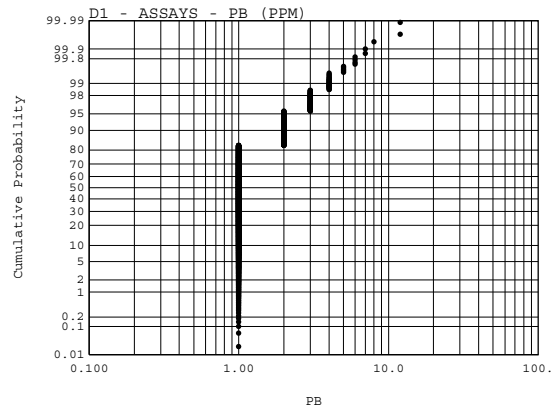
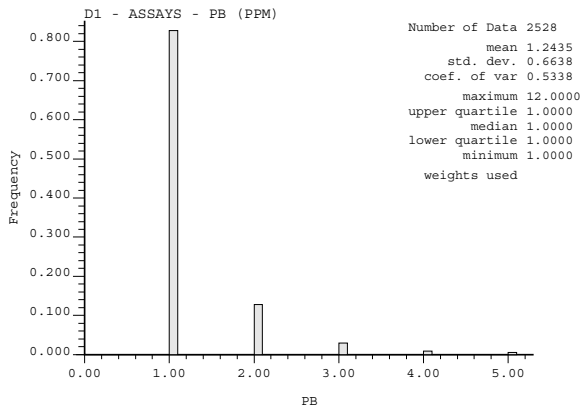


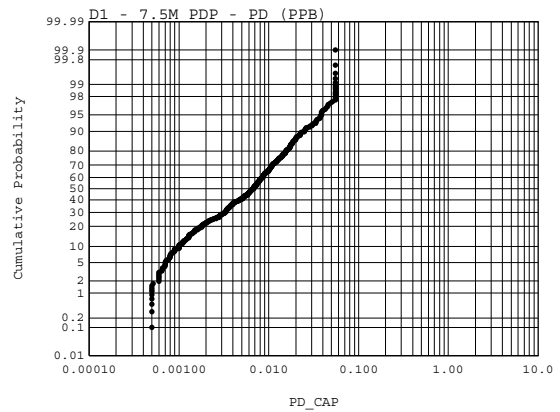
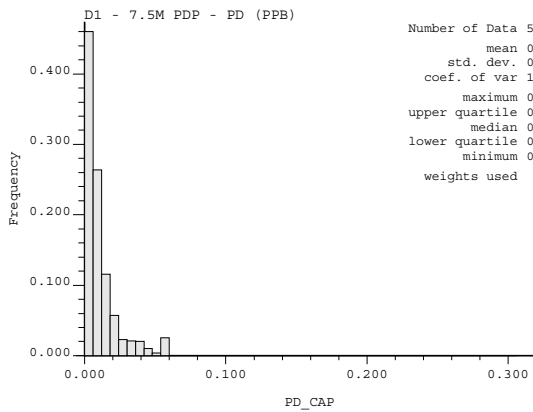
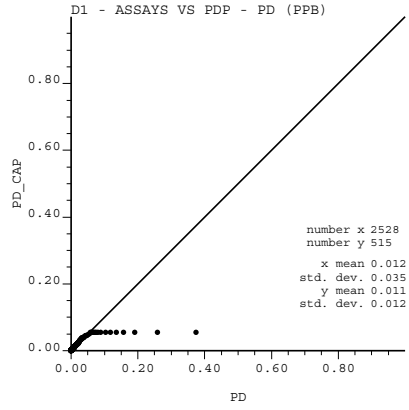
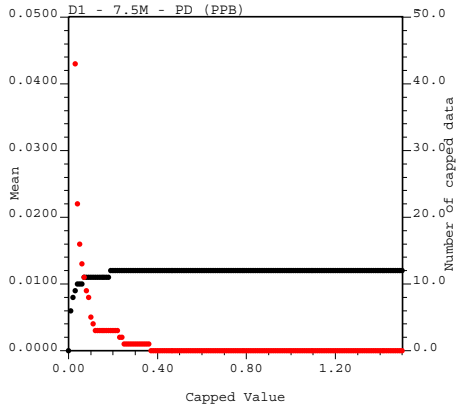
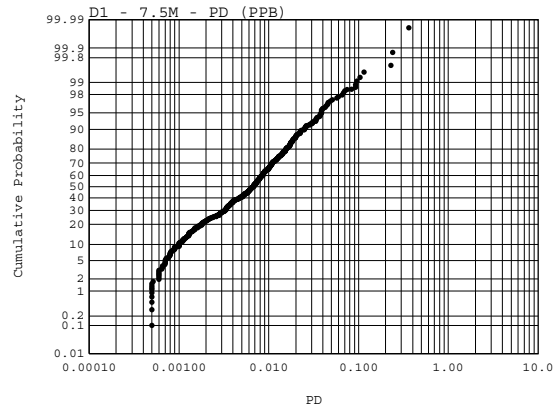
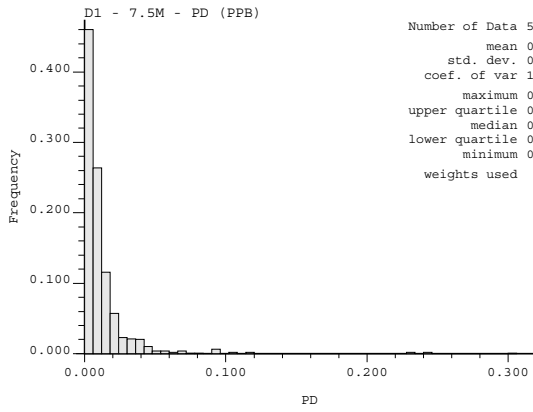
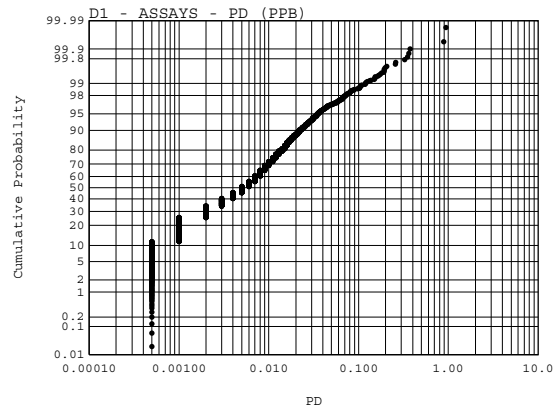
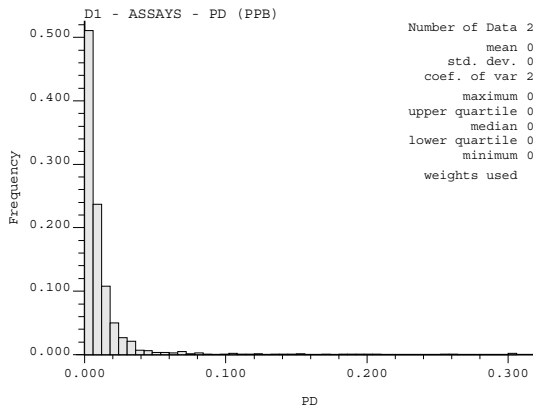


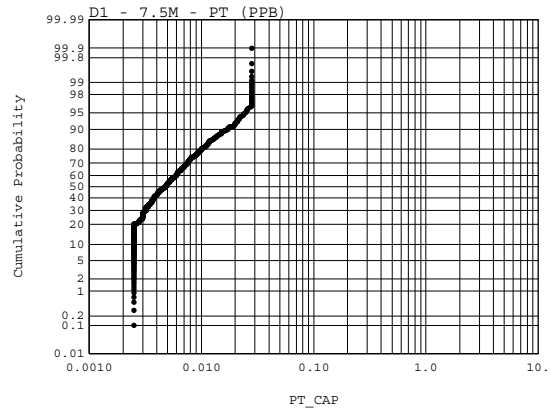
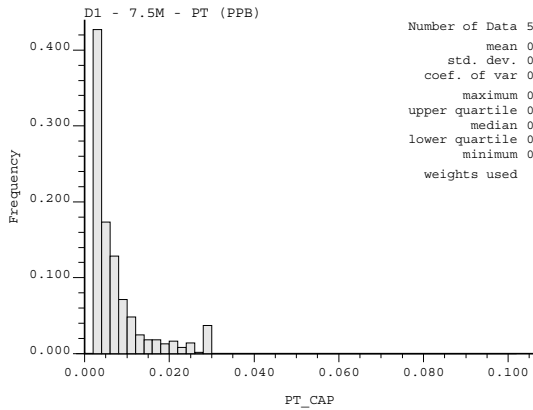
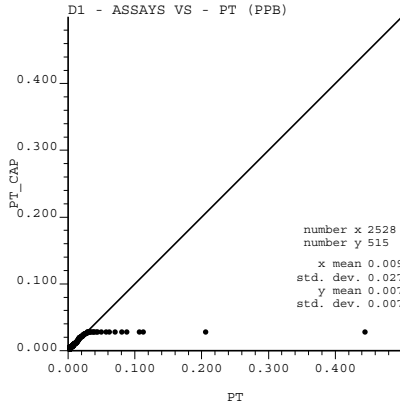
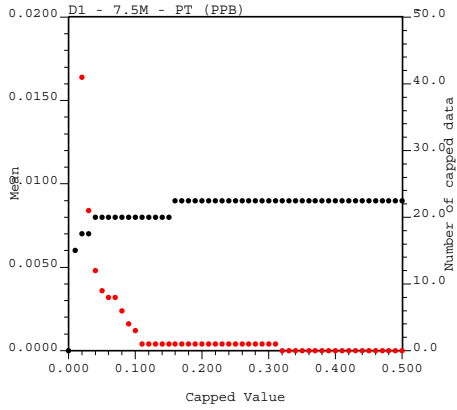
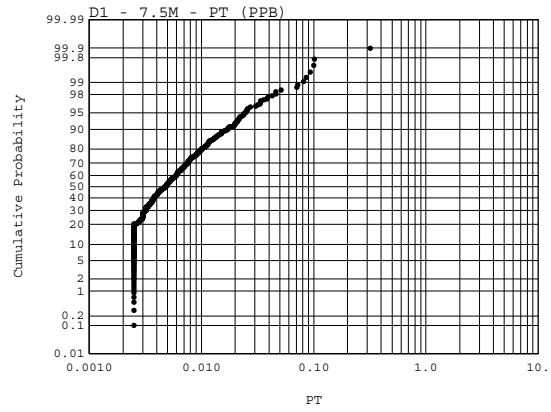
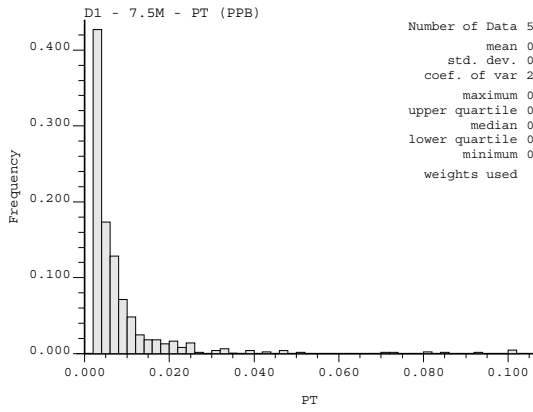
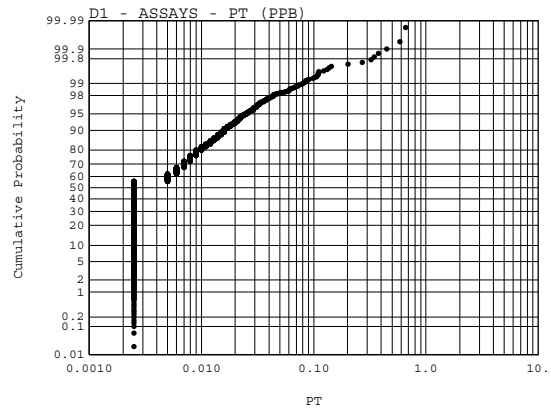
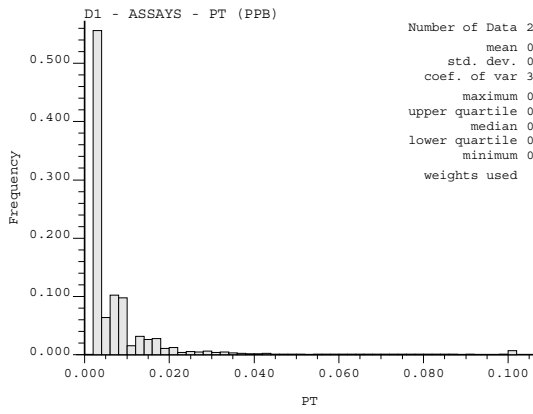


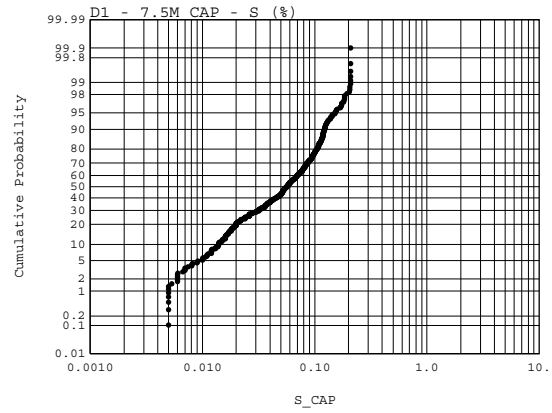
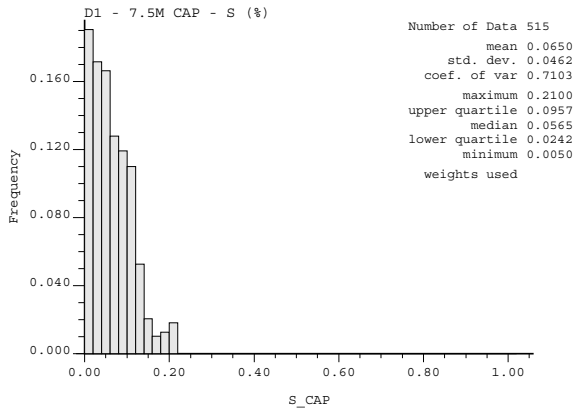
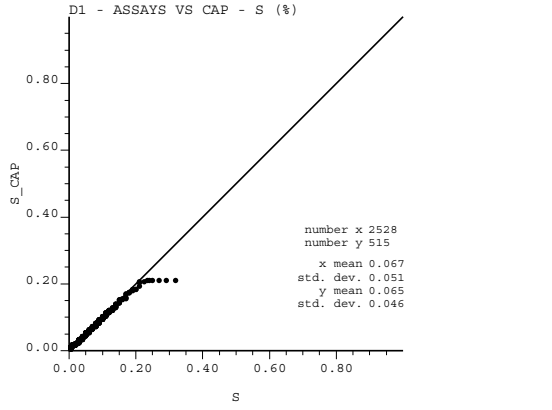
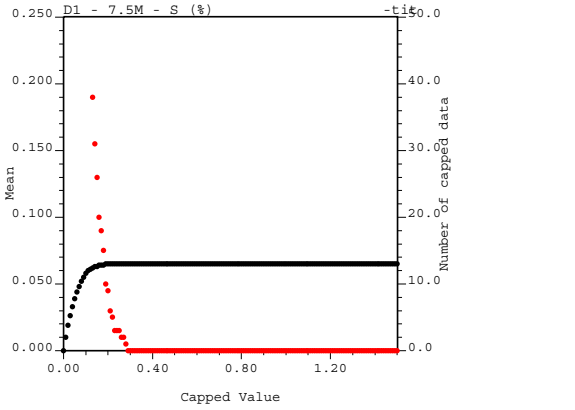
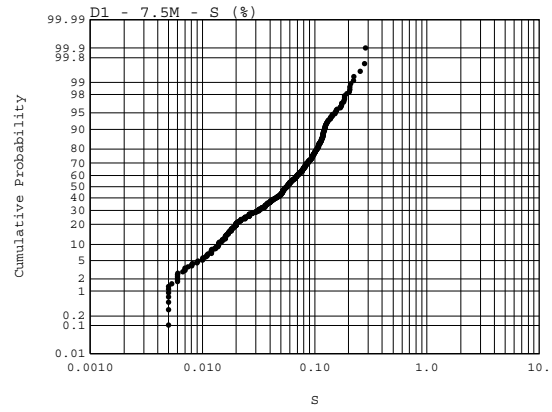
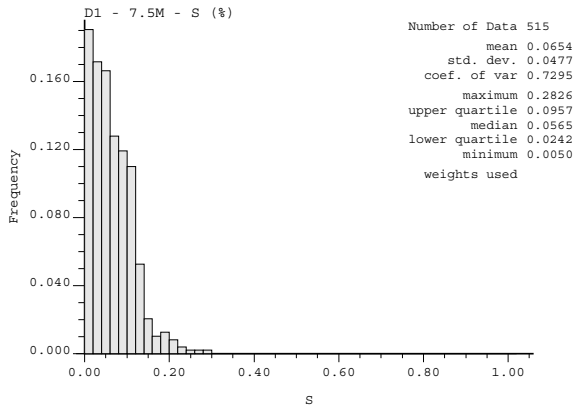
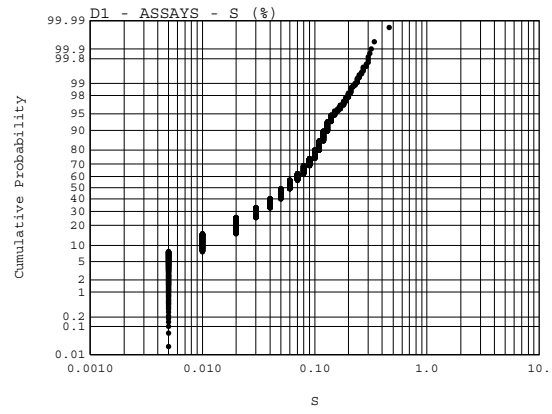
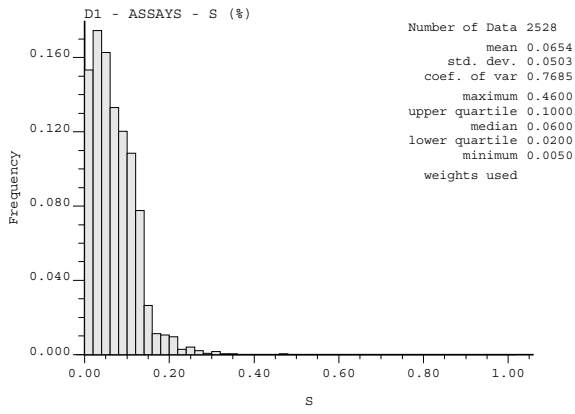


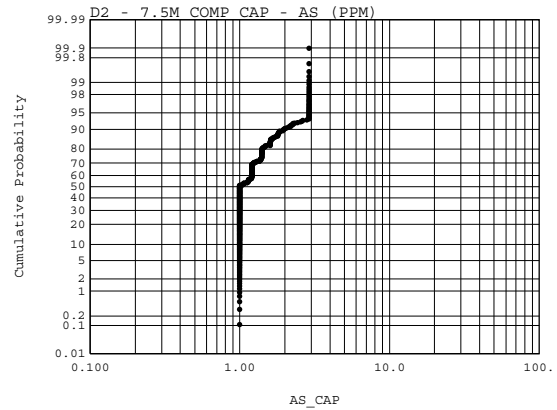
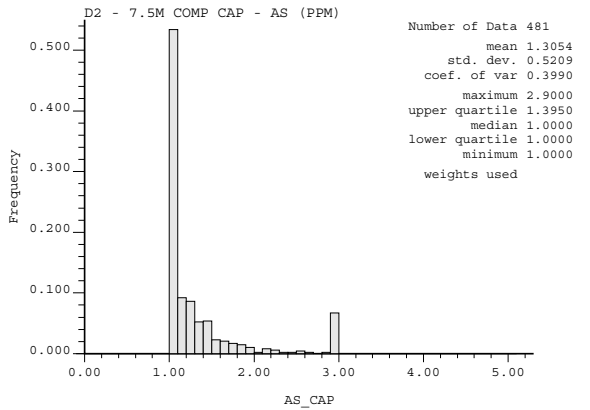
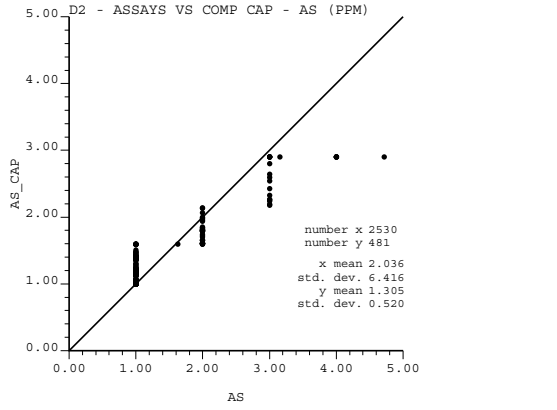
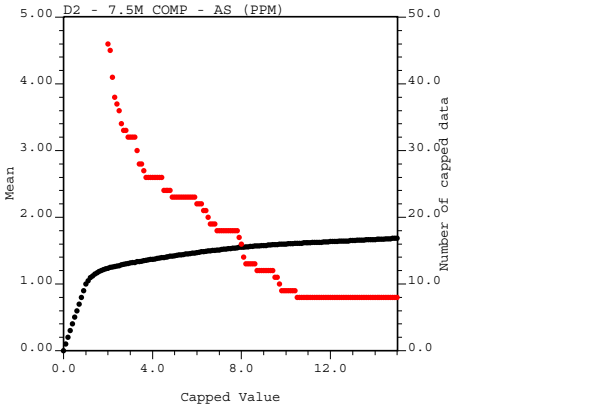
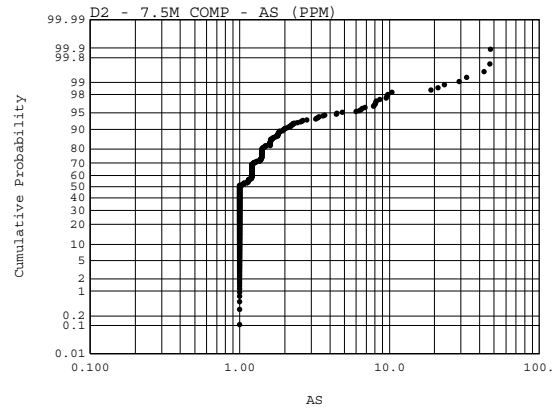
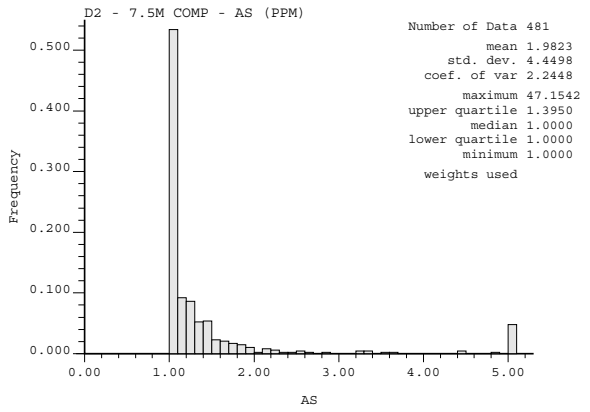
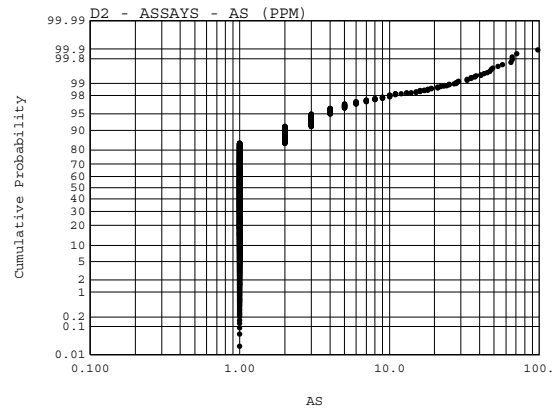
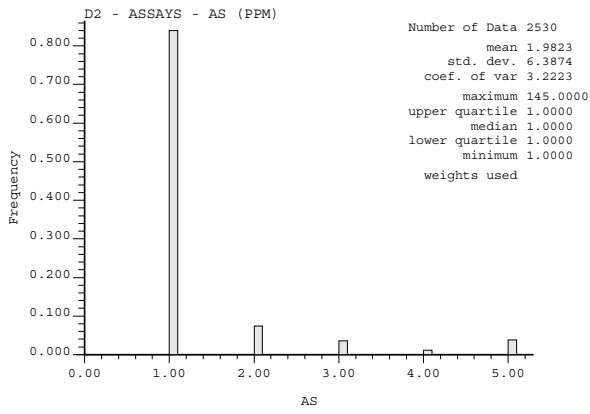


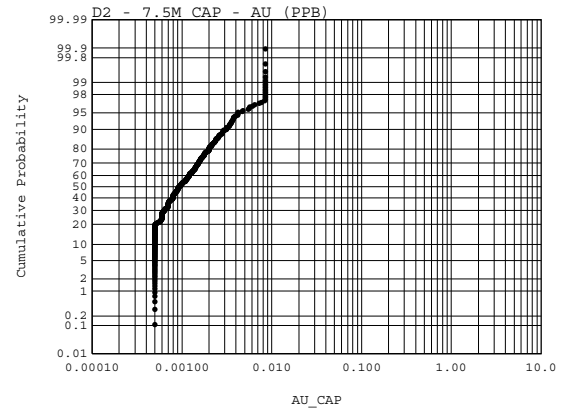
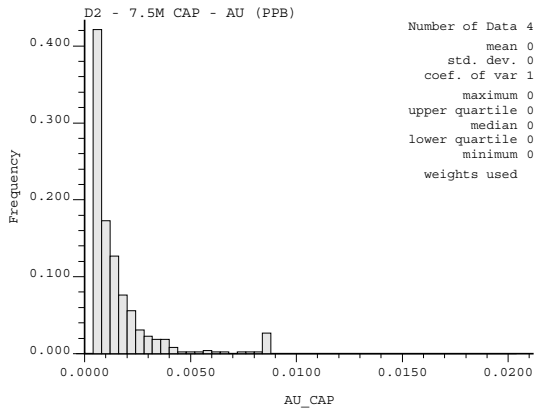
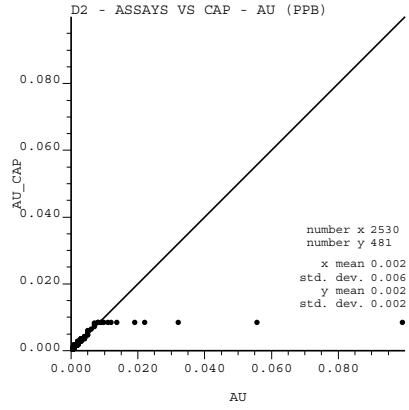
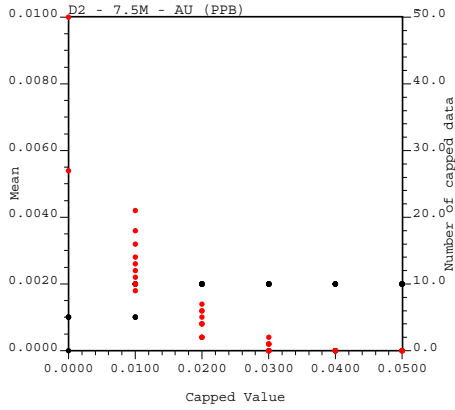
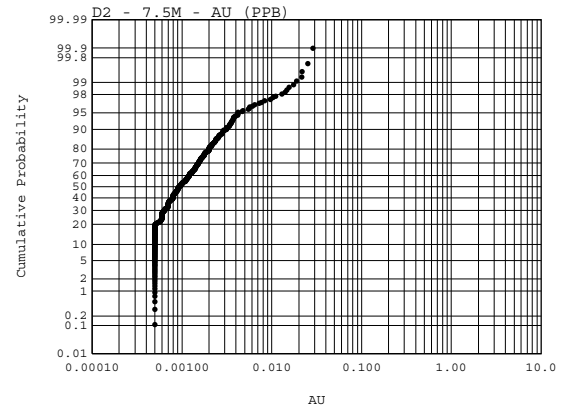
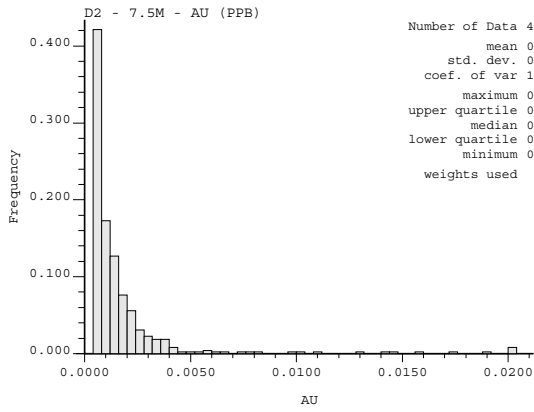
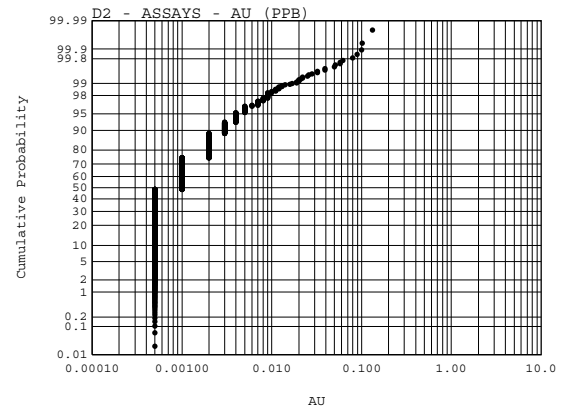
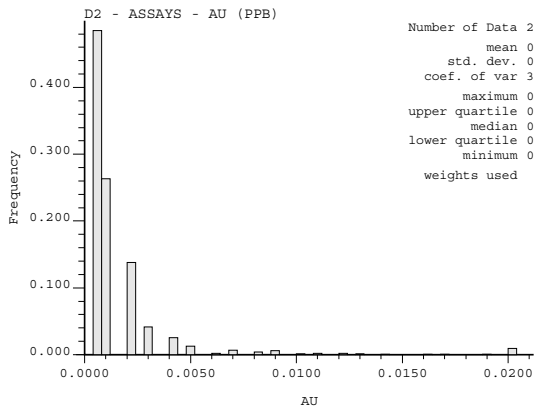


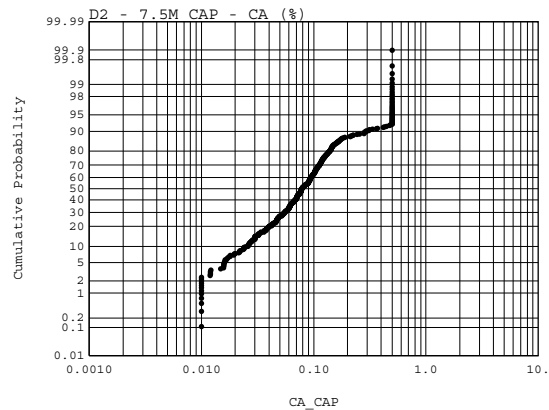
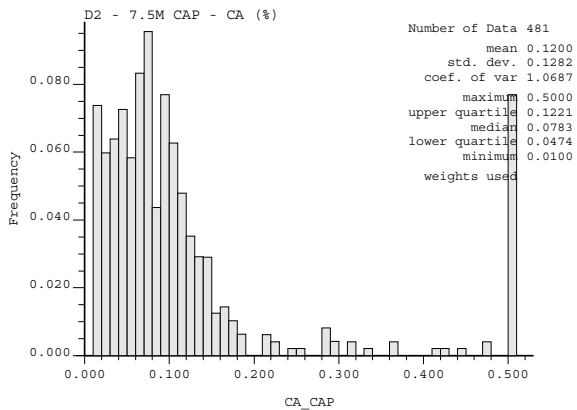
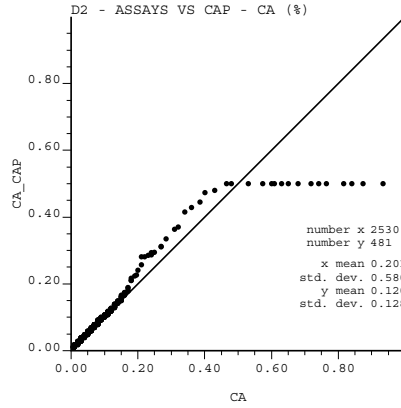
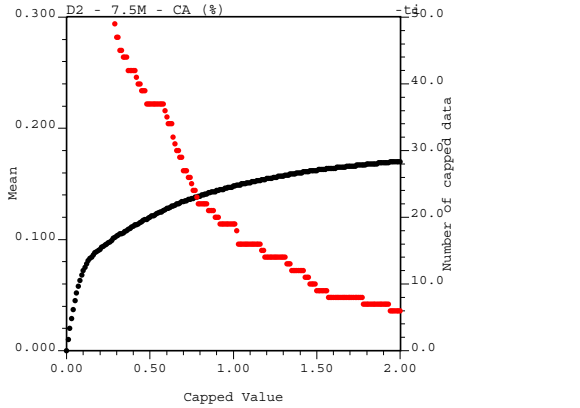
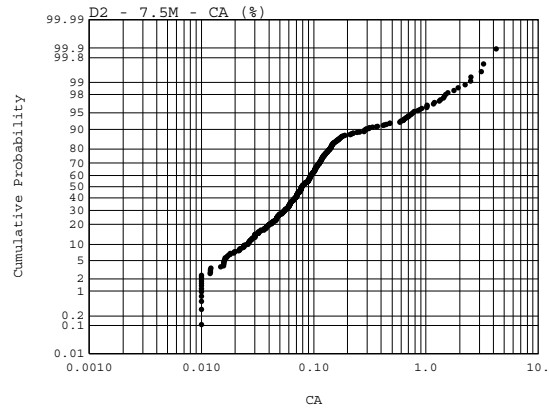
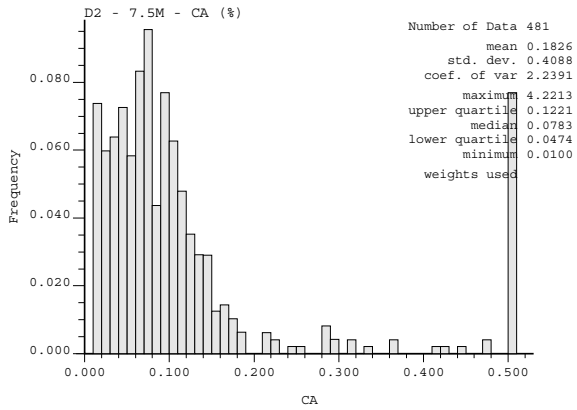
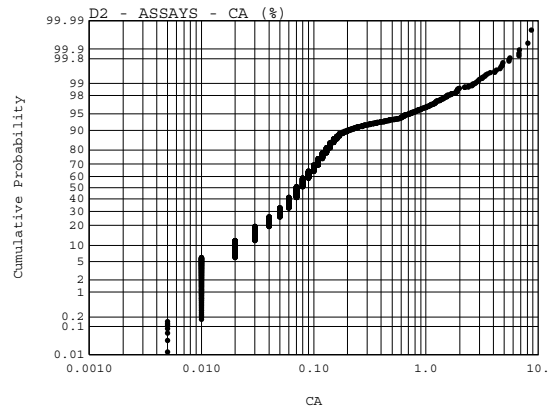
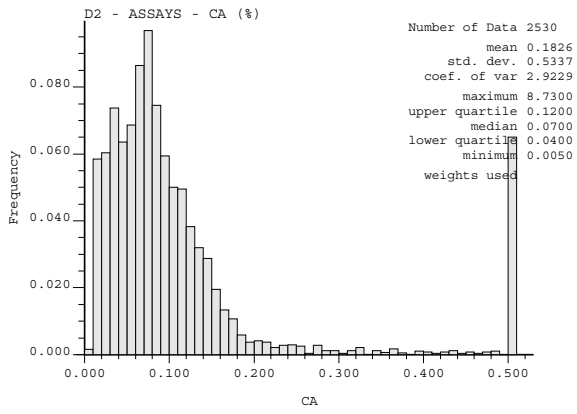


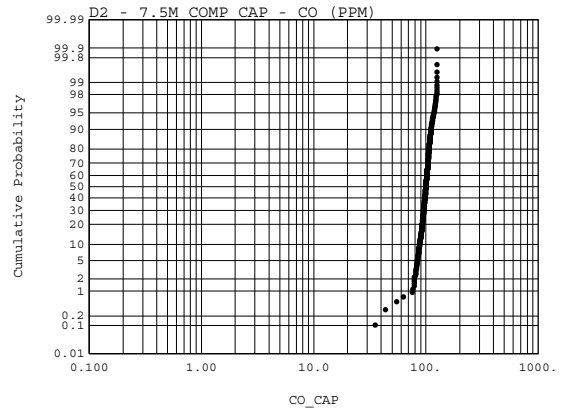
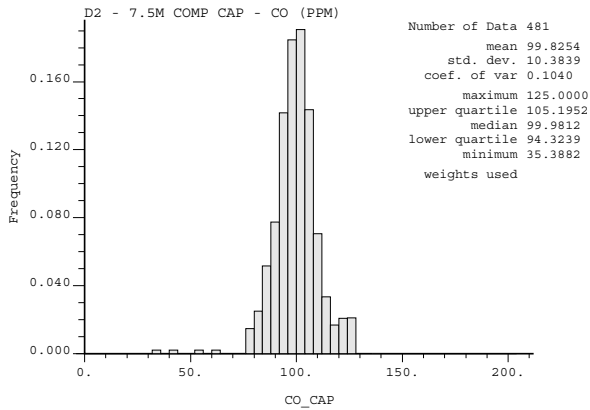
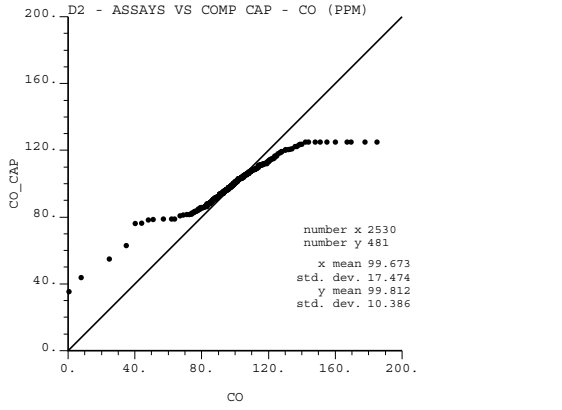
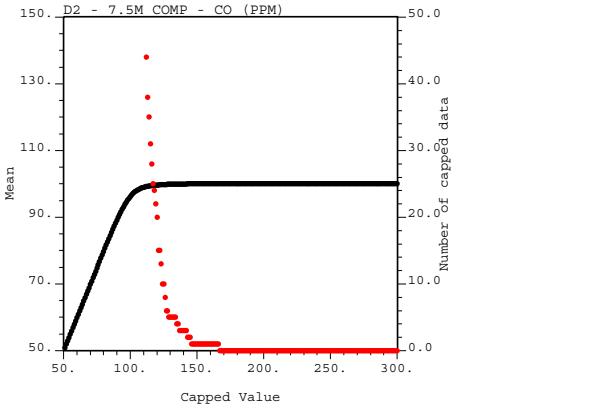
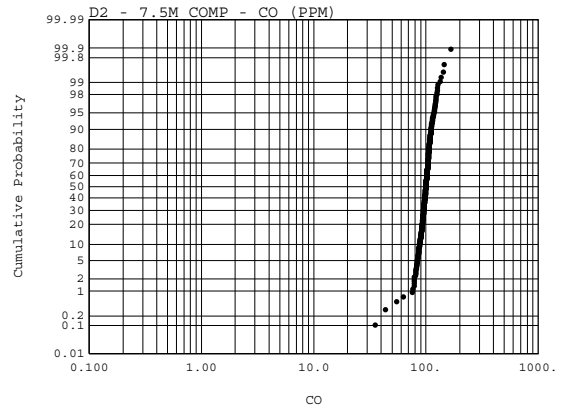
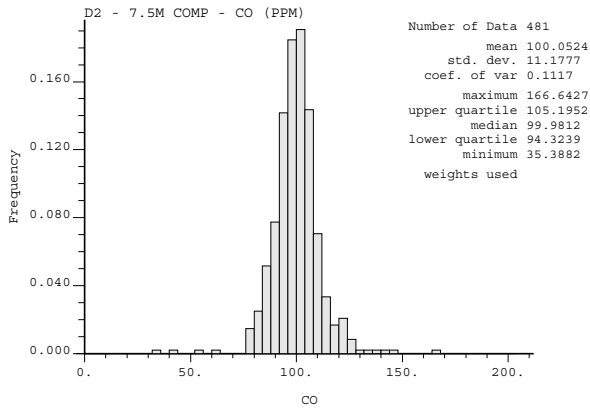
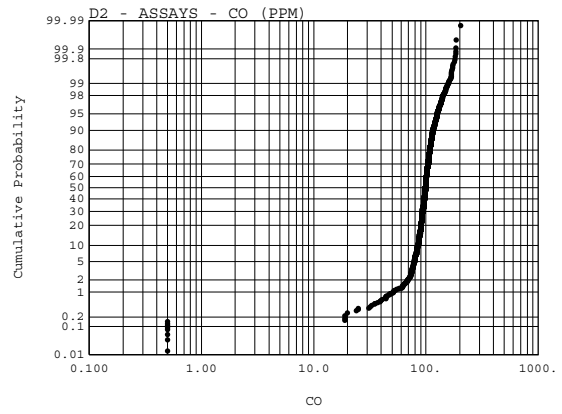
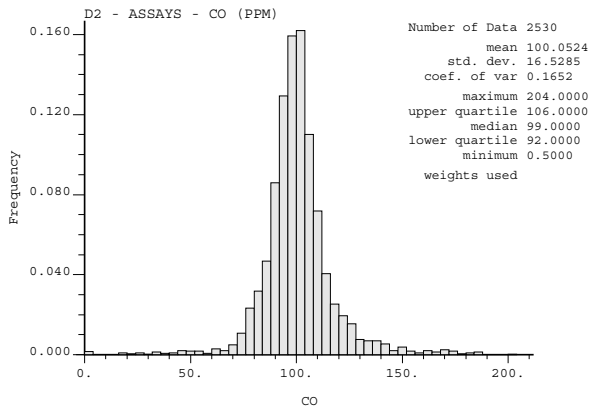


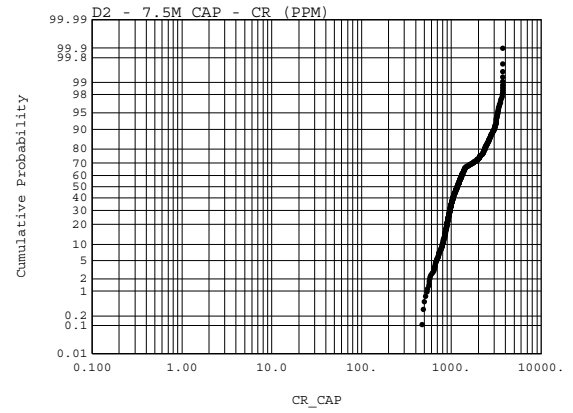
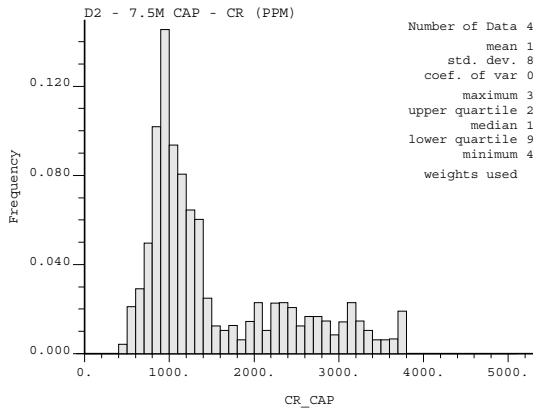
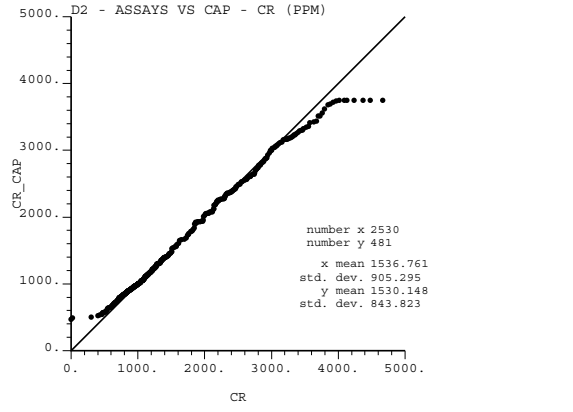
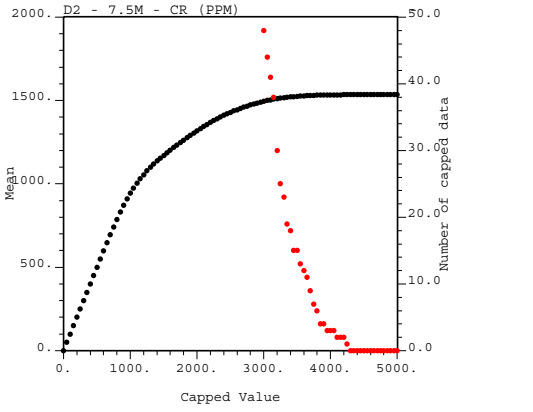
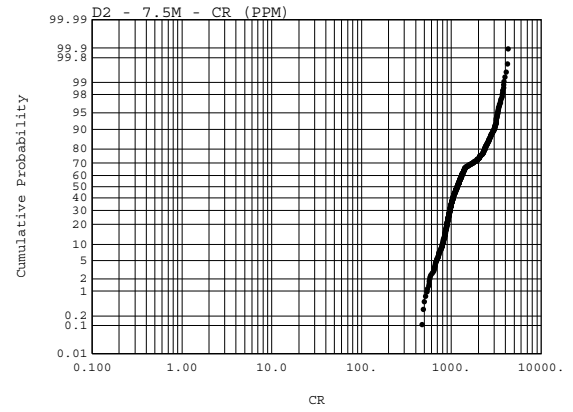
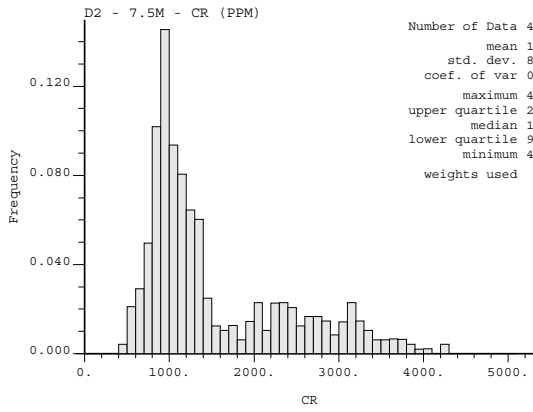
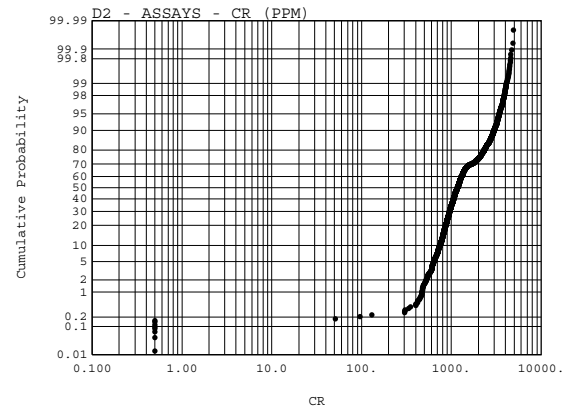
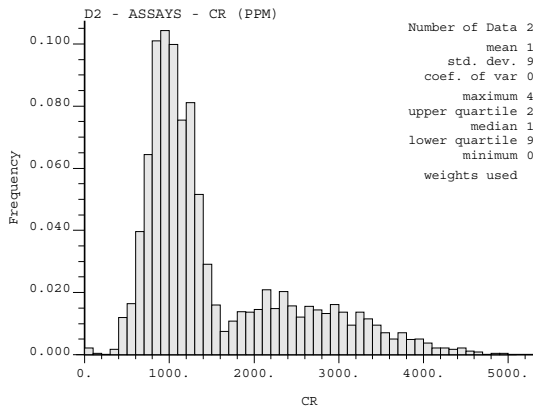


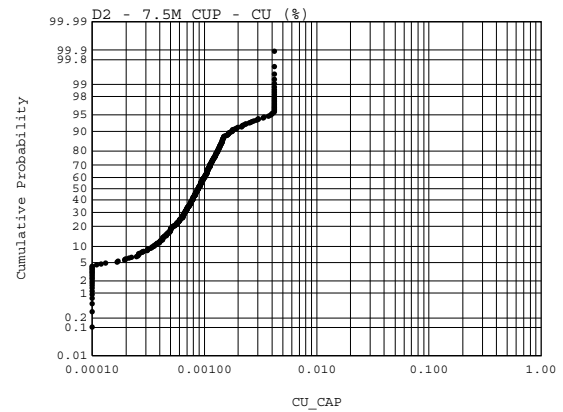
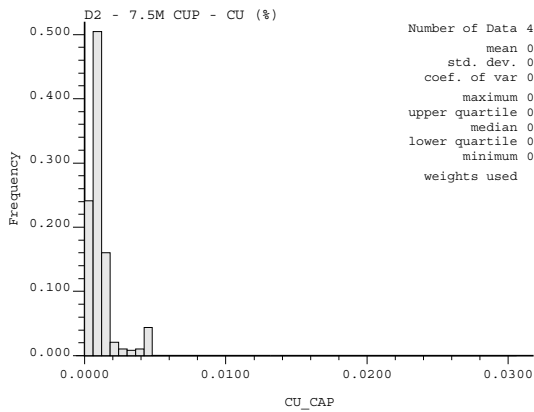
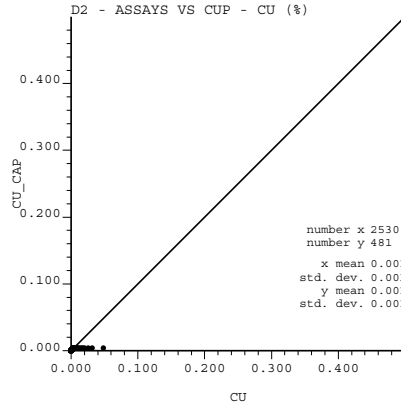
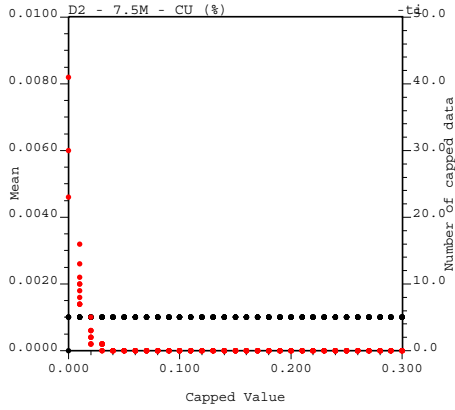
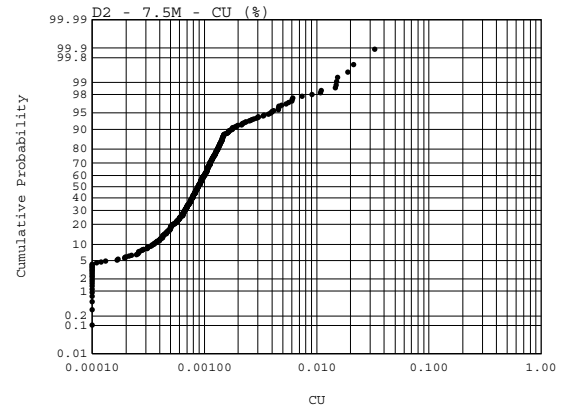
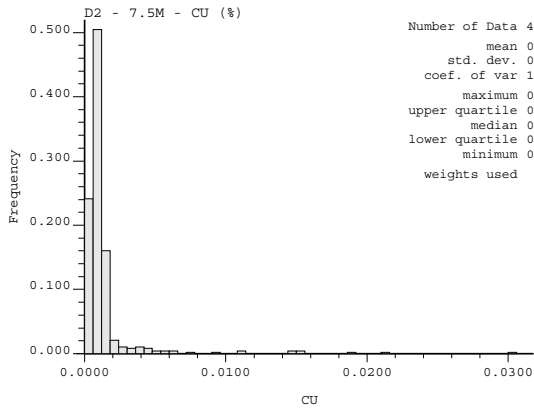
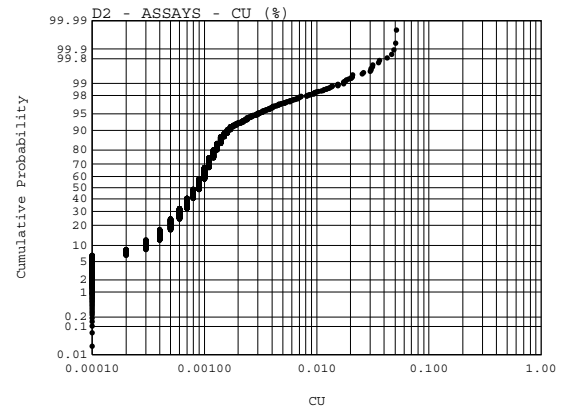
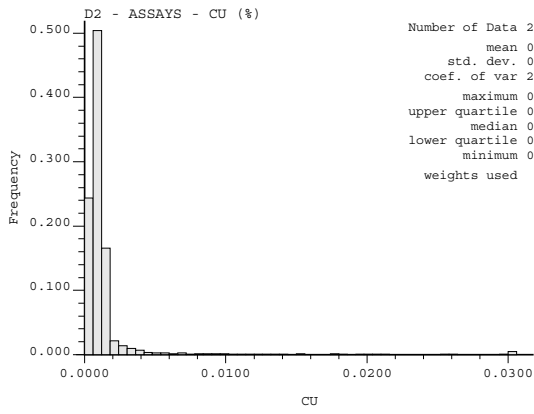


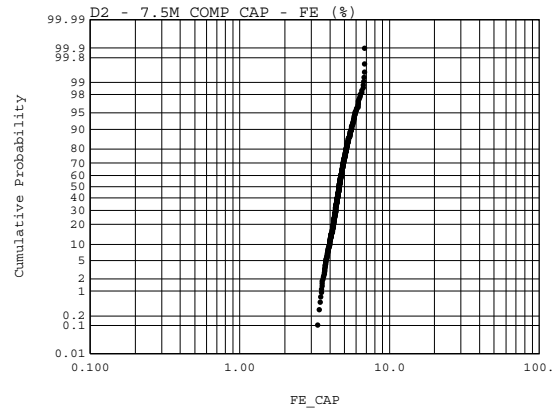
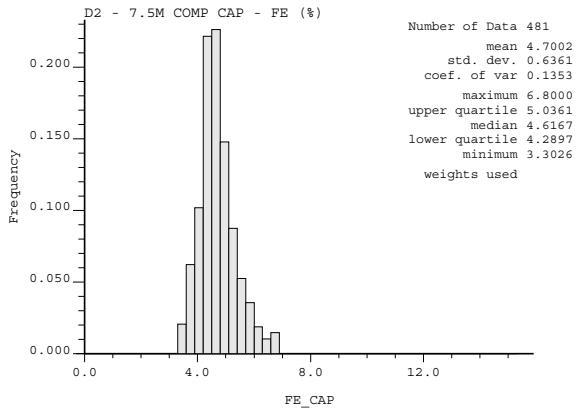
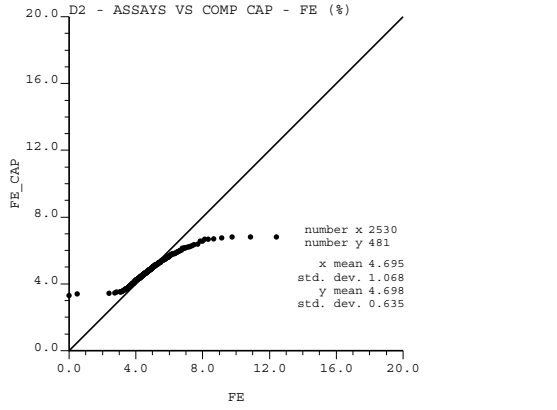
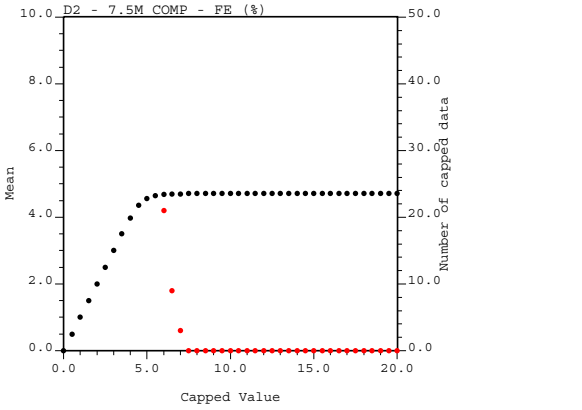
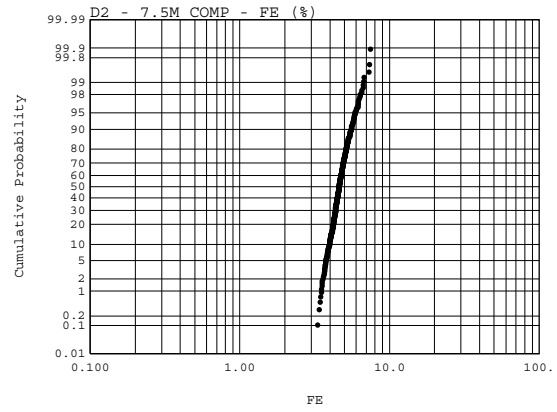
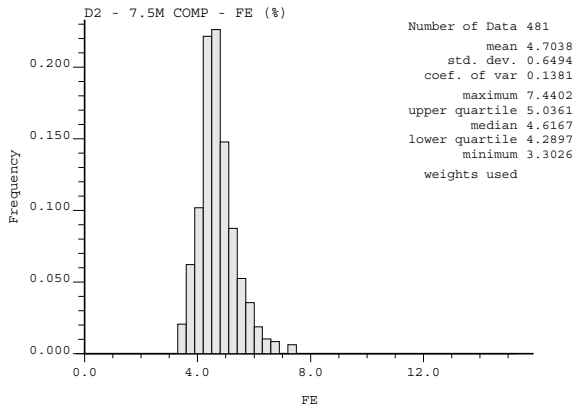
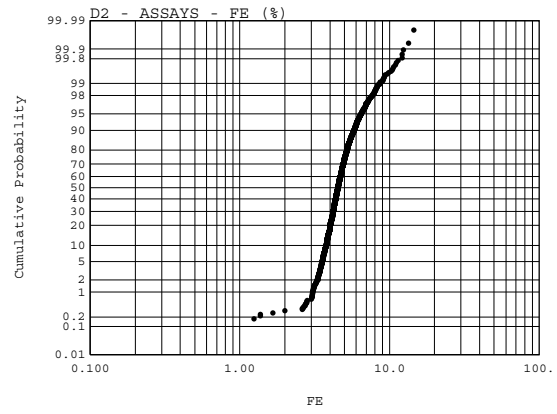
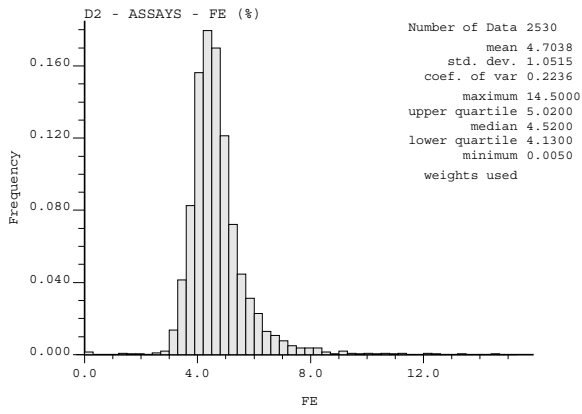


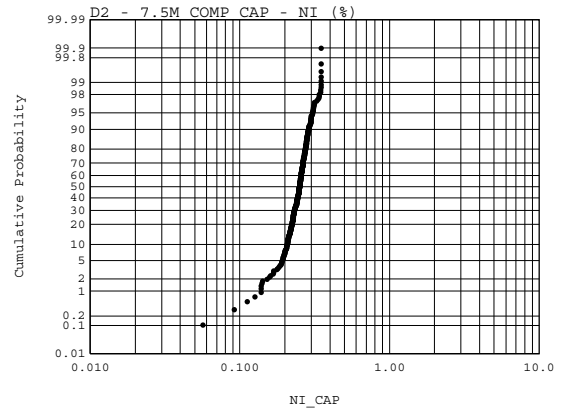
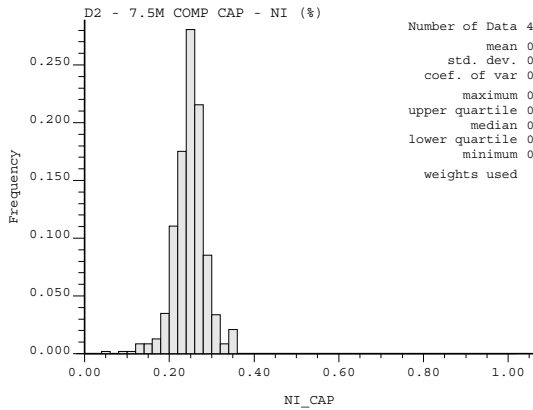
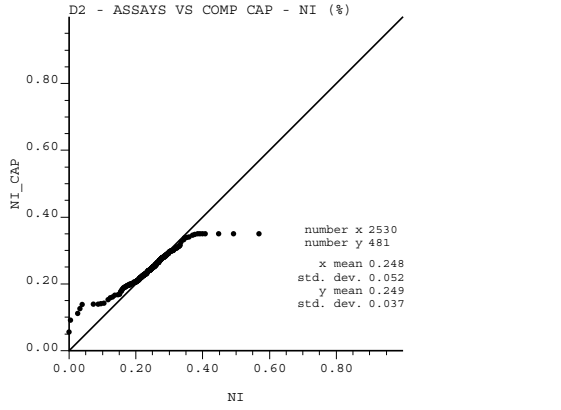
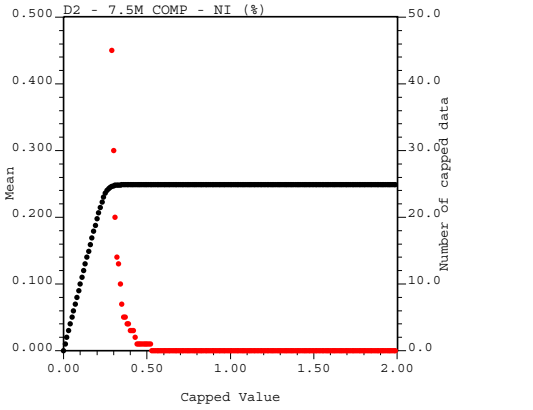
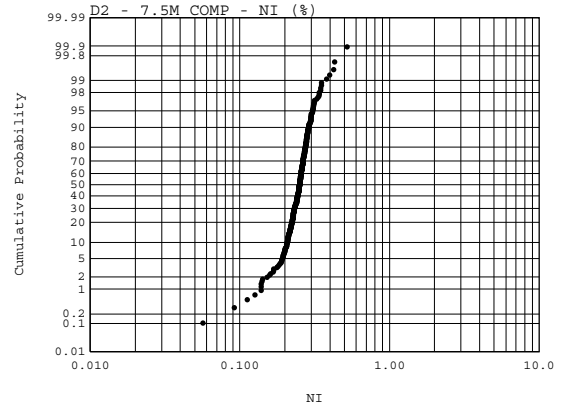
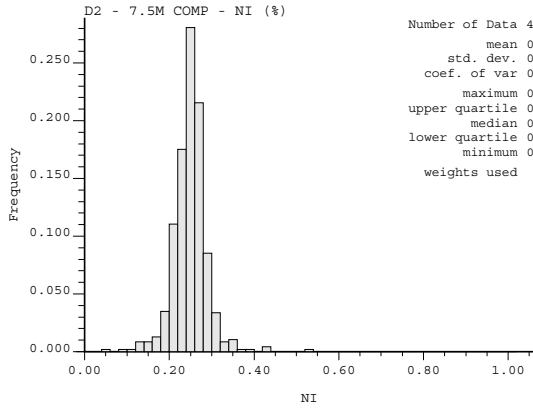
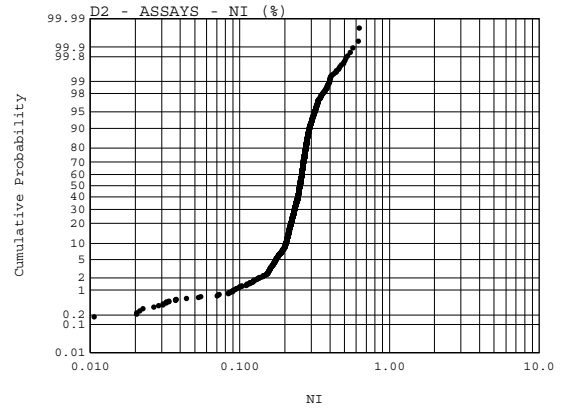
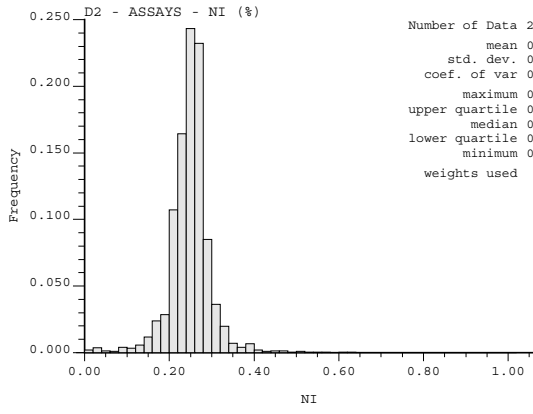


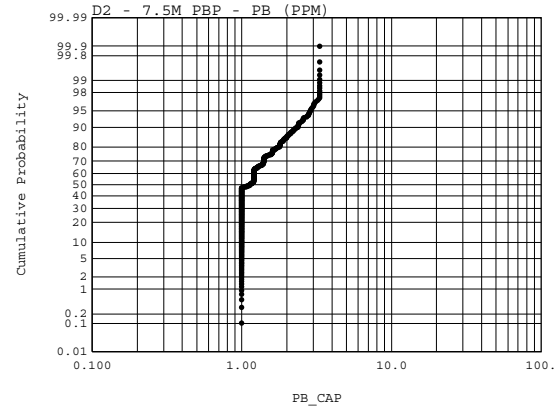
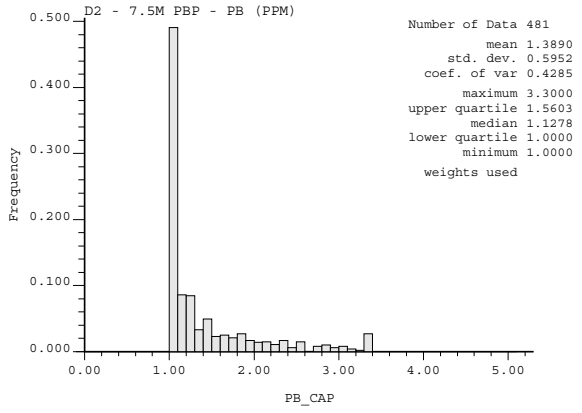
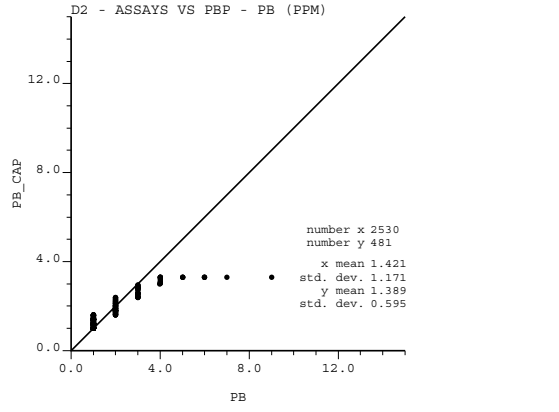
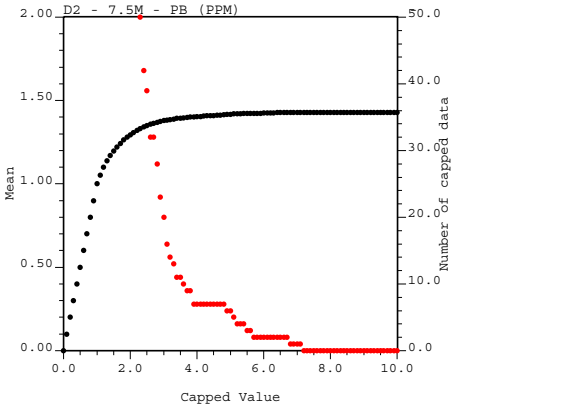
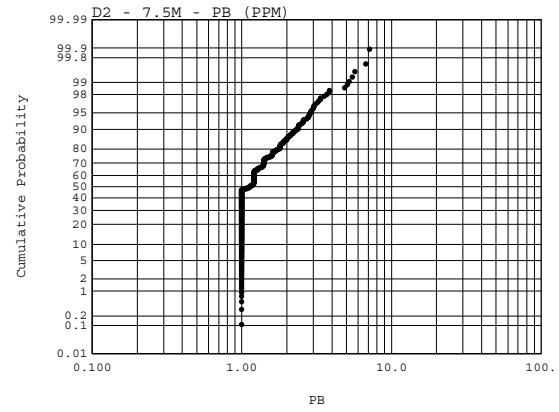
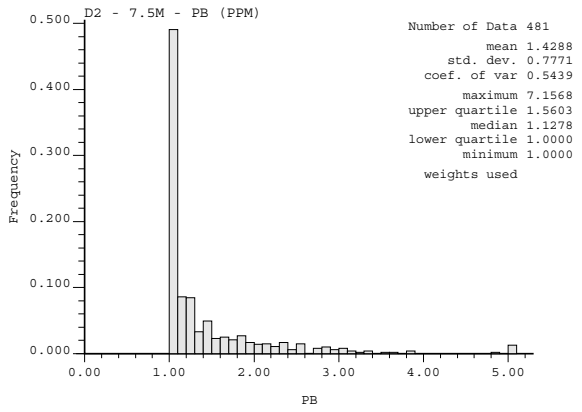
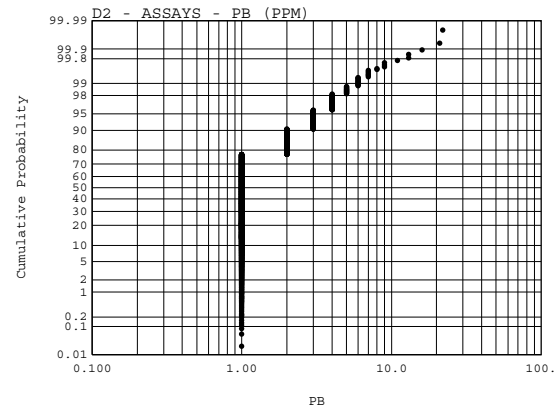
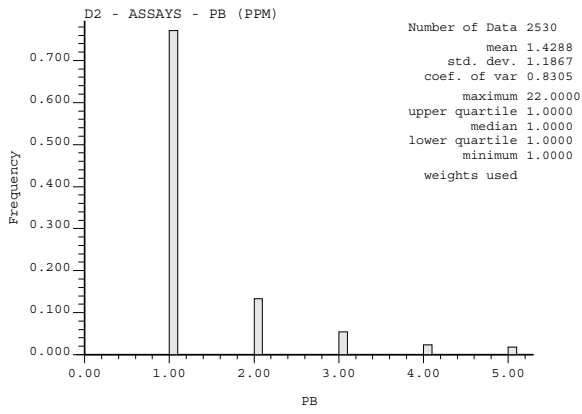


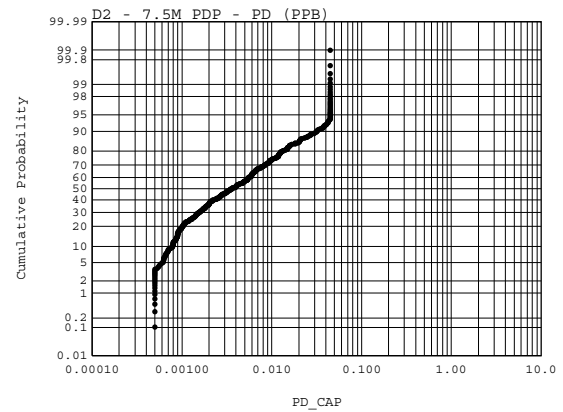
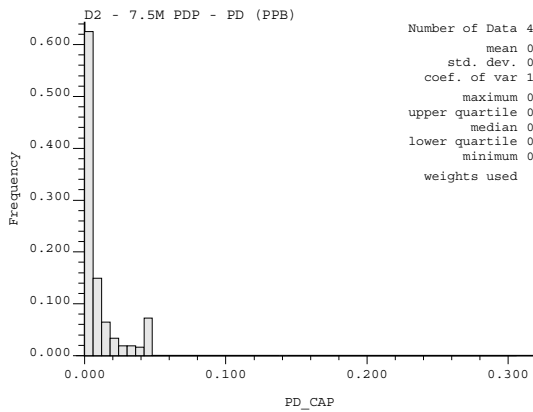
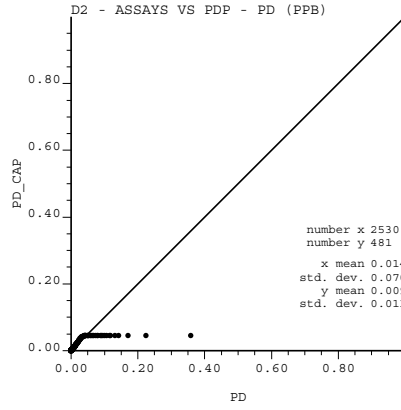
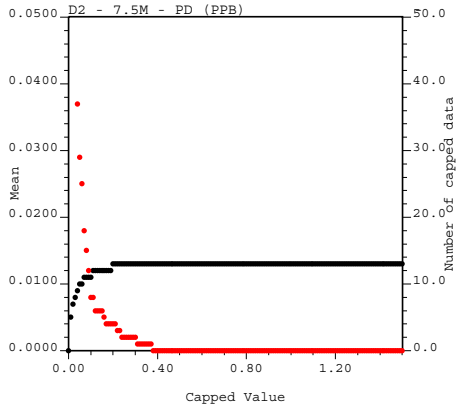
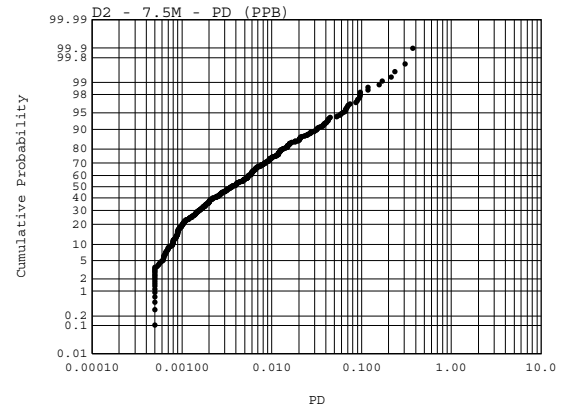
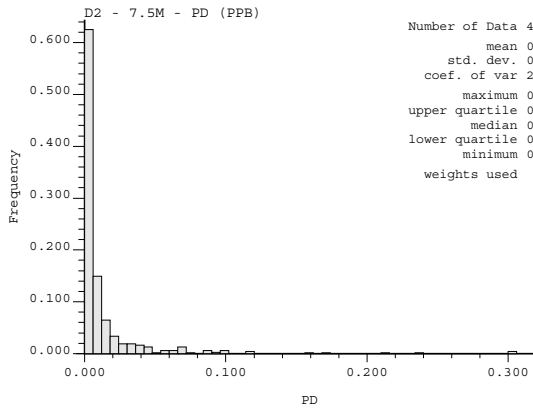
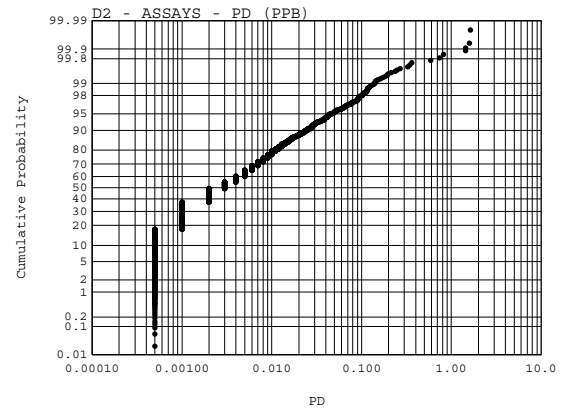
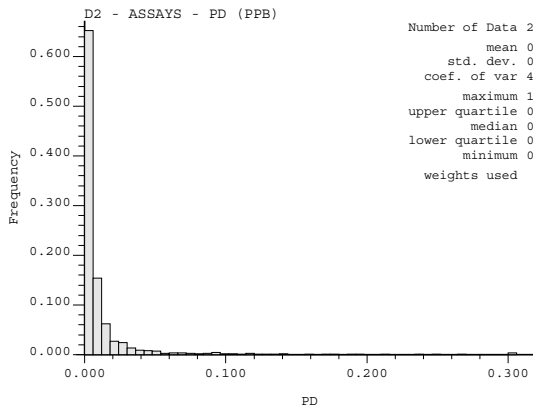


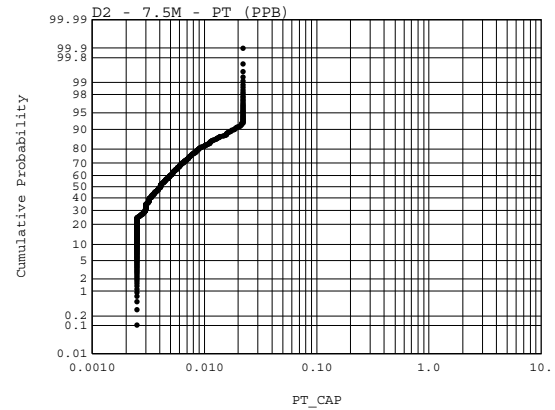
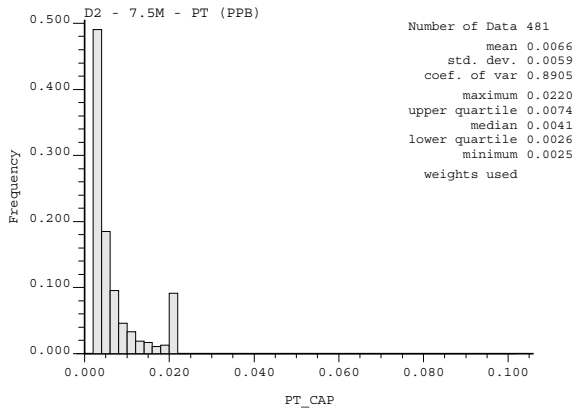
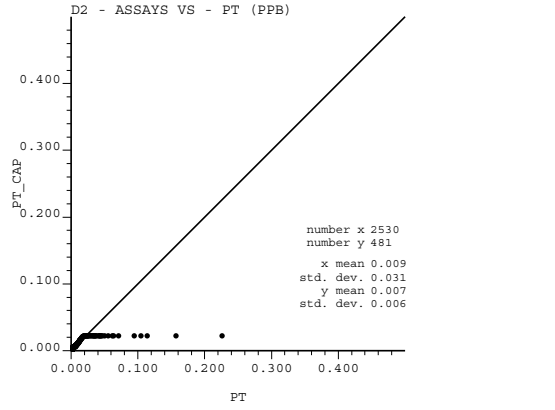
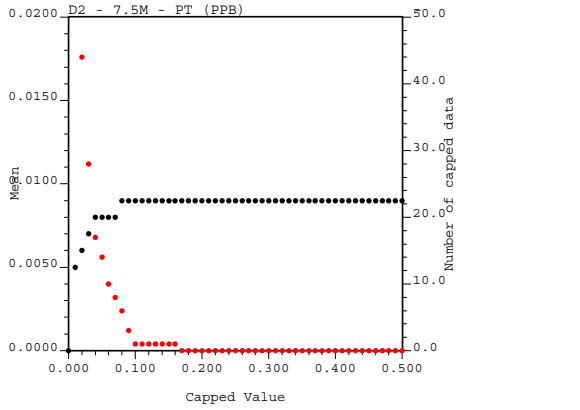
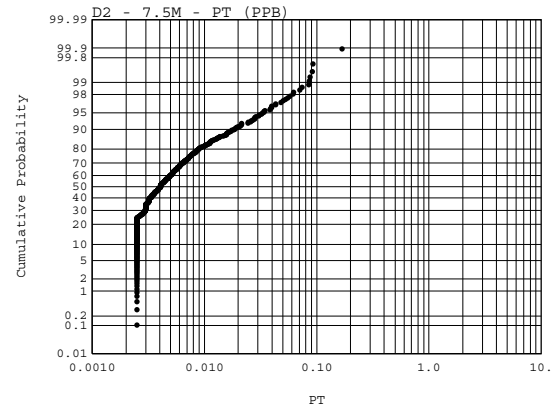
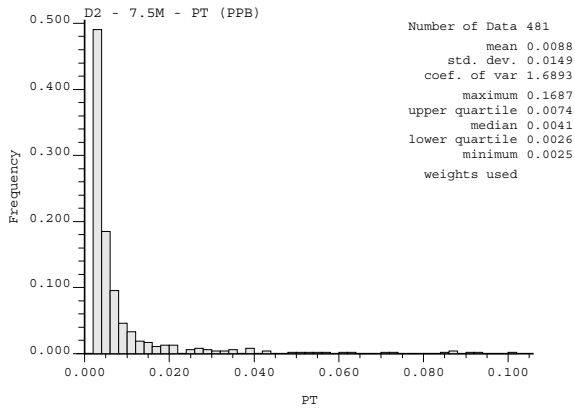
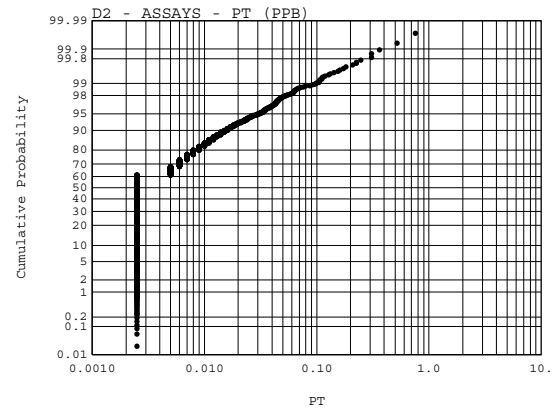
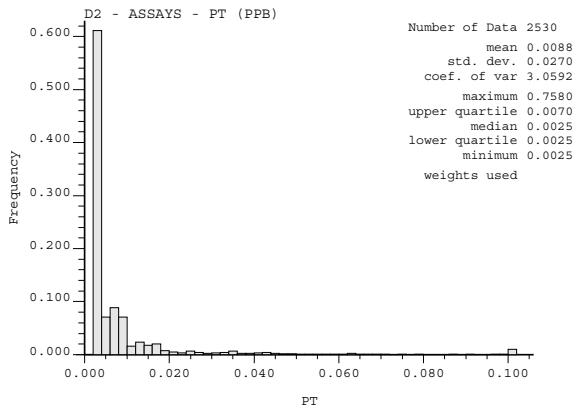


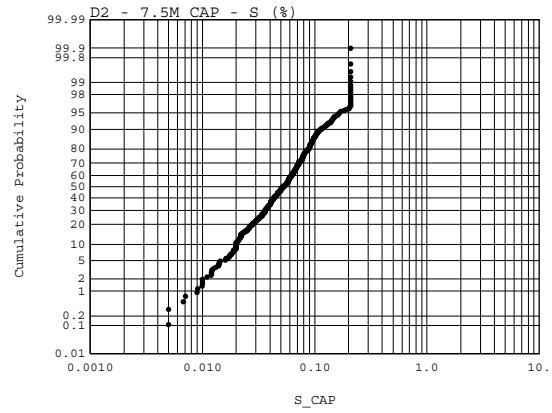
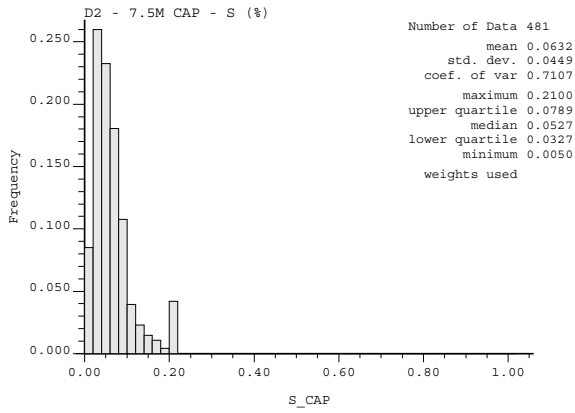
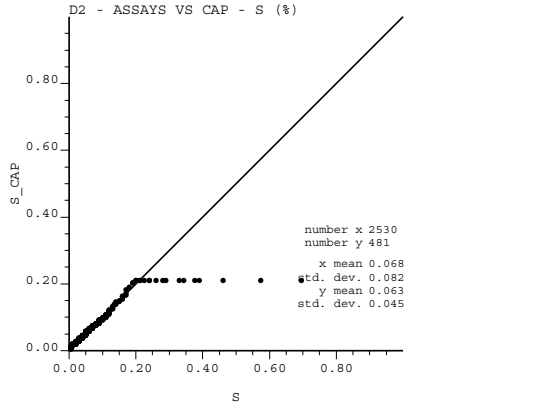
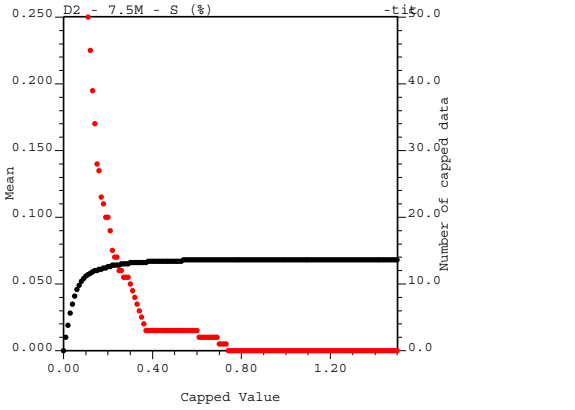
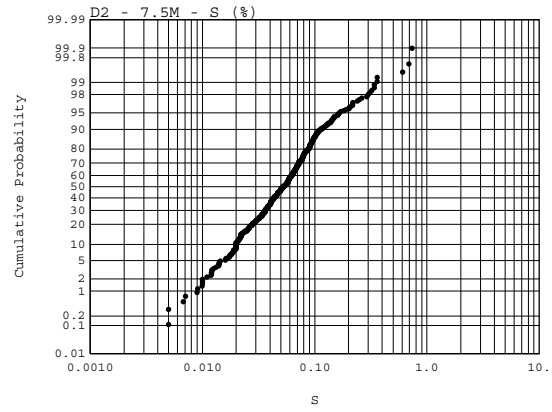
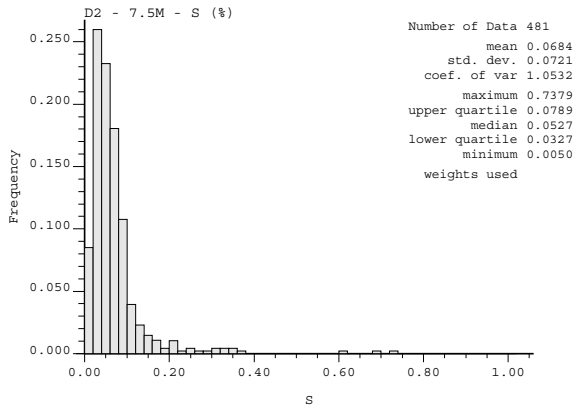
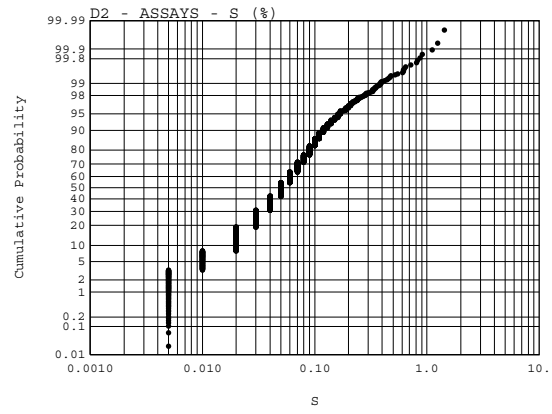
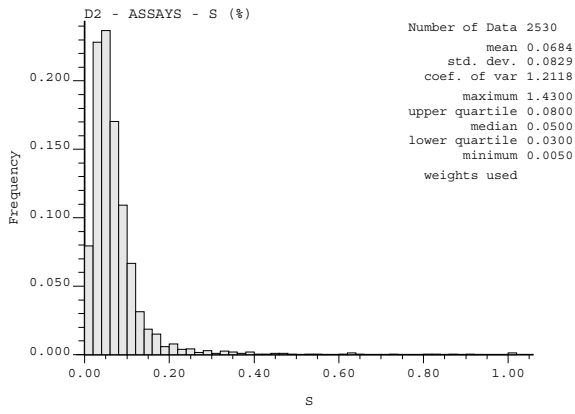


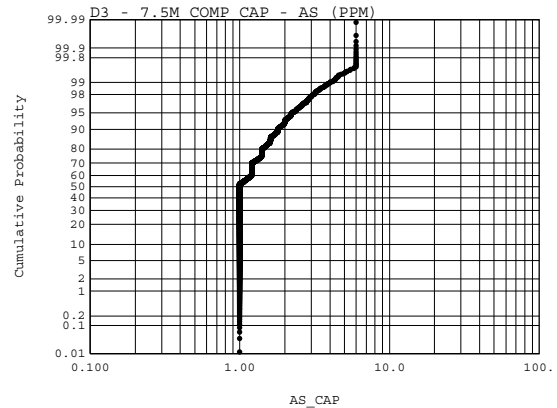
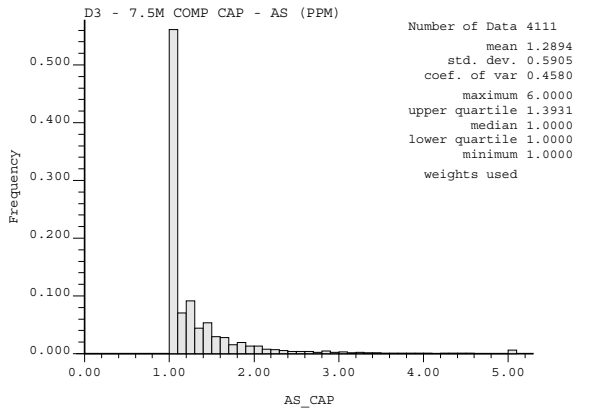
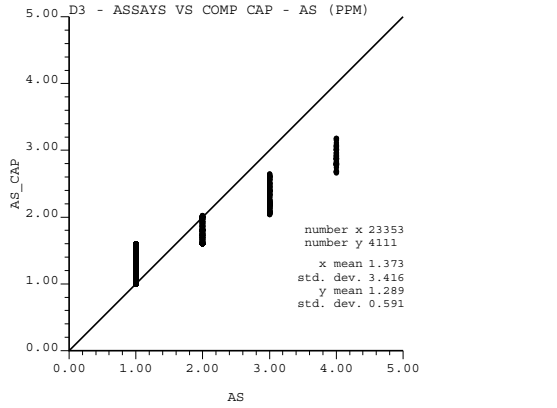
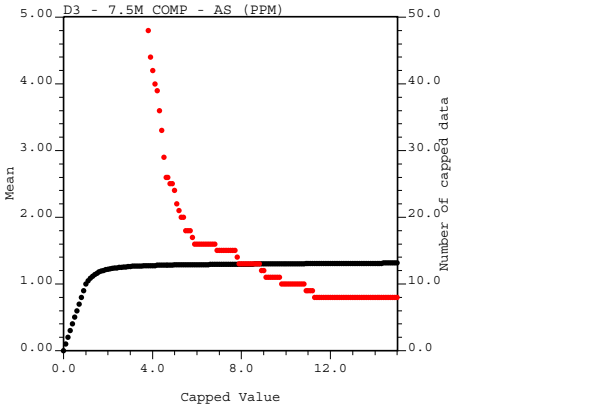
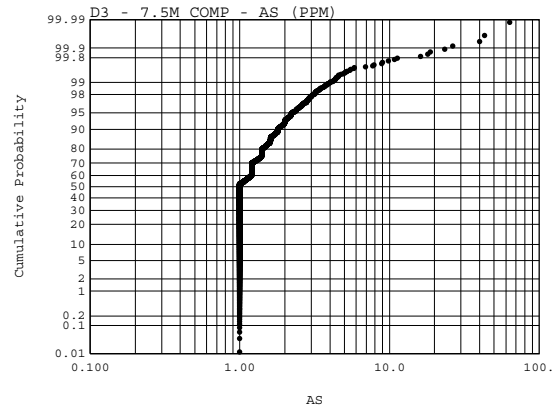
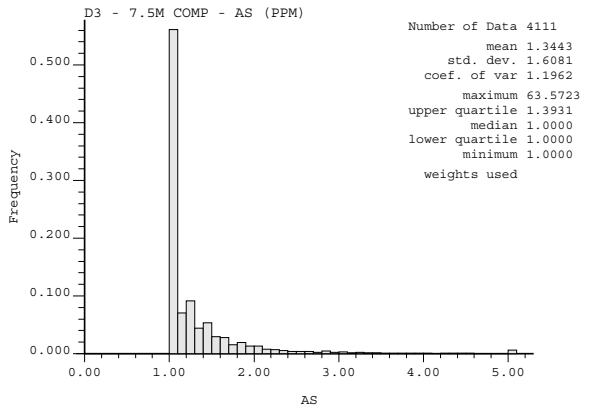
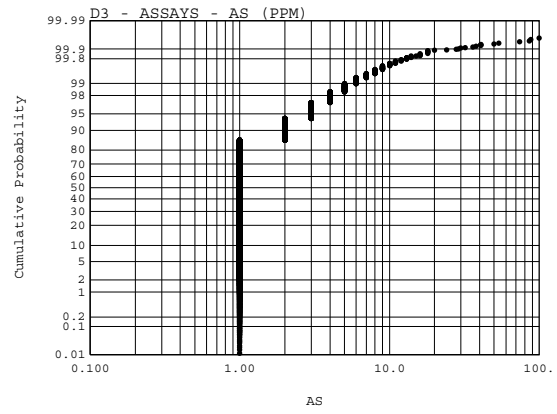
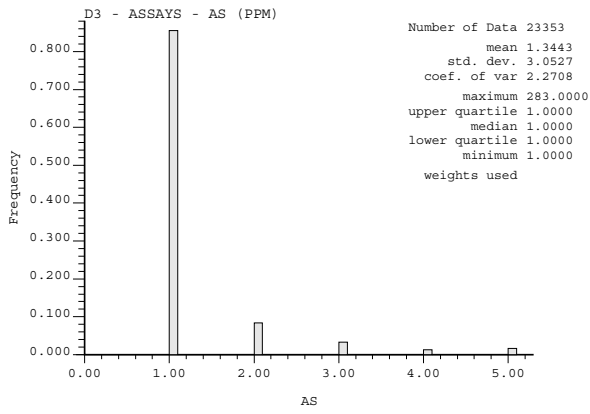


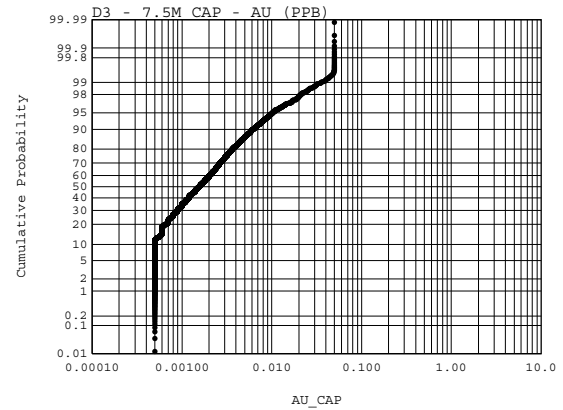
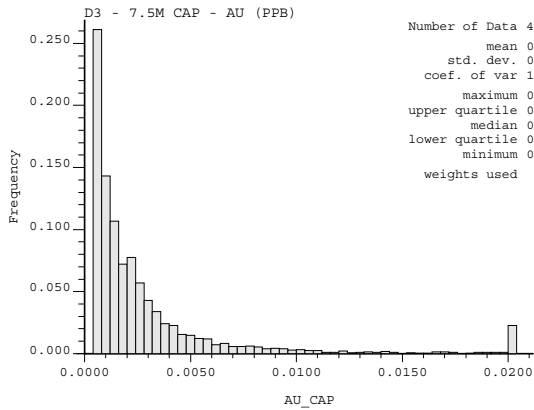
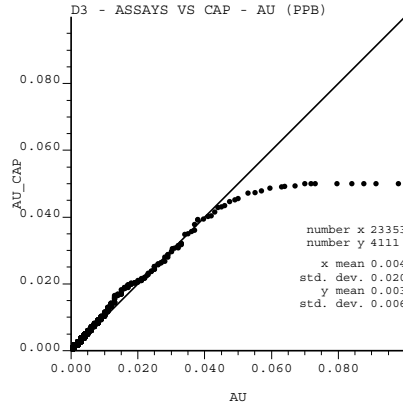
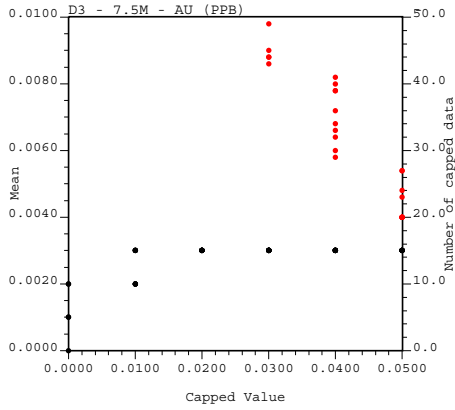
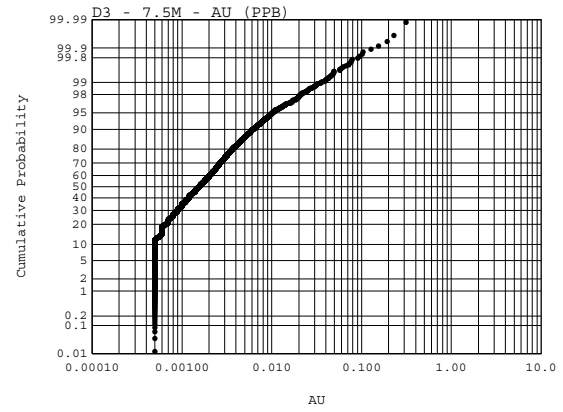
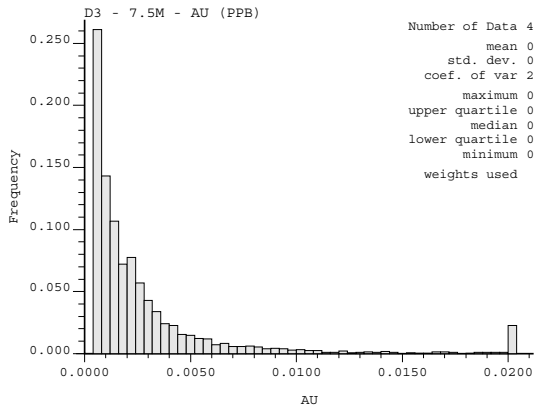
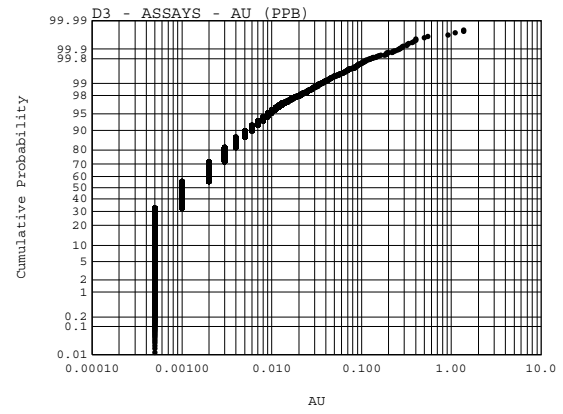
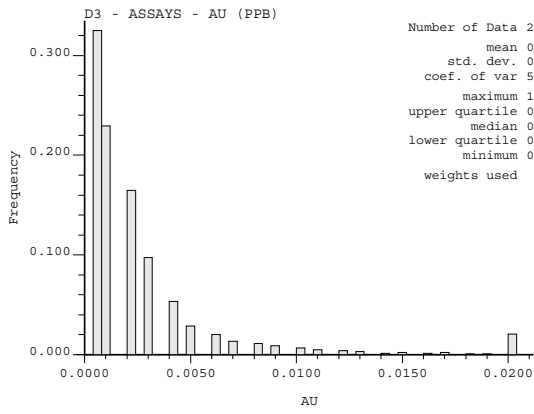


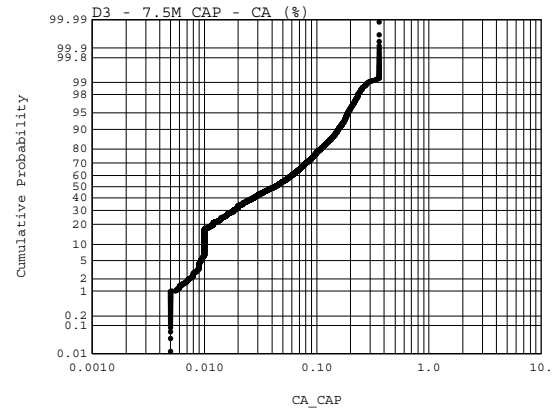
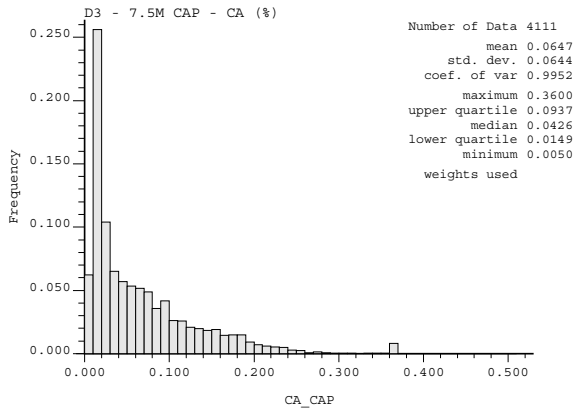
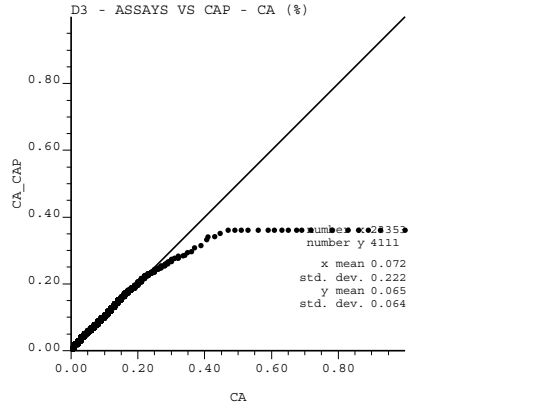
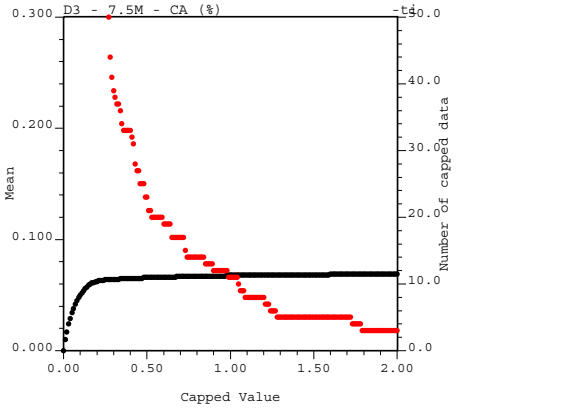
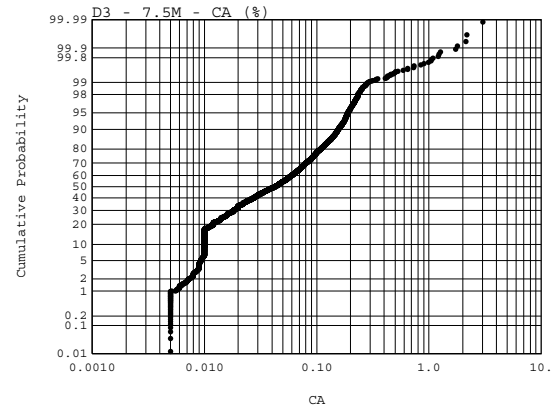
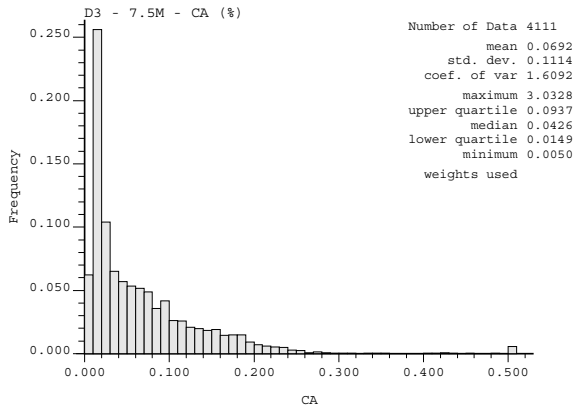
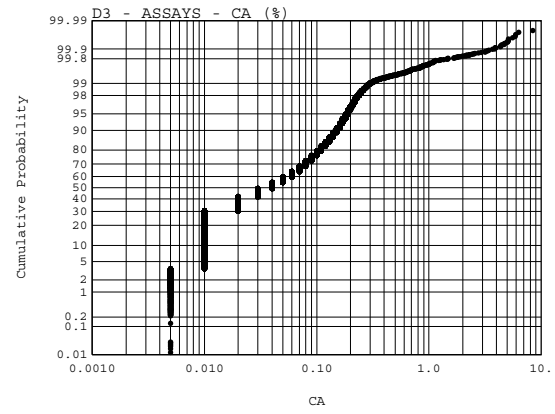
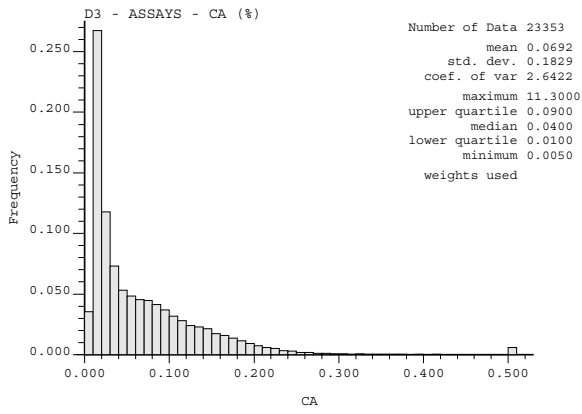


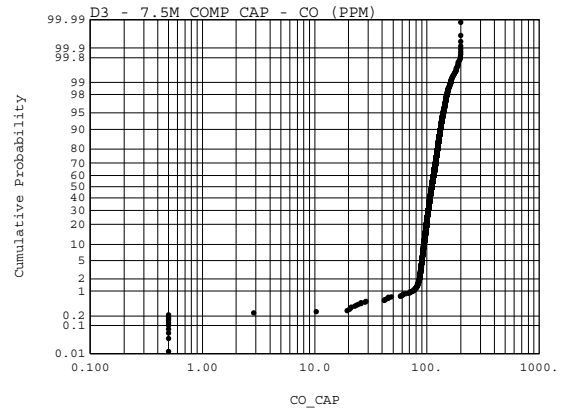
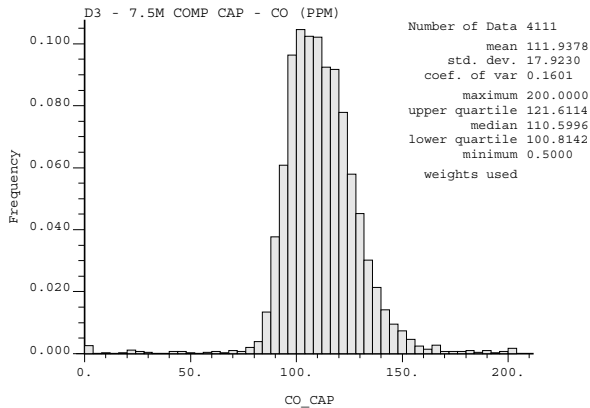
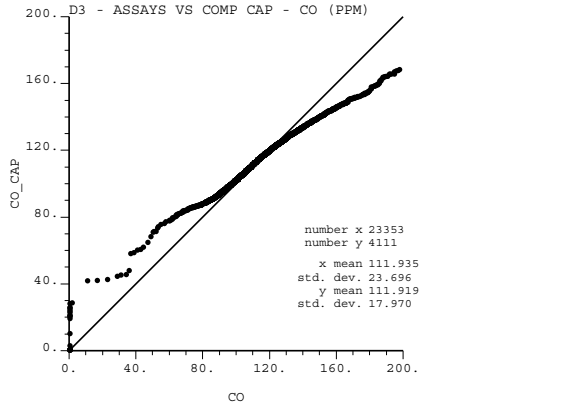
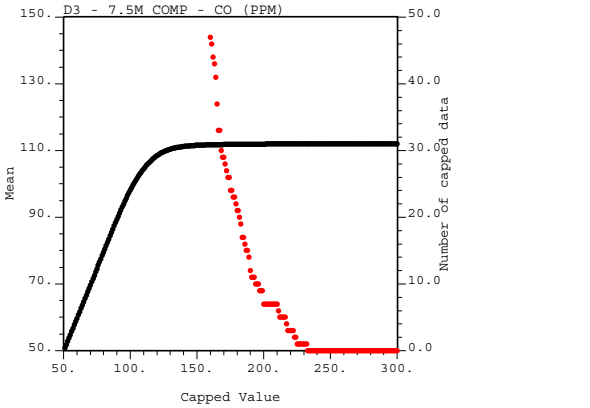
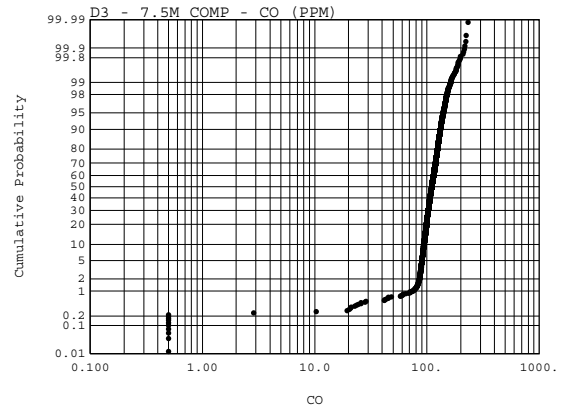
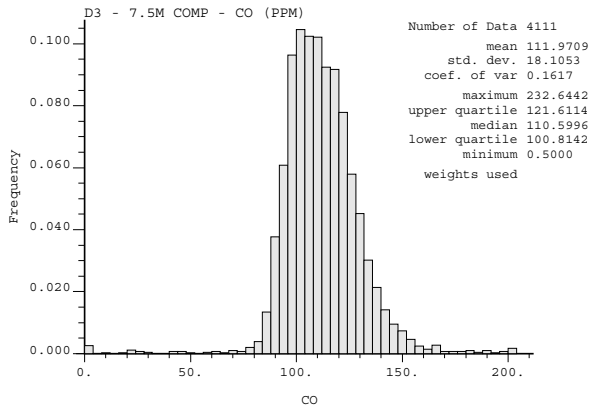
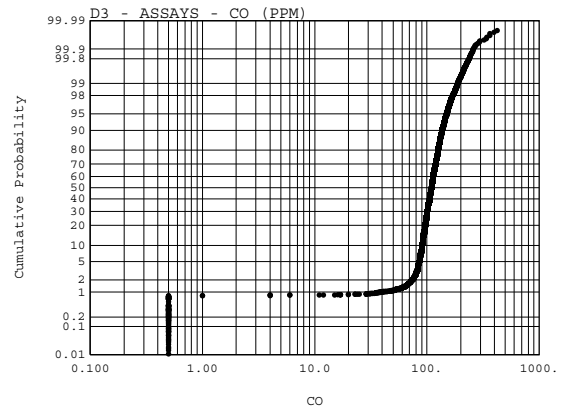
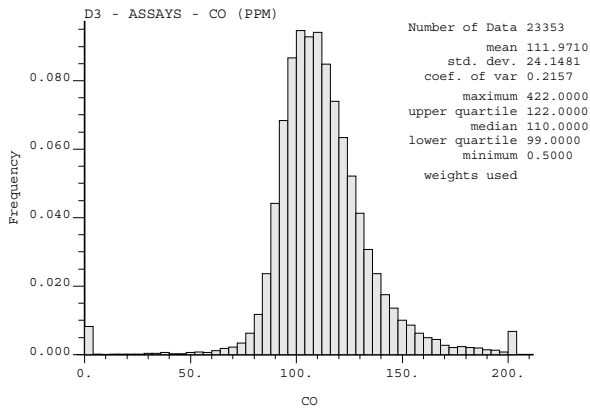


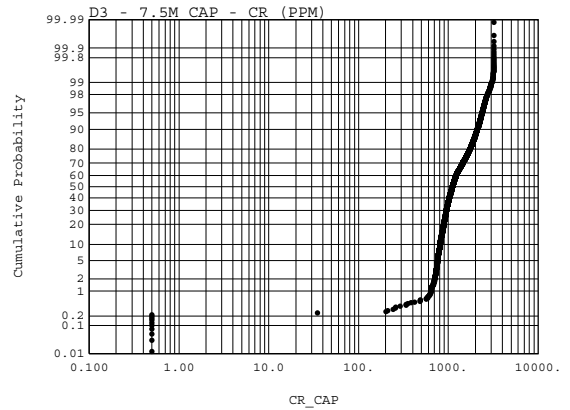
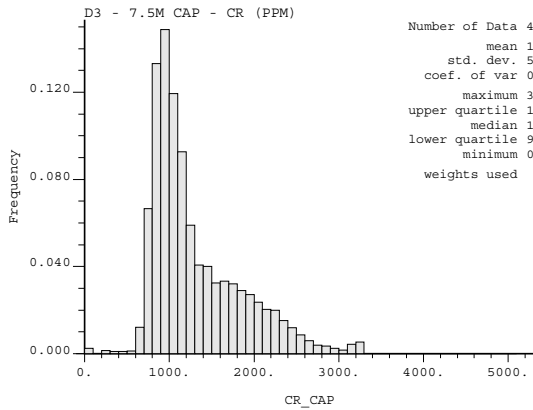
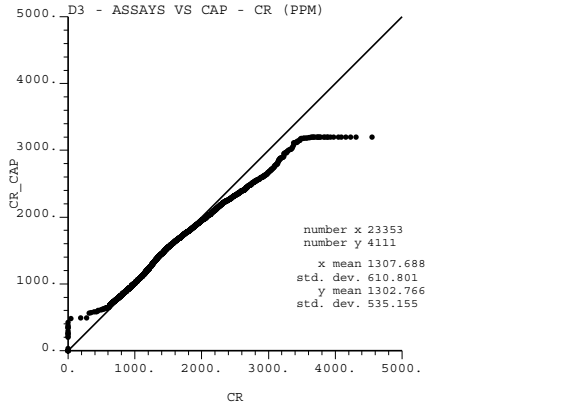
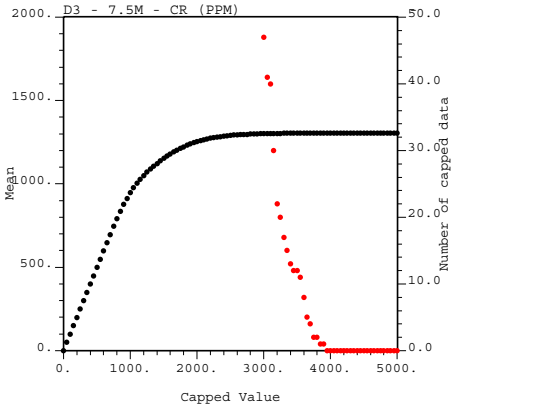
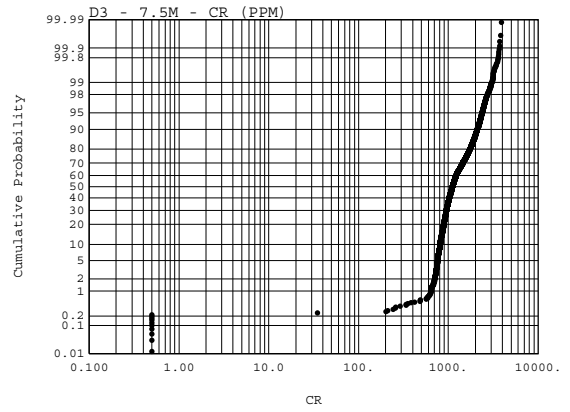
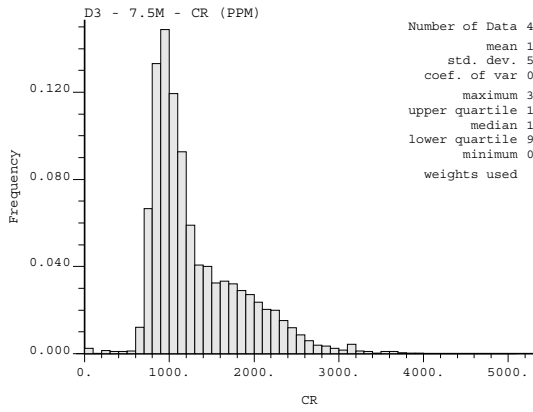
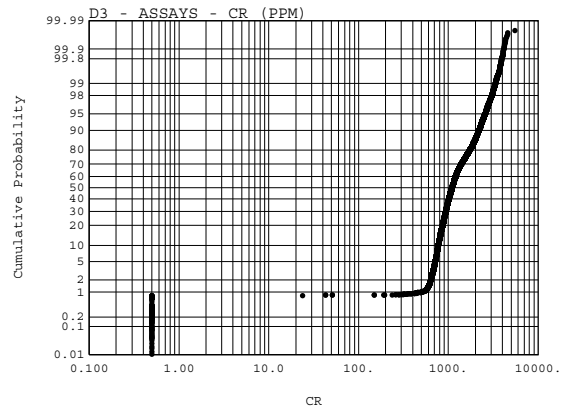
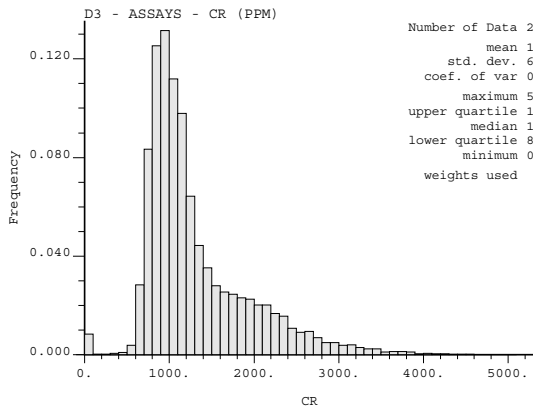


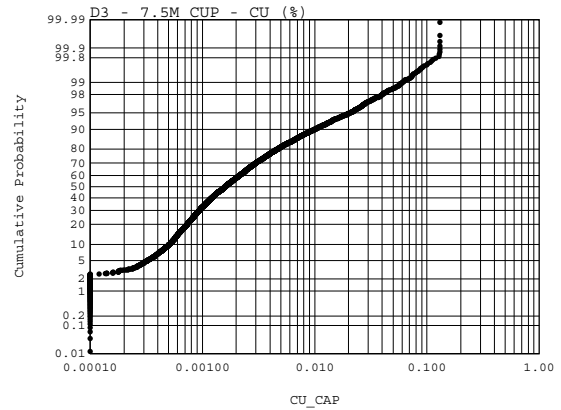
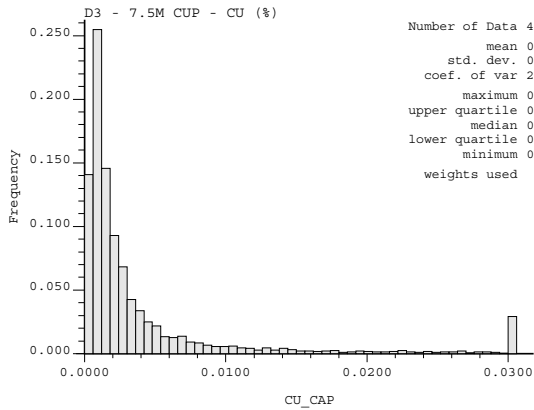
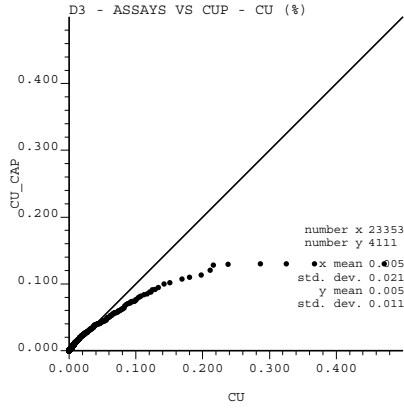
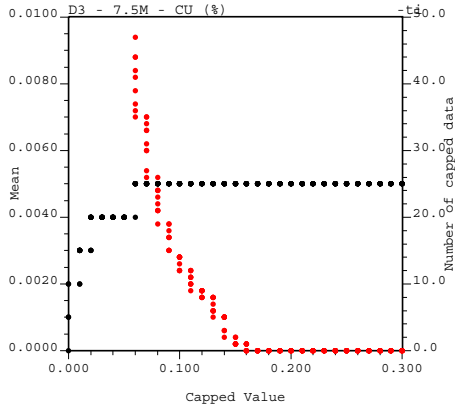
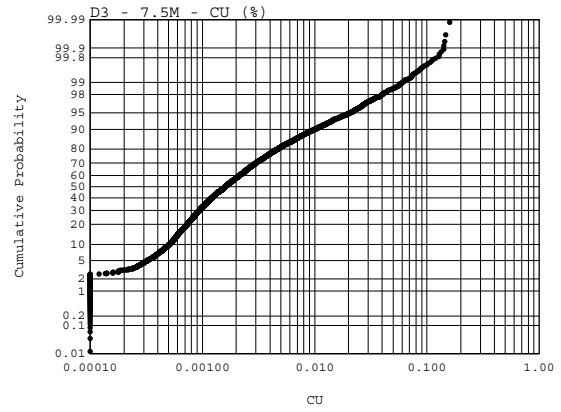
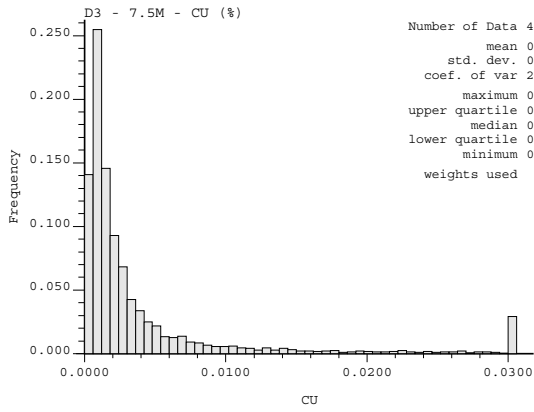
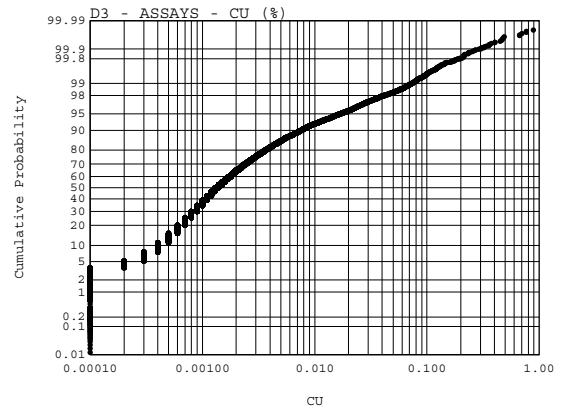
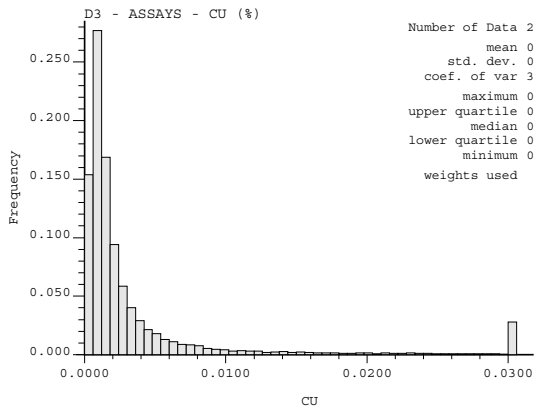


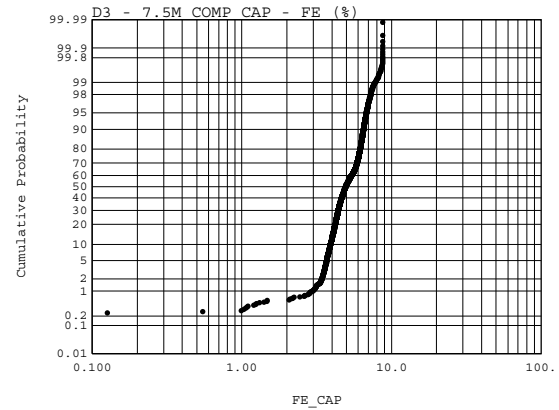
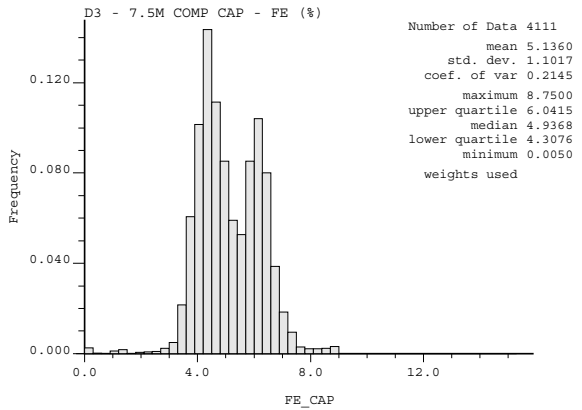
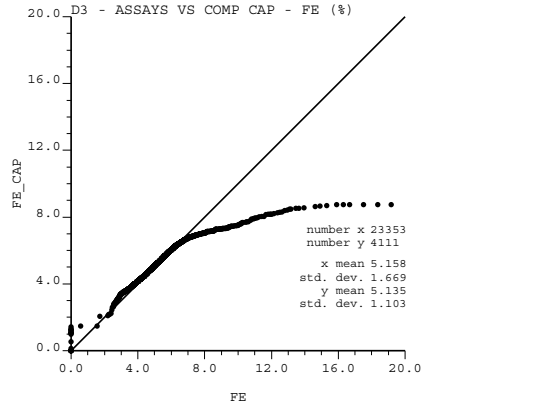
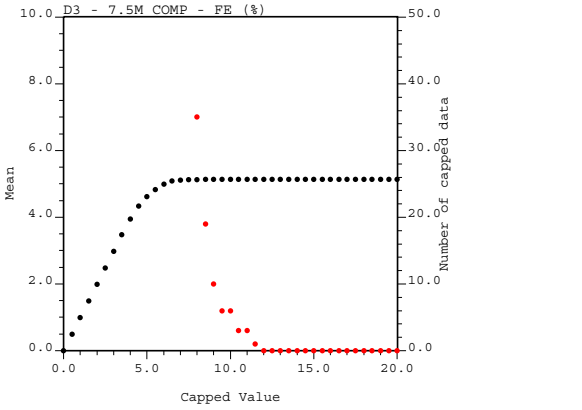
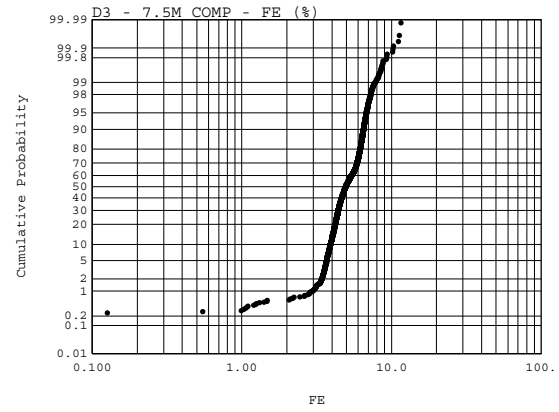
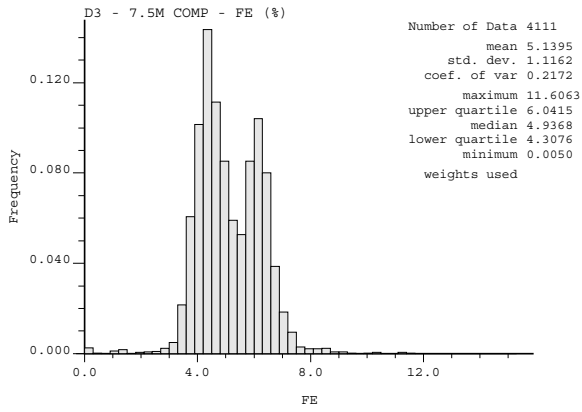
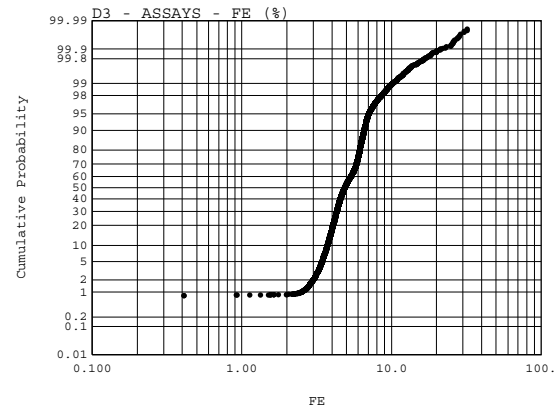
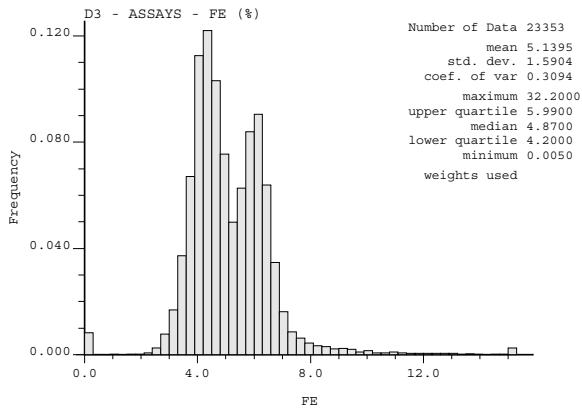


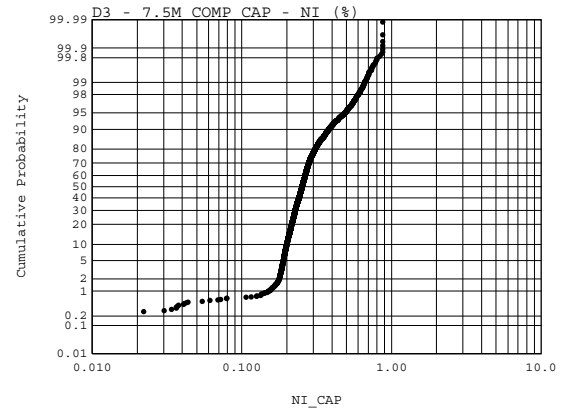
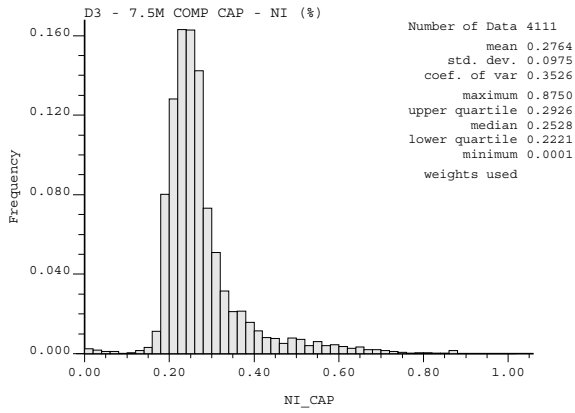
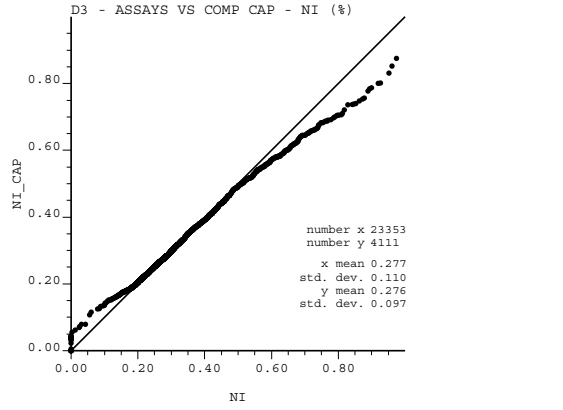
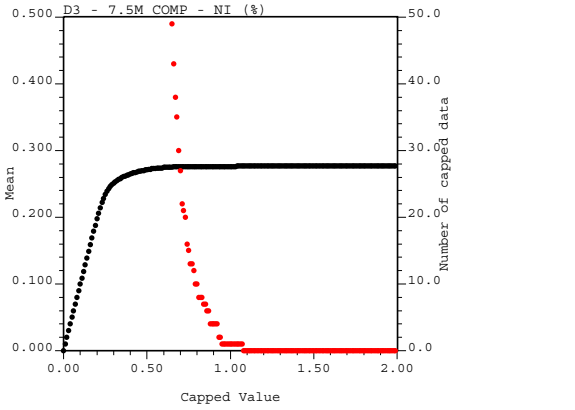
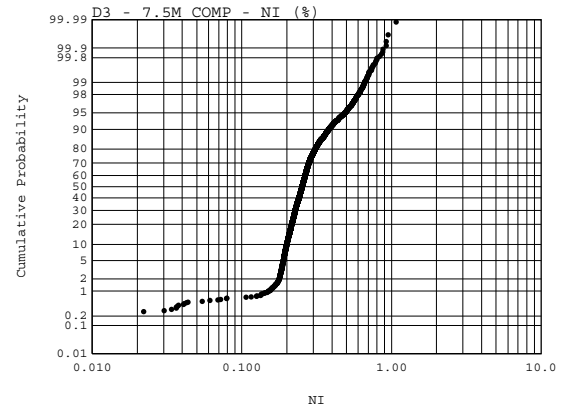
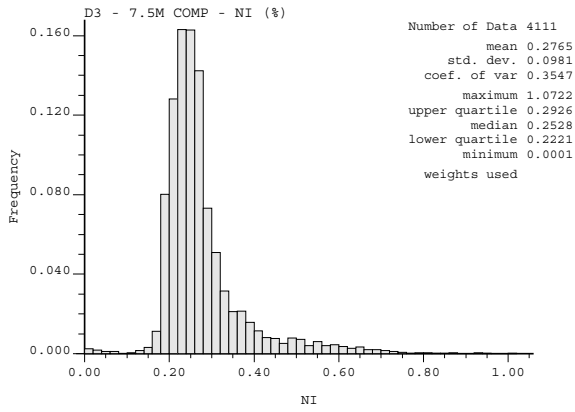
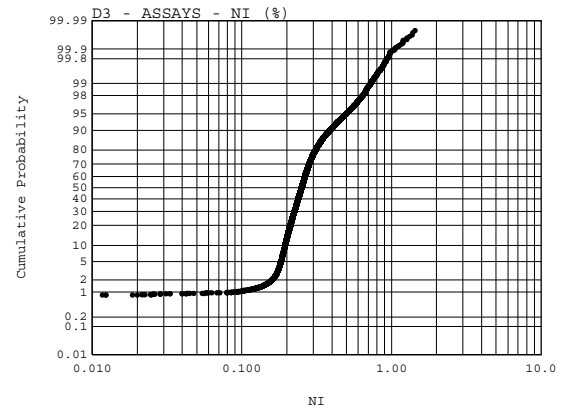
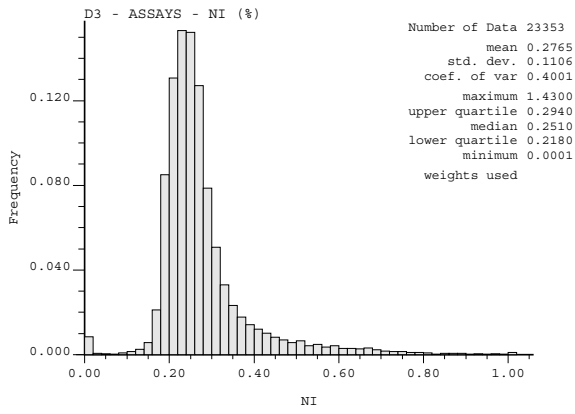


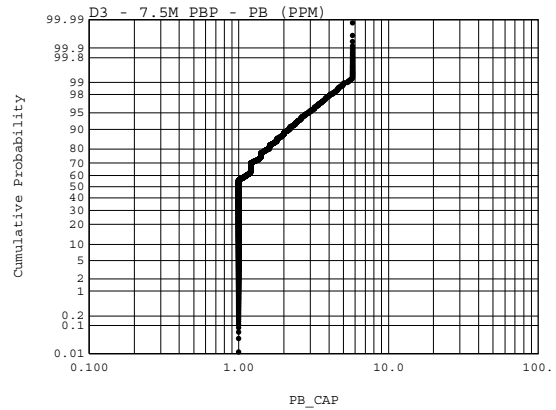
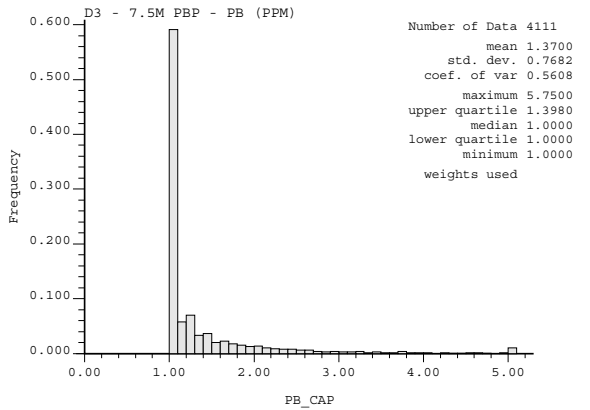
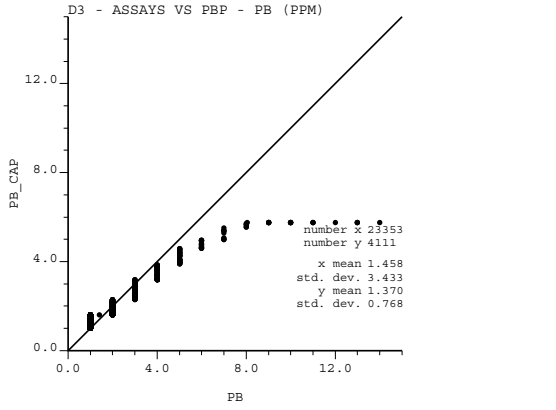
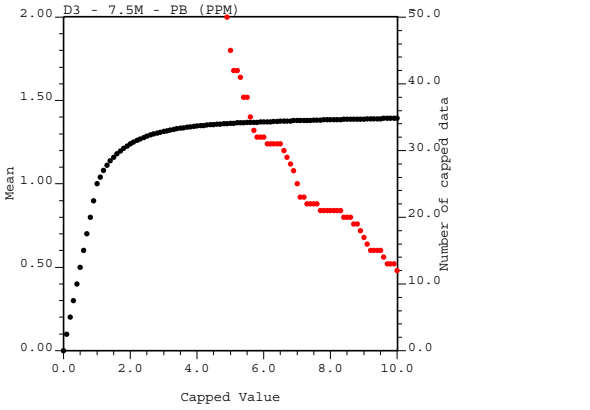
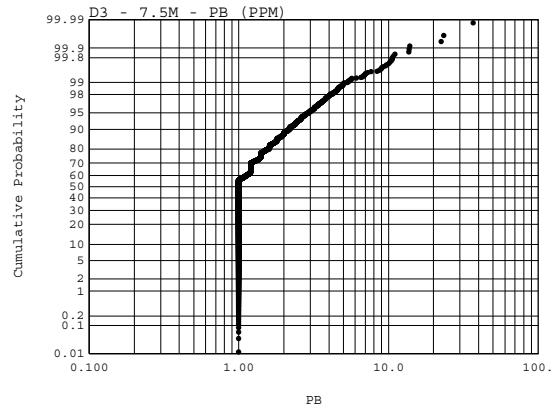
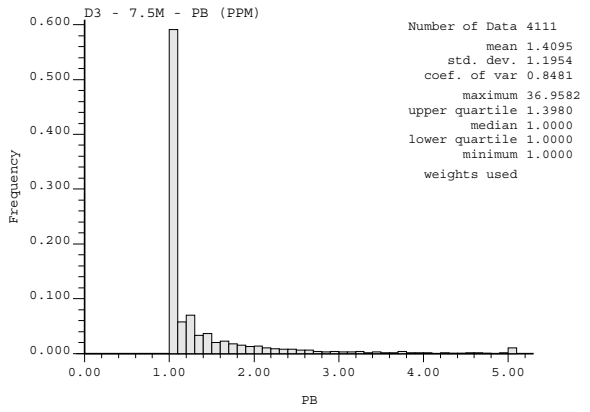
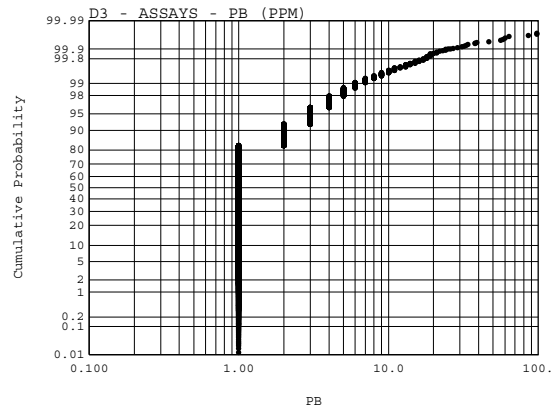
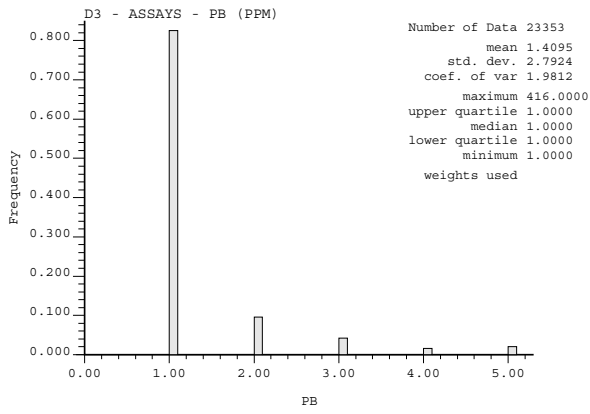


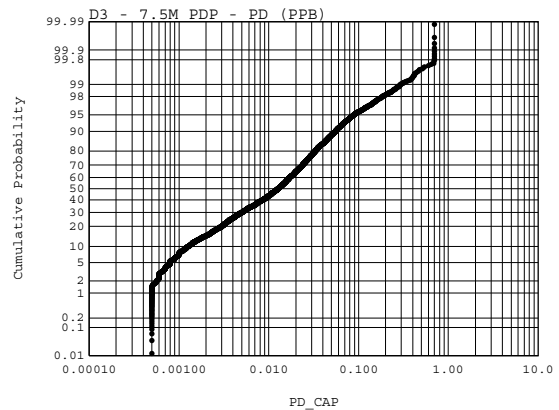
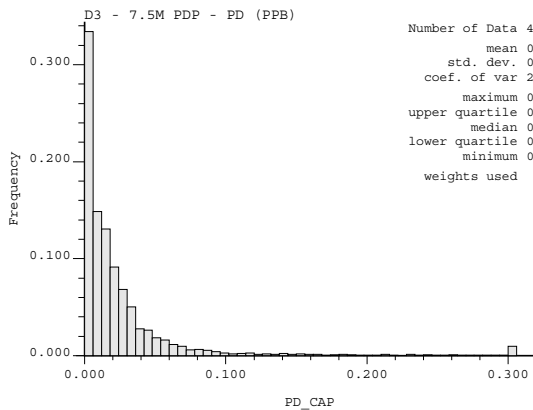
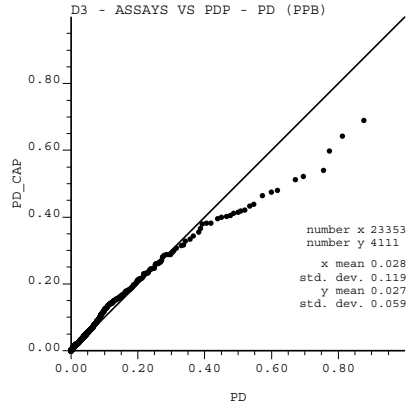
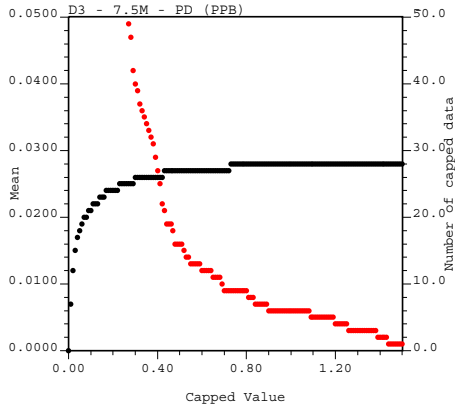
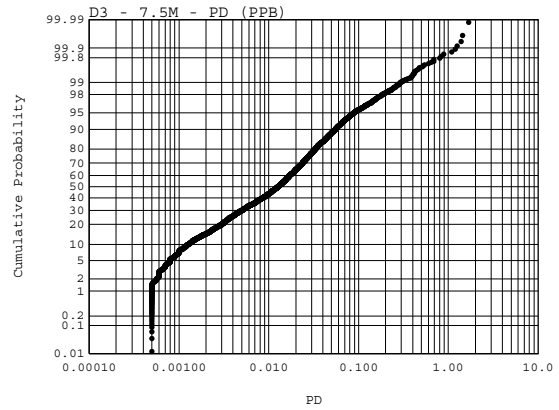
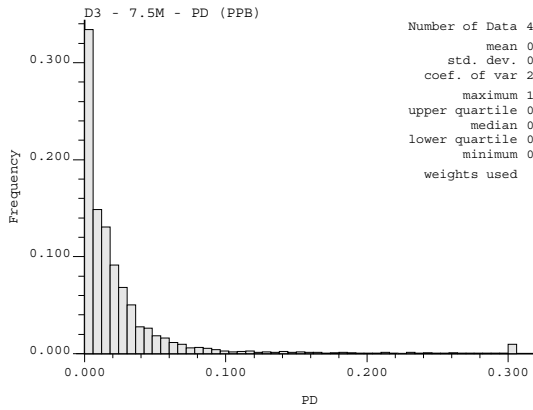
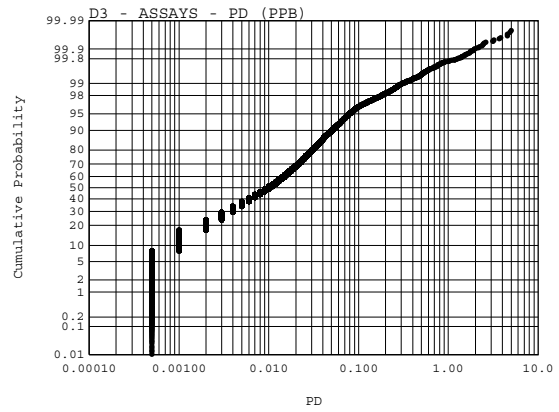
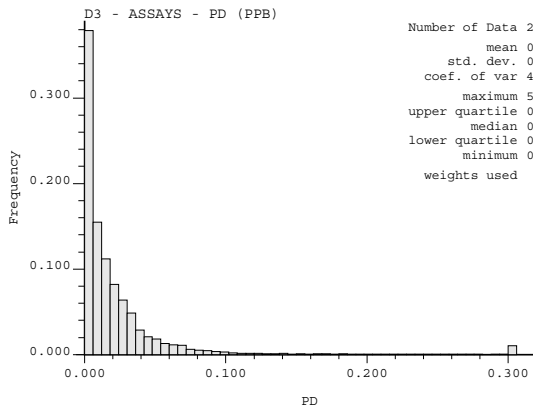


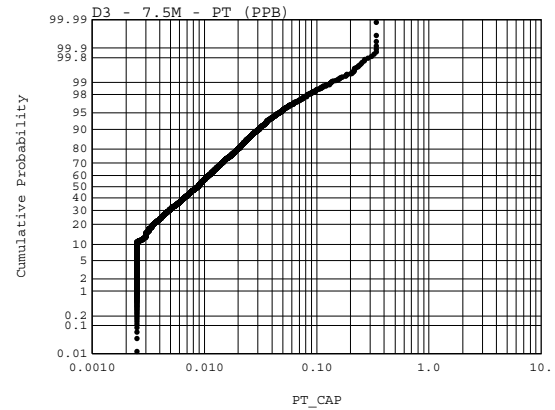
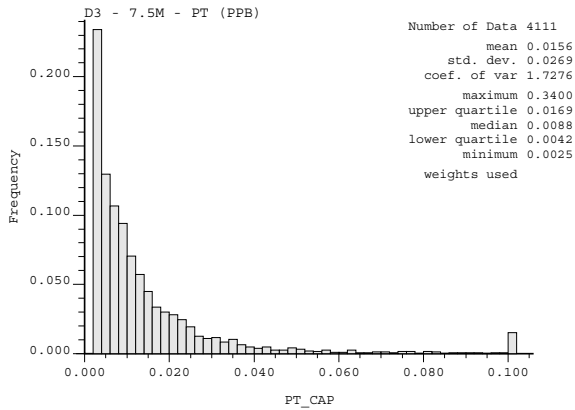
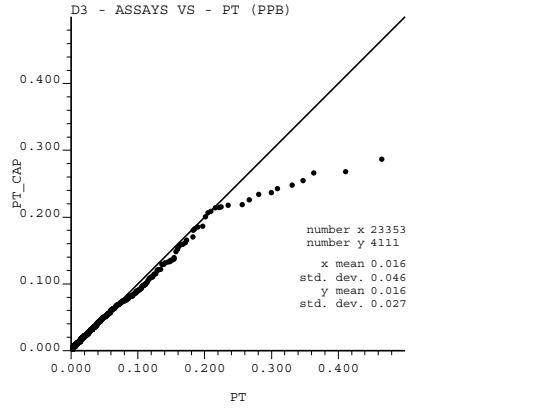
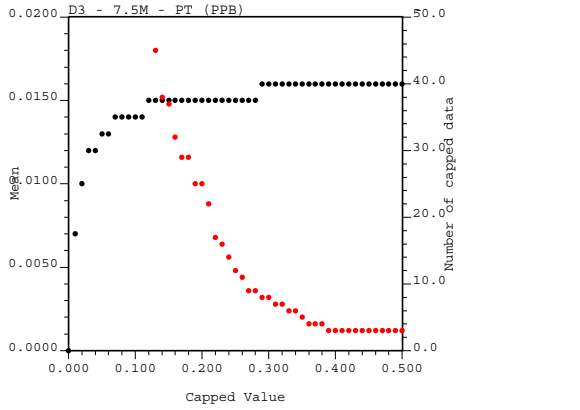
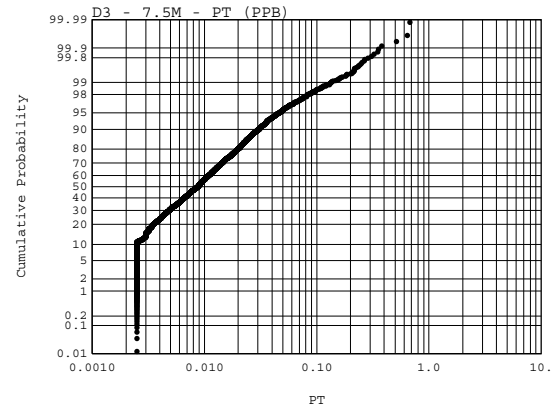
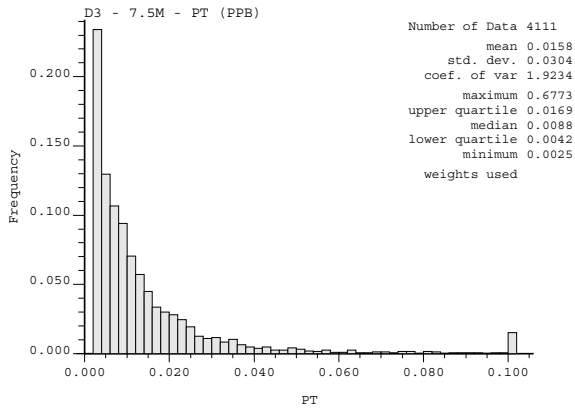
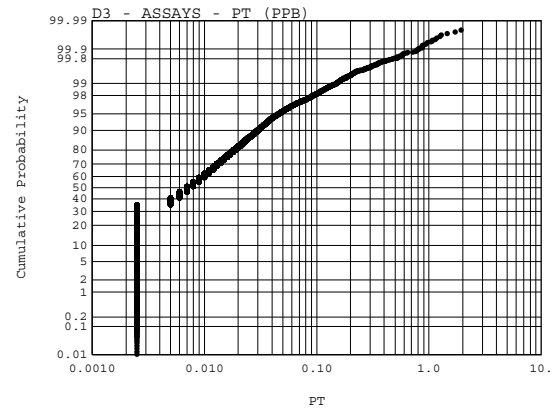
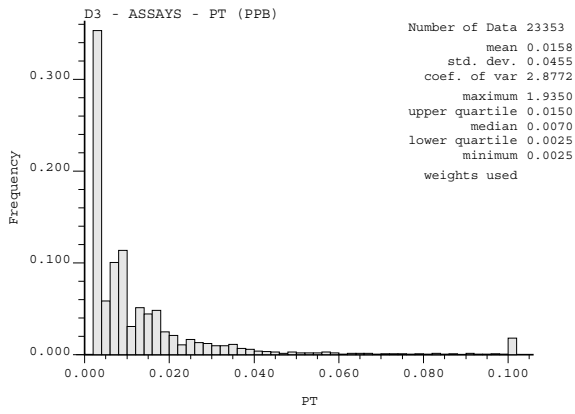


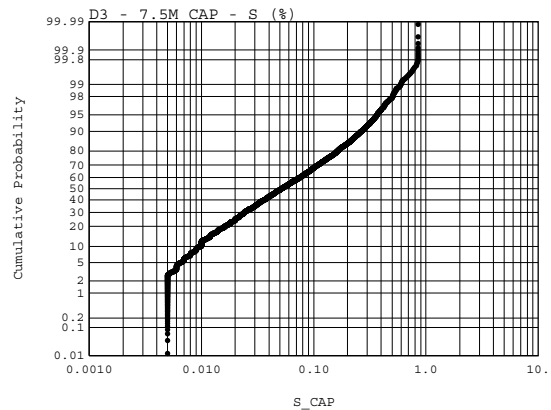
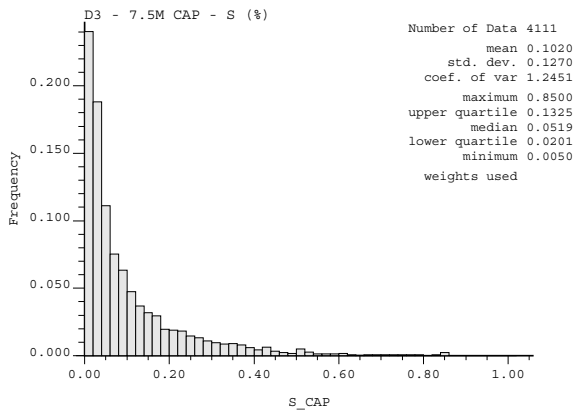
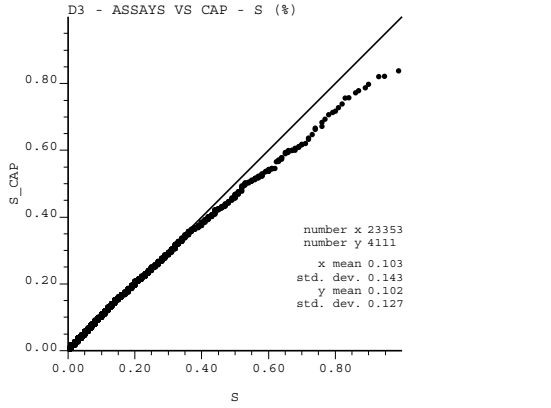
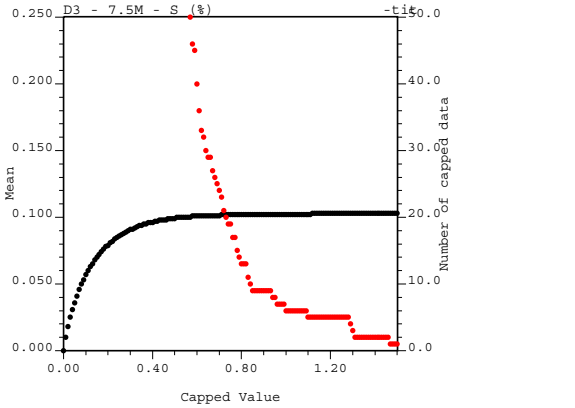
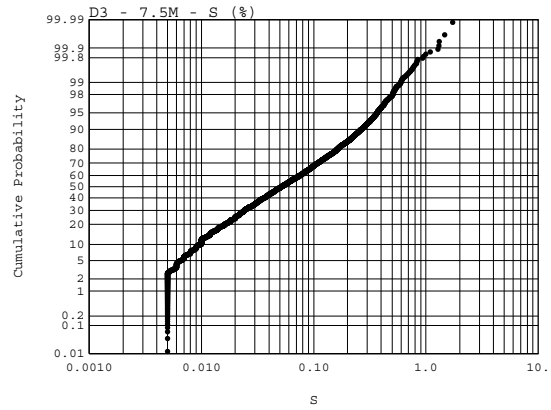
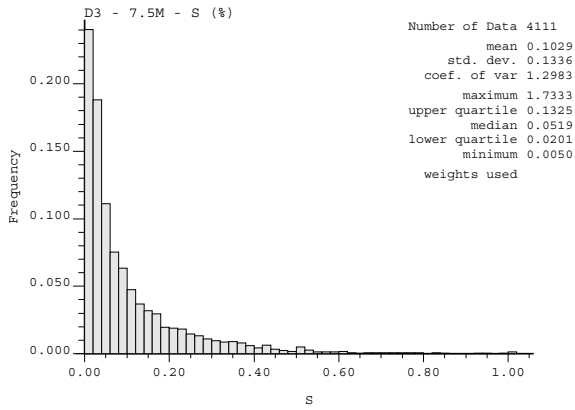
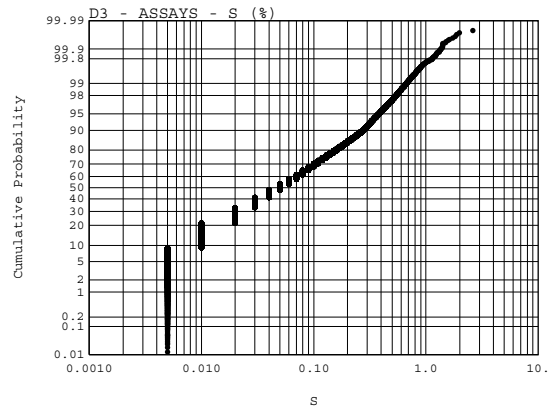
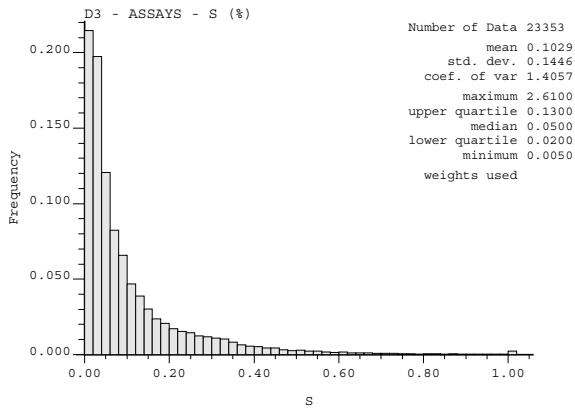


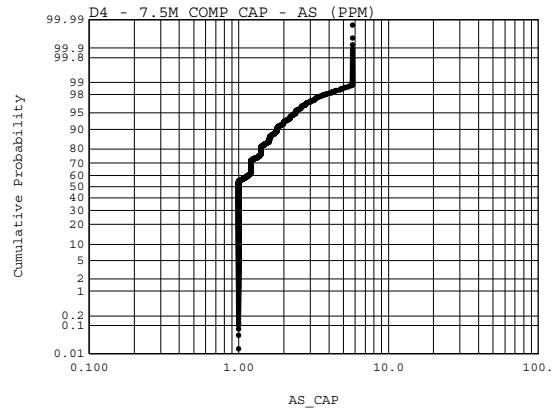
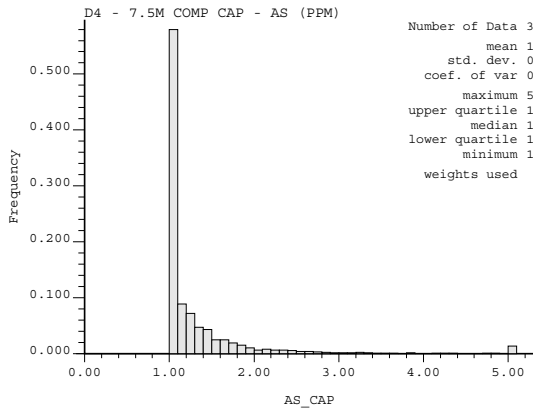
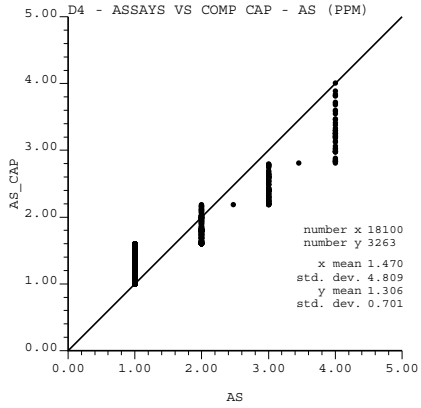
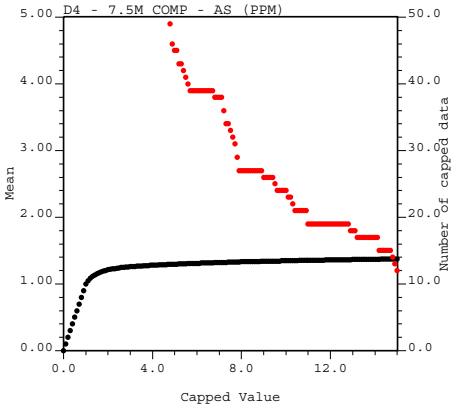
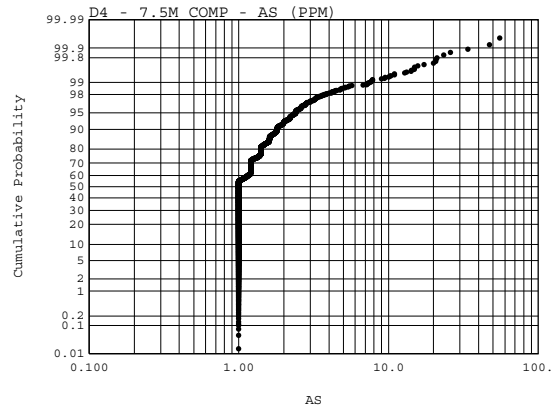
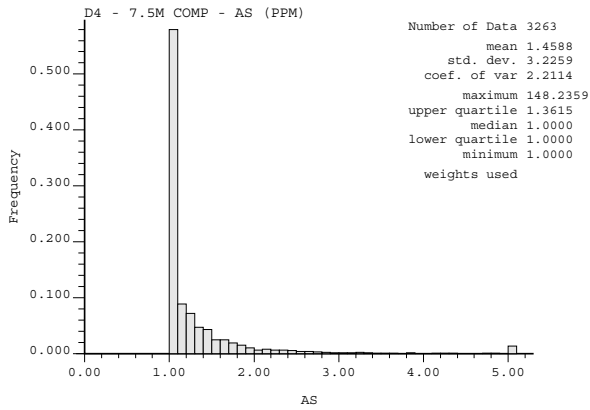
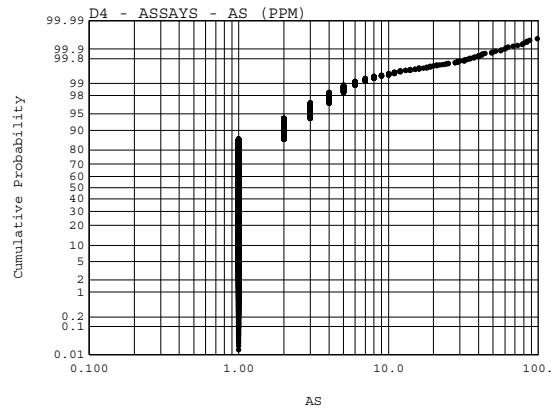
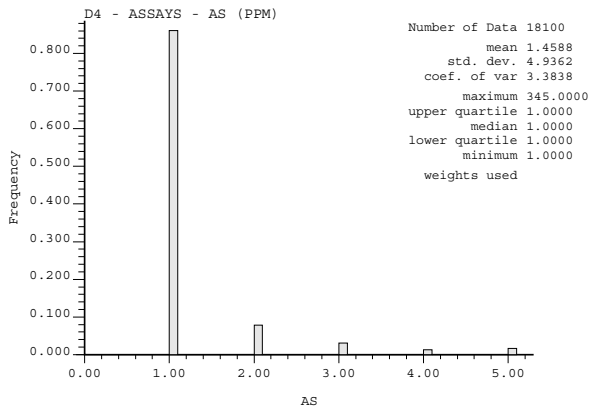


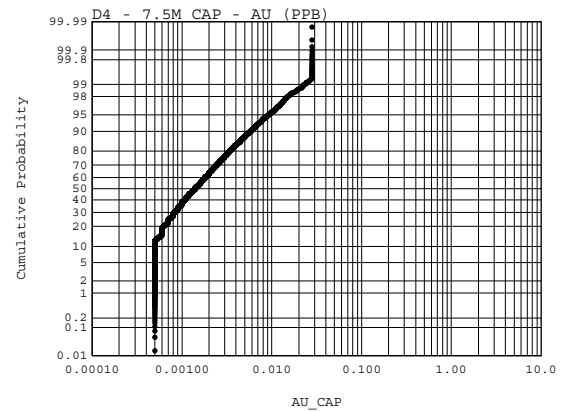
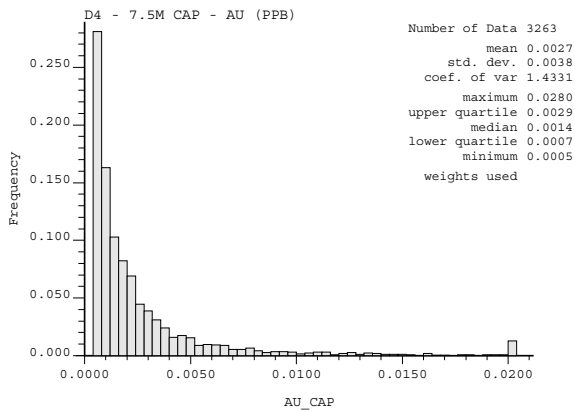
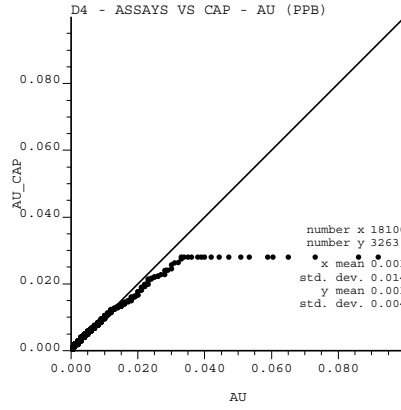
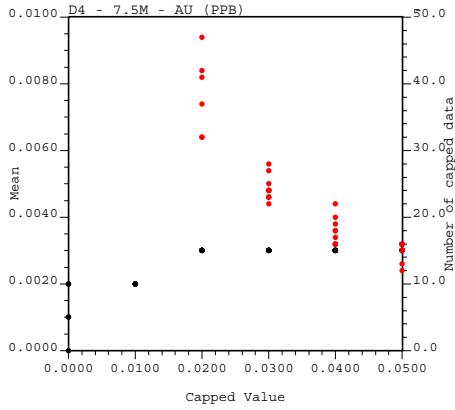
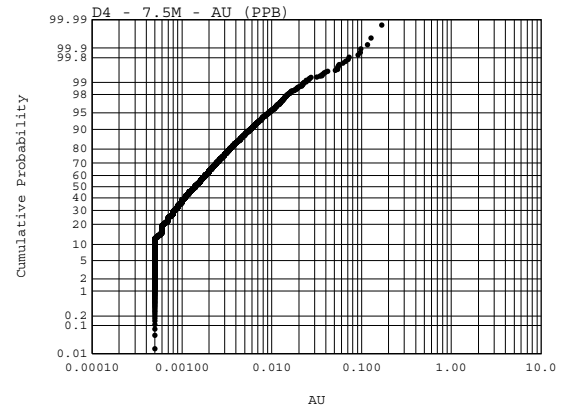
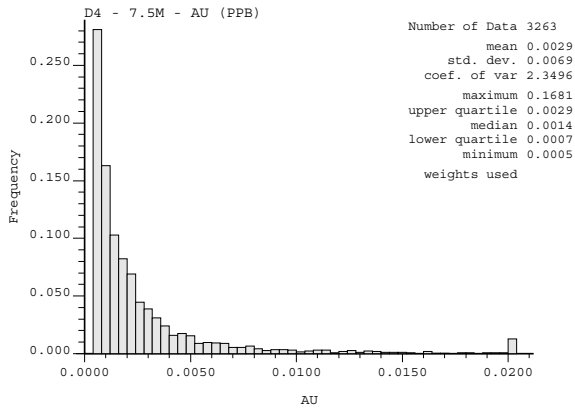
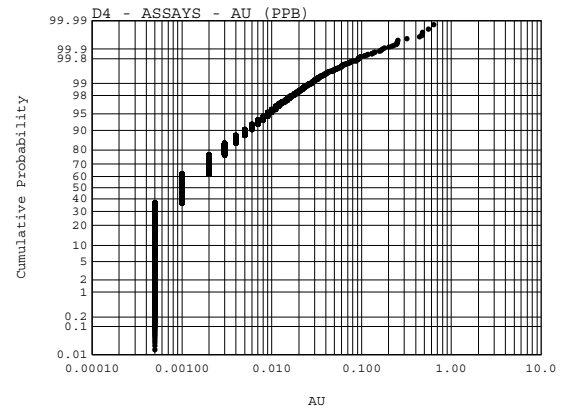
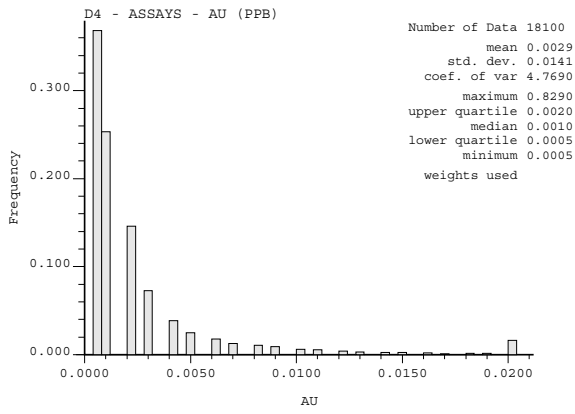


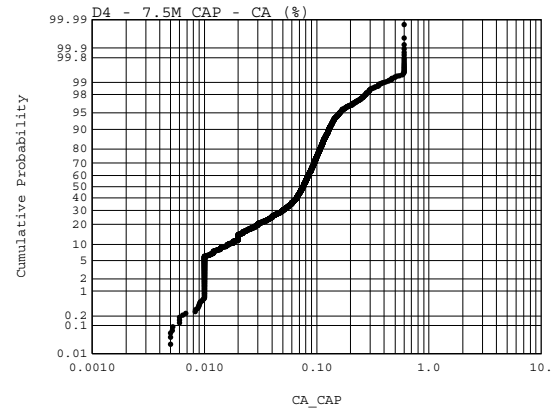
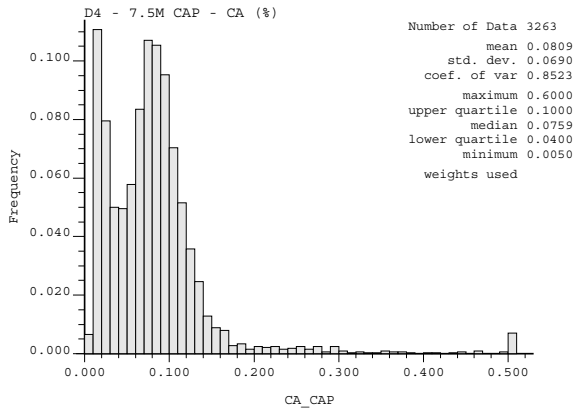
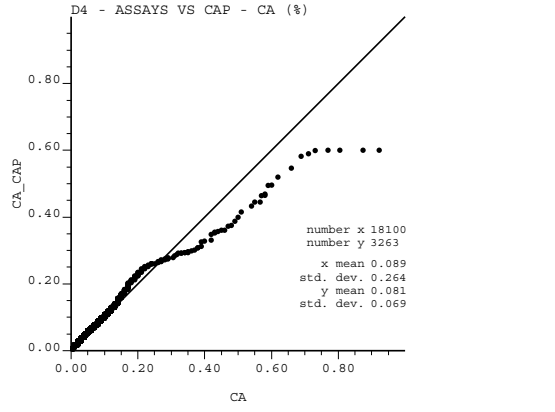
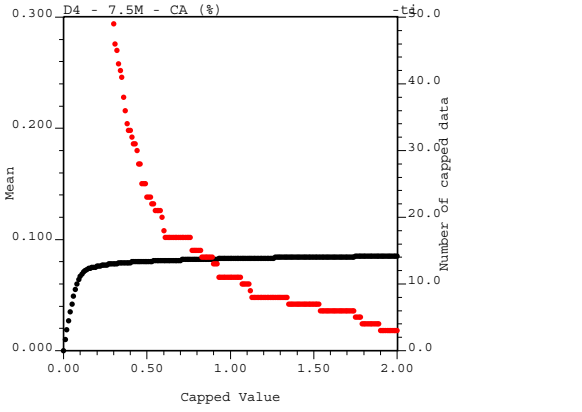
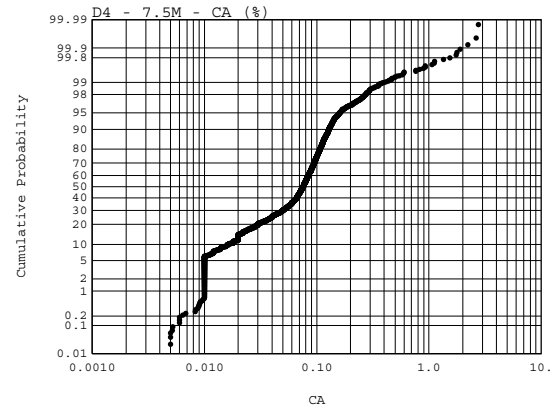
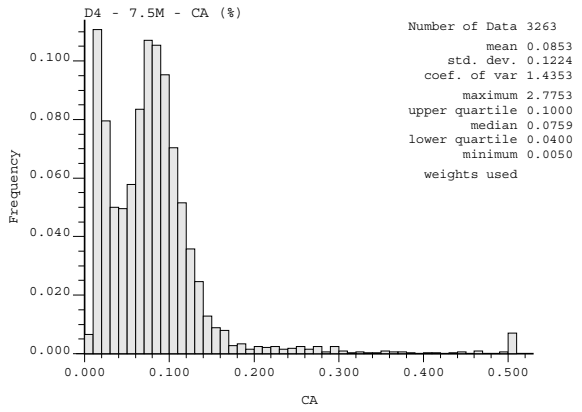
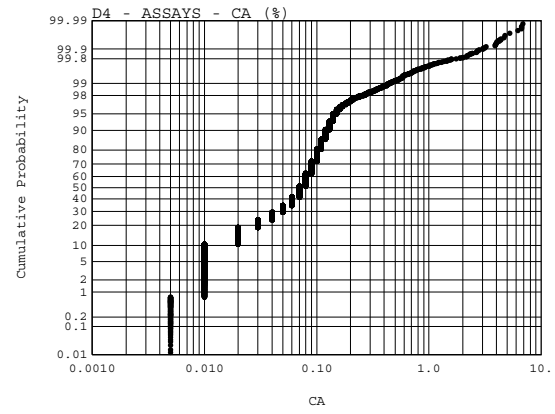
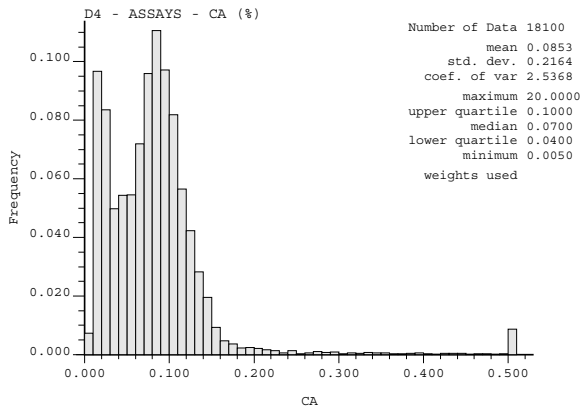


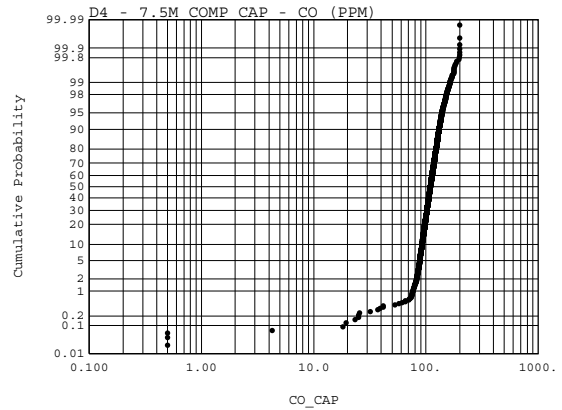
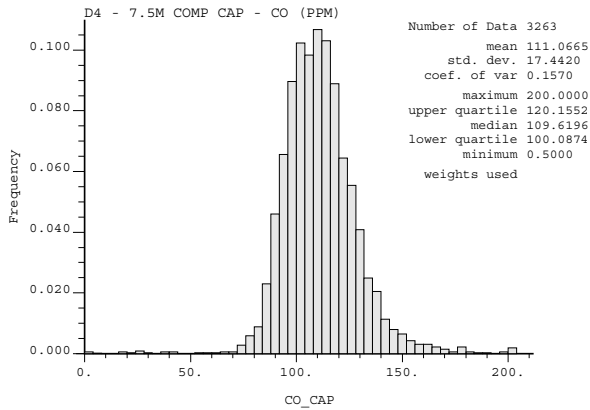
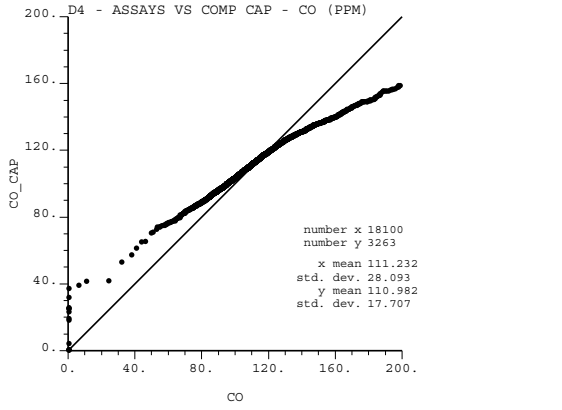
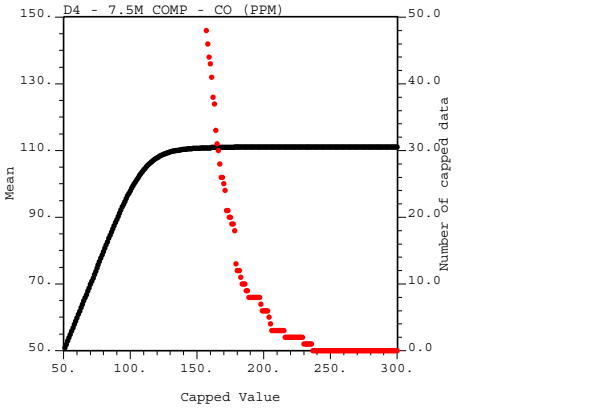
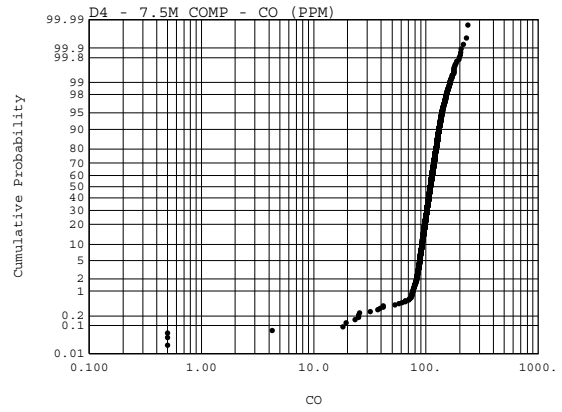
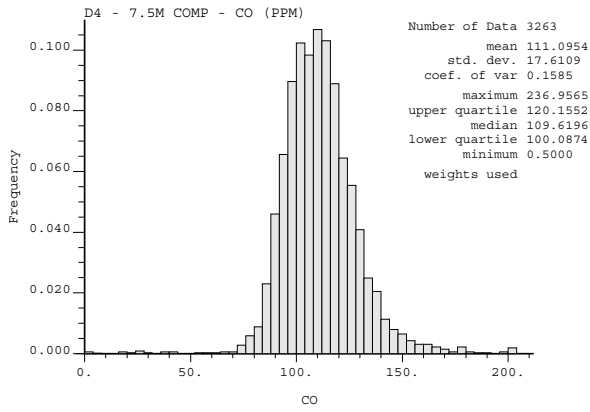
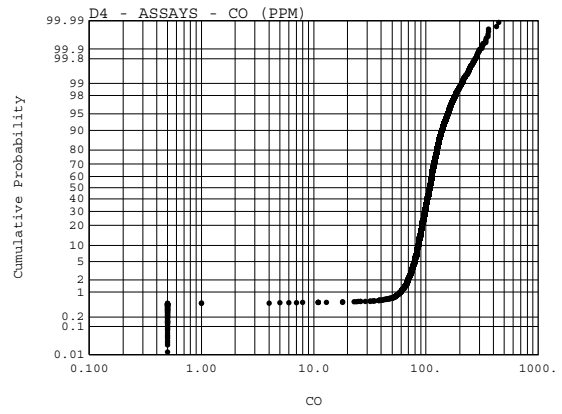
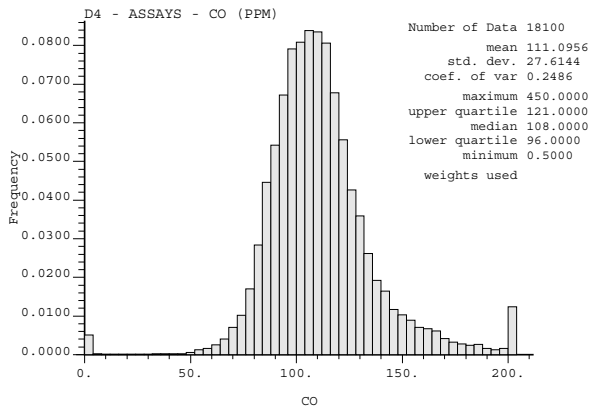


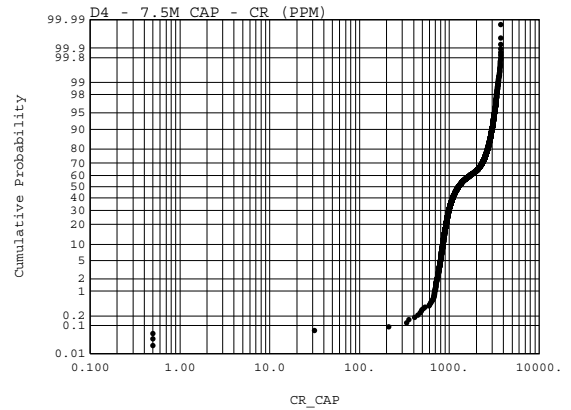
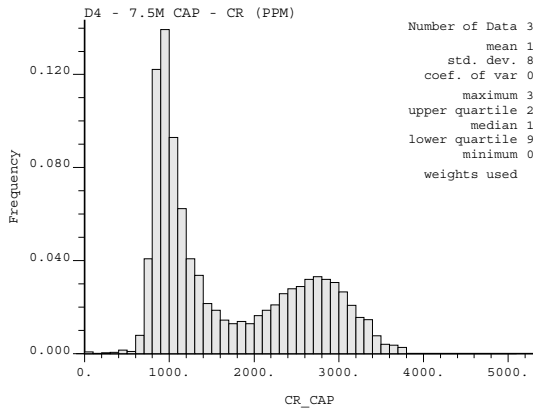
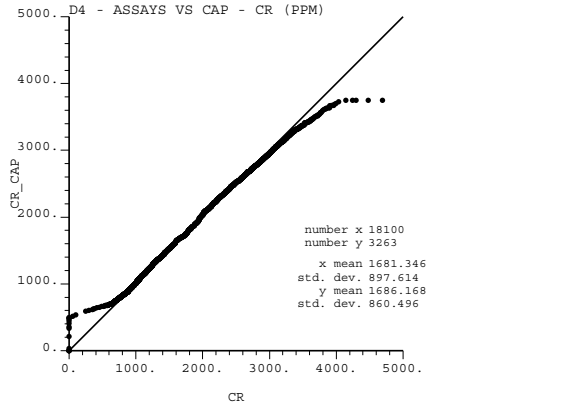
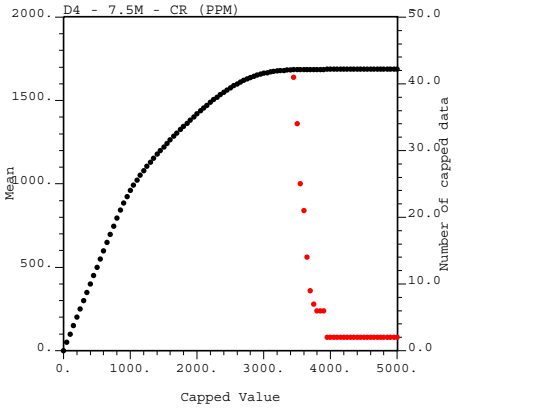
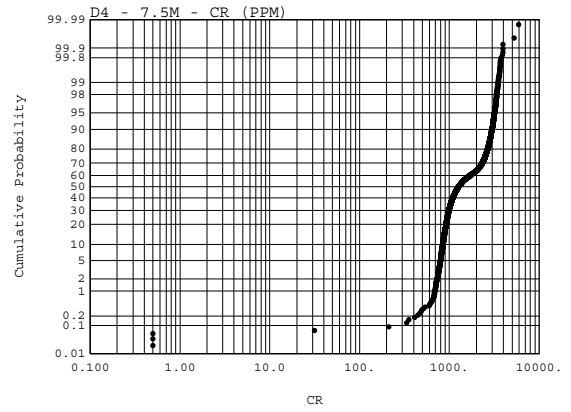
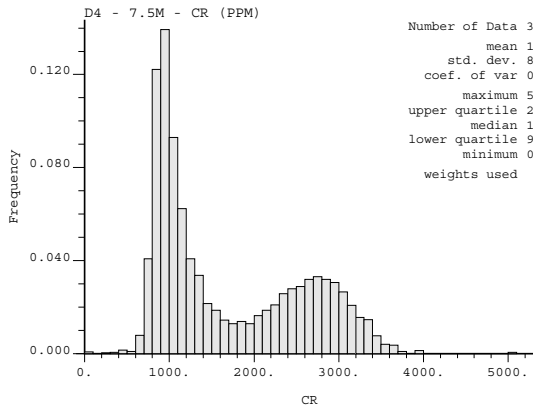
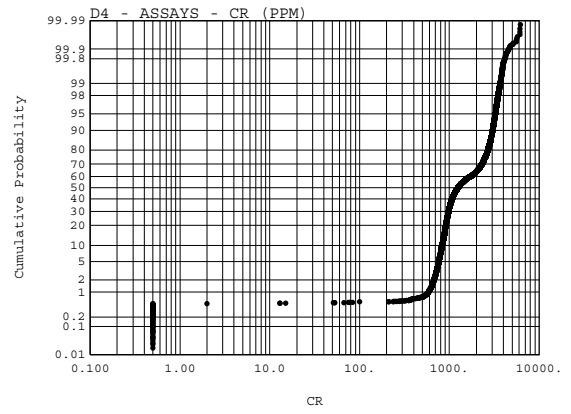
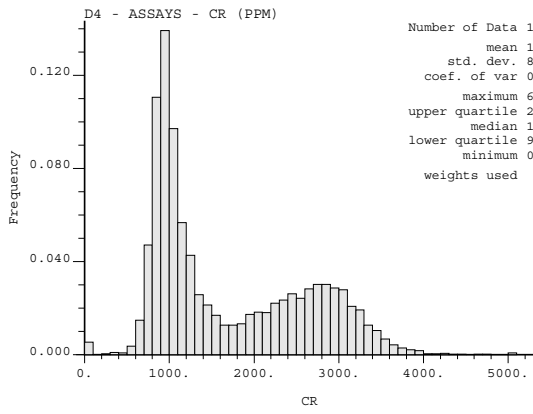


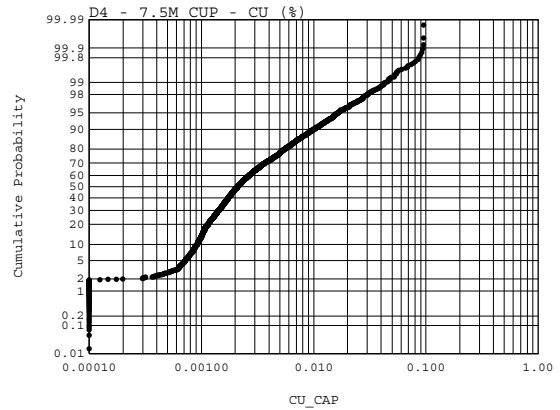
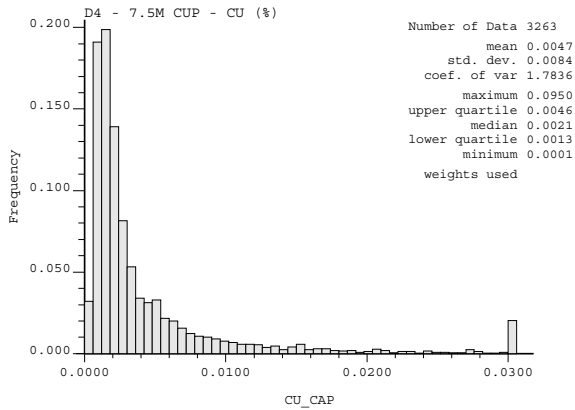
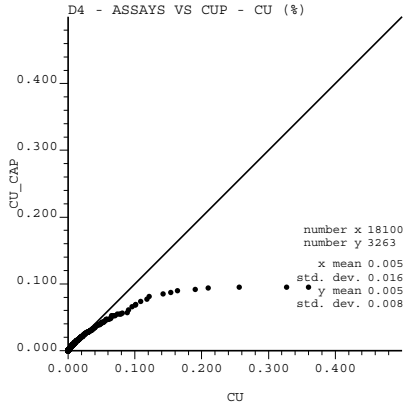
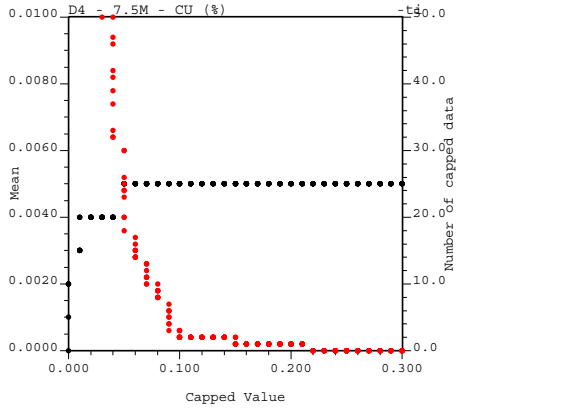
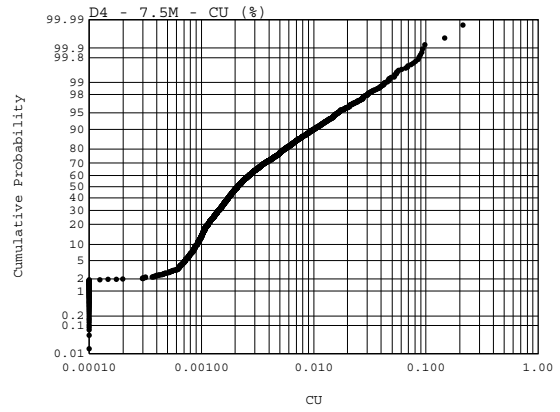
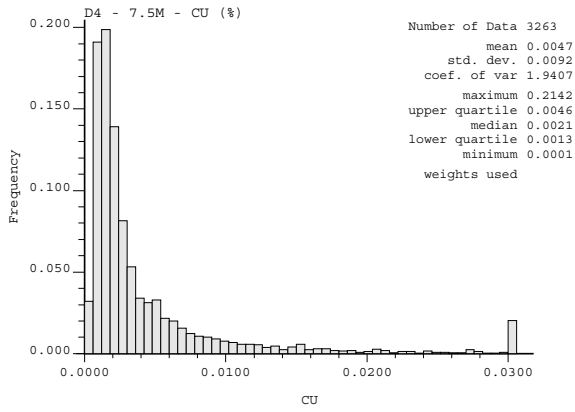
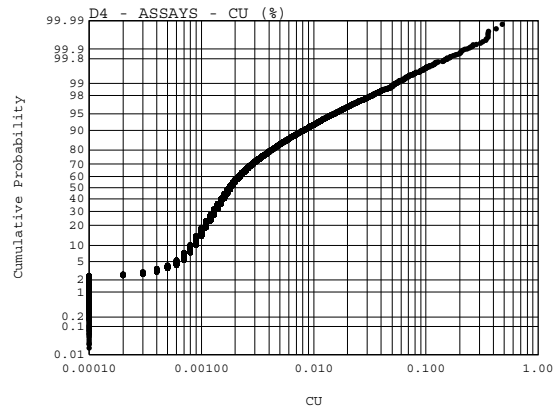
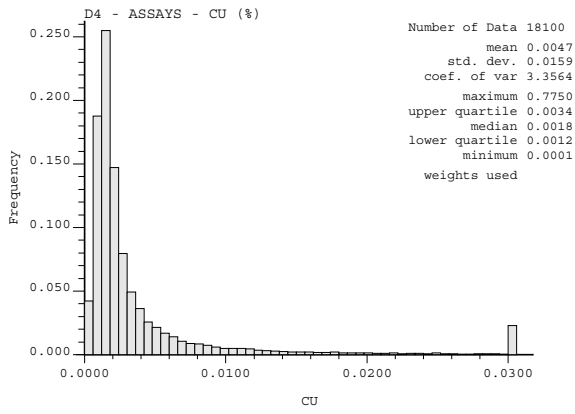


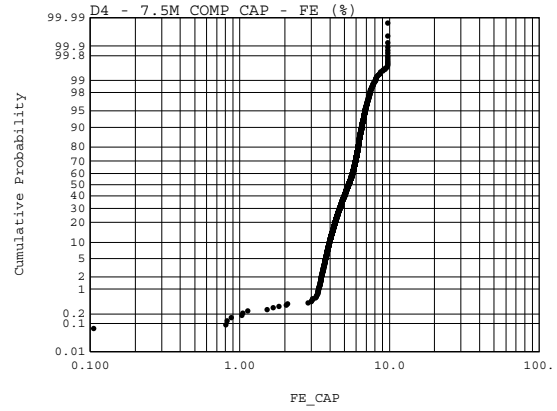
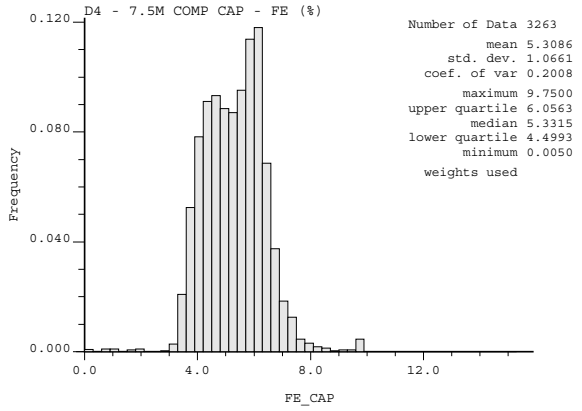
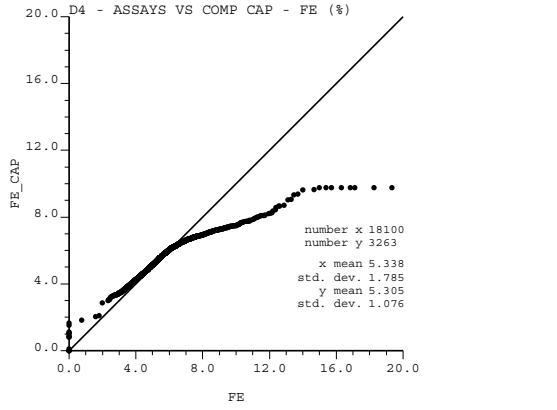
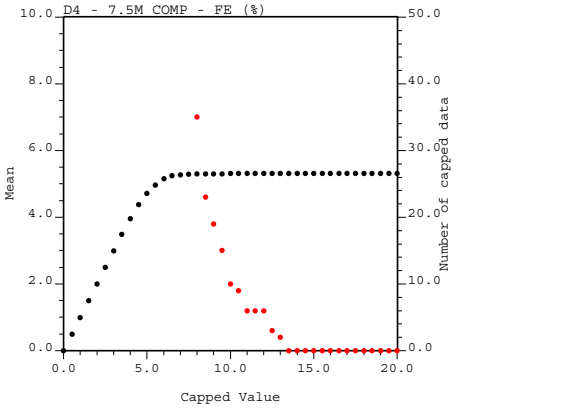
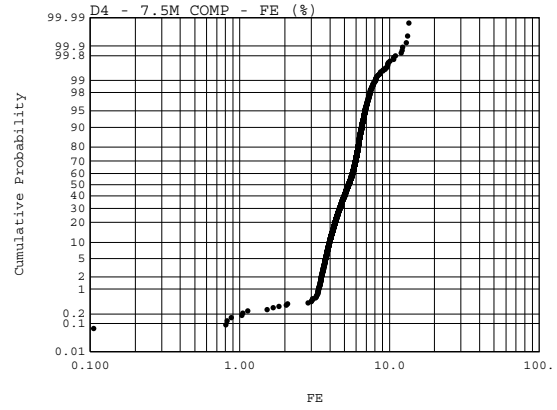
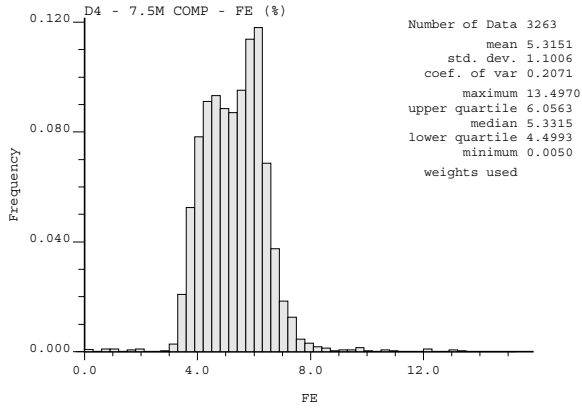
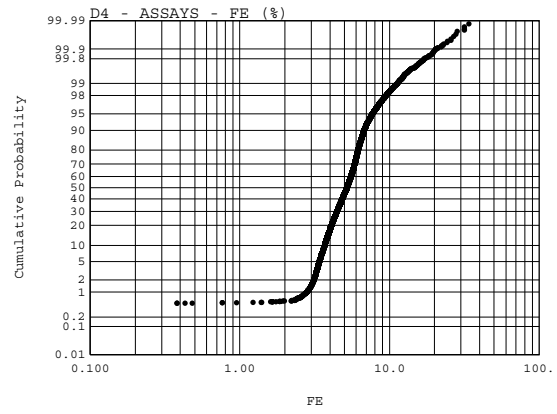
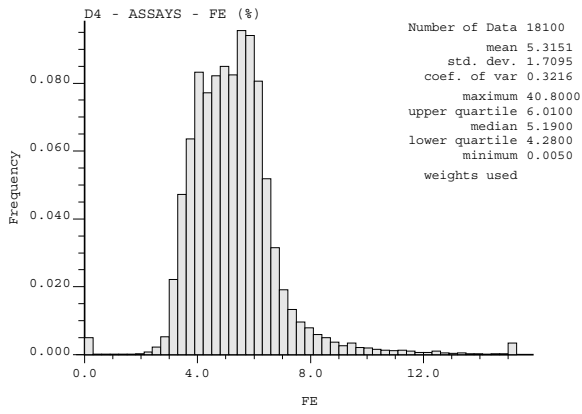


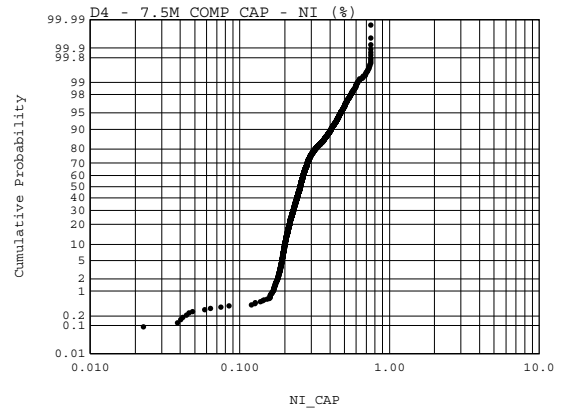
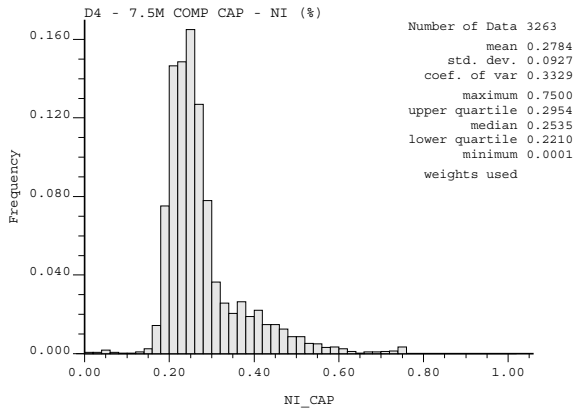
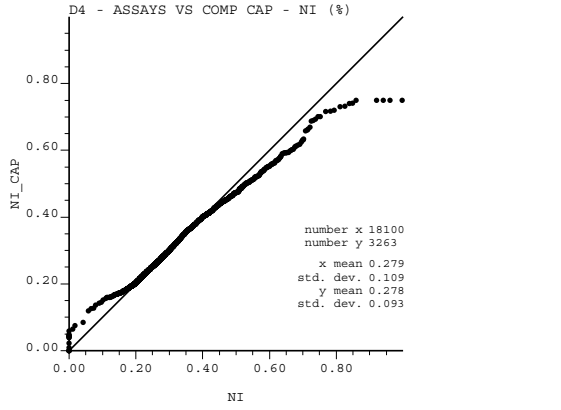
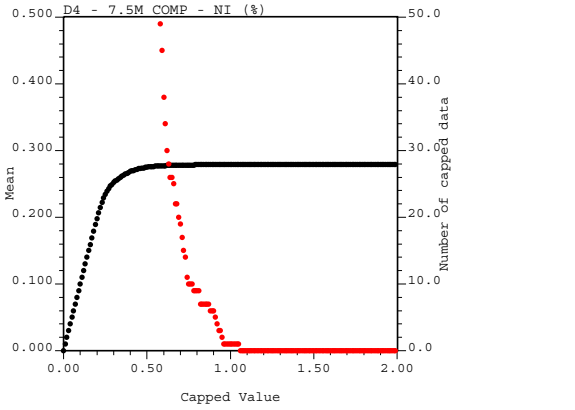
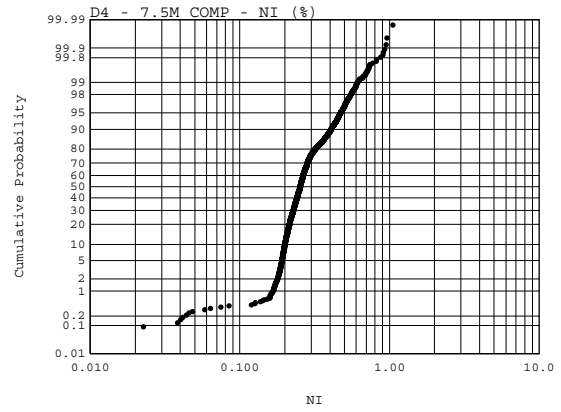
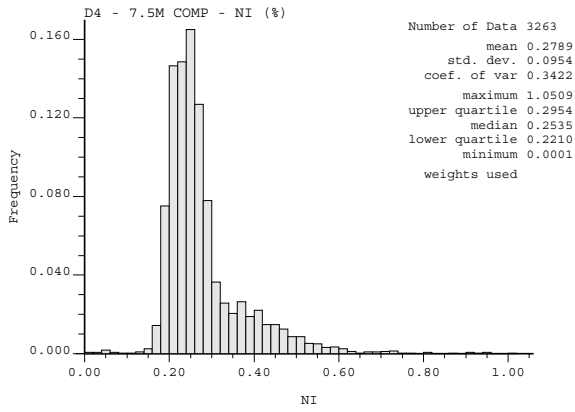
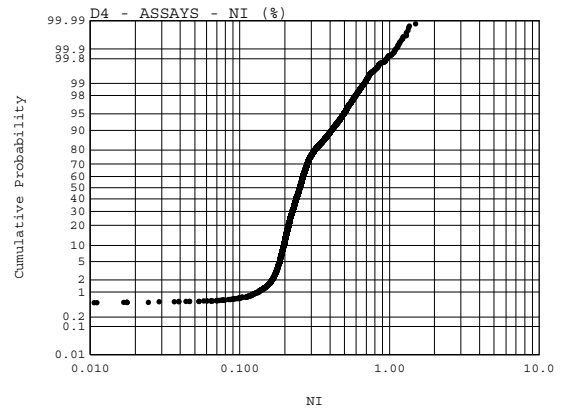
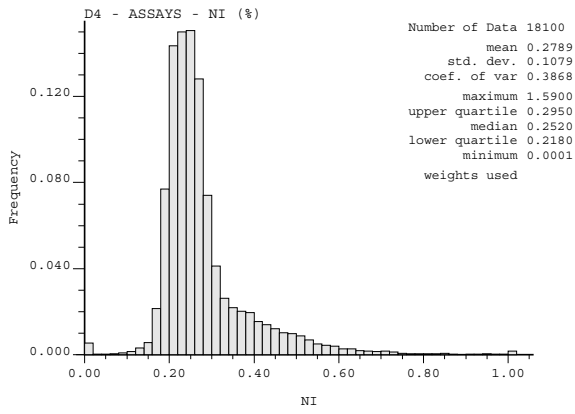


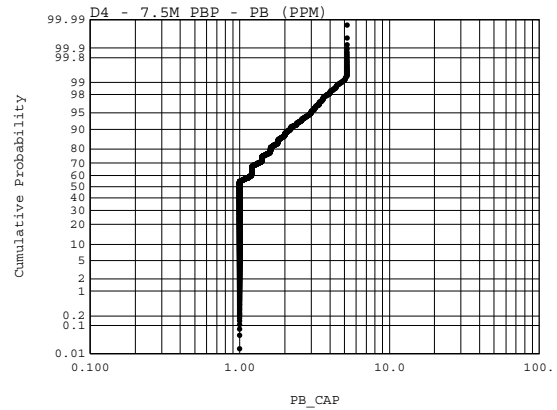
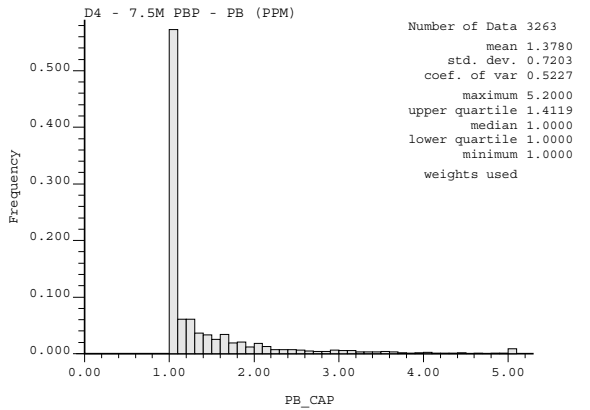
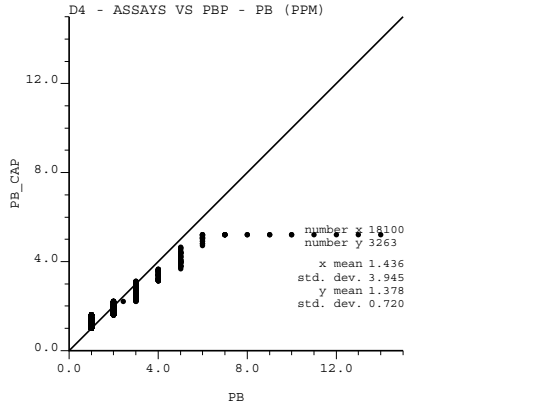
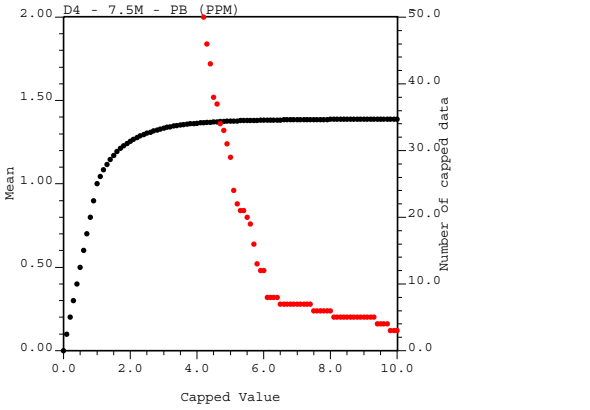
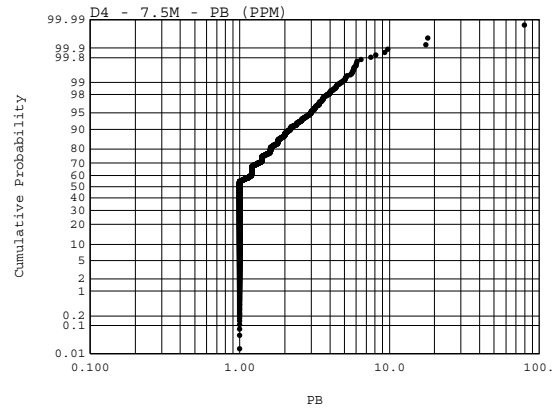
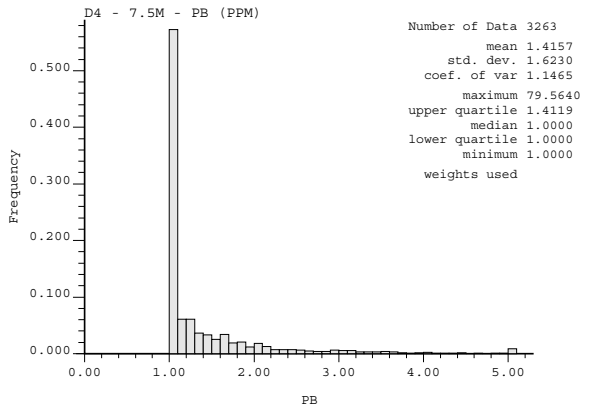
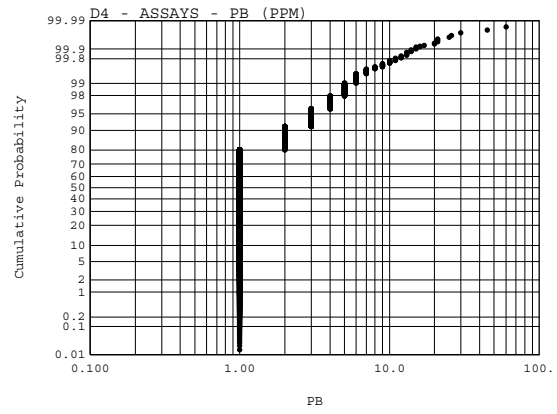
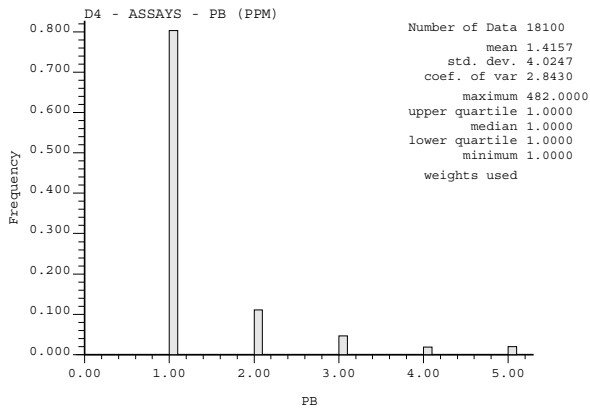


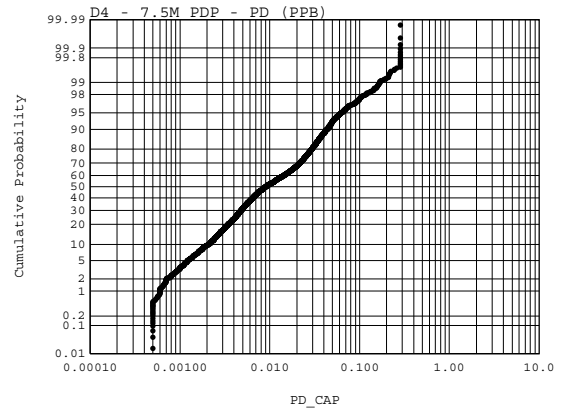
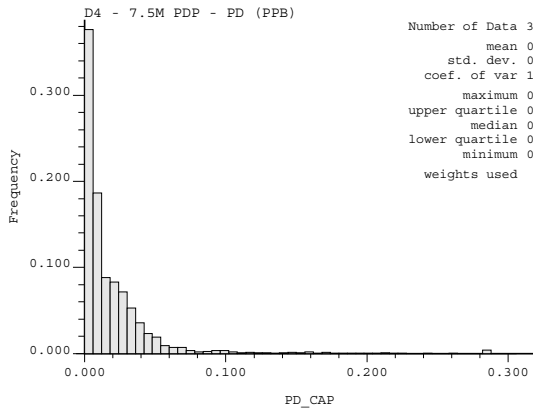
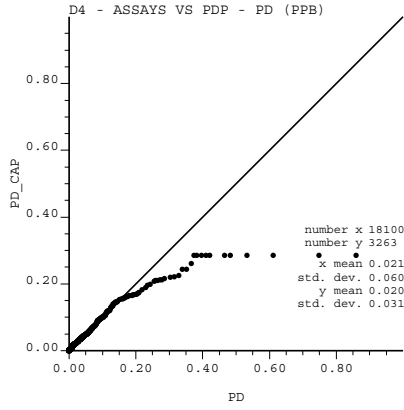
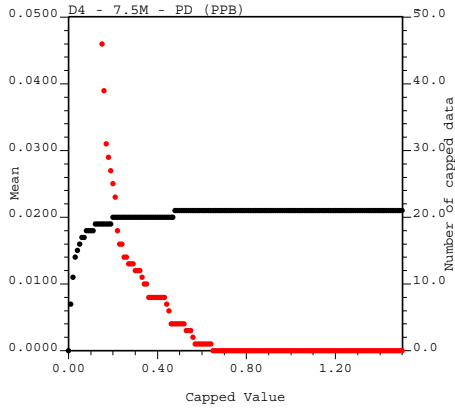
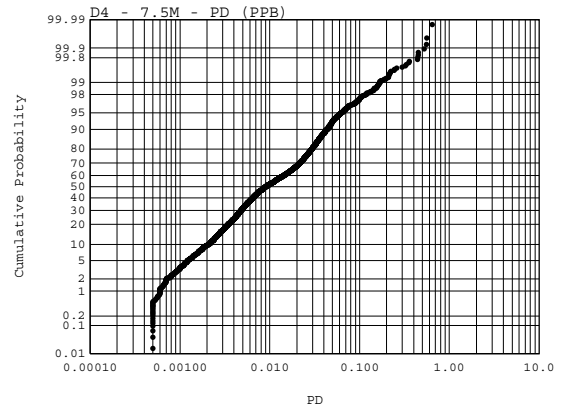
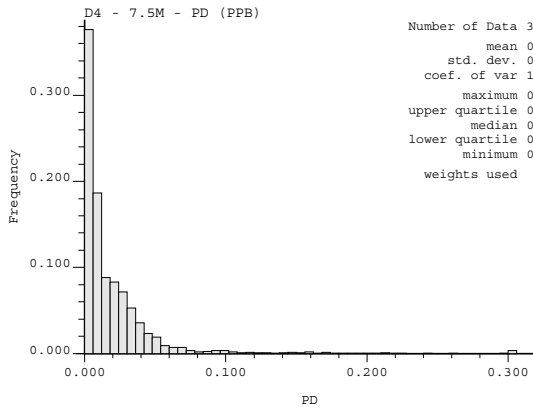
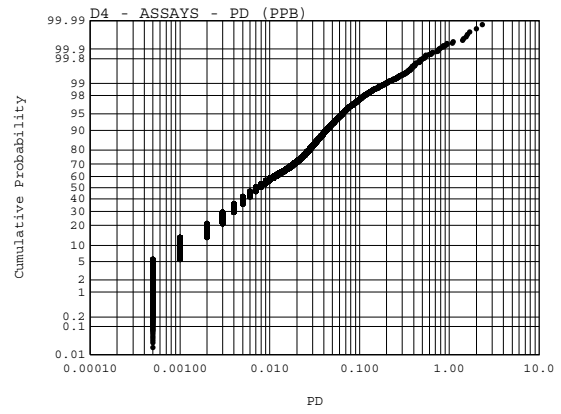
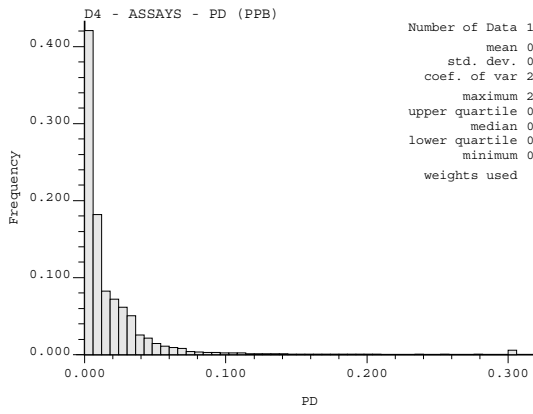


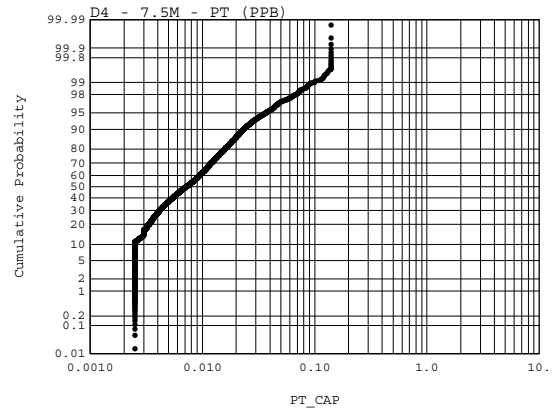
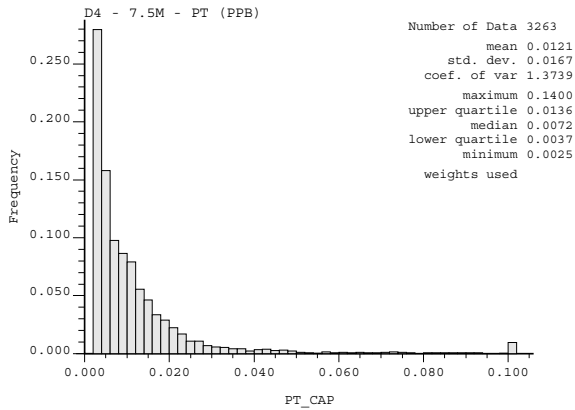
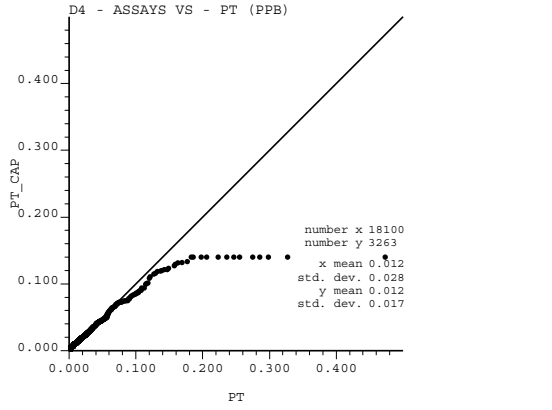
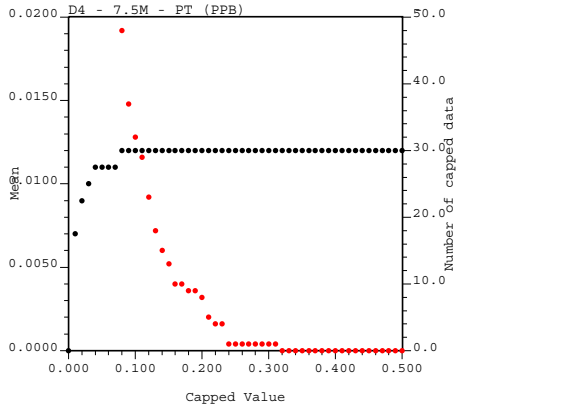
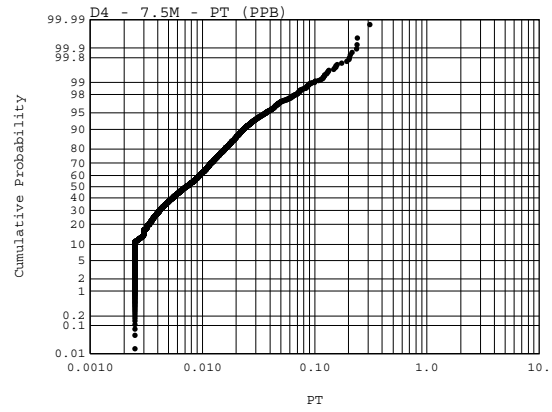
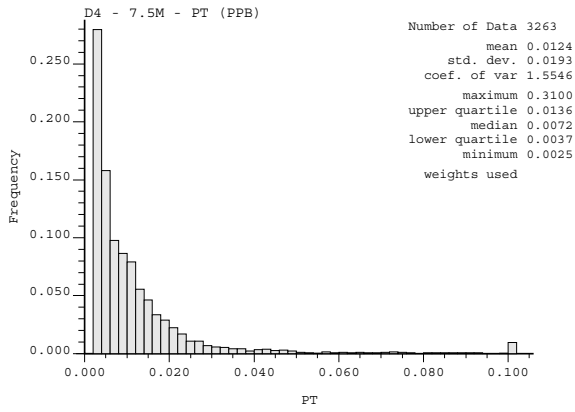
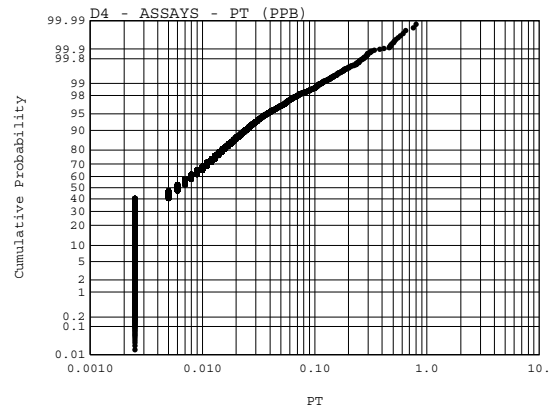
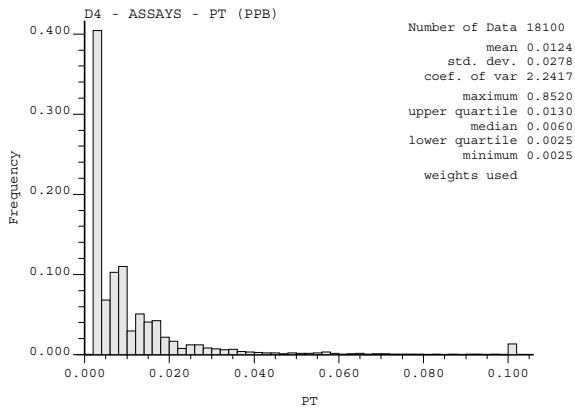


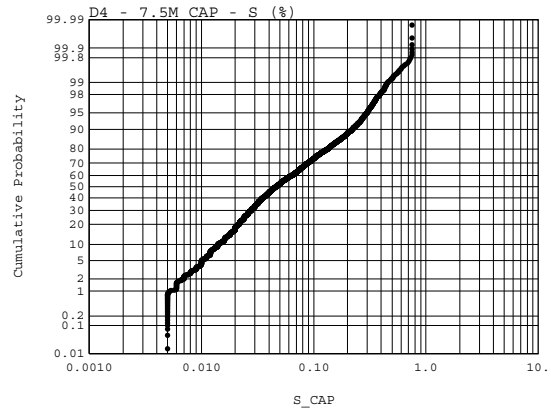
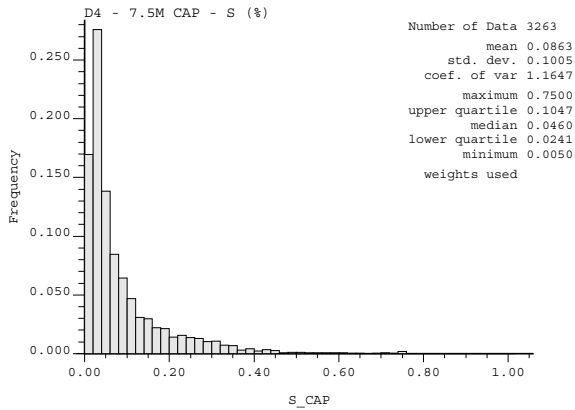
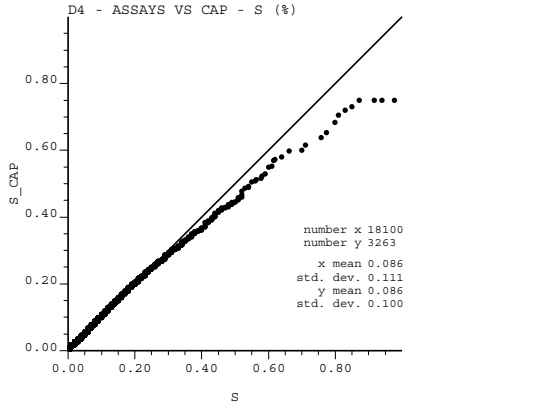
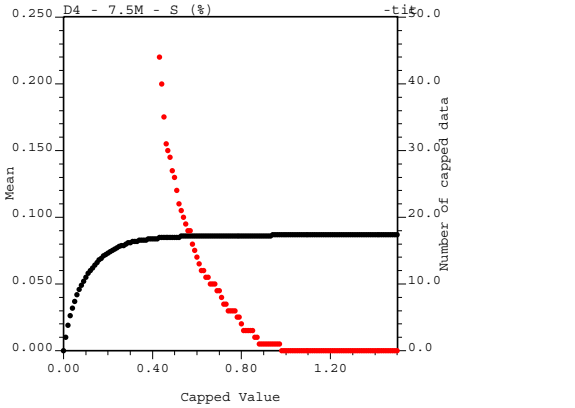
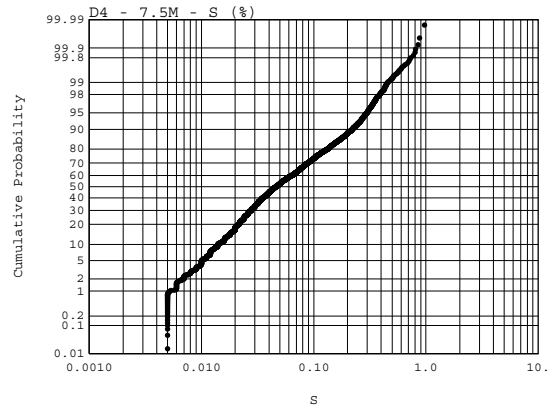
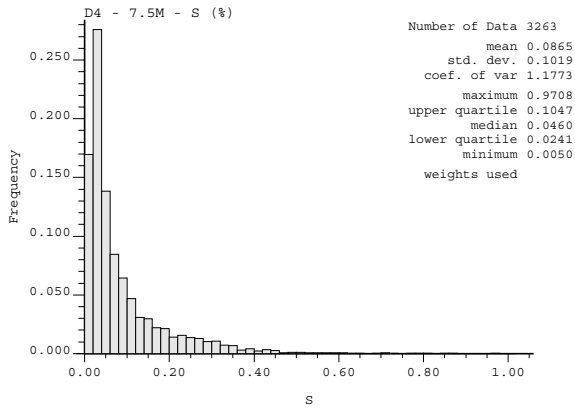
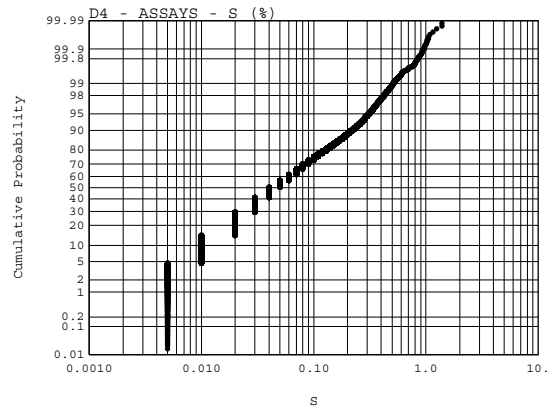
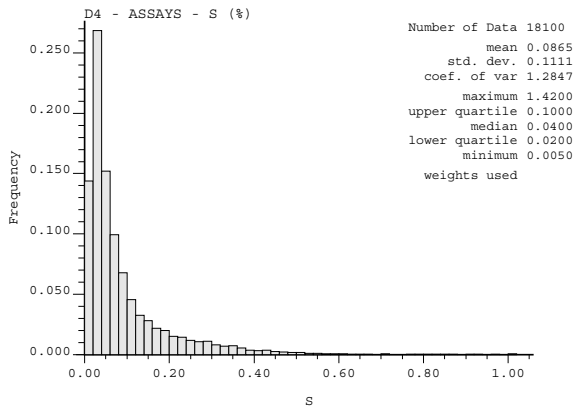


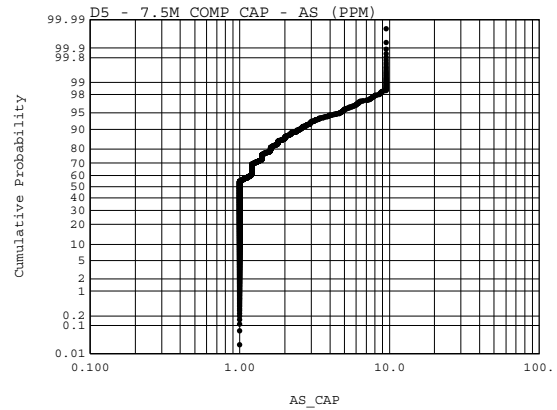
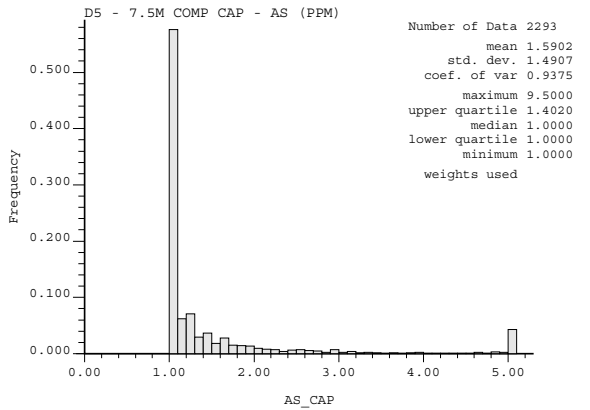
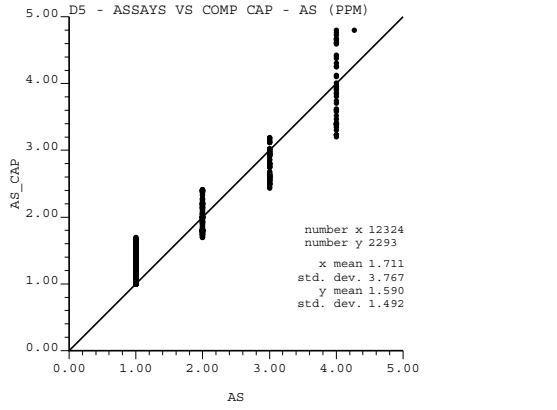
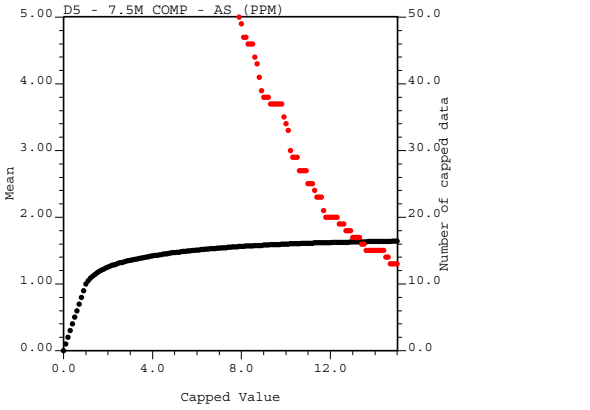
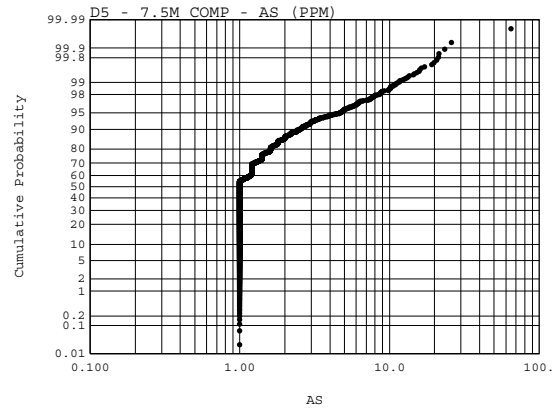
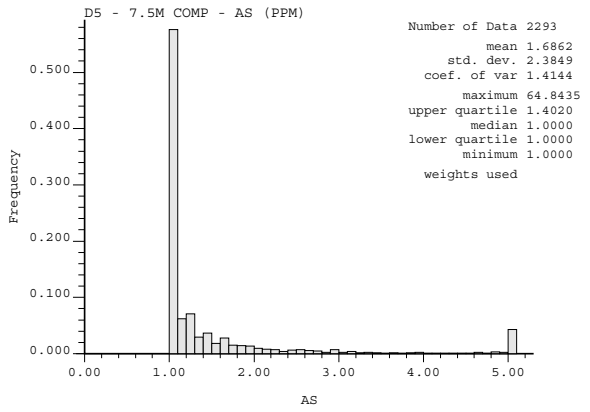
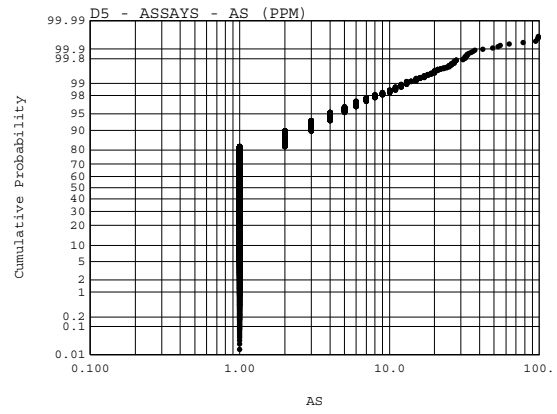
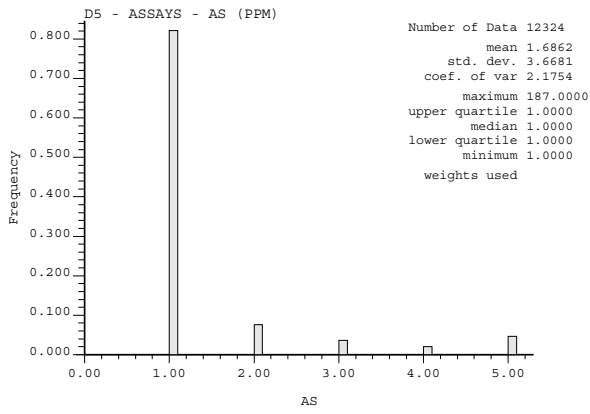


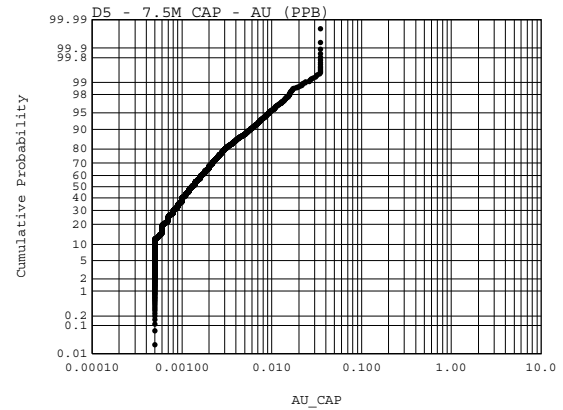
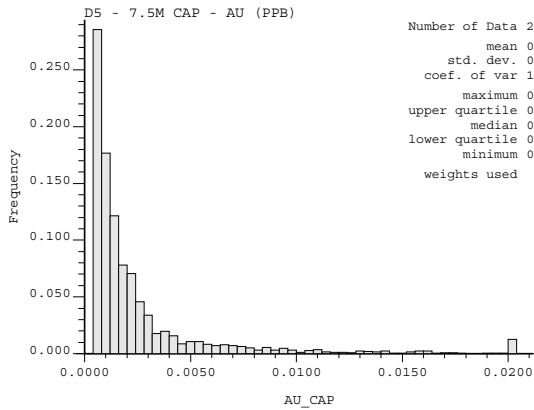
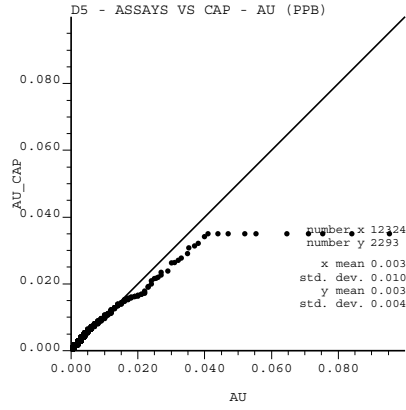
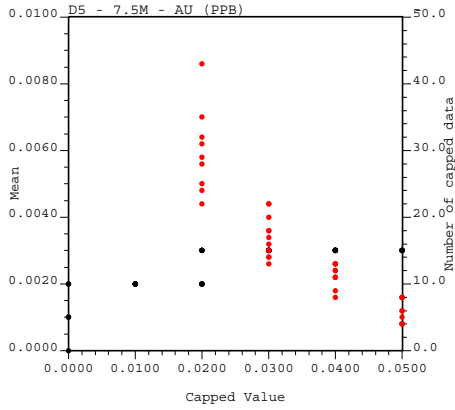
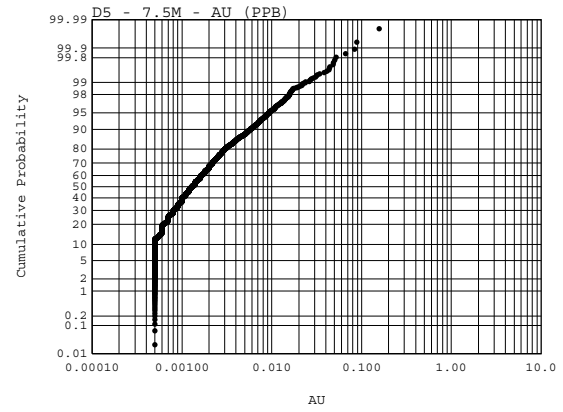
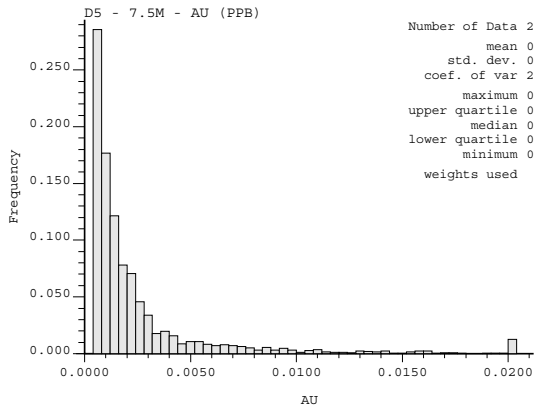
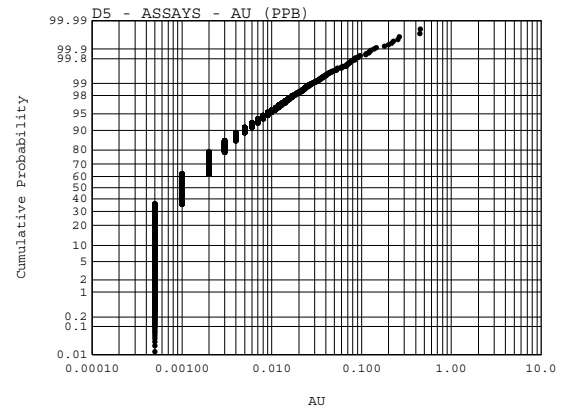
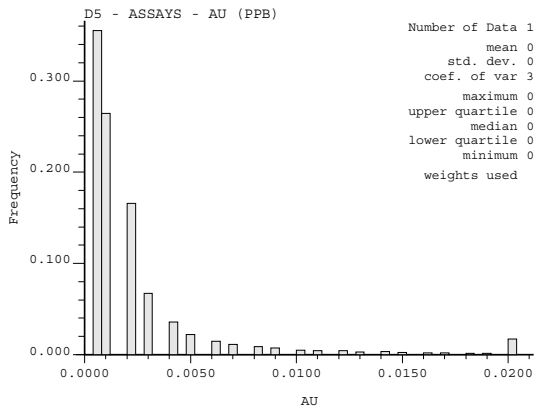


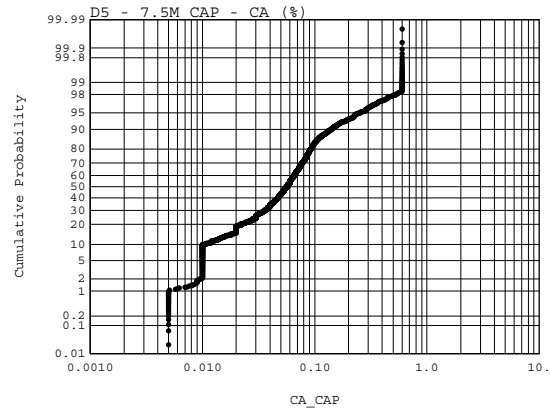
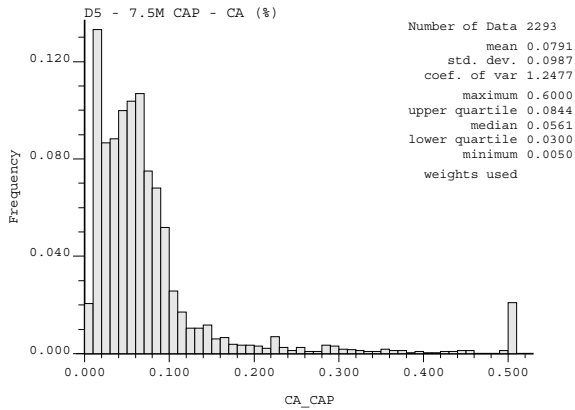
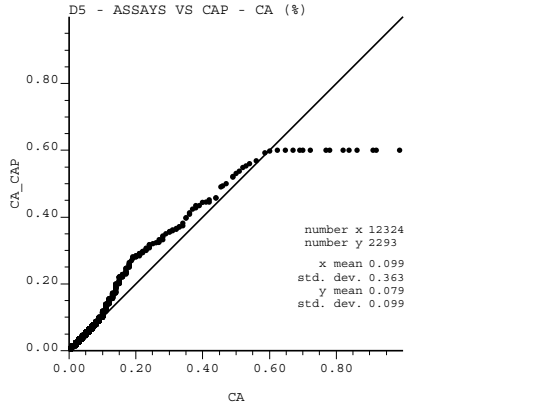
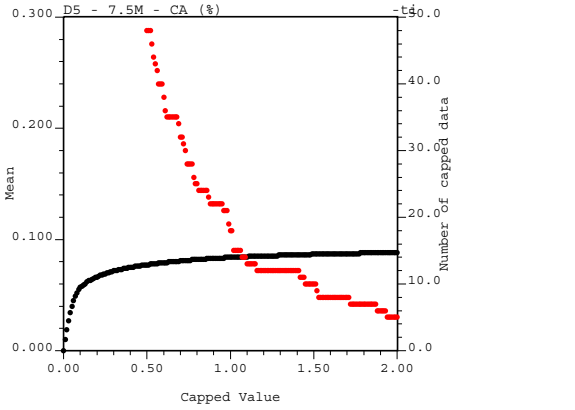
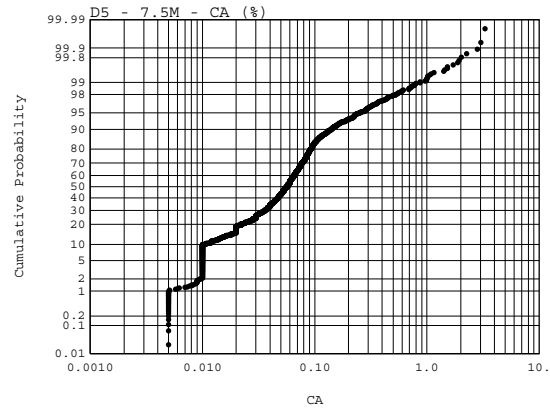
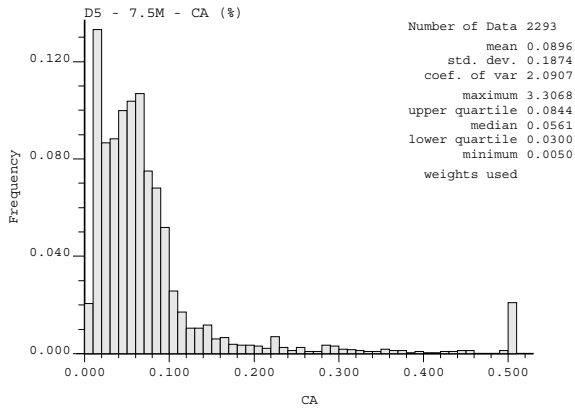
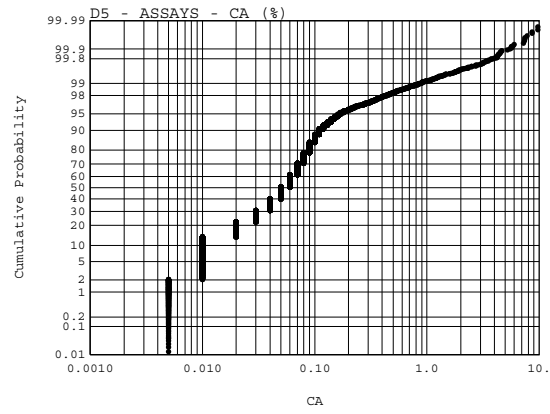
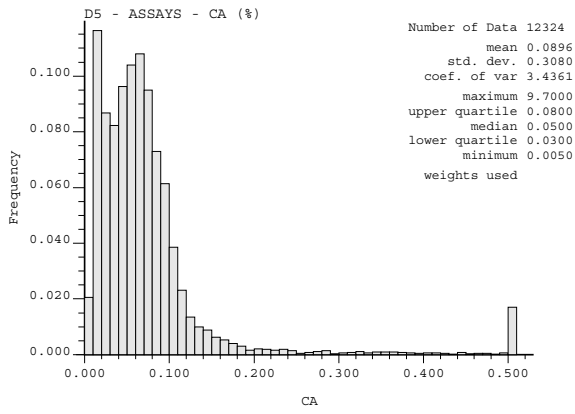


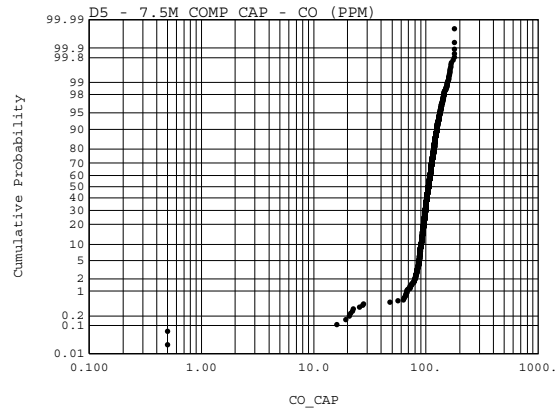
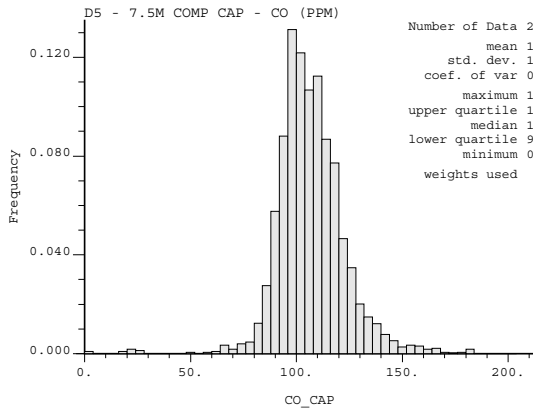
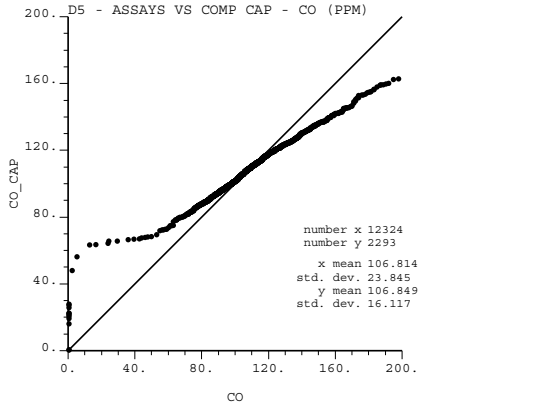
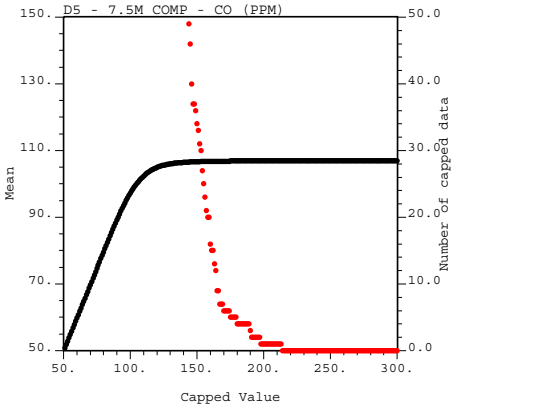
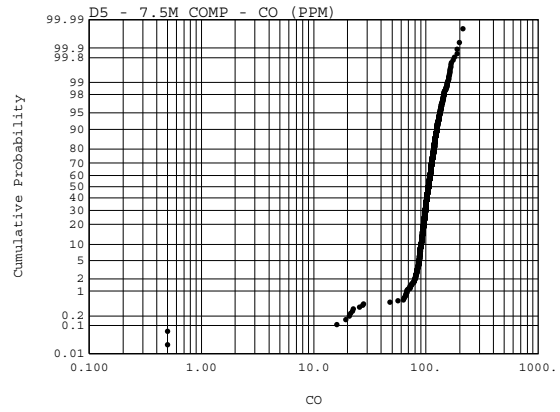
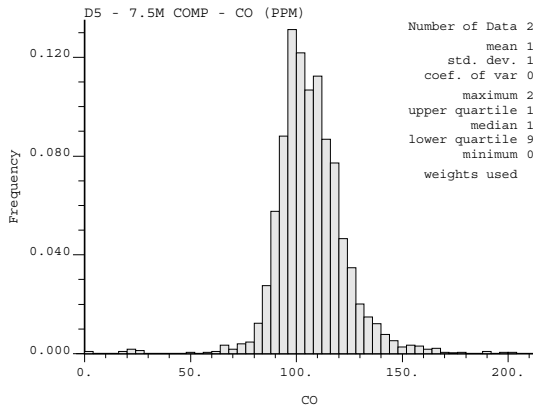
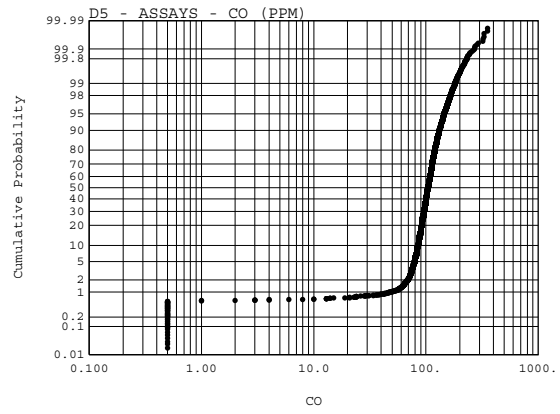
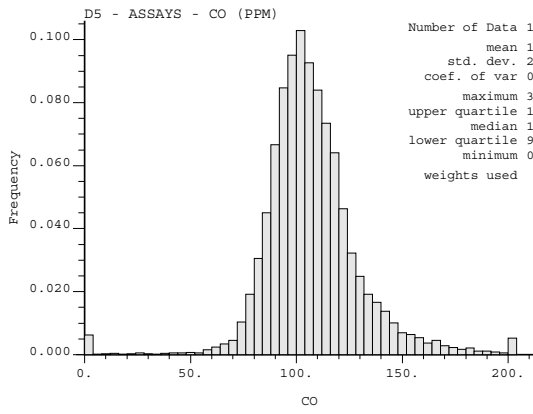


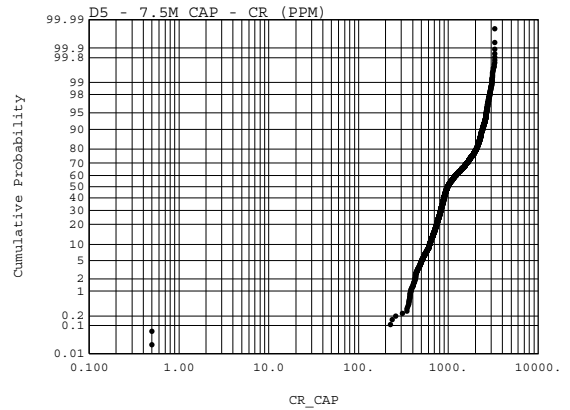
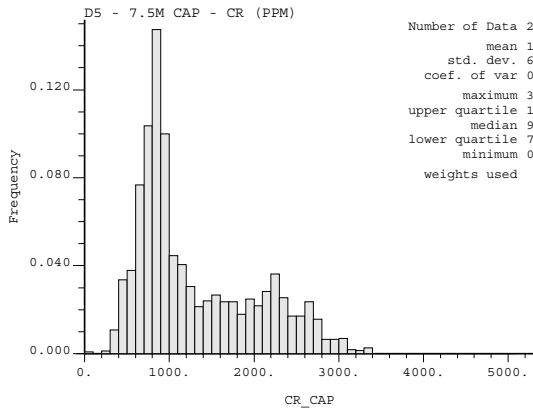
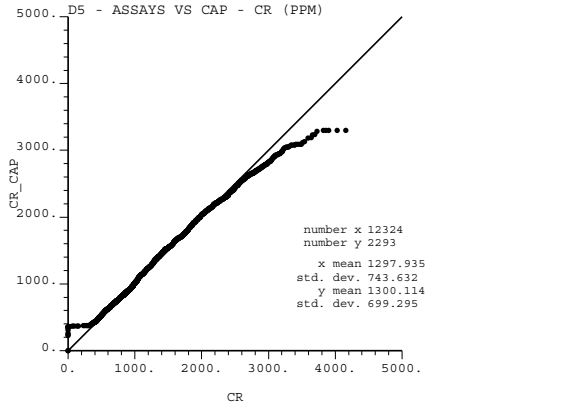
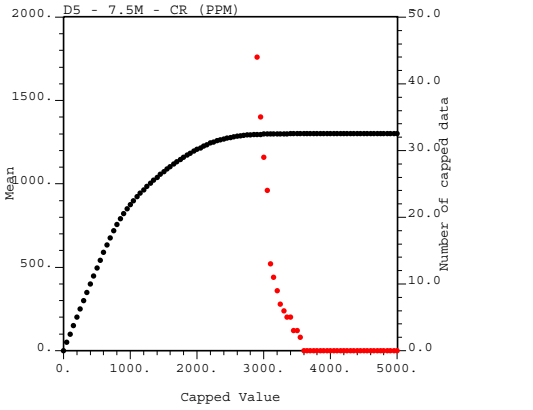
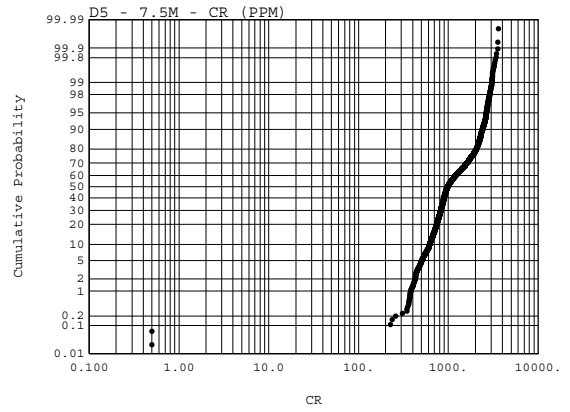
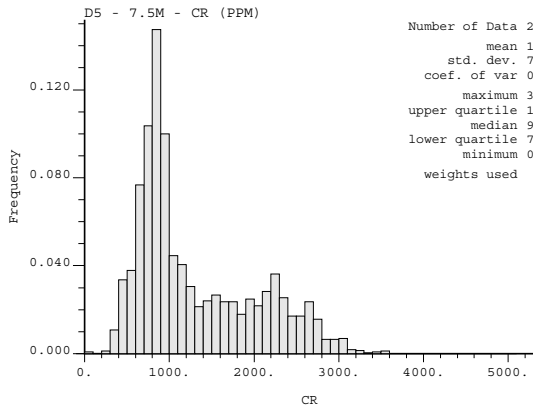
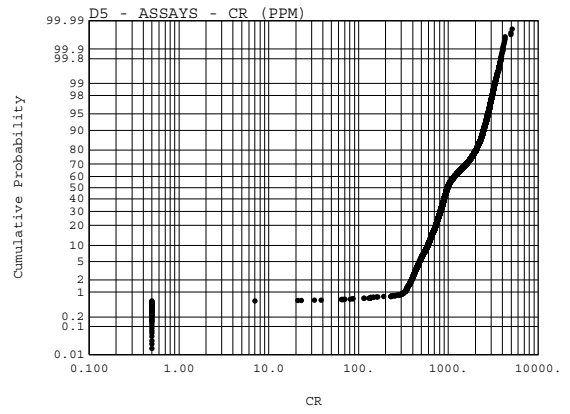
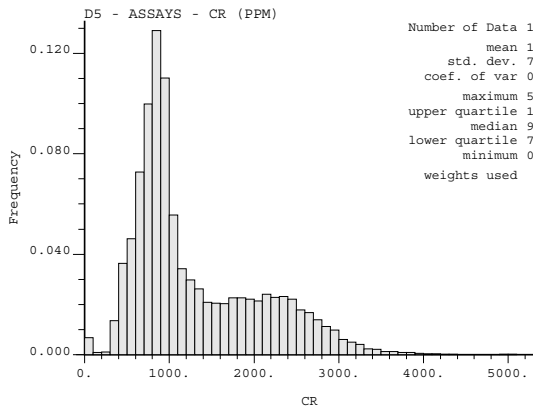


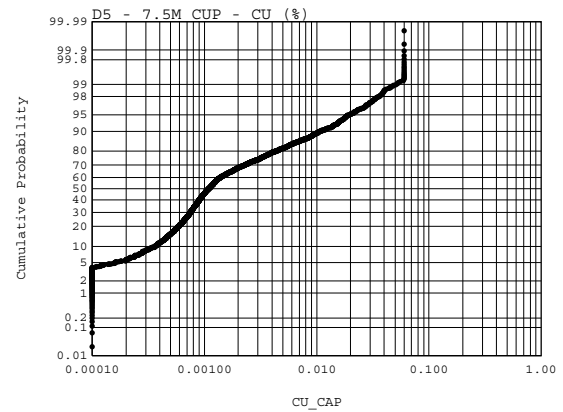
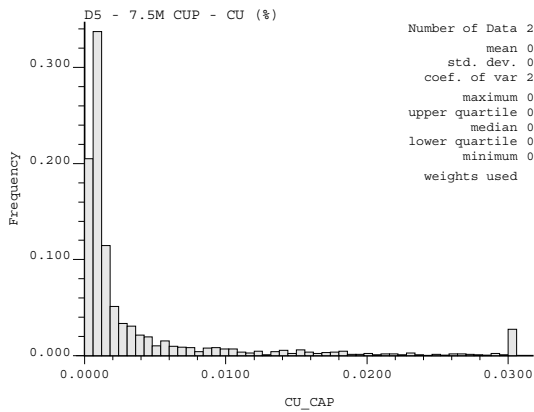
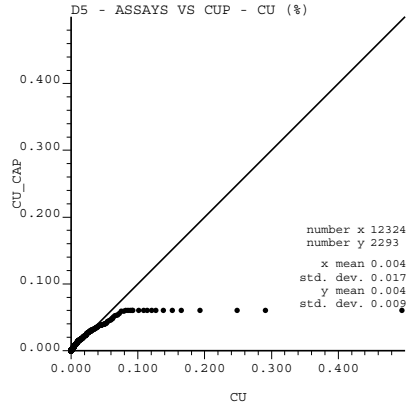
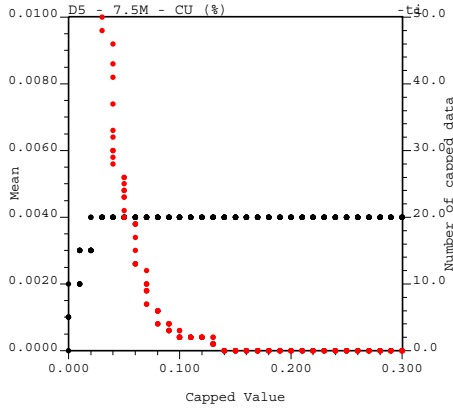
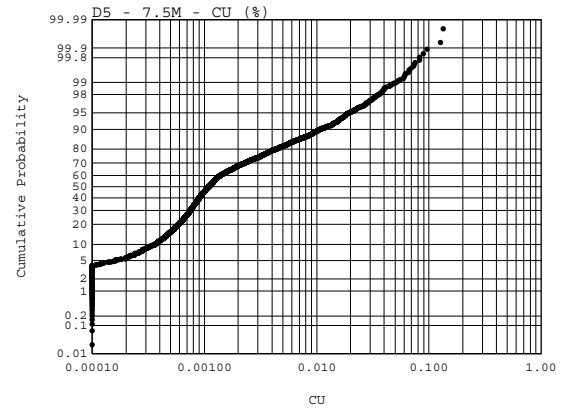
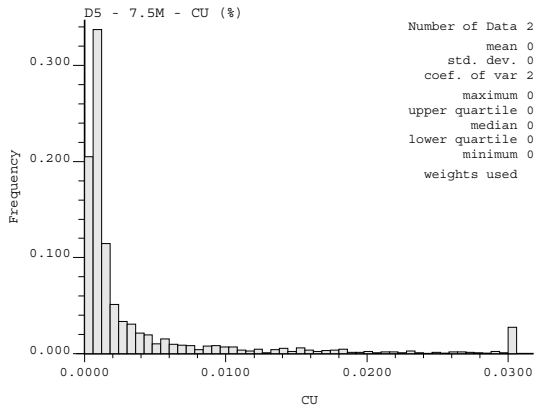
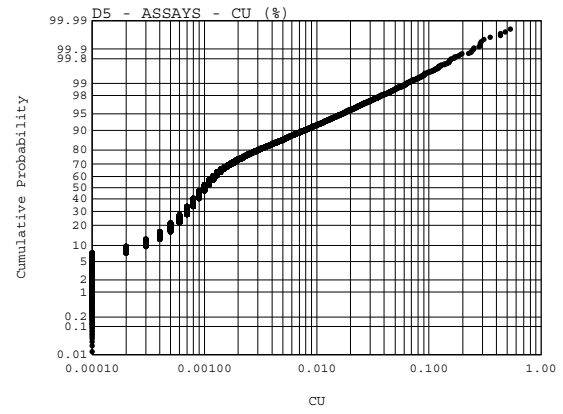
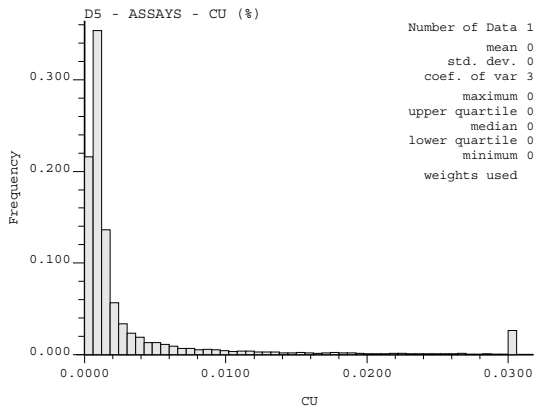


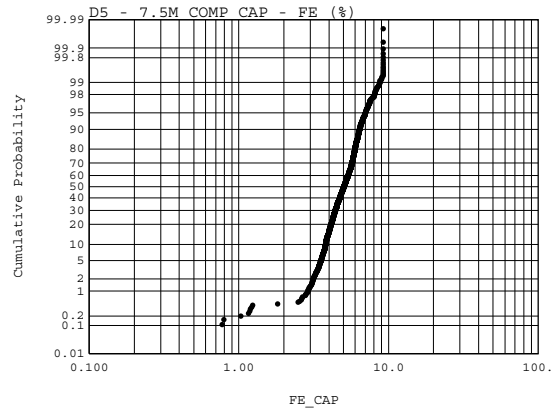
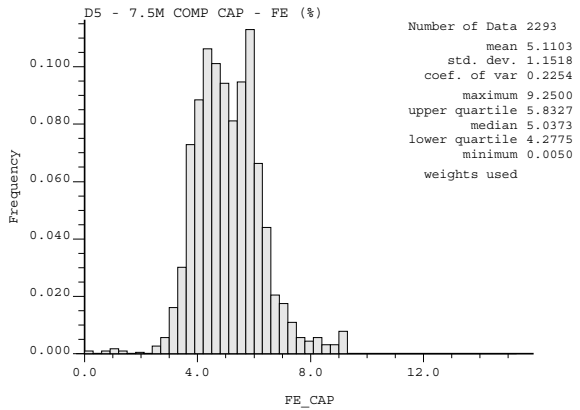
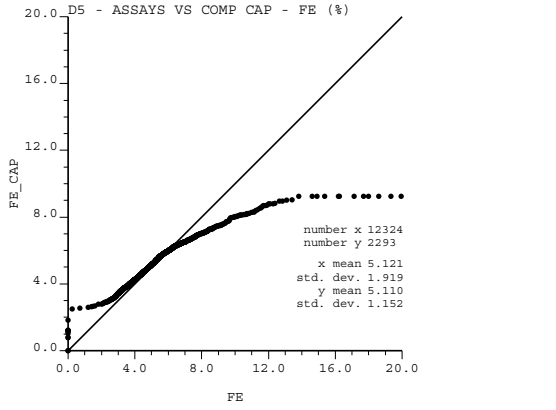
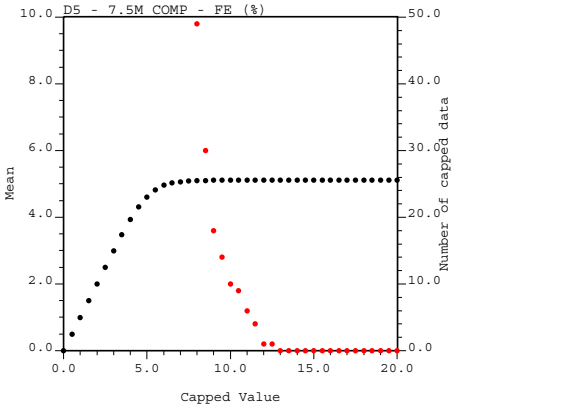
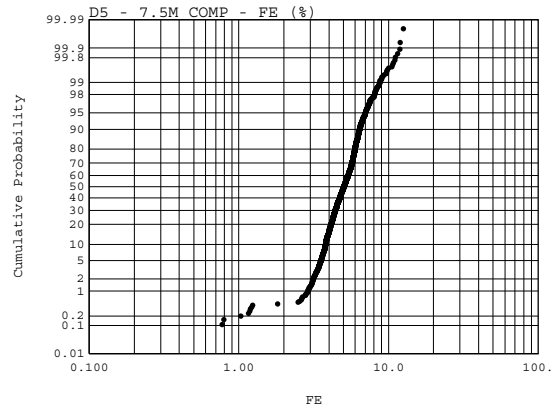
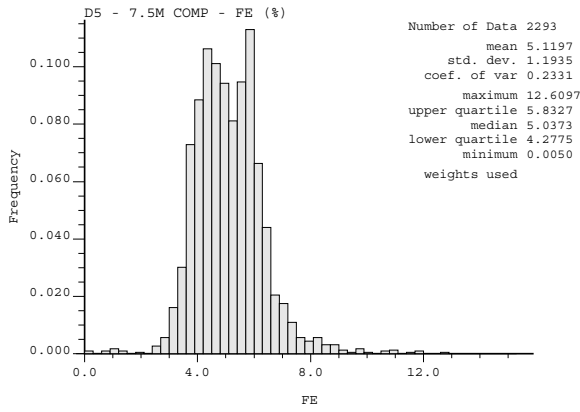
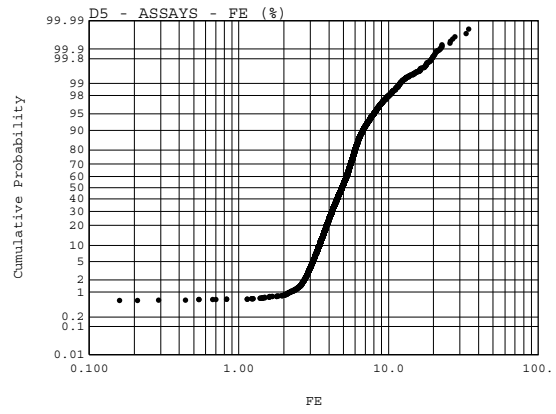
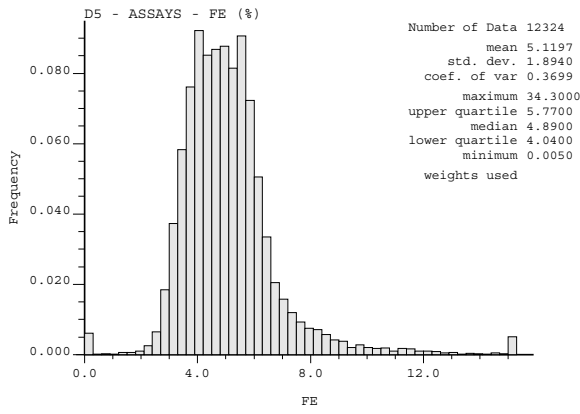


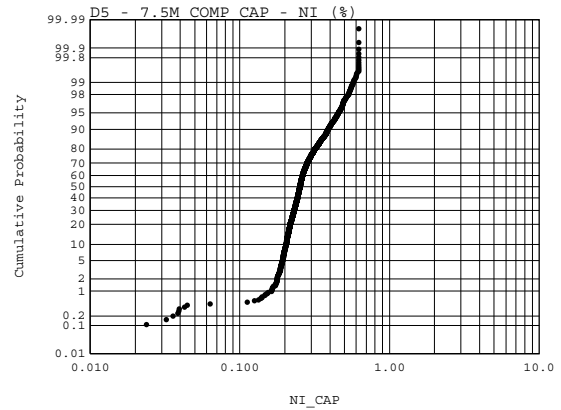
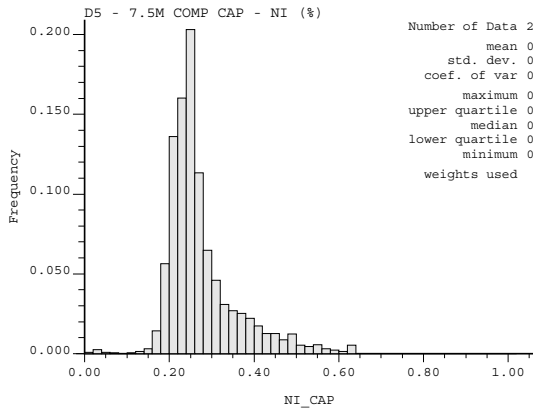
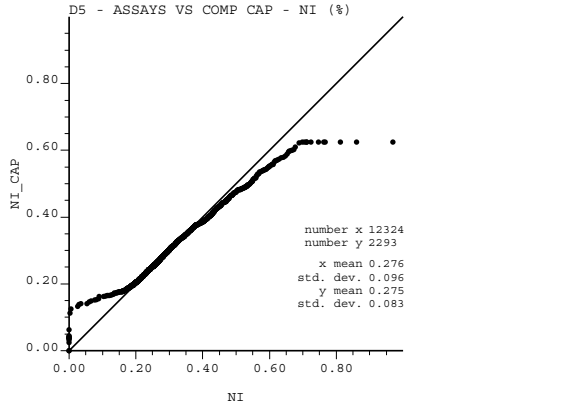
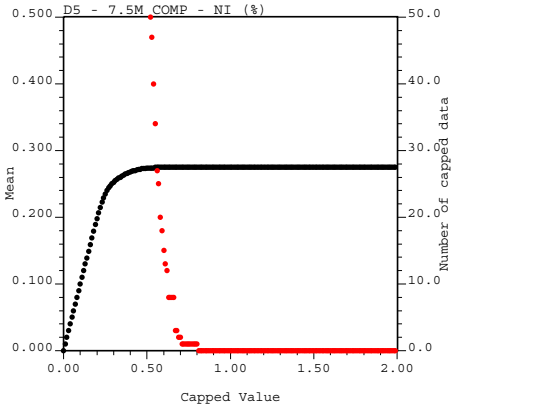
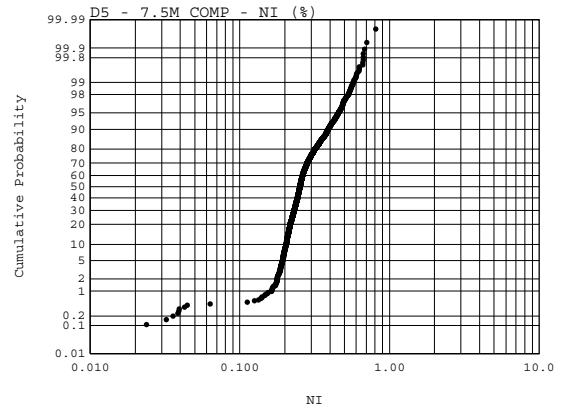
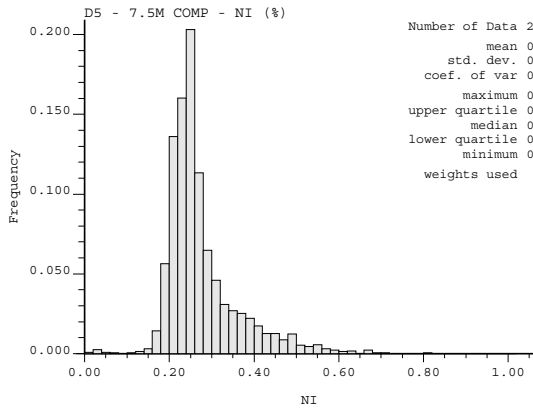
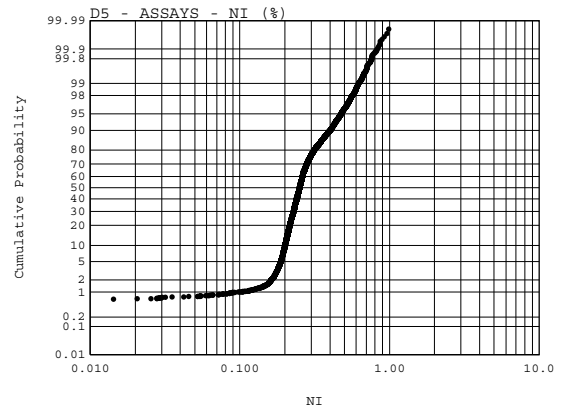
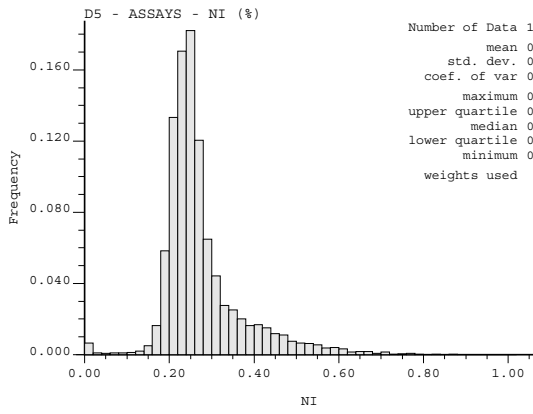


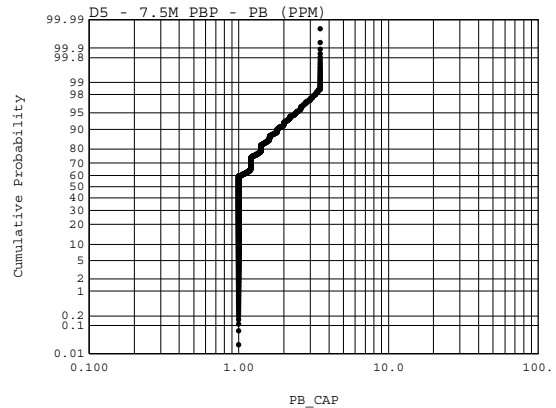
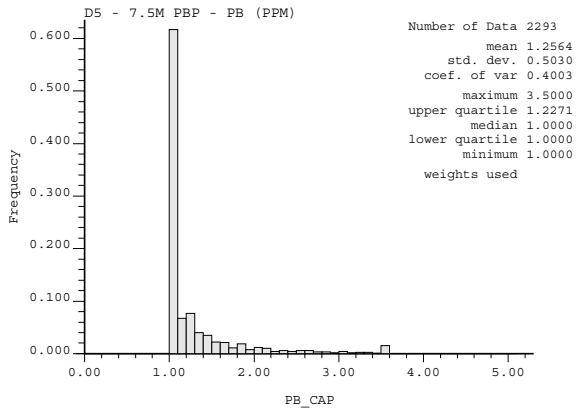
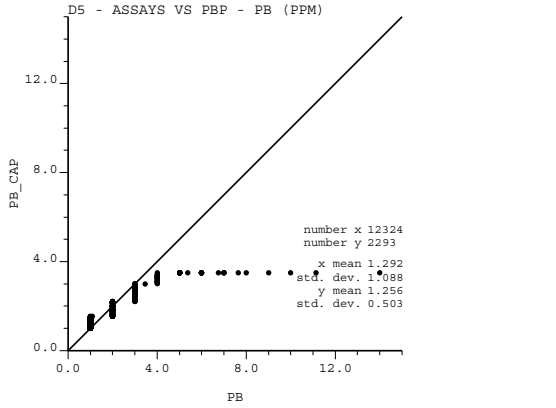
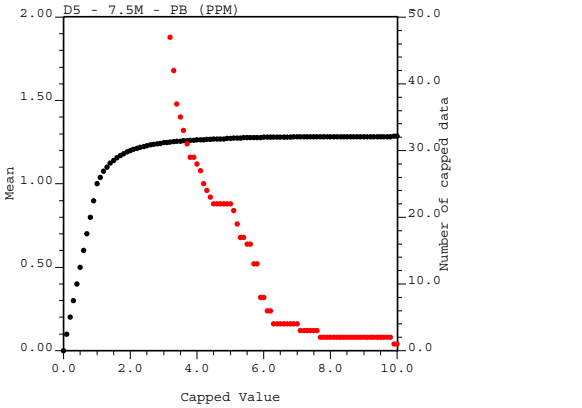
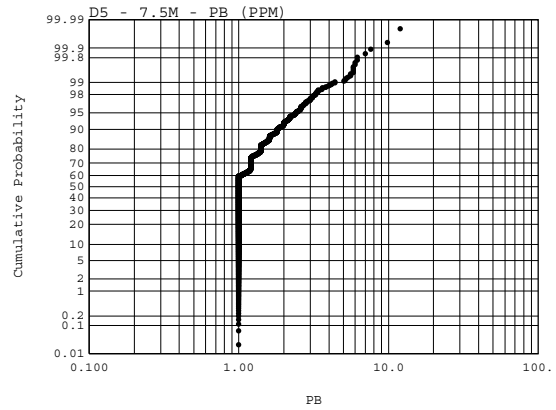
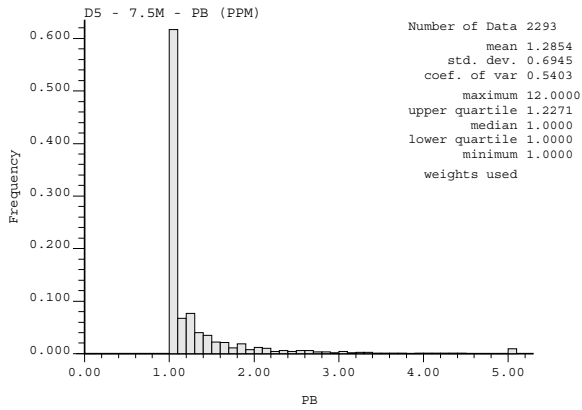
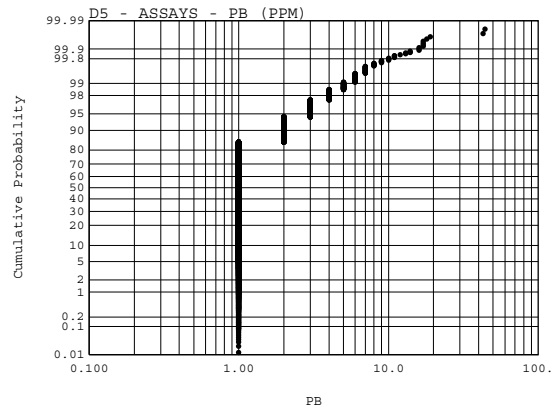
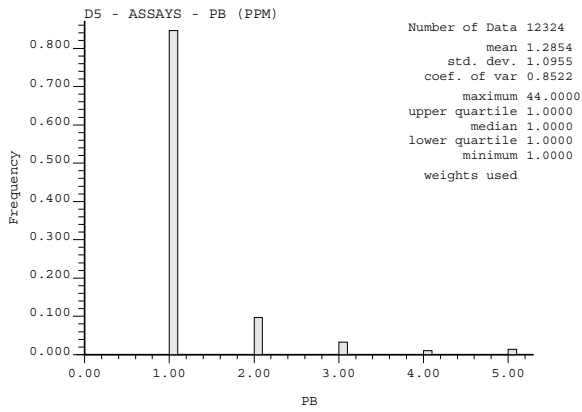


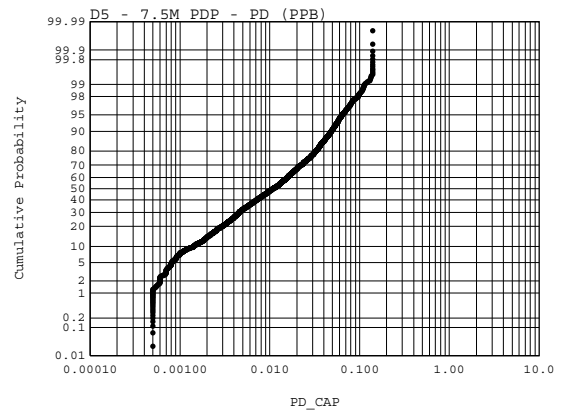
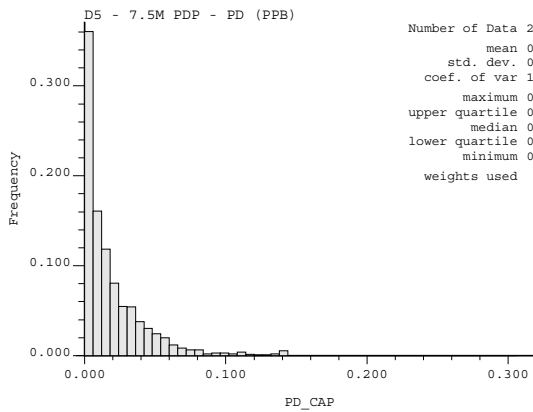
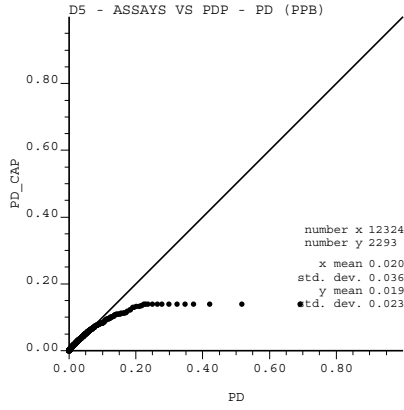
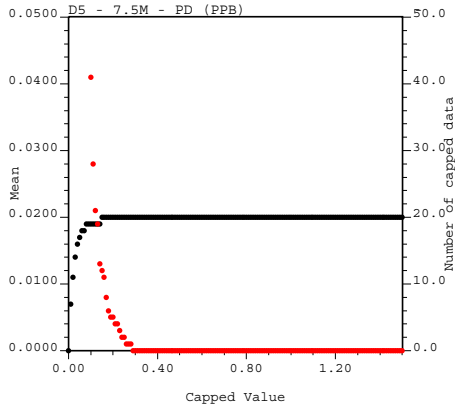
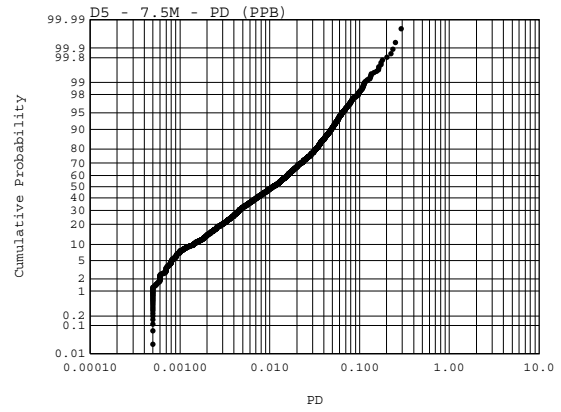
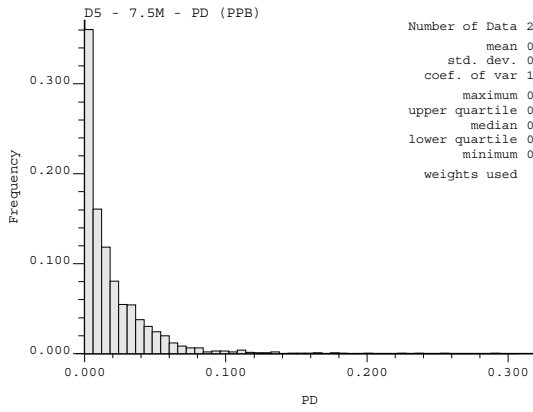
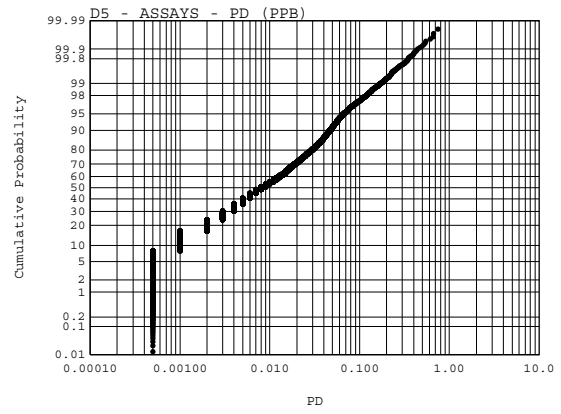
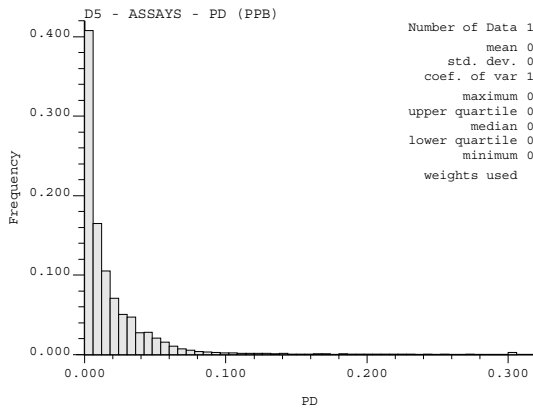


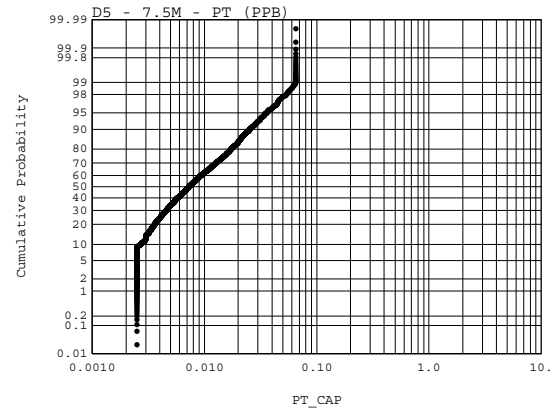
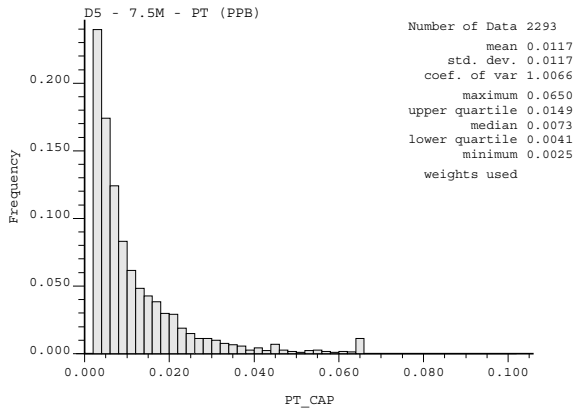
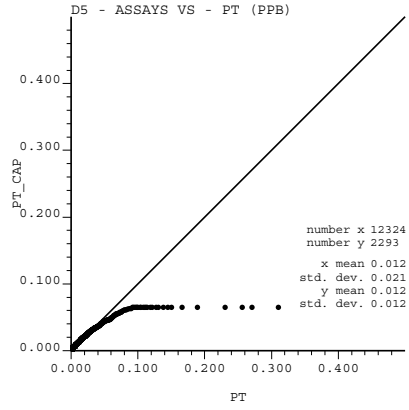
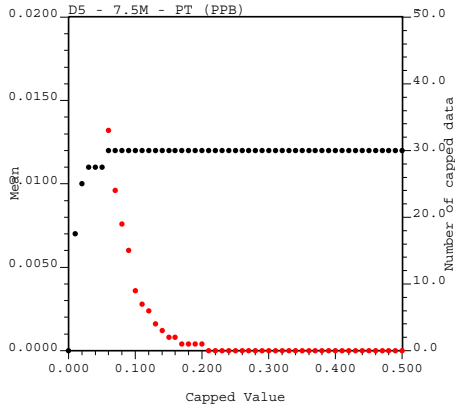
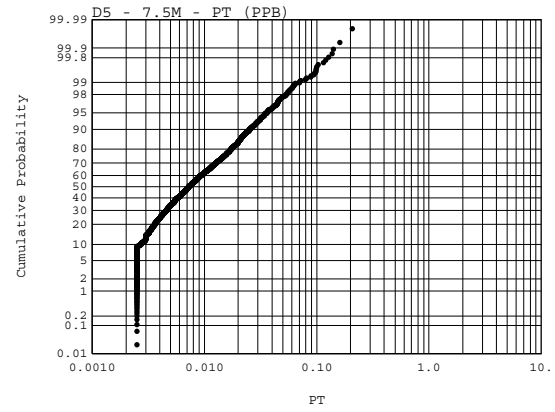
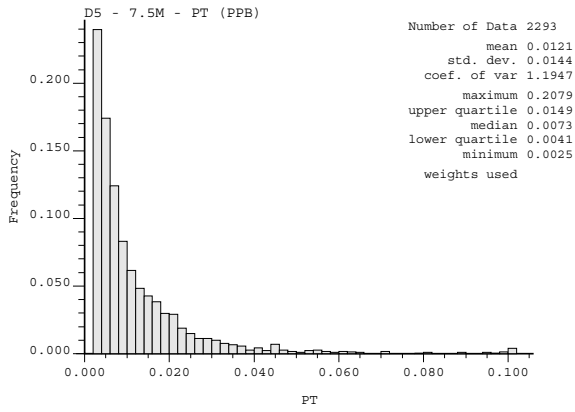
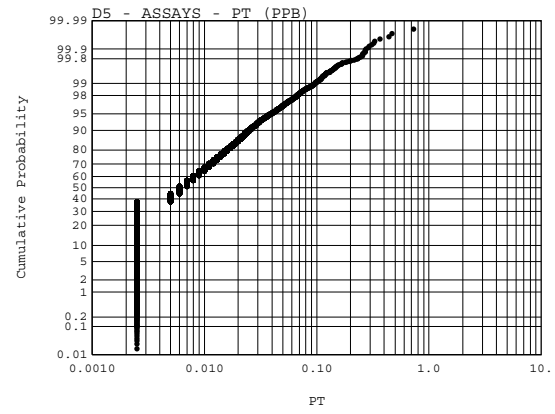
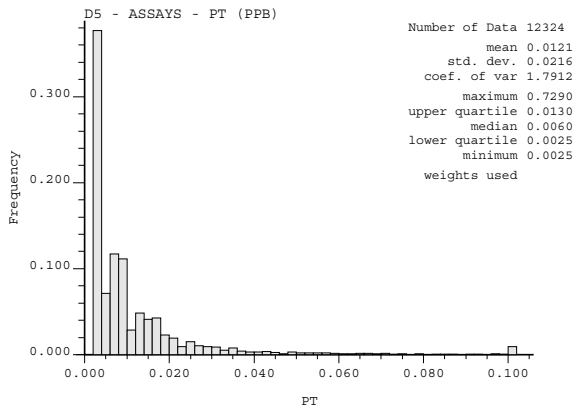


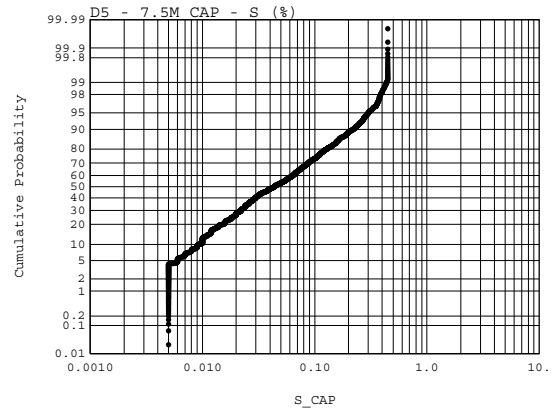
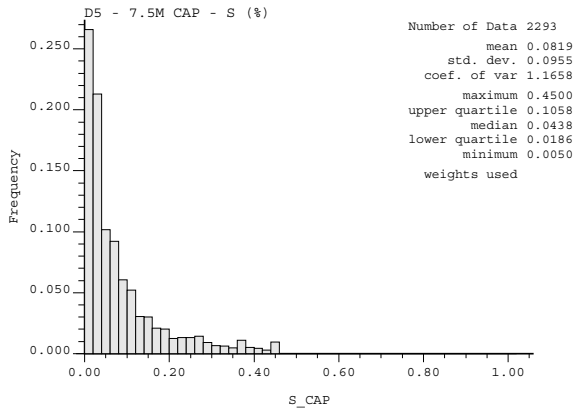
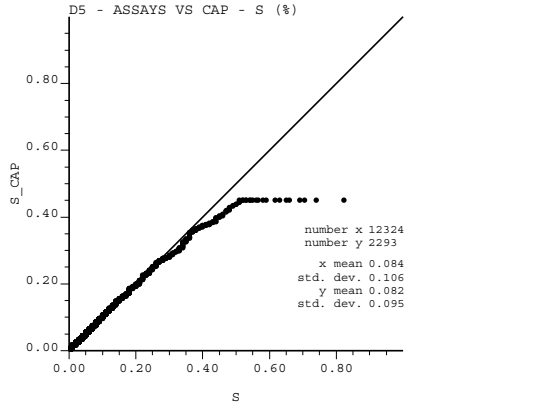
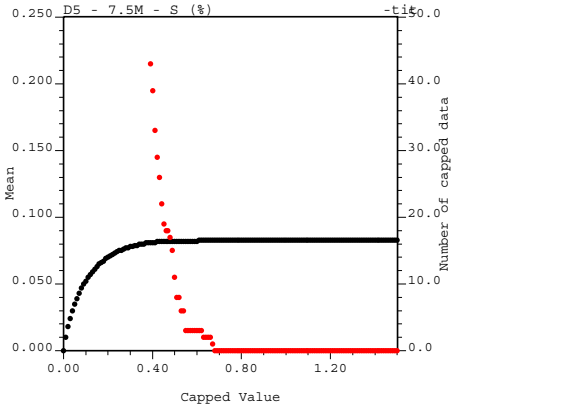
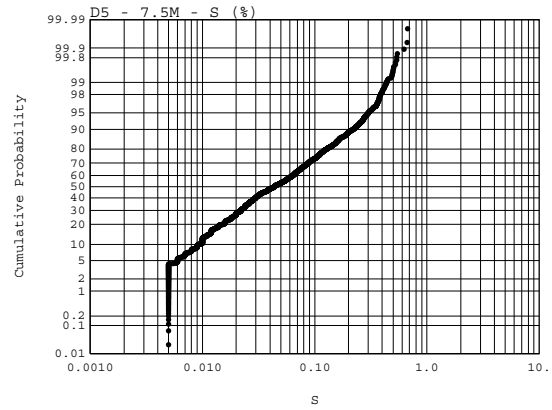
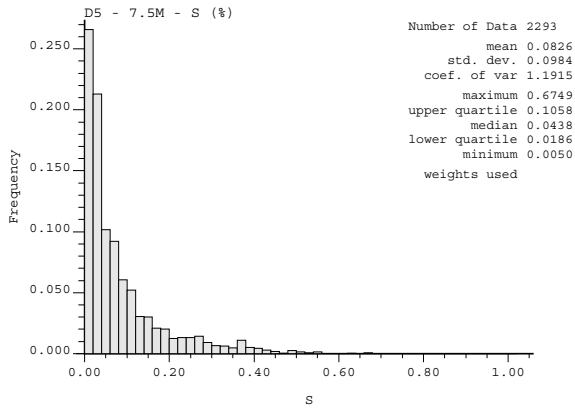
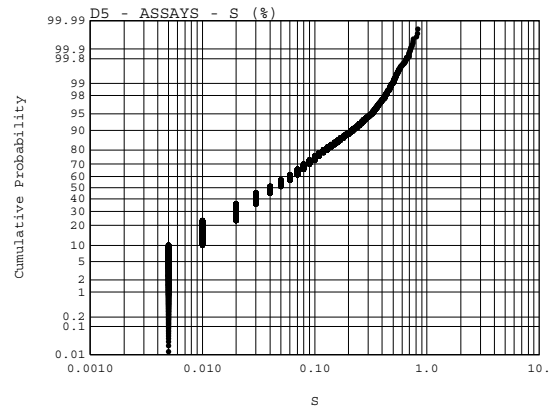
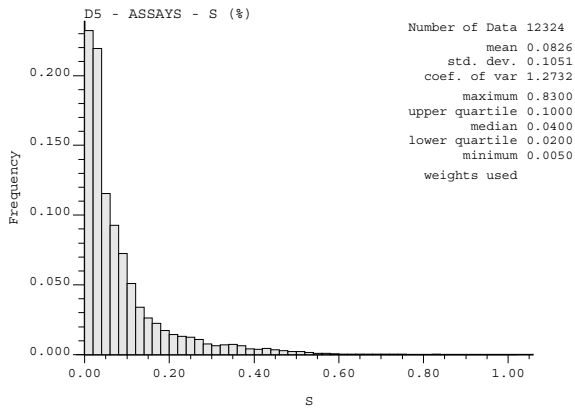


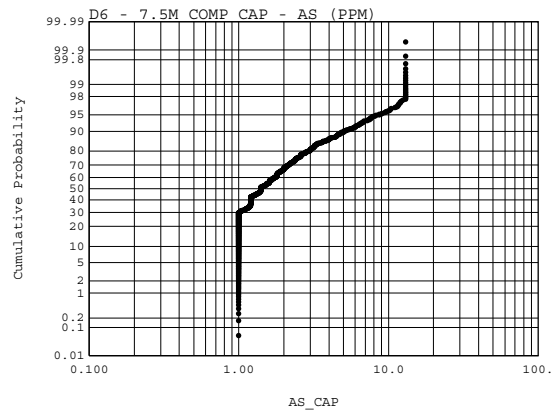
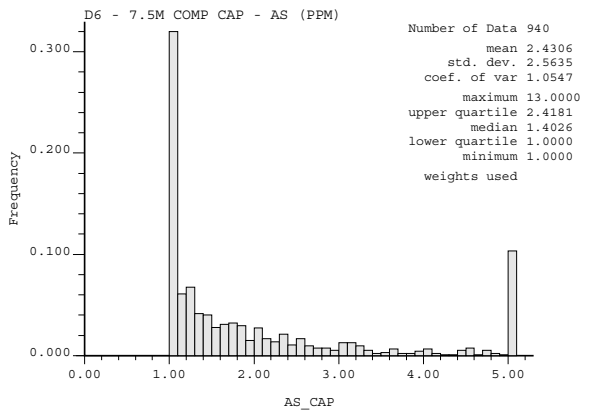
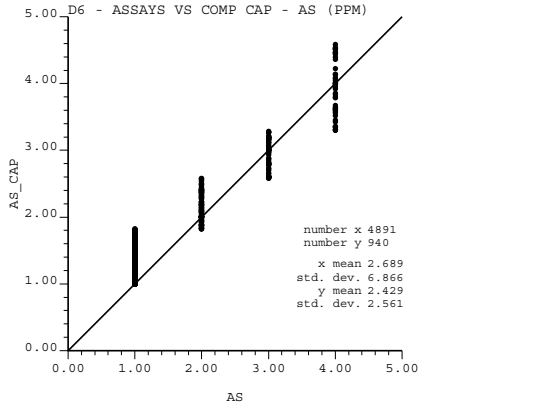
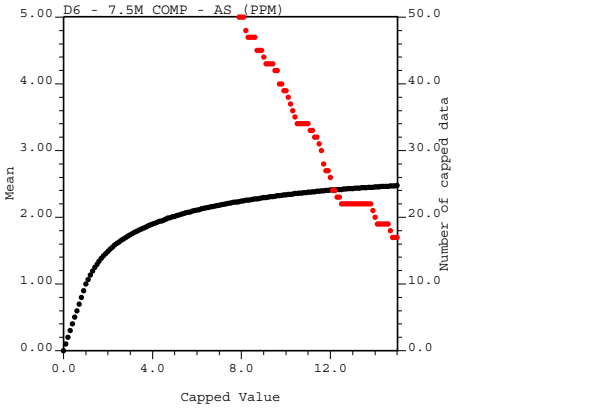
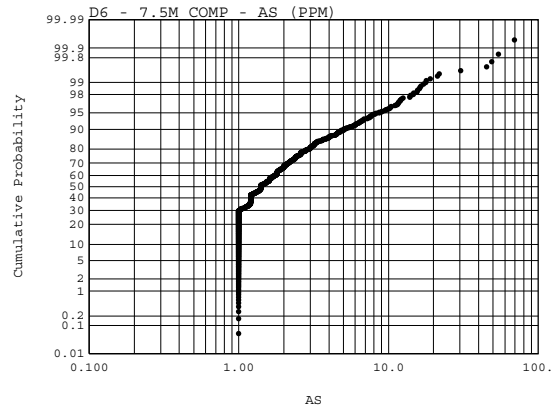
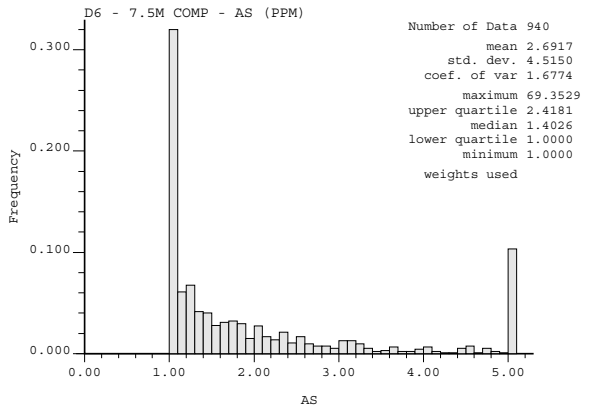
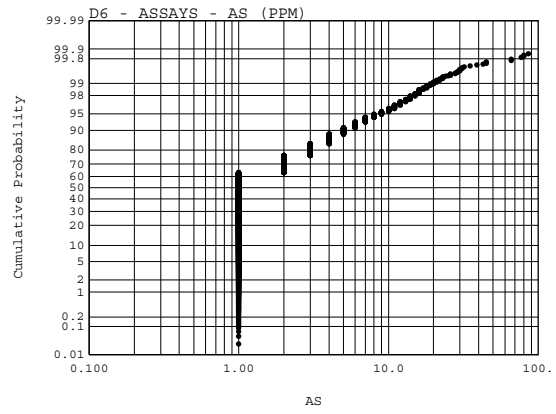
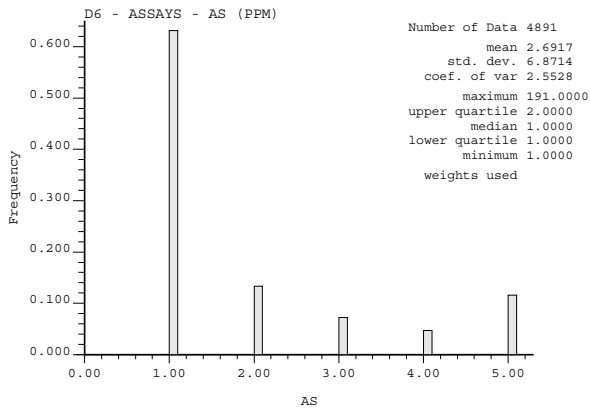


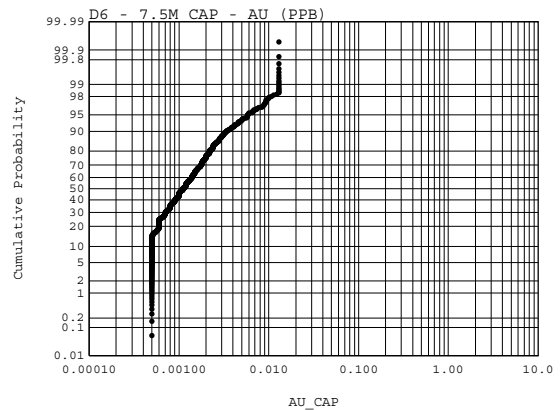
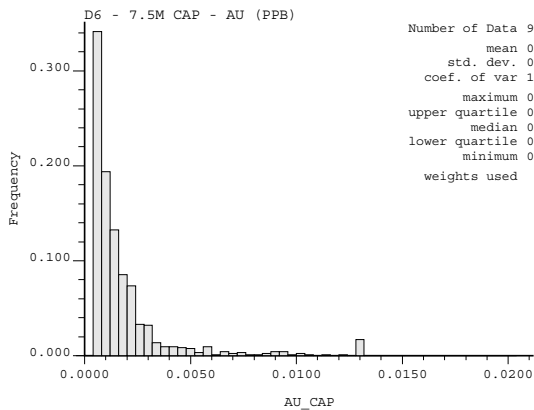
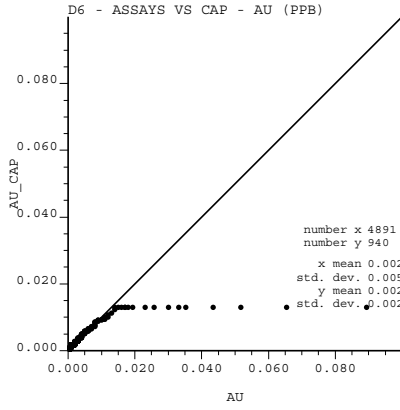
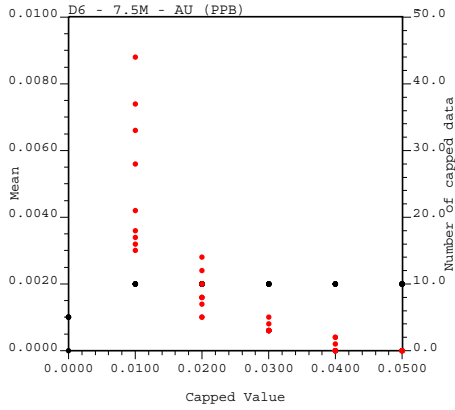
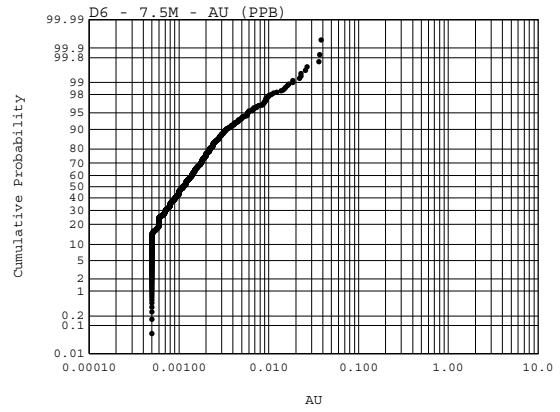
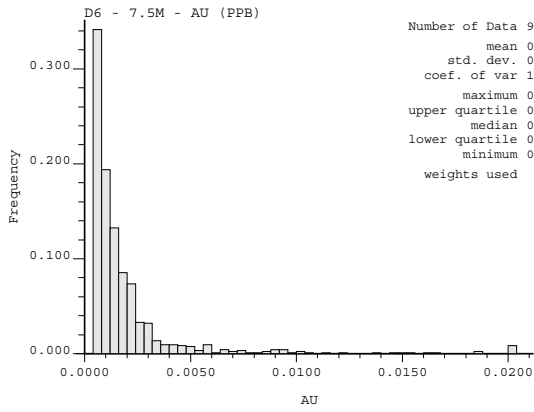
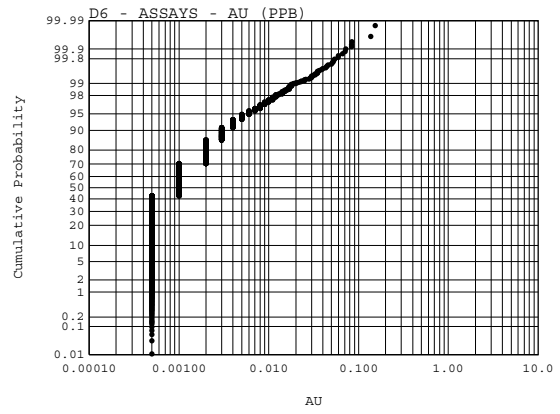
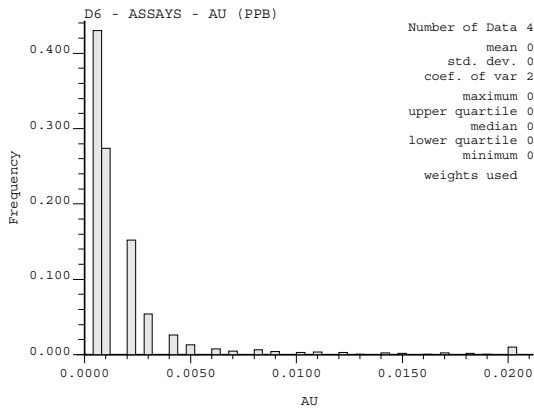


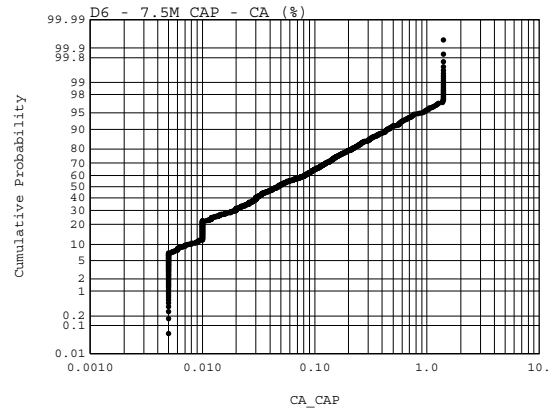
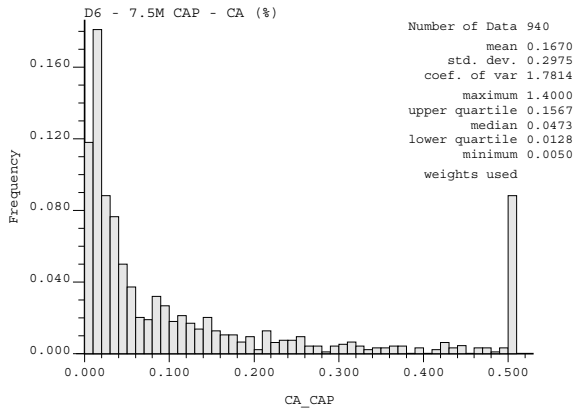
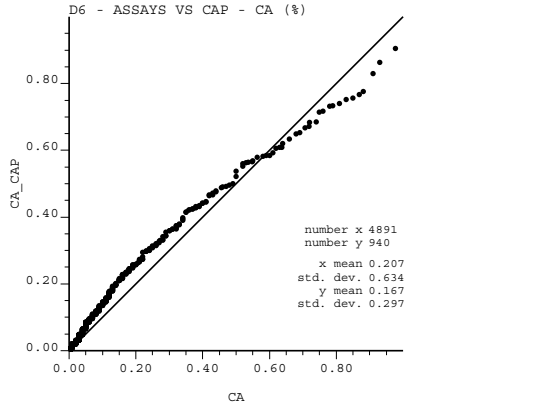
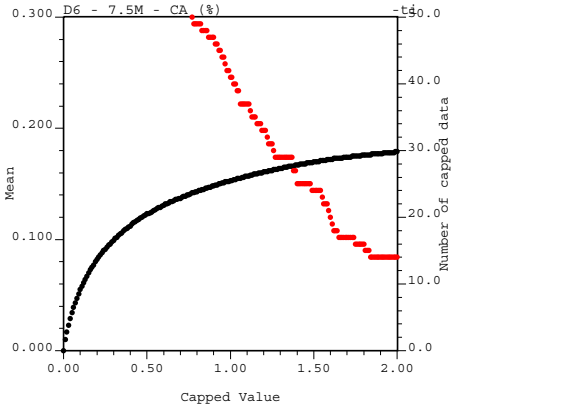
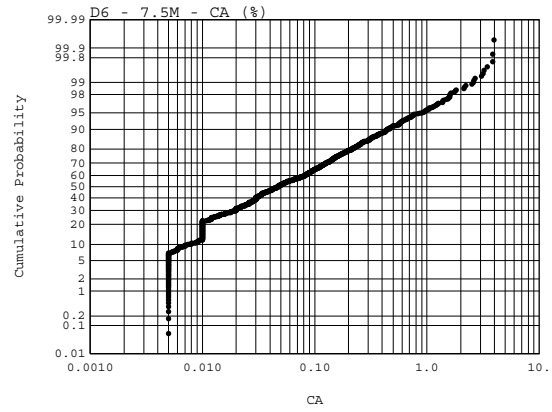
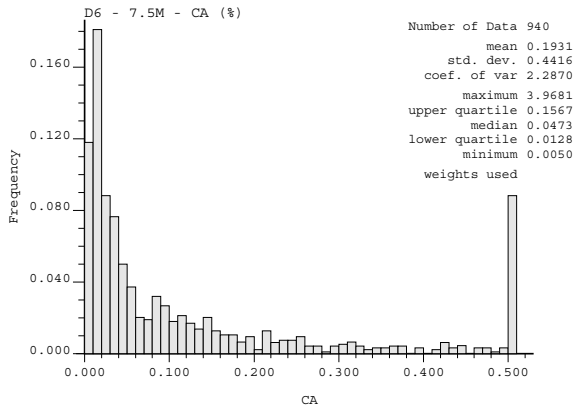
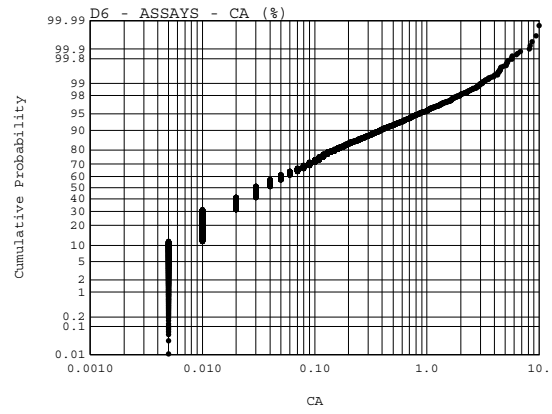
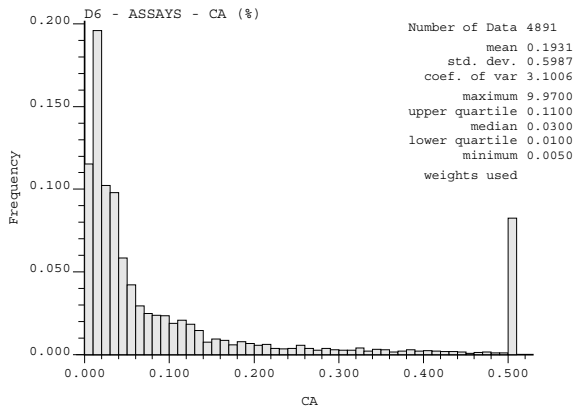


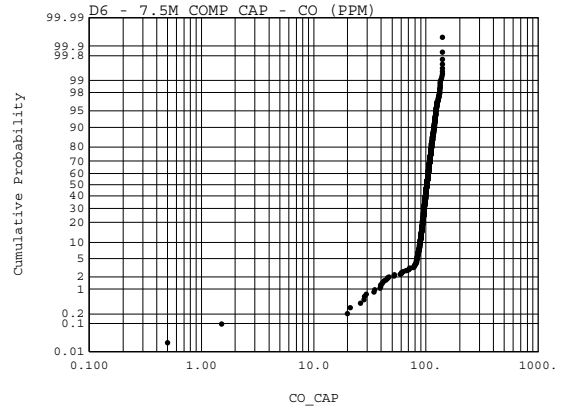
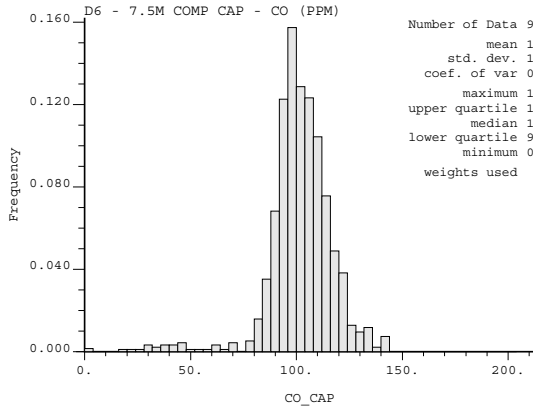
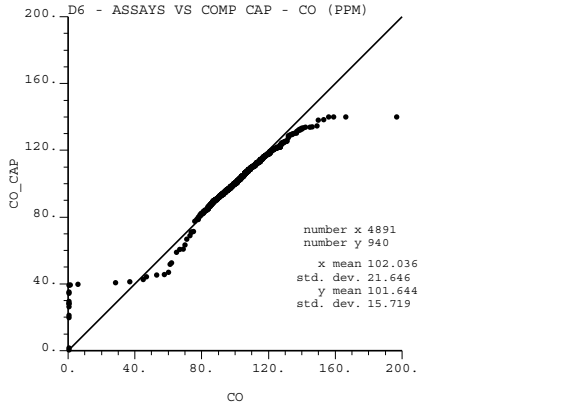
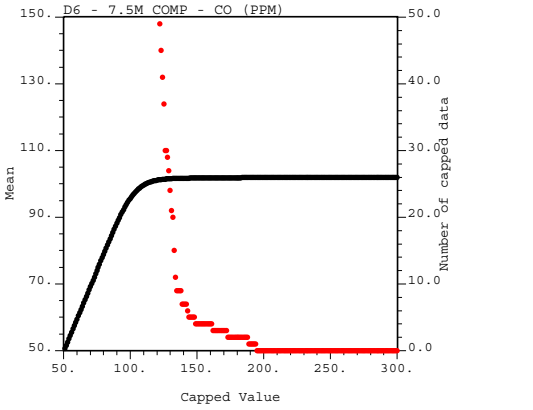
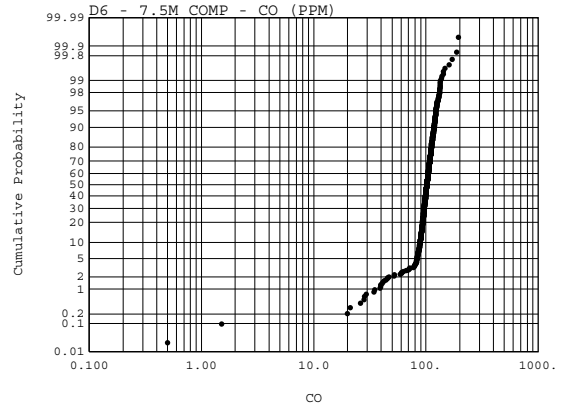
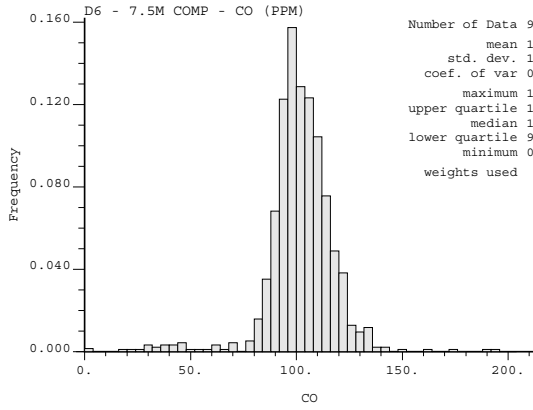
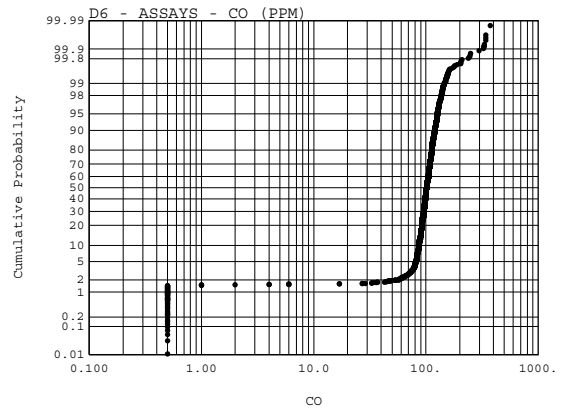
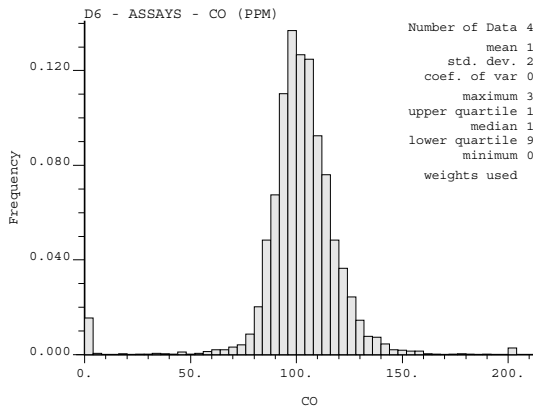


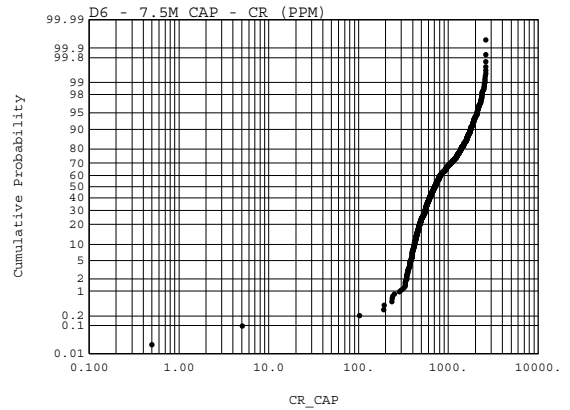
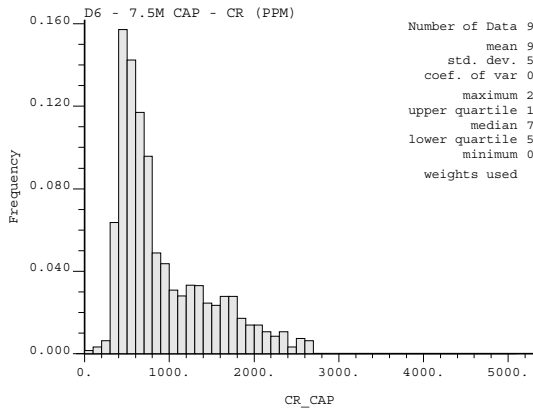
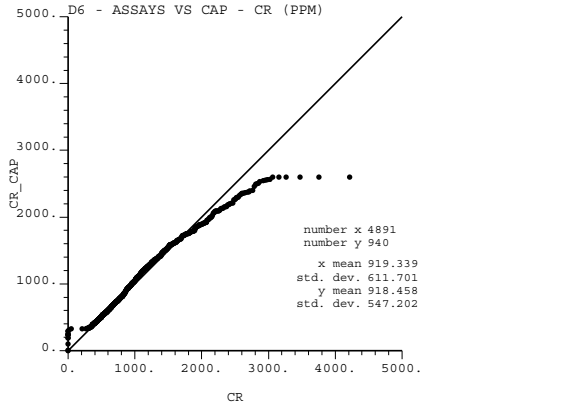
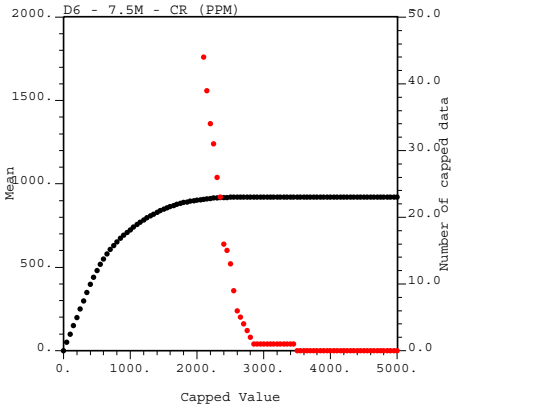
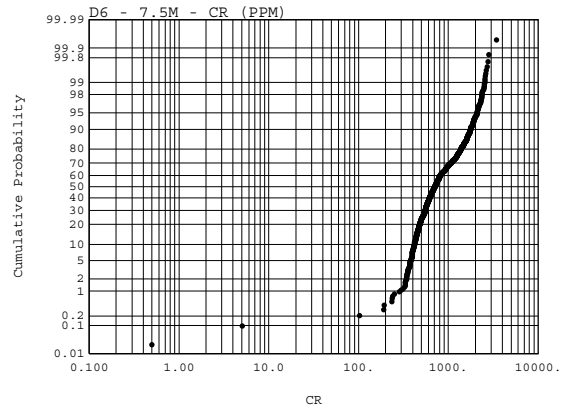
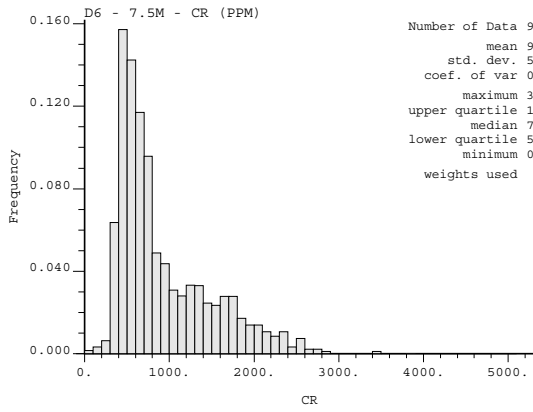
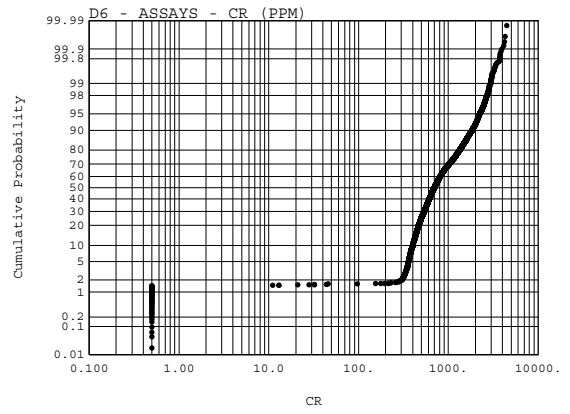
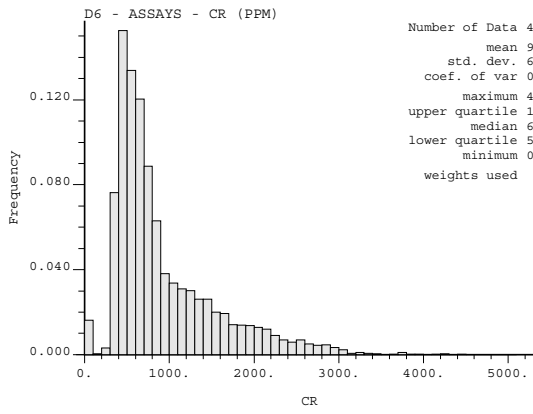


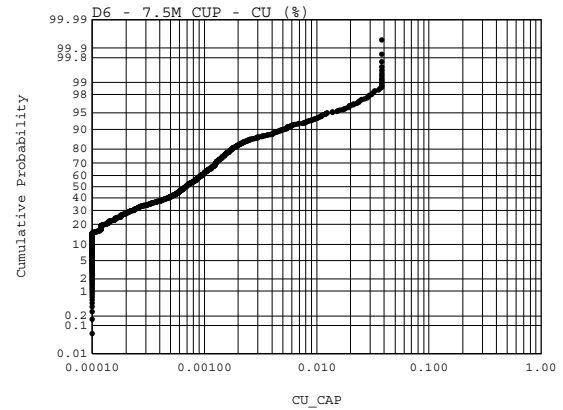
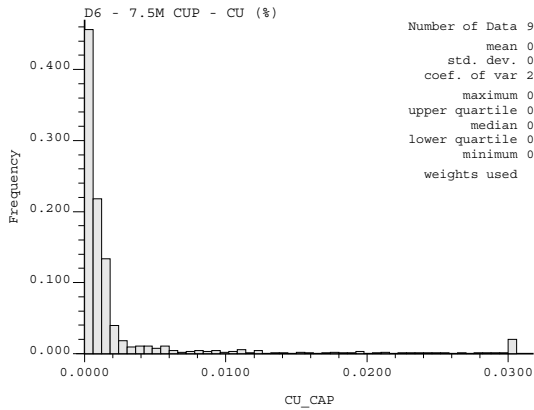
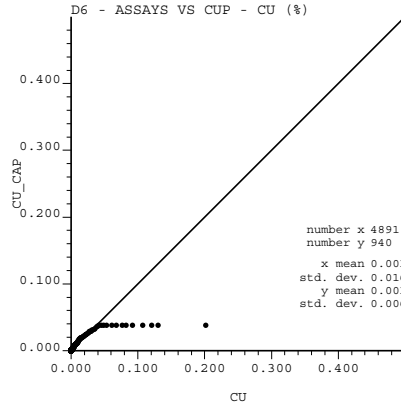
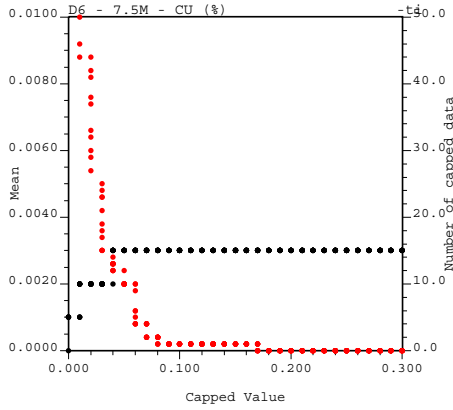
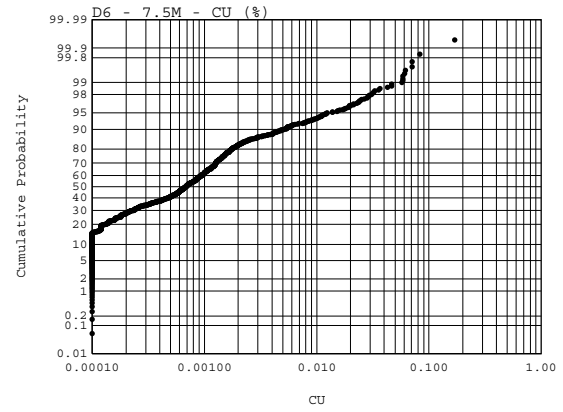
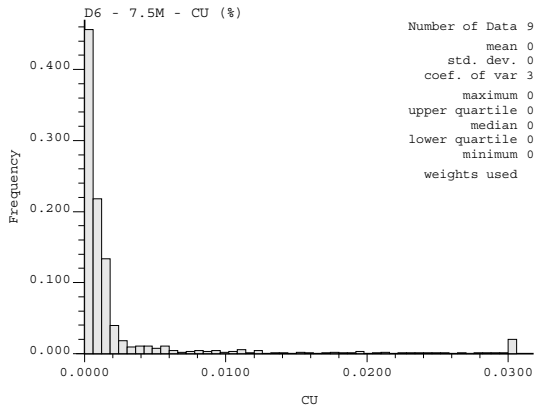
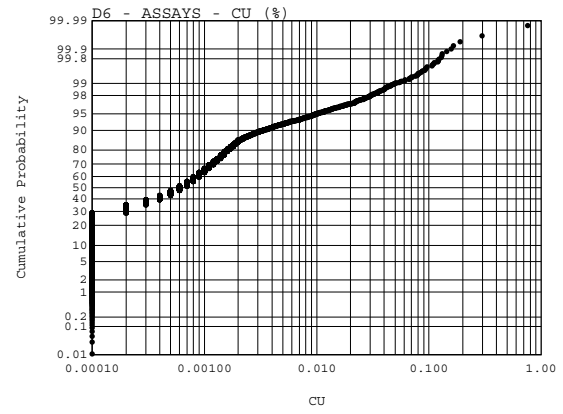
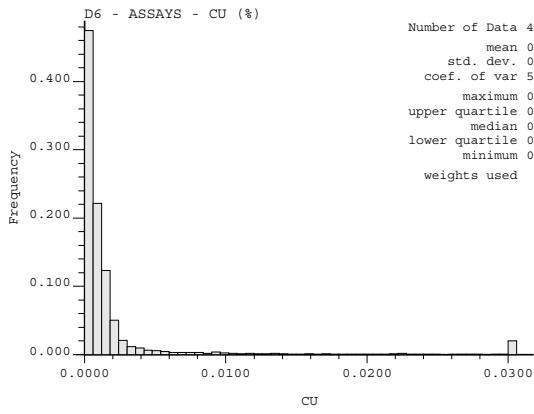


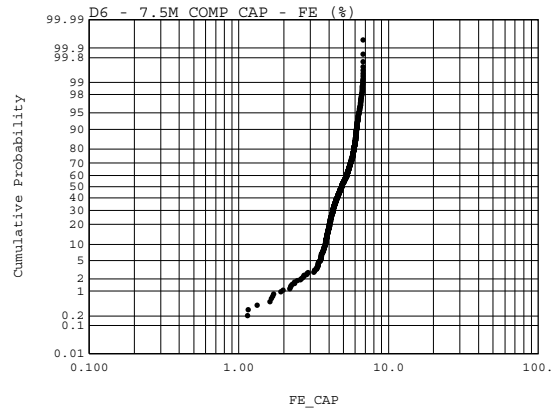
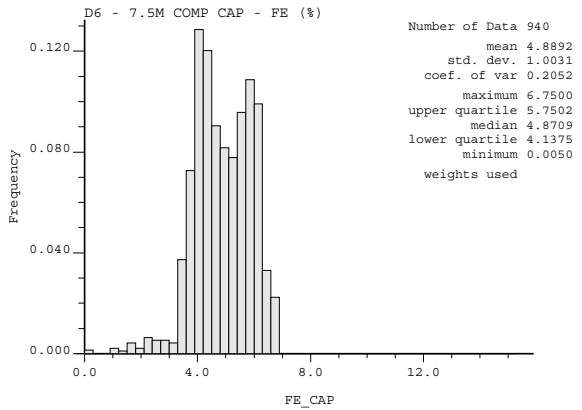
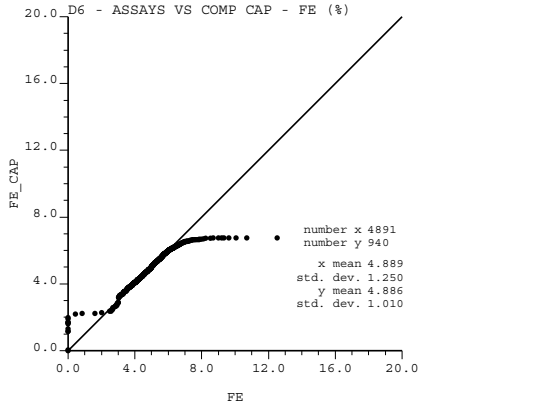
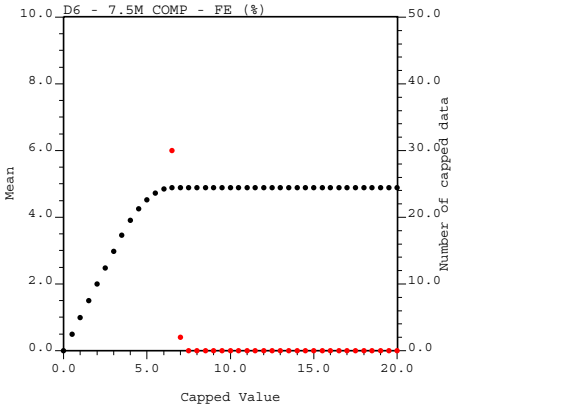
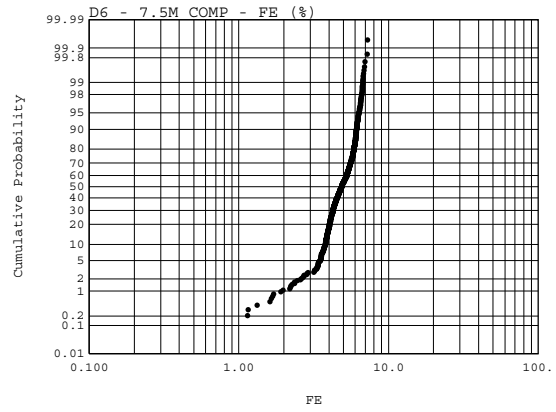
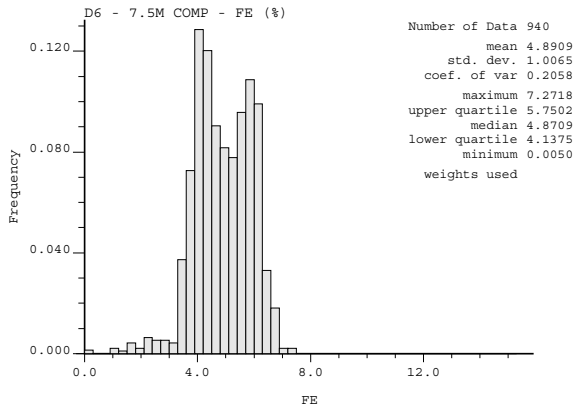
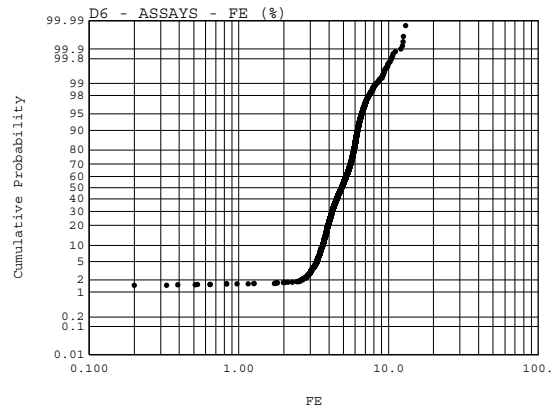
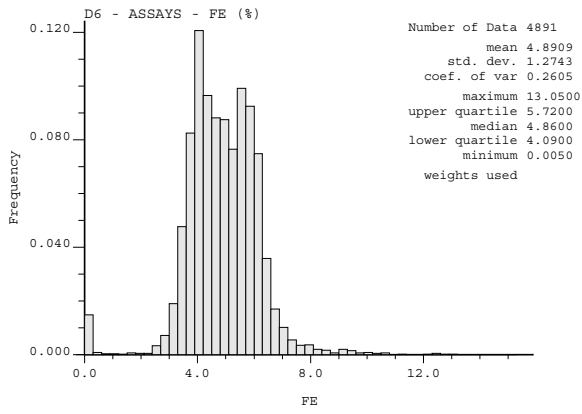


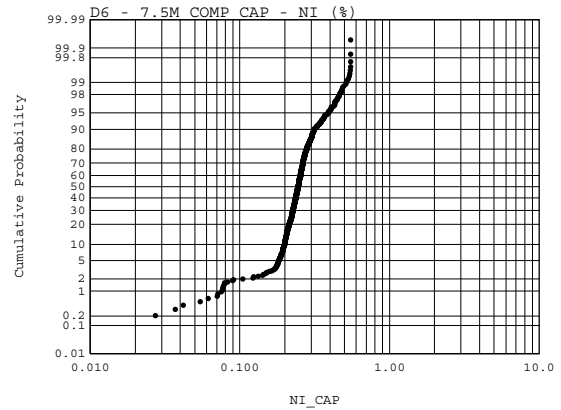
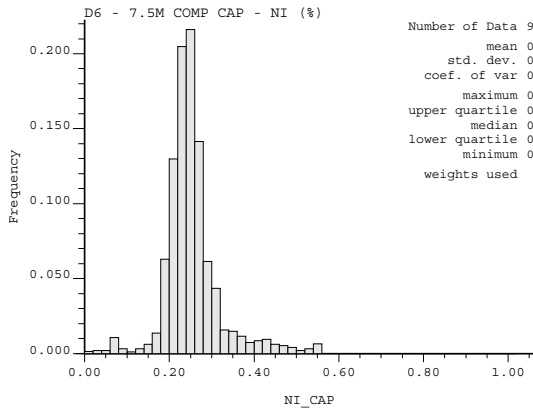
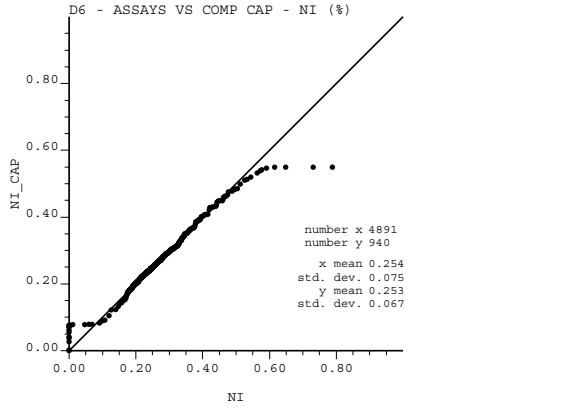
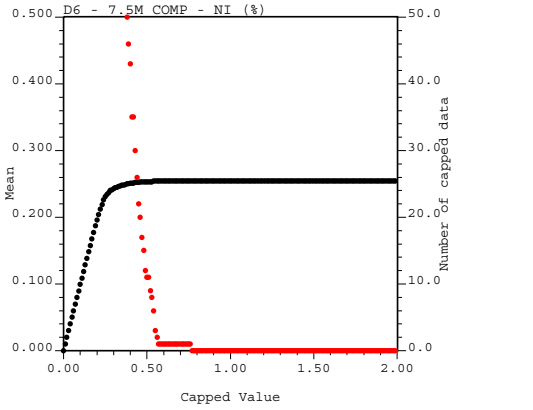
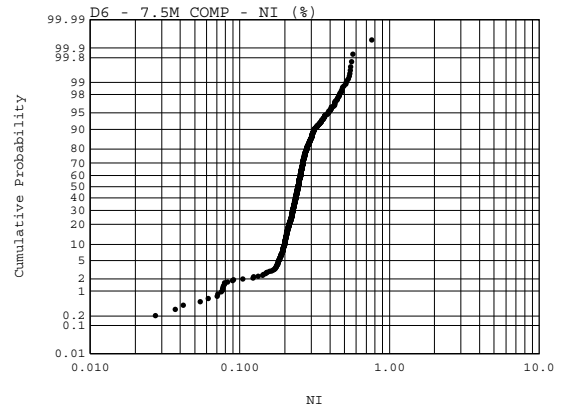
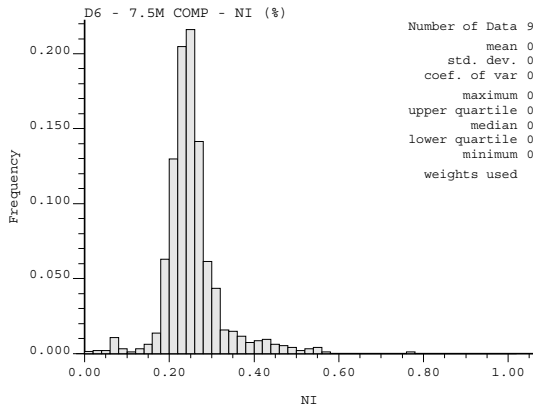
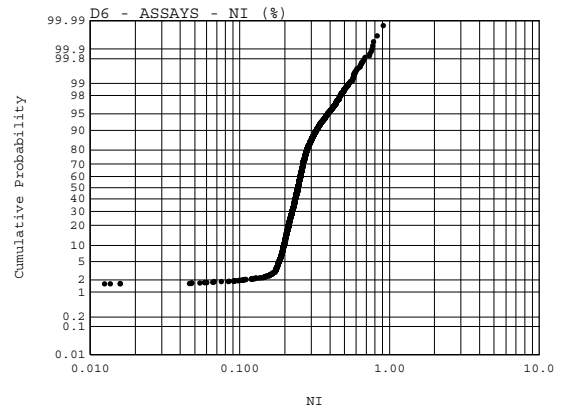
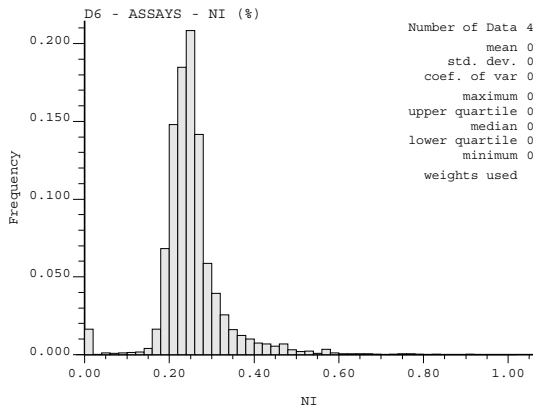


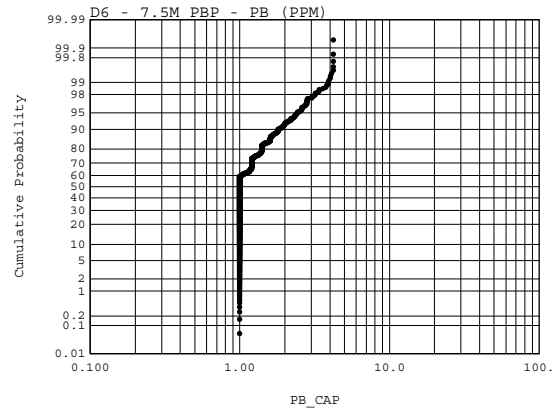
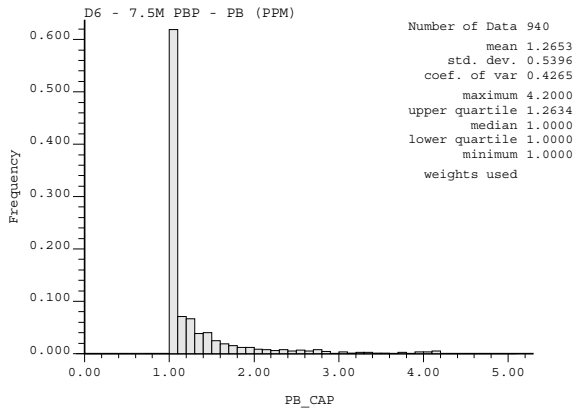
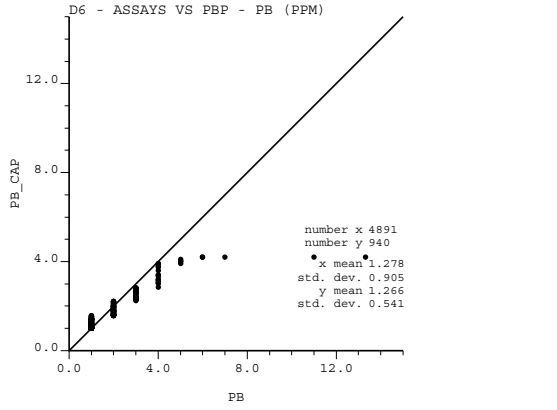
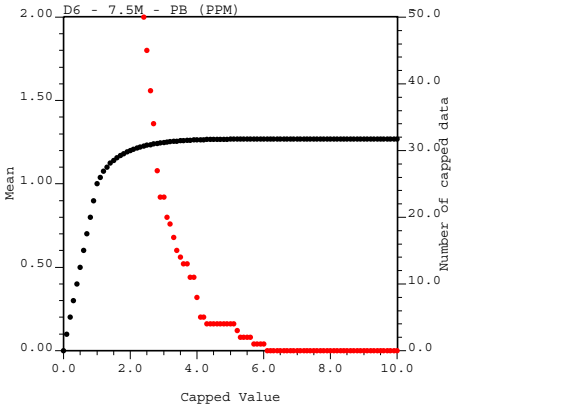
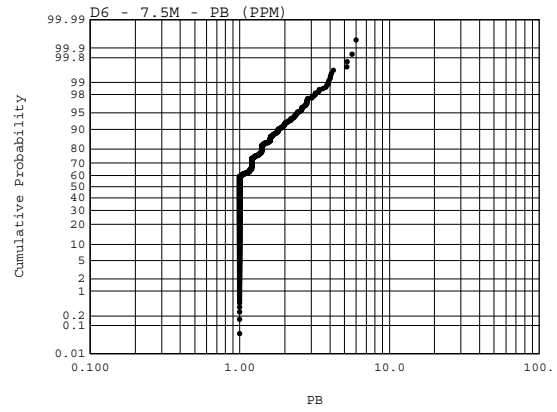
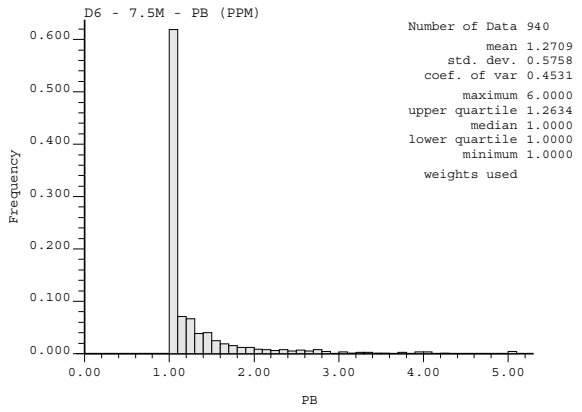
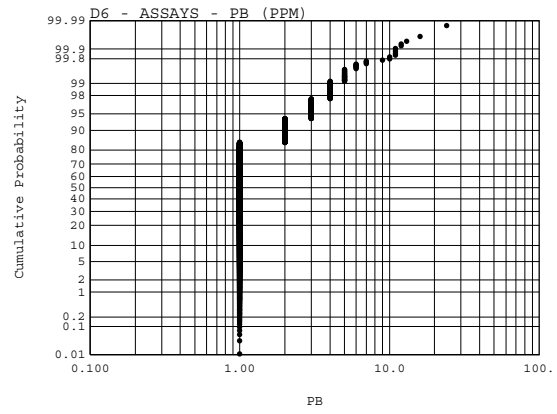
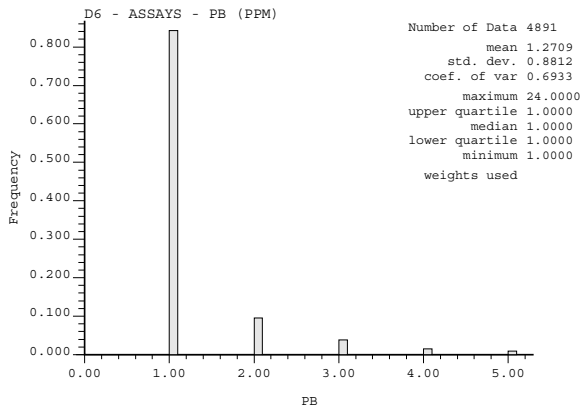


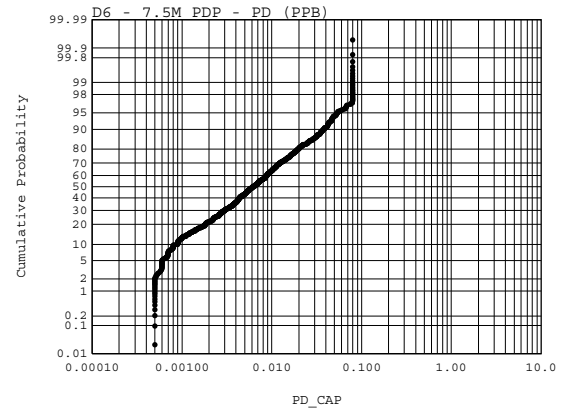
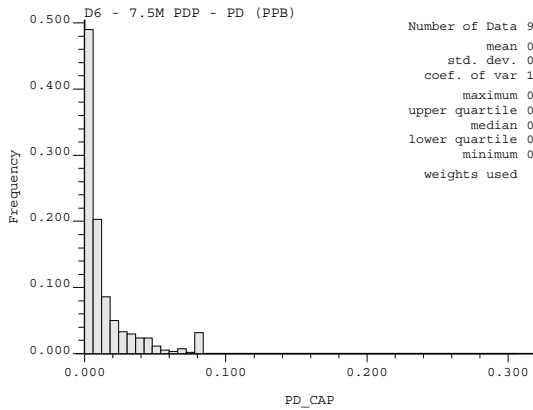
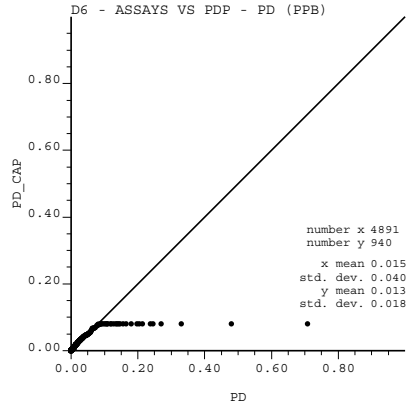
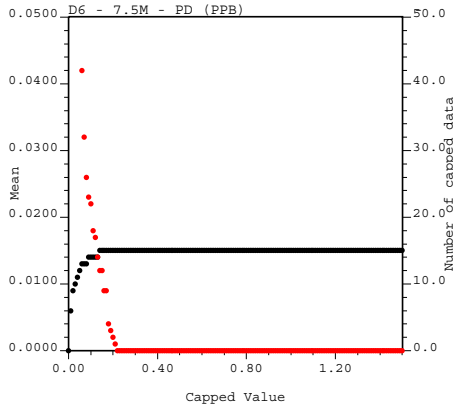
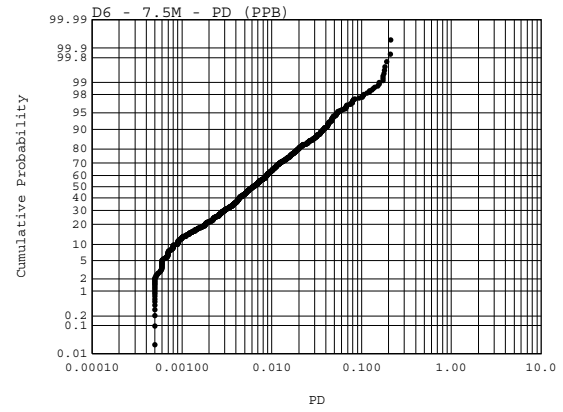
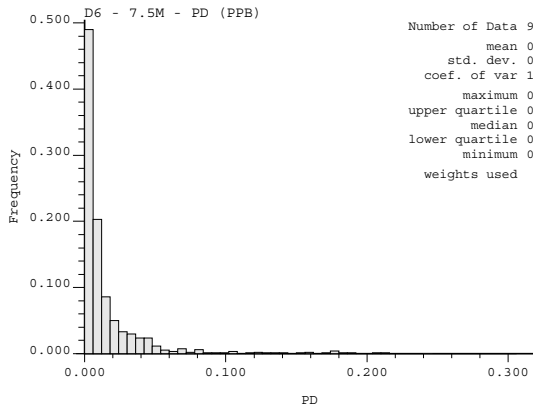
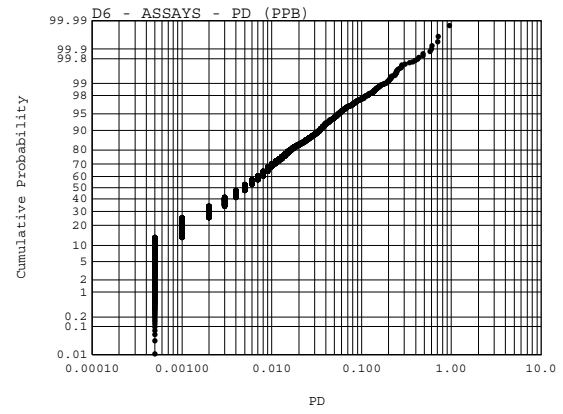
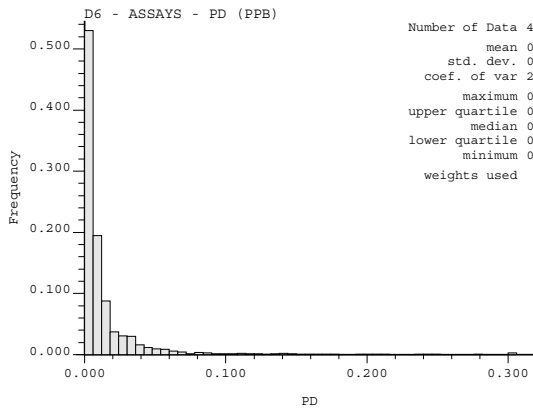


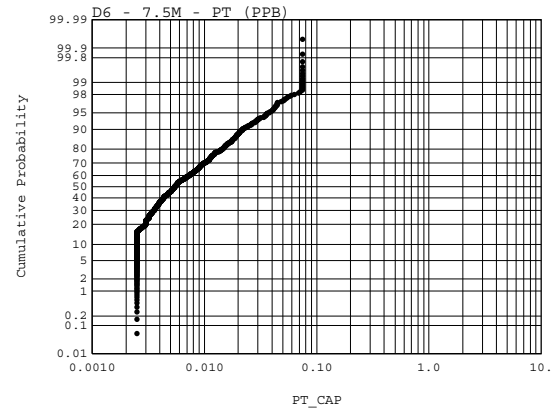
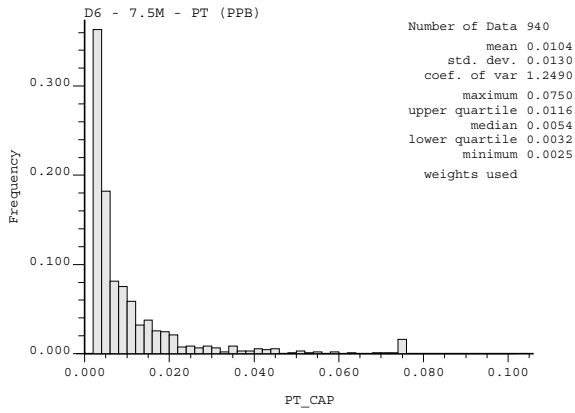
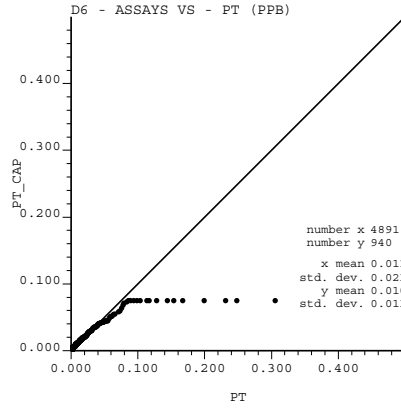
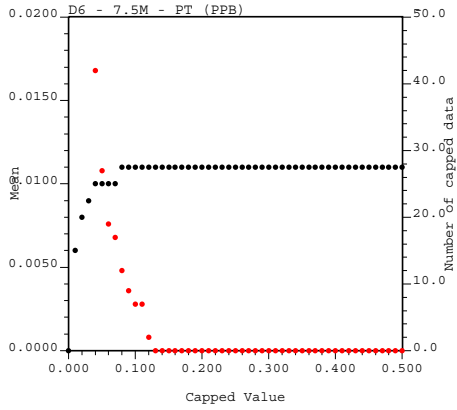
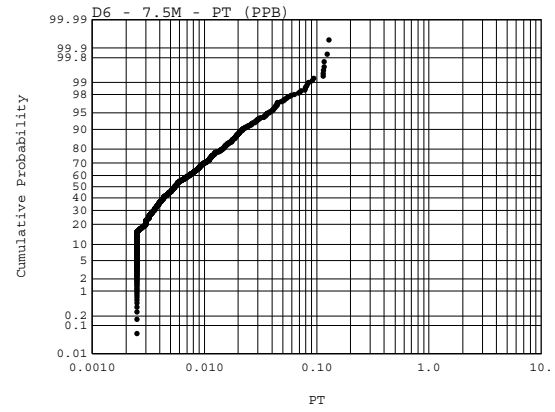
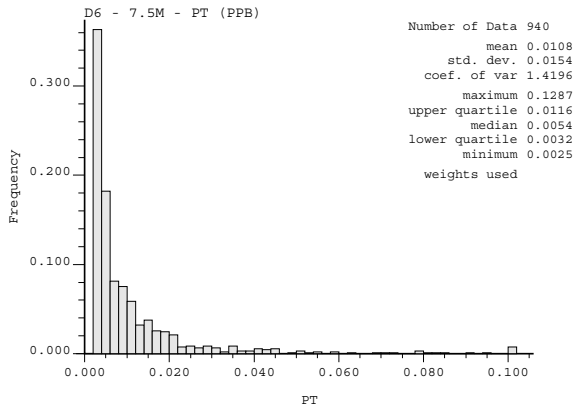
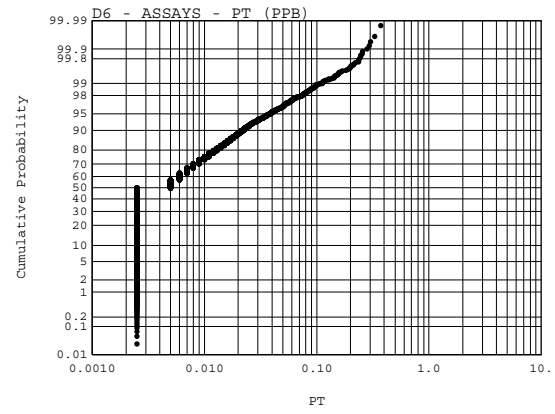
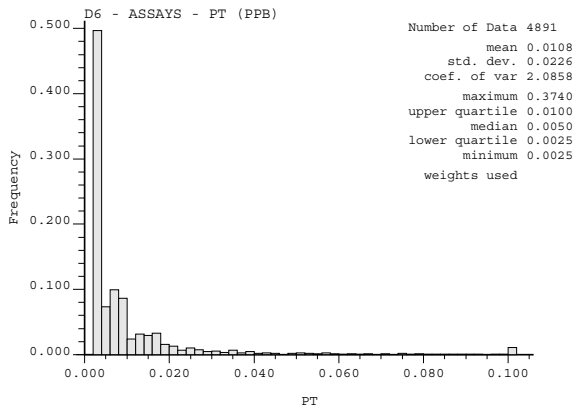


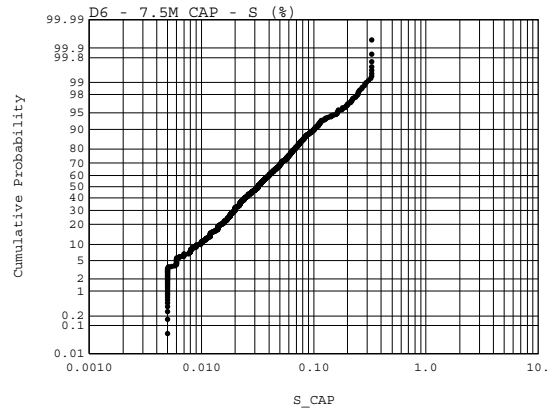
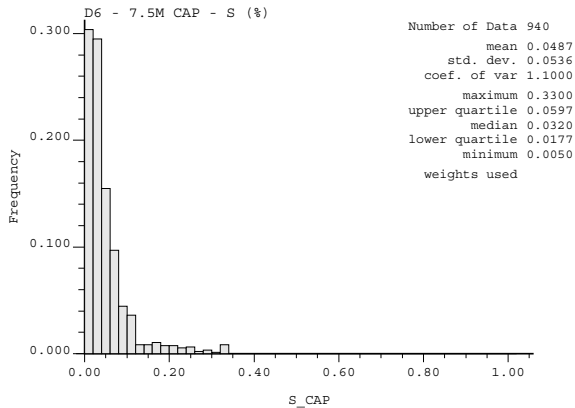
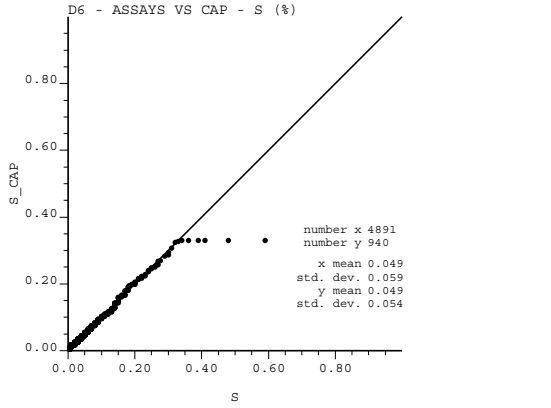
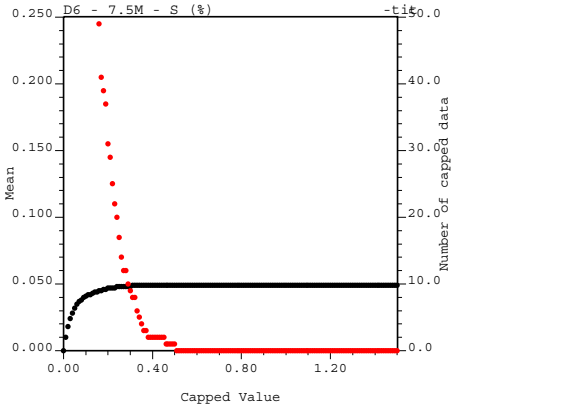
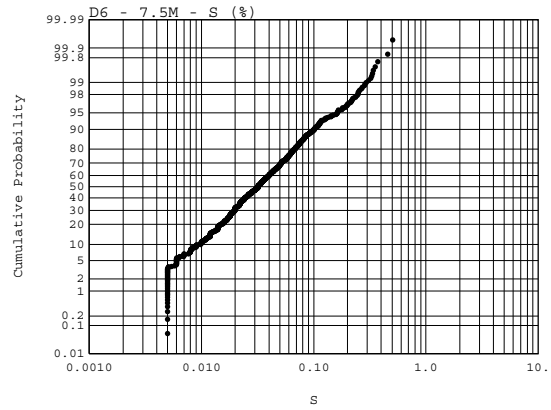
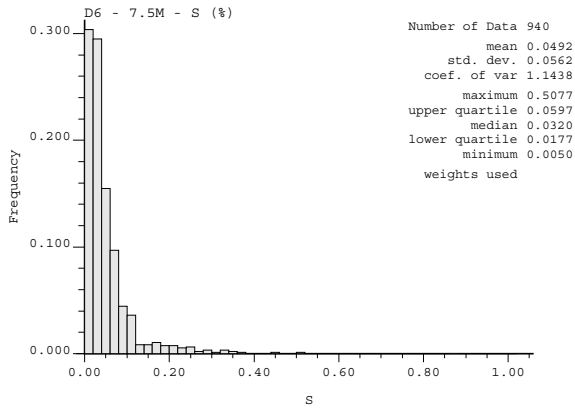
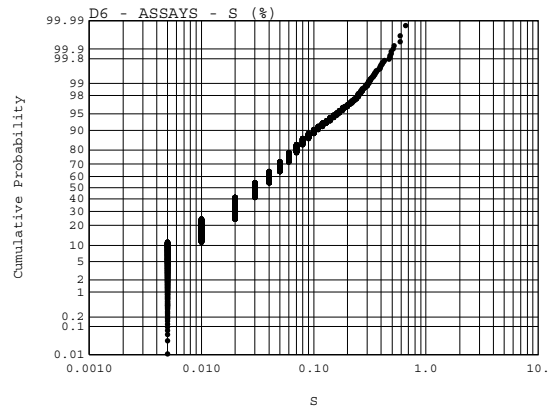
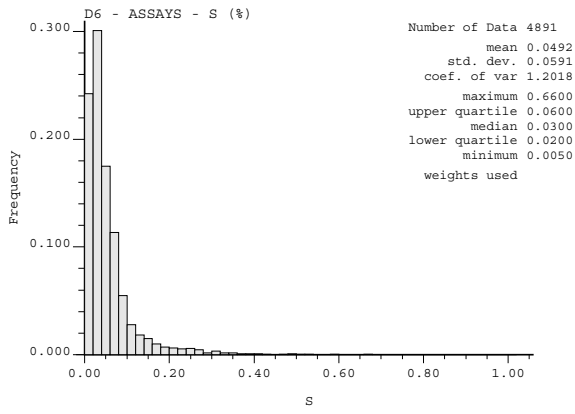


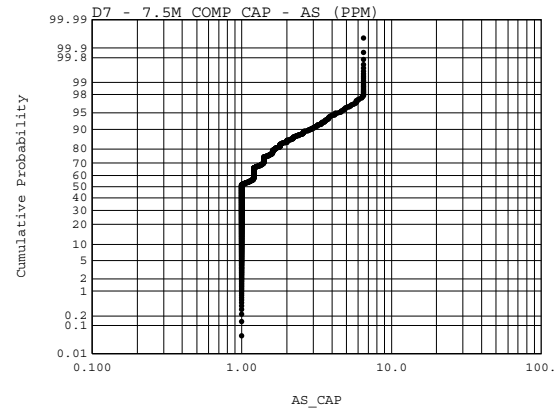
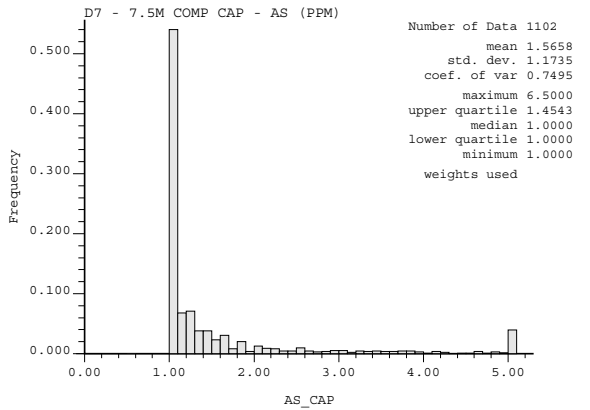
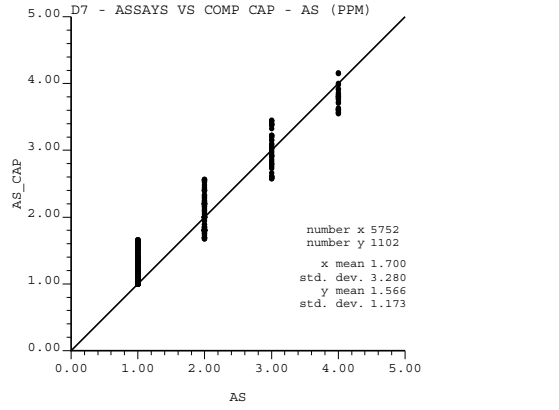
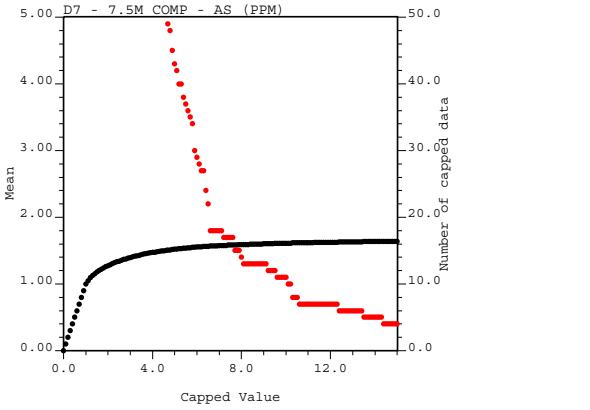
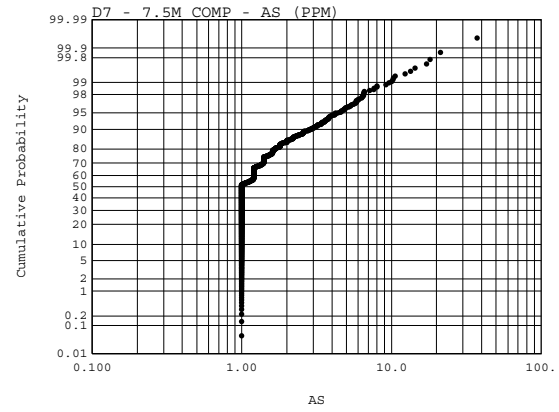
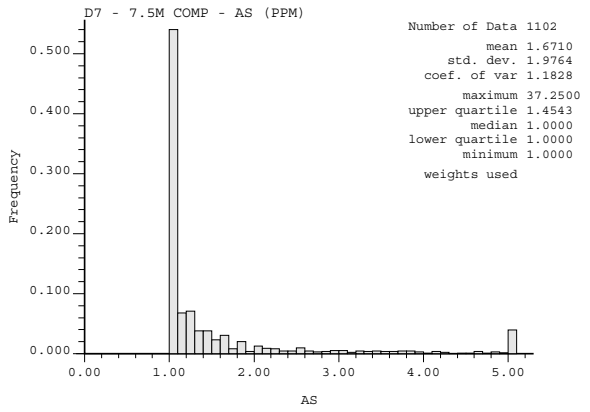
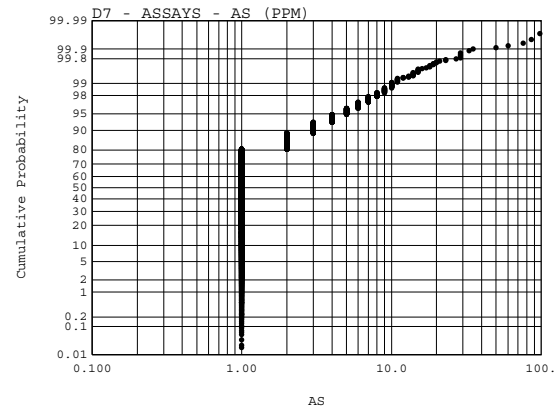
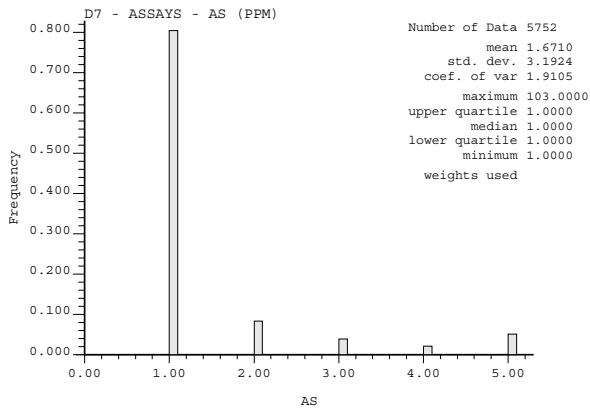


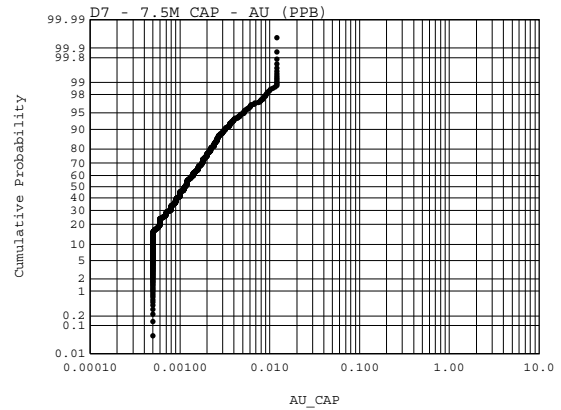
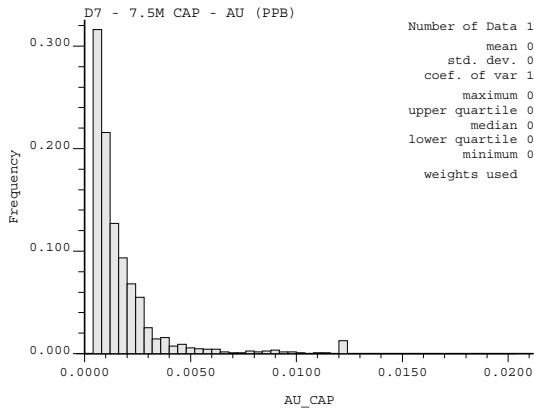
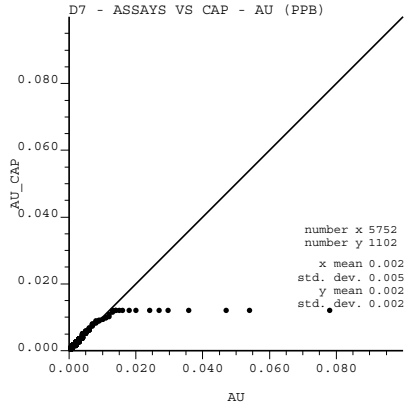
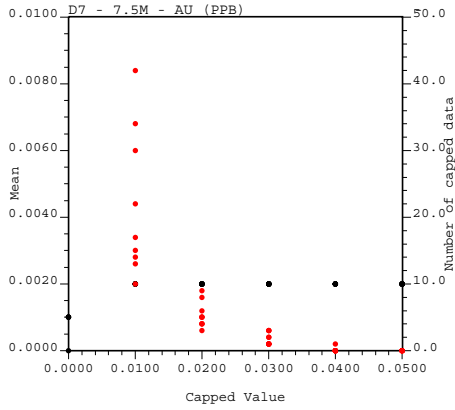
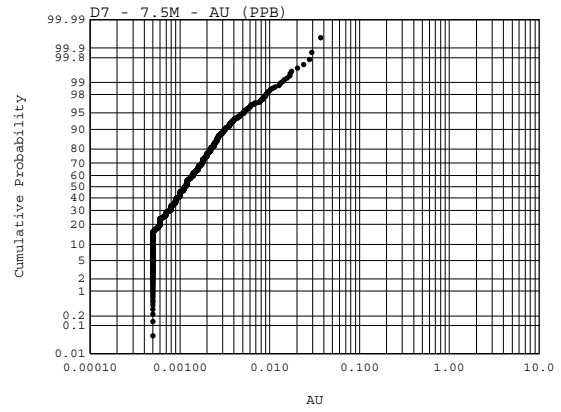
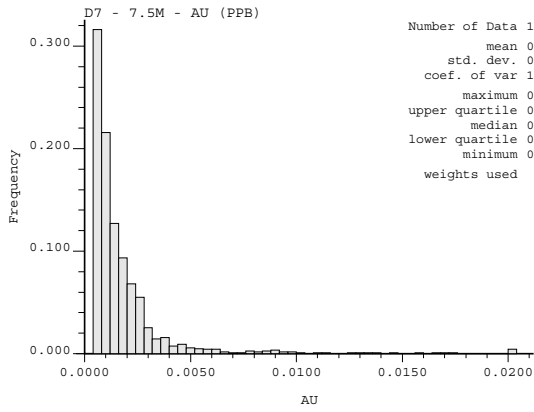
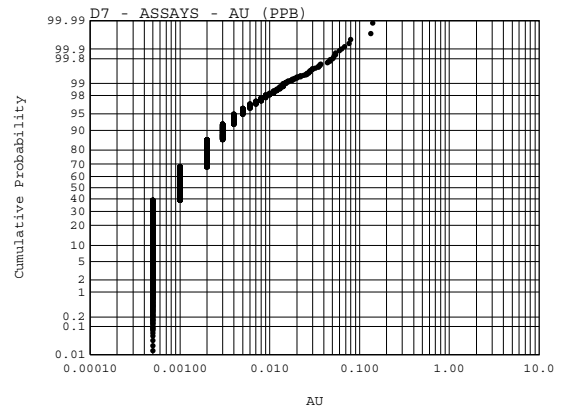
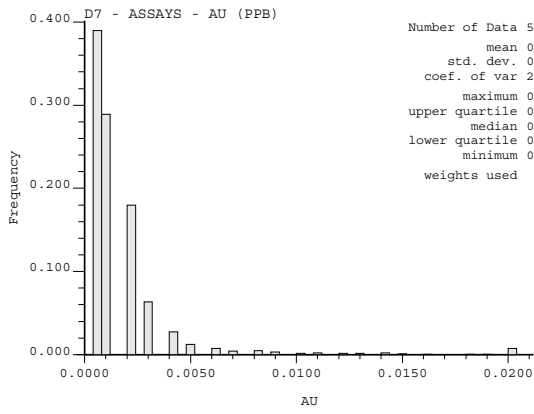


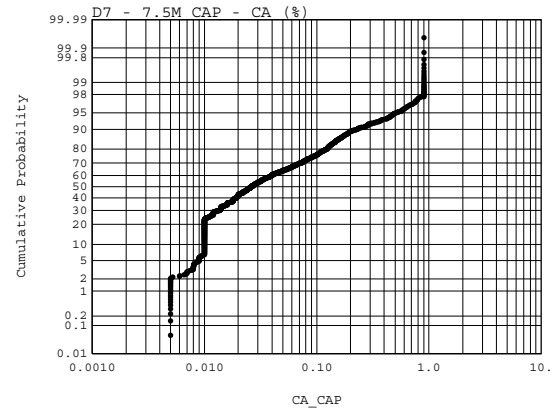
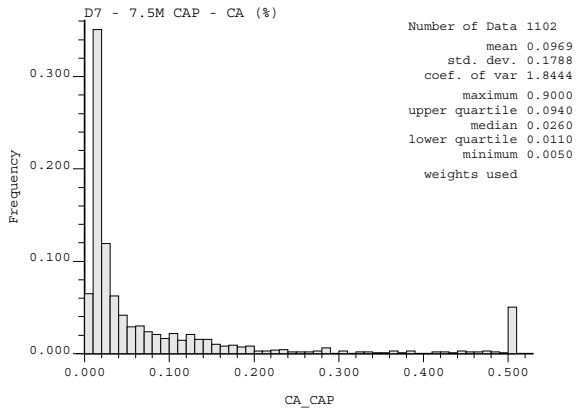
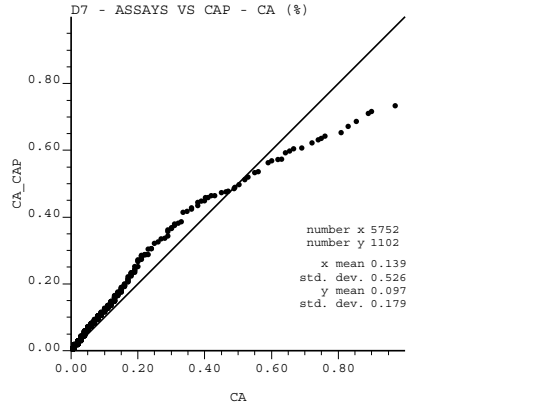
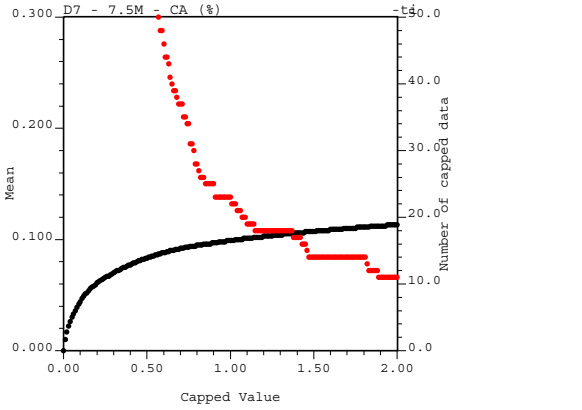
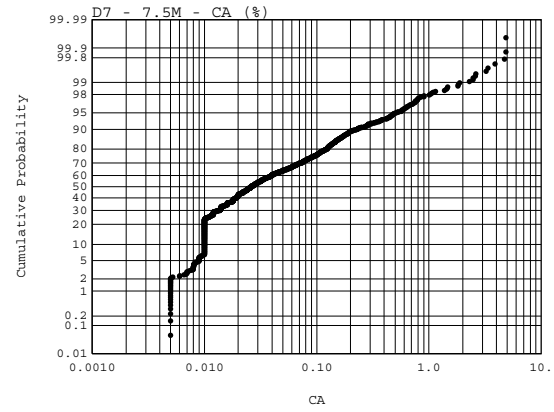
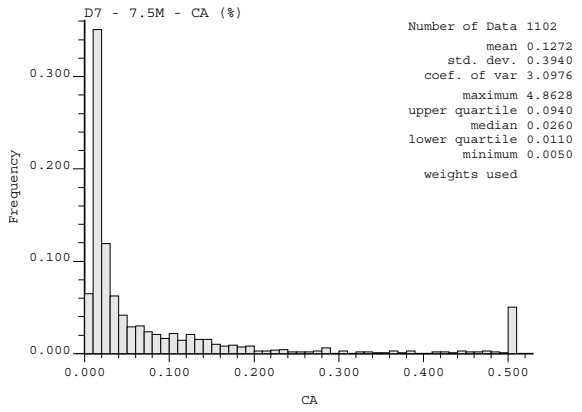
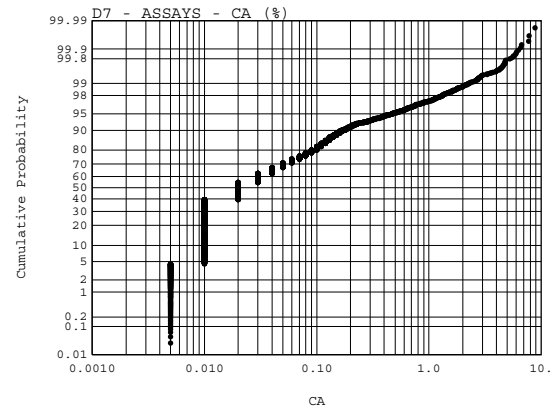
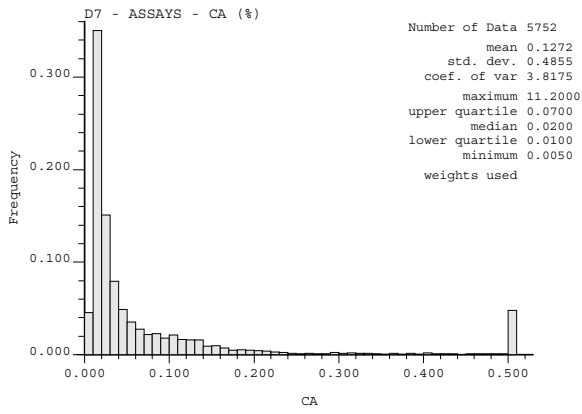


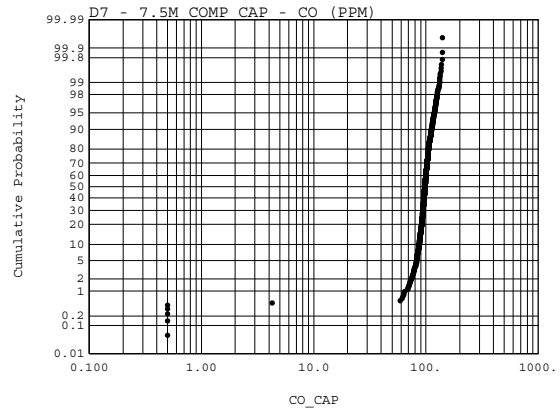
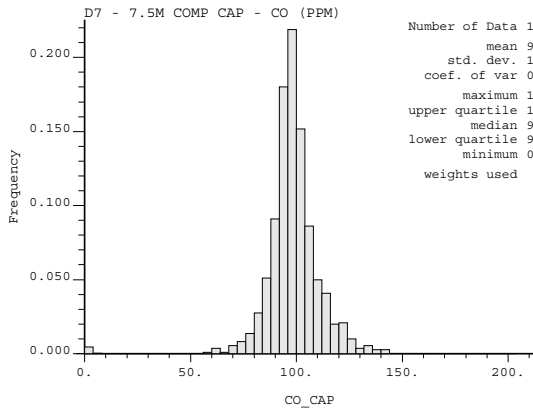
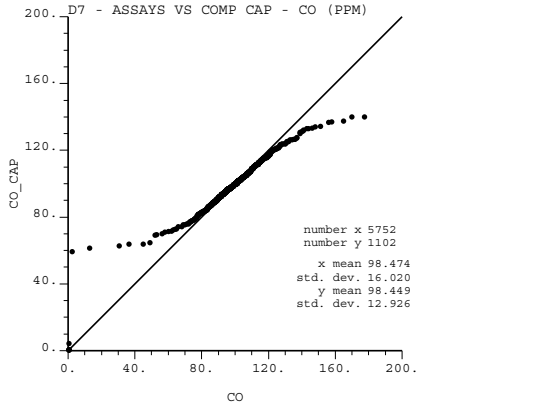
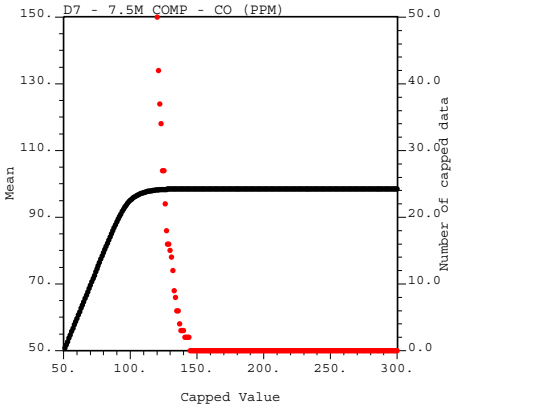
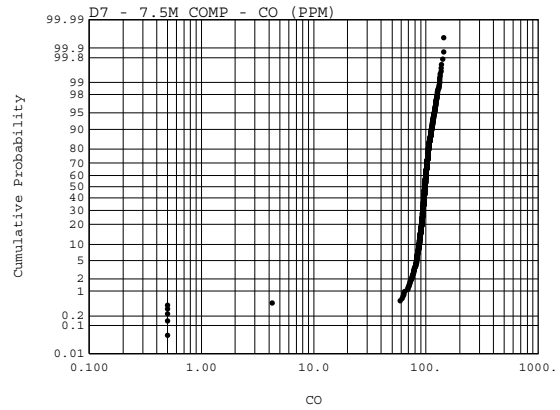
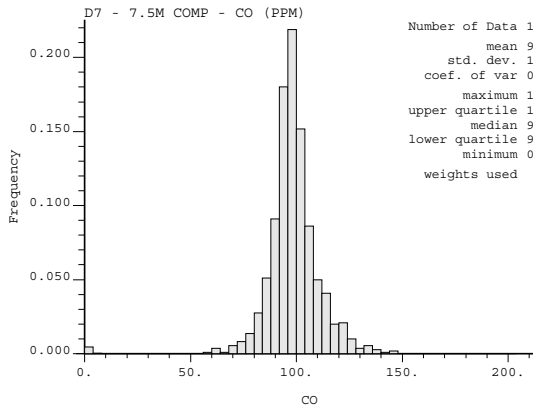
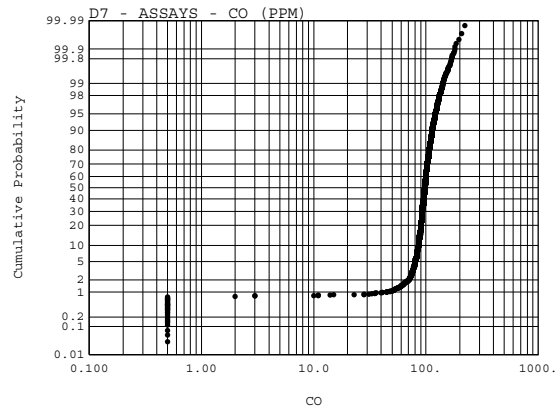
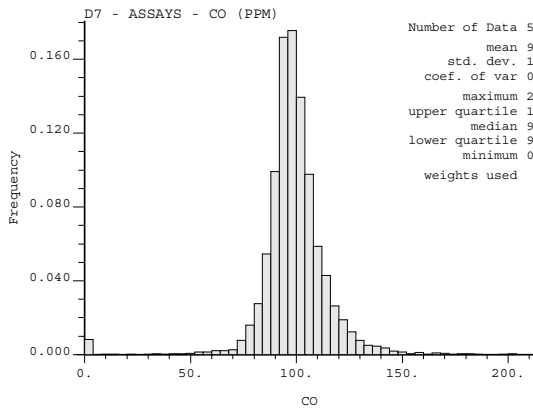


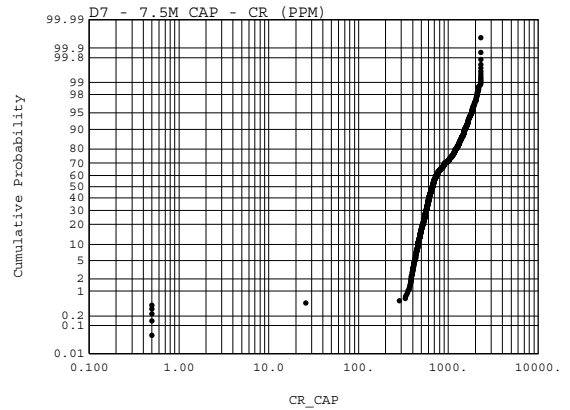
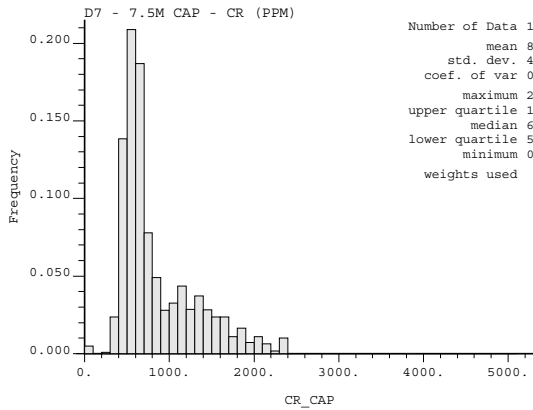
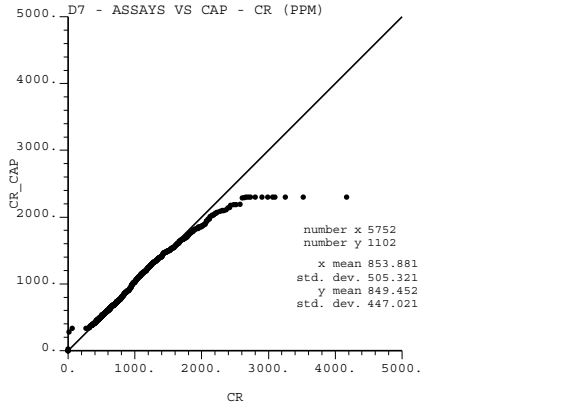
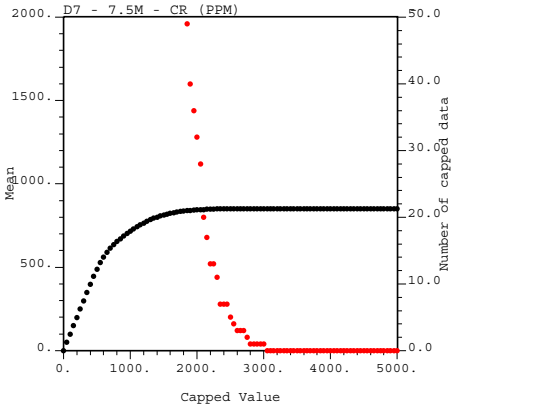
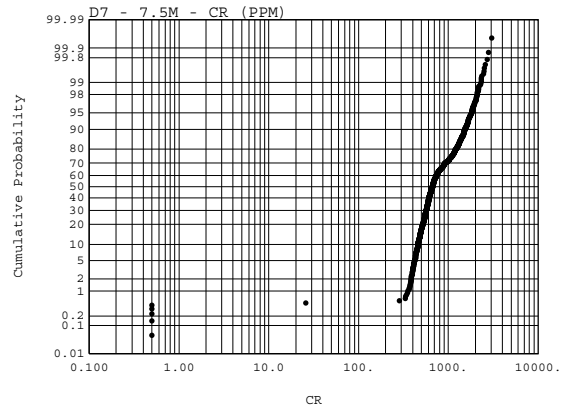
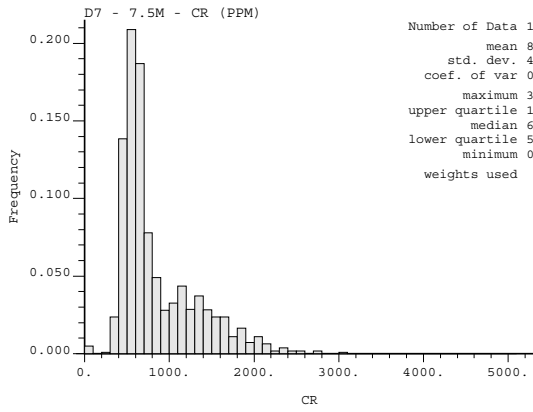
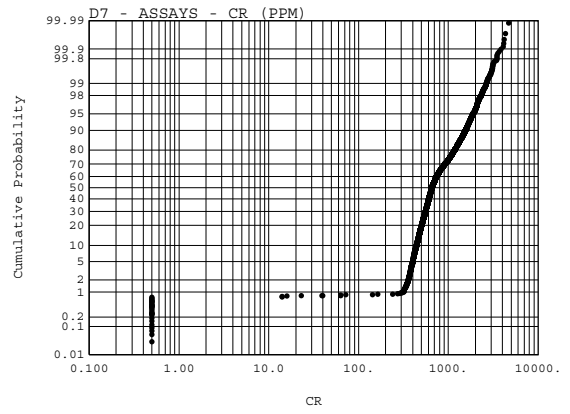
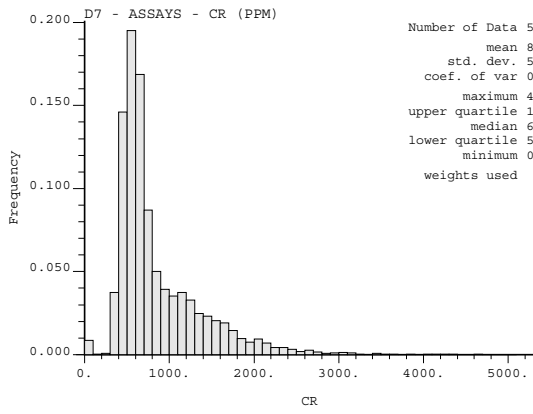


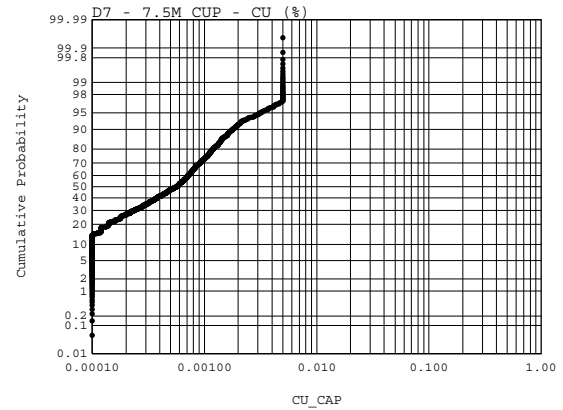
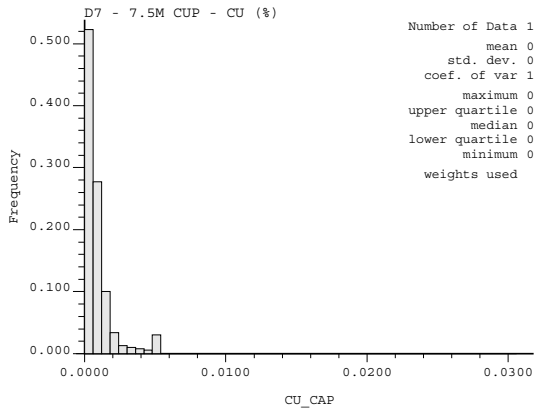
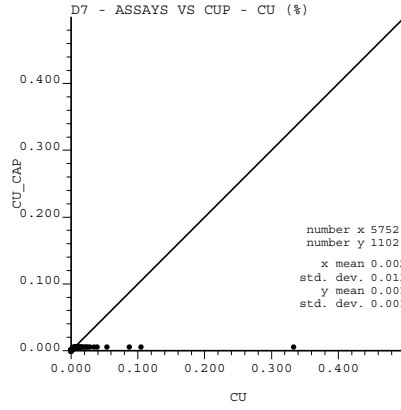
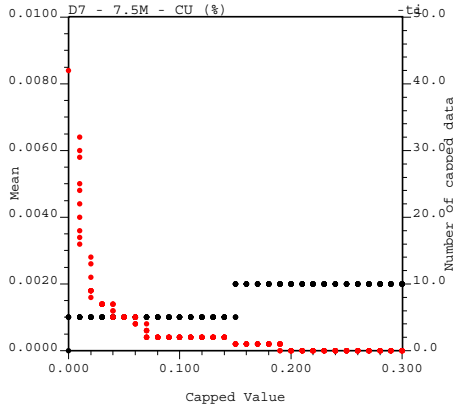
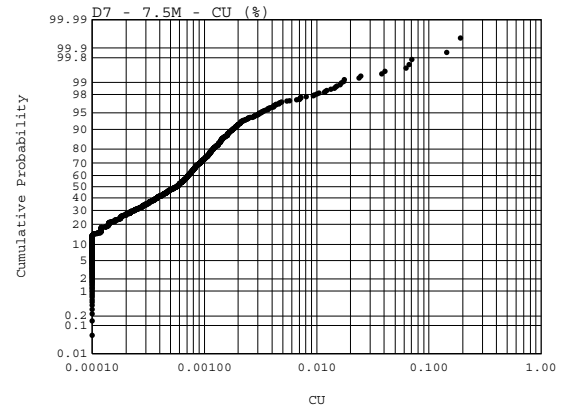
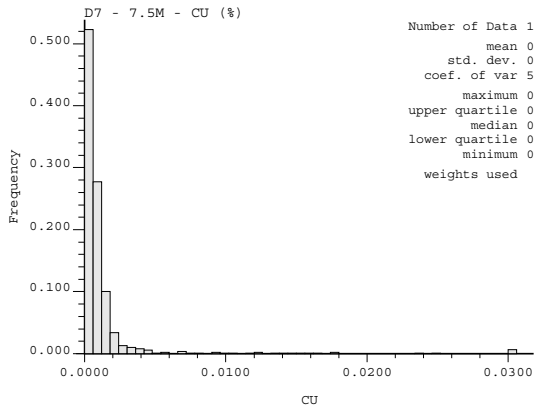
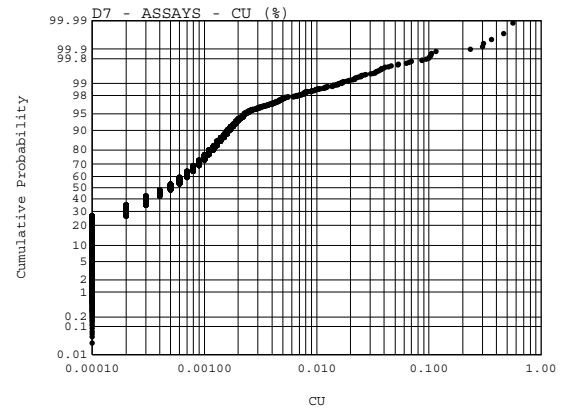
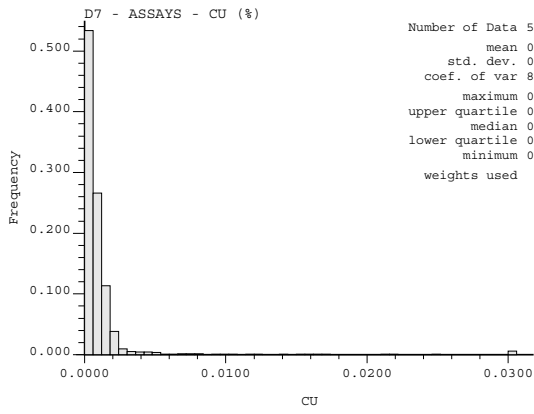


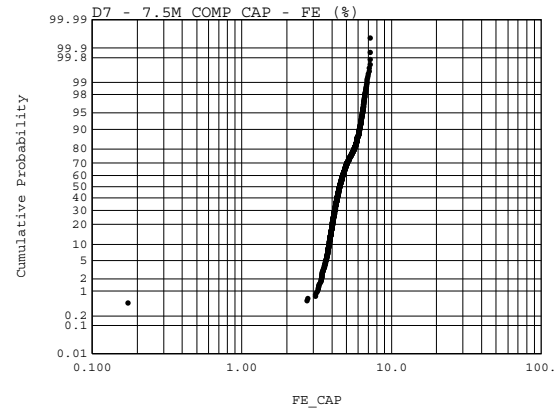
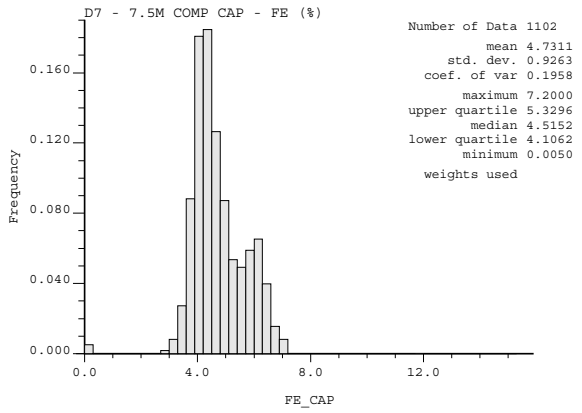
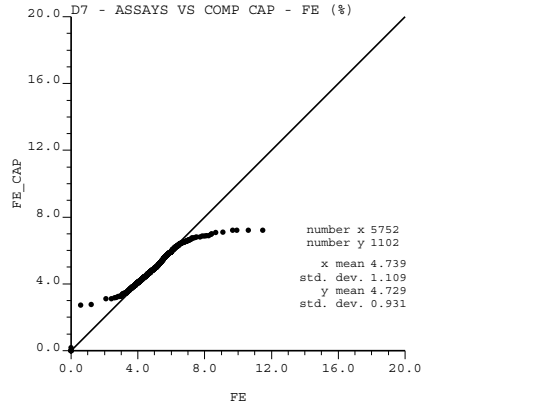
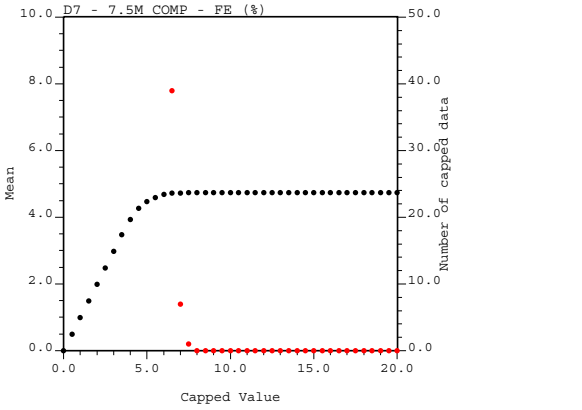
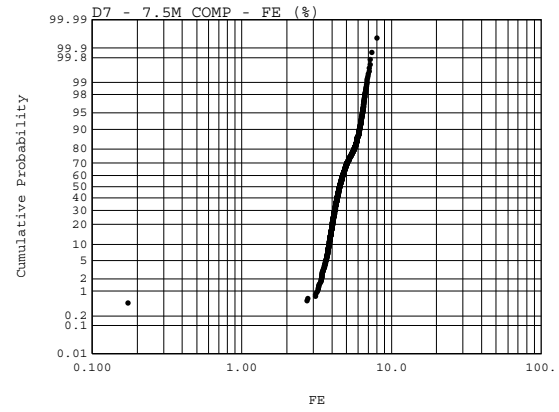
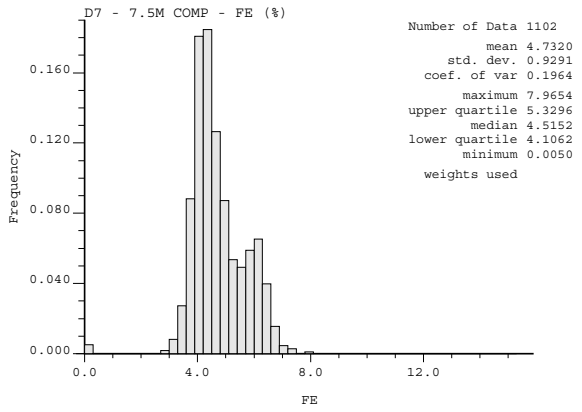
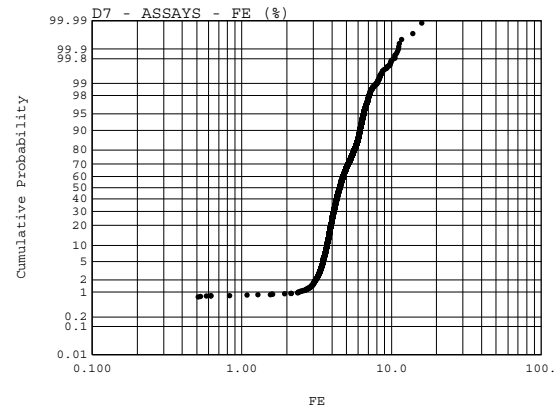
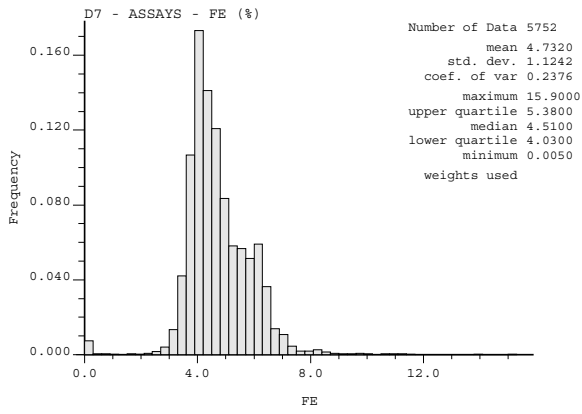


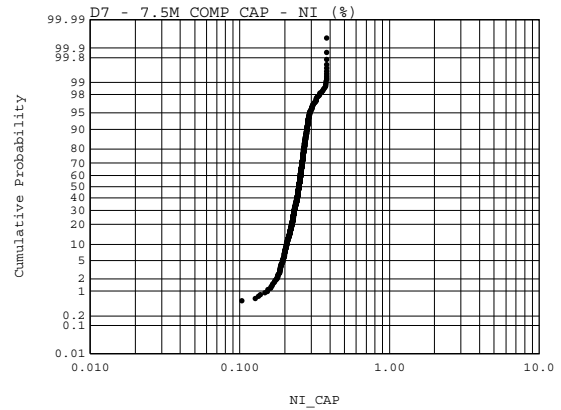
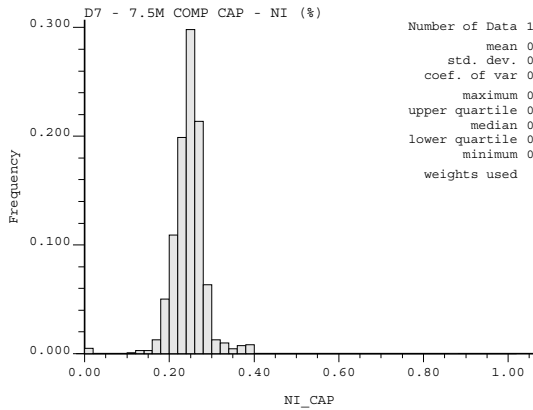
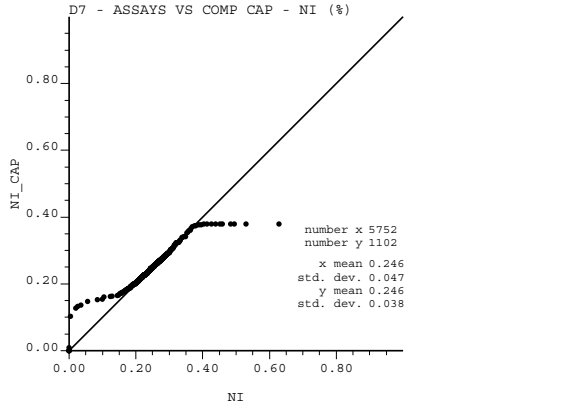
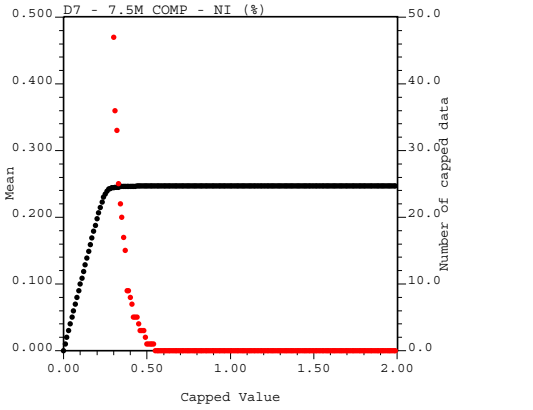
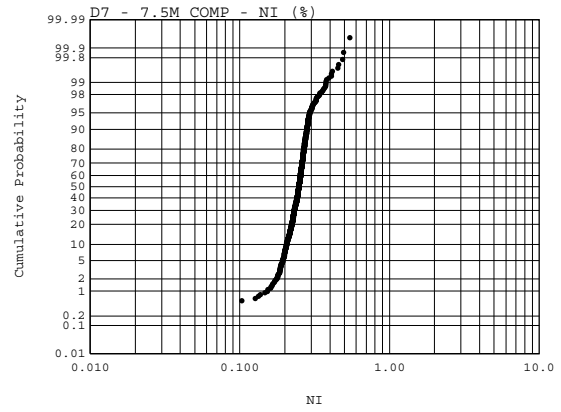
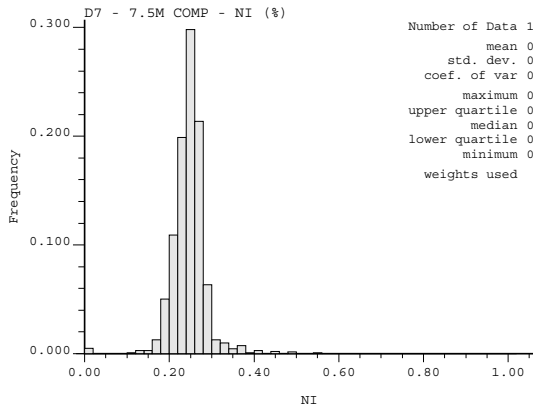
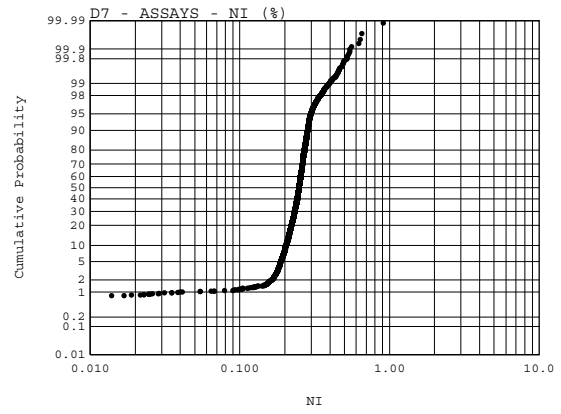
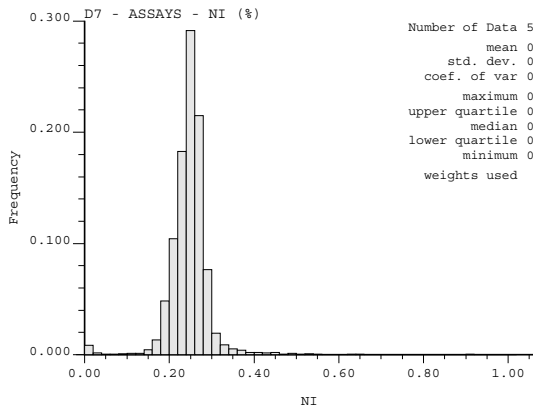


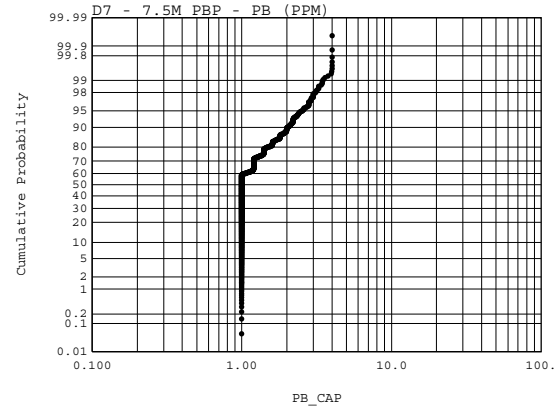
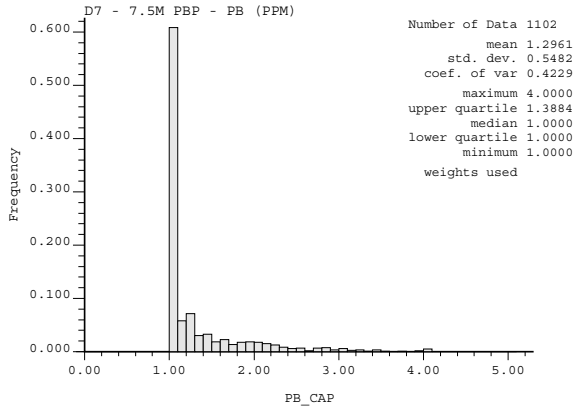
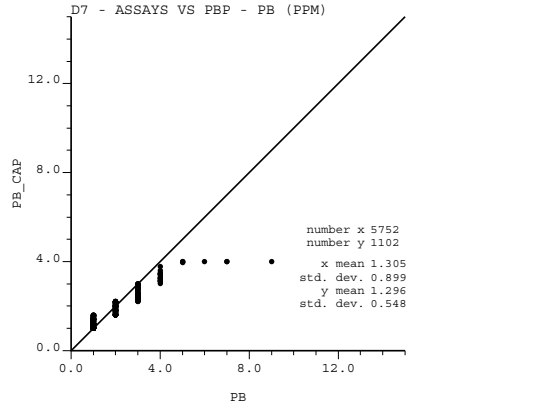
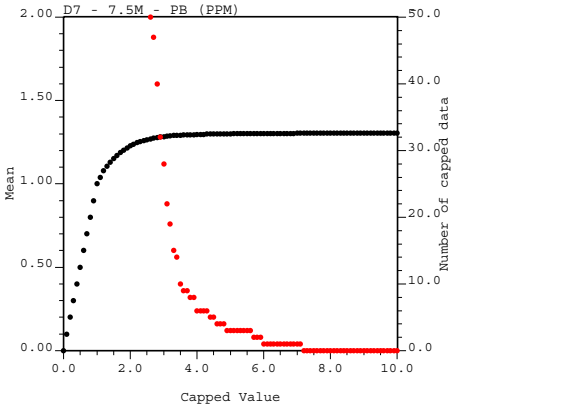
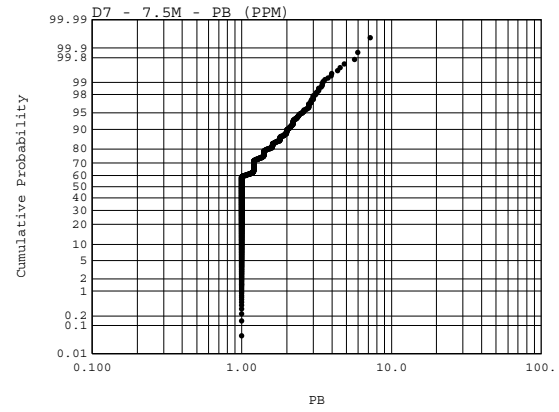
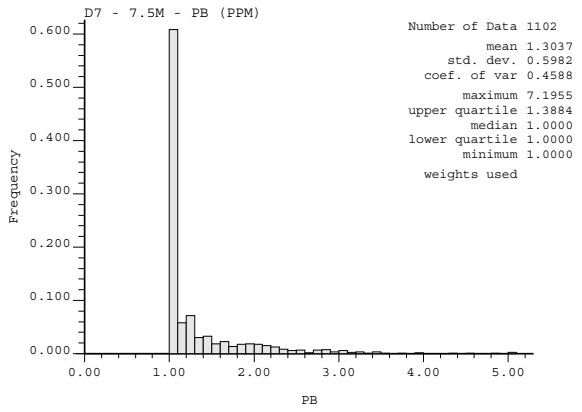
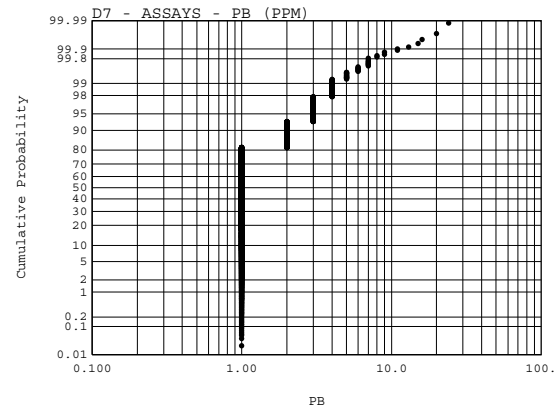
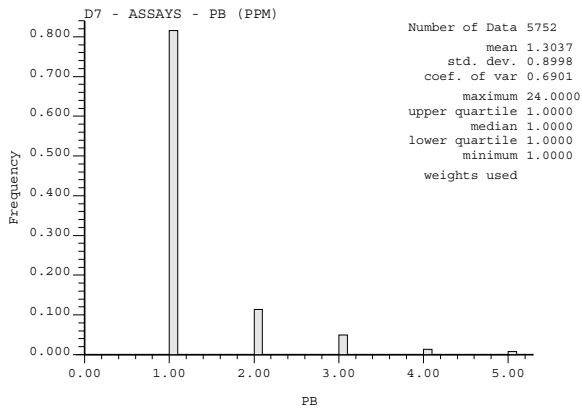


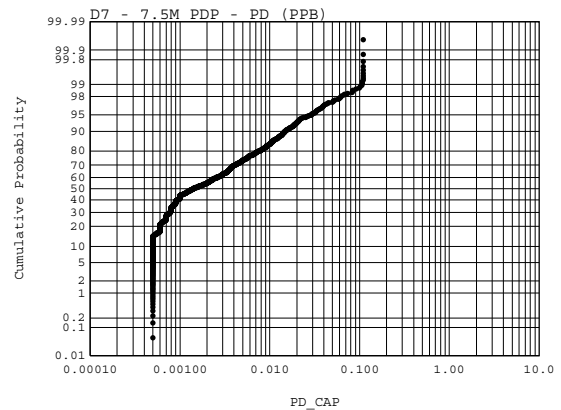
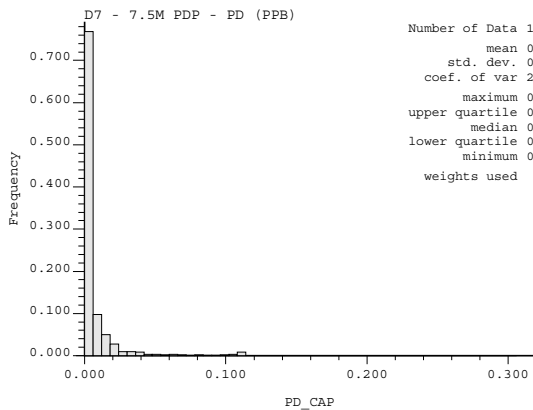
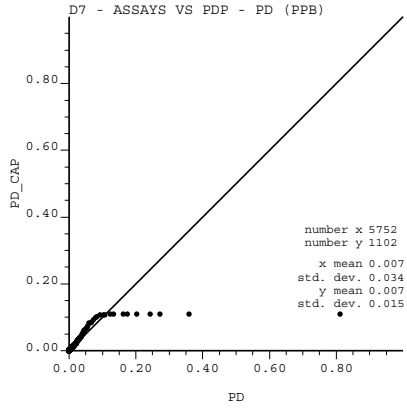
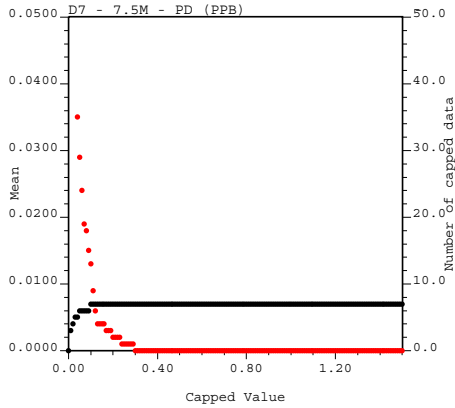
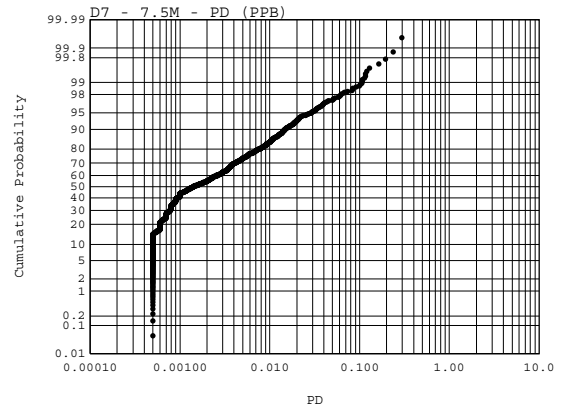
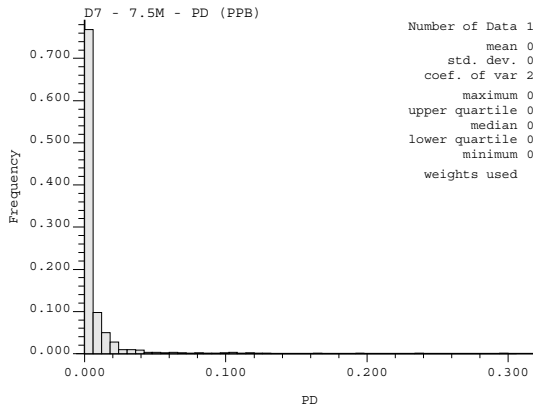
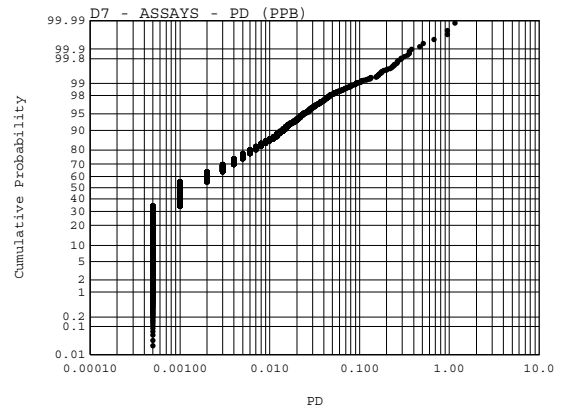
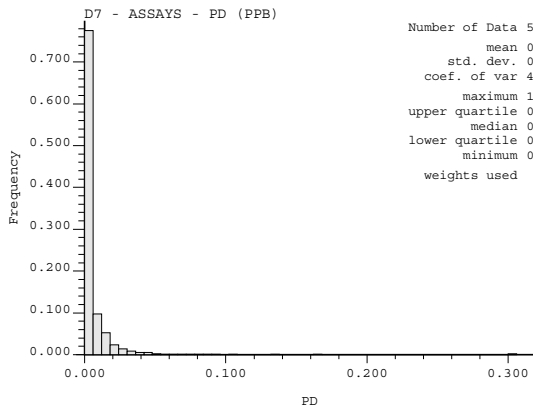


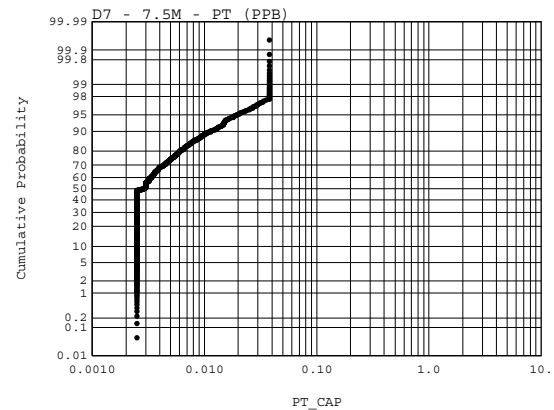
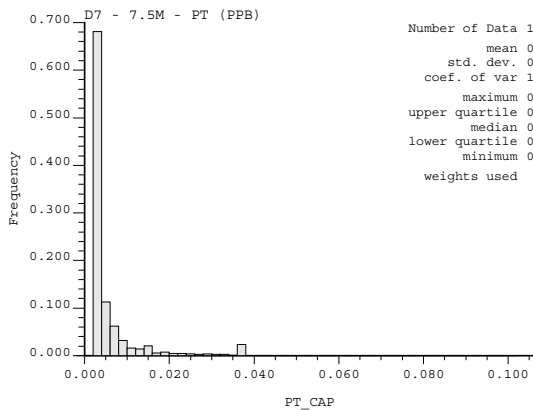
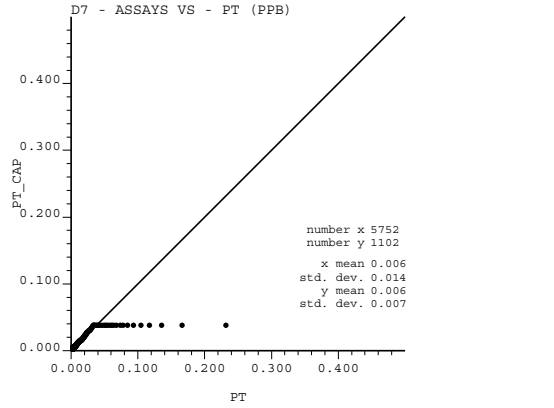
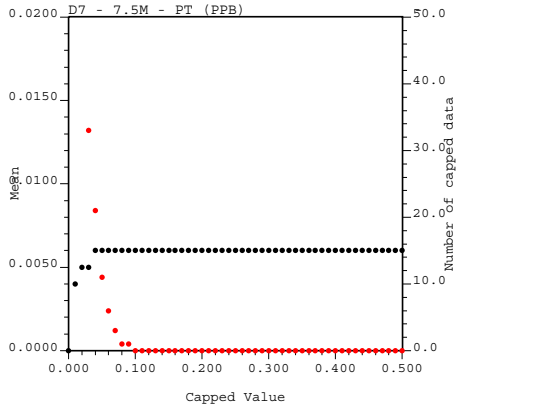
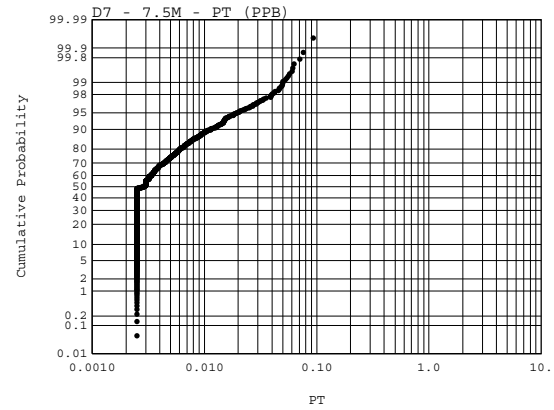
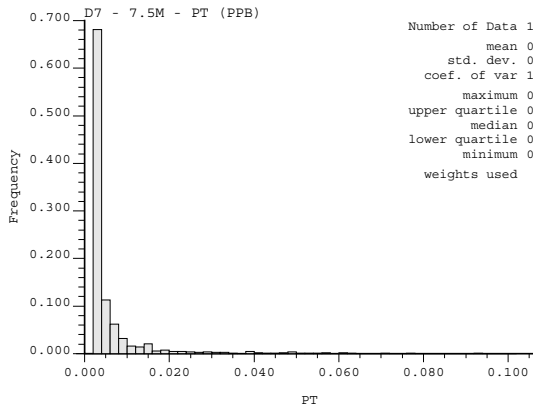
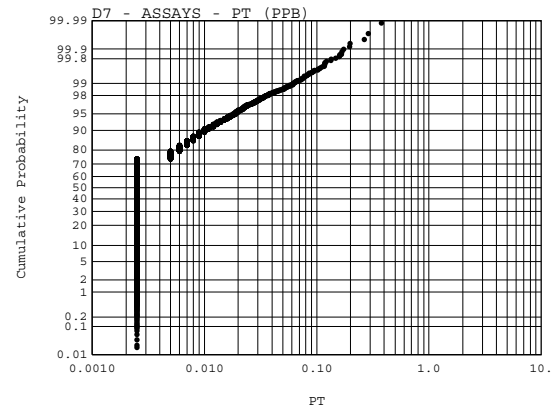
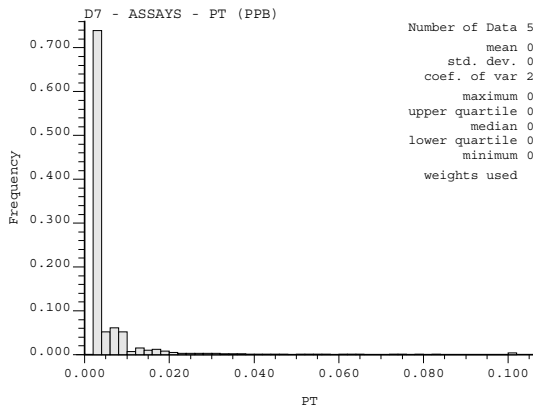


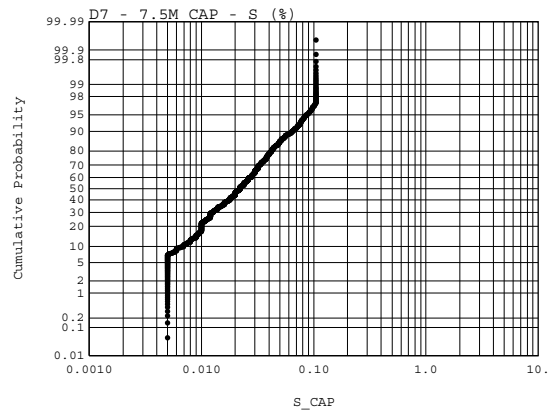
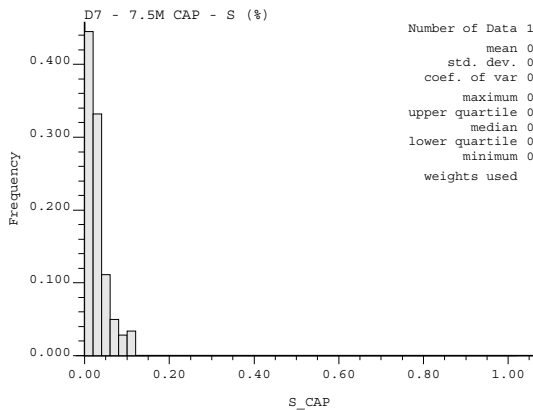
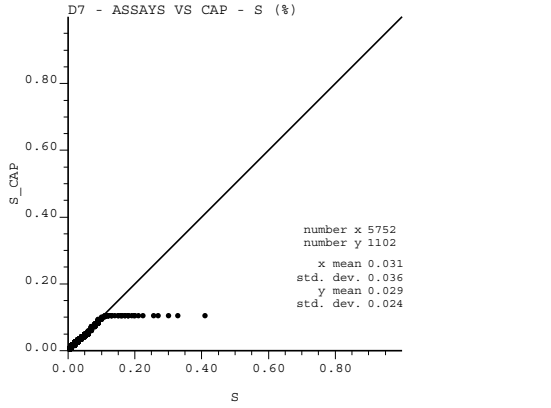
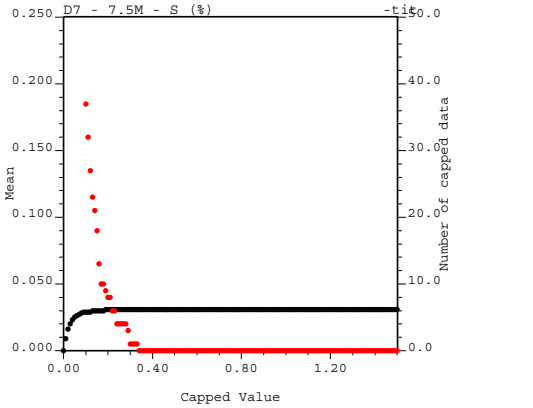
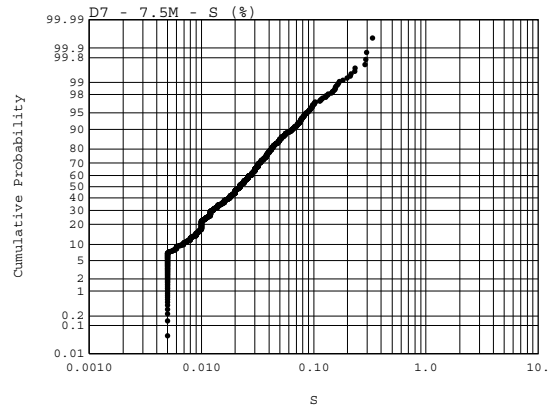
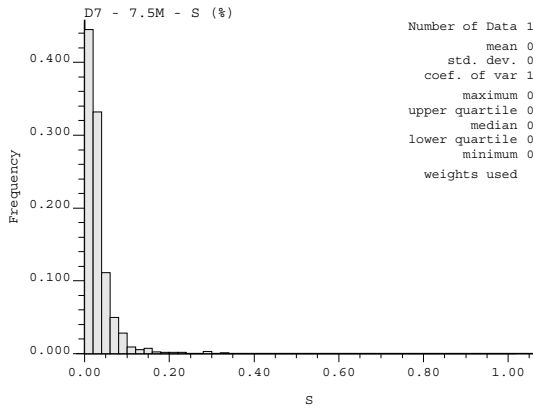
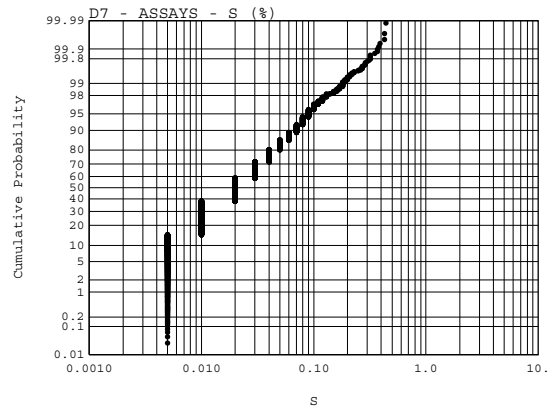
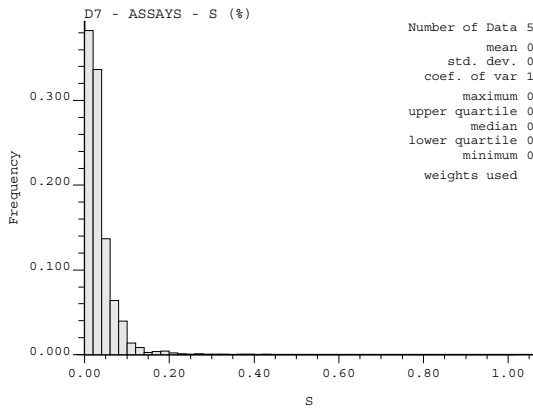












APPENDIX B

**Variogram Models of Main Elements
Used for Resource Estimation**

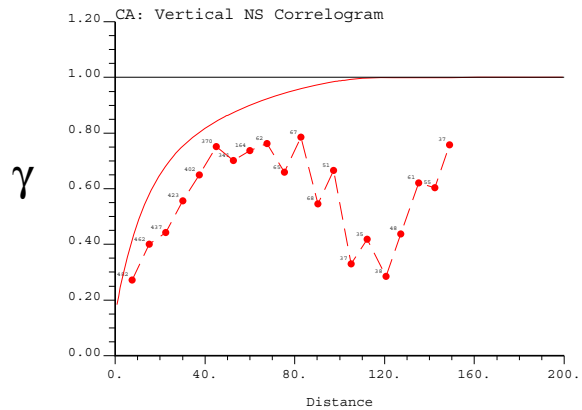
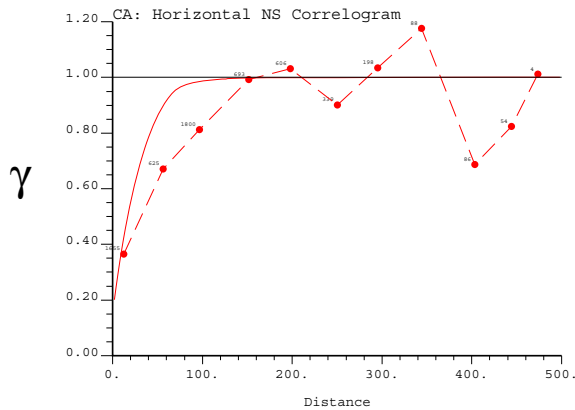
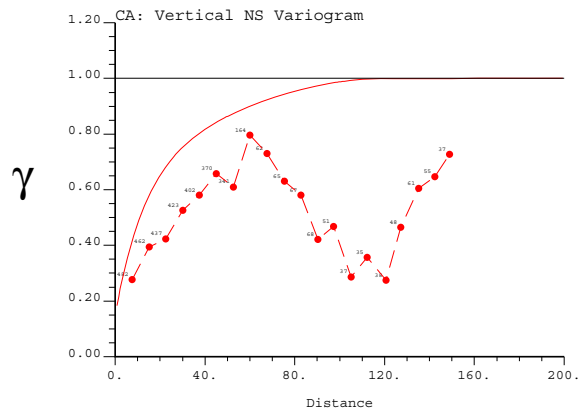
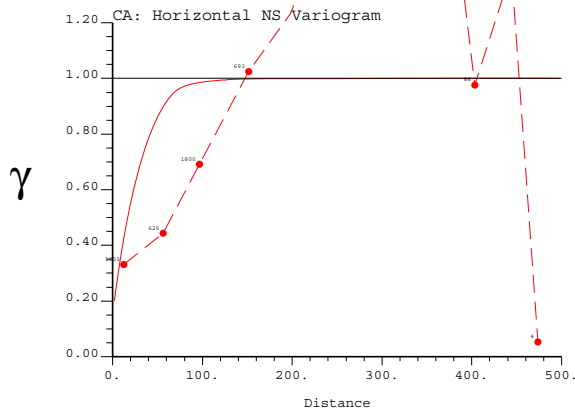
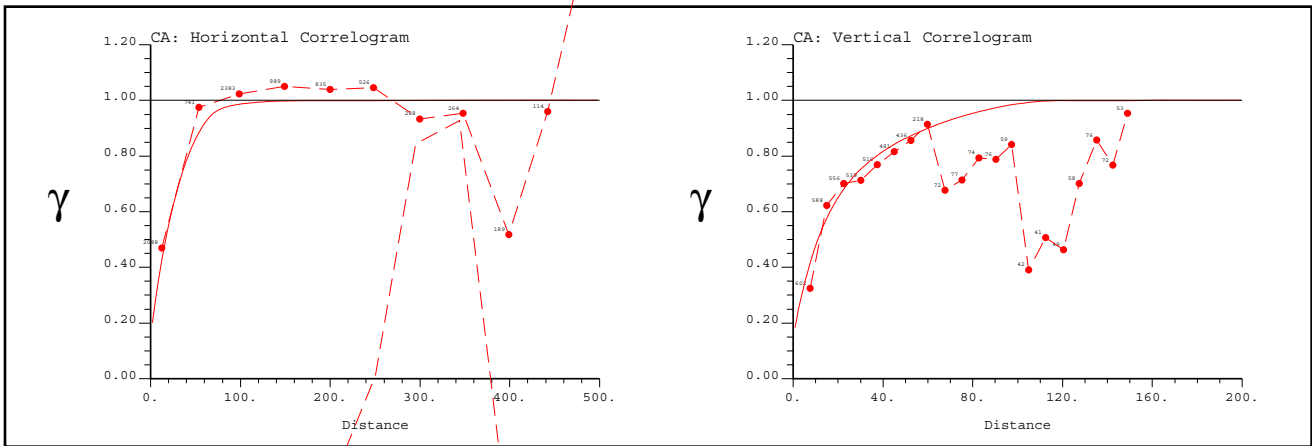
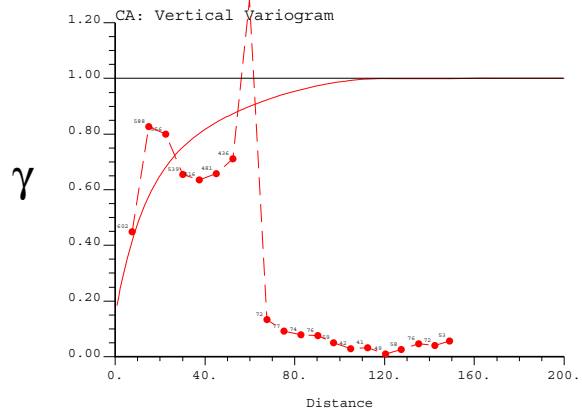
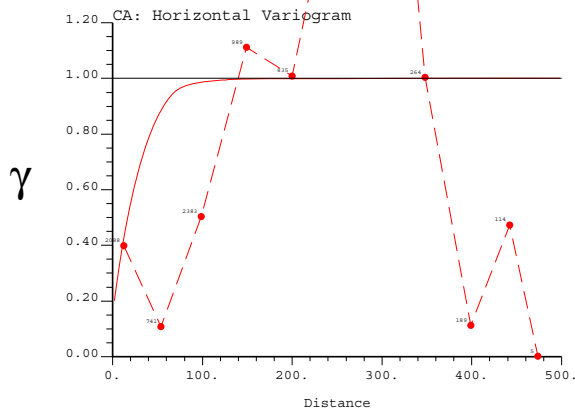
Table B1: Variograms Used for Estimation of Main Elements. Note that Angles ANG1, ANG2 and ANG3 Conform to GSLib Conventions.

Domain	Variable	CO	NST	IST	TYPE	CC	A_HMAX	A_HMIN	A_VERT	ANG1	ANG2	ANG3
1+2	CA	0.15	2	1	EXPONENTIAL	0.55	80	80	40	45	-60	0
				2	SPHERICAL	0.3	80	80	120	45	-60	0
	CO	0.1	2	1	EXPONENTIAL	0.6	25	25	35	45	-60	0
				2	SPHERICAL	0.3	100	100	35	45	-60	0
	CR	0.1	1	1	EXPONENTIAL	0.9	275	275	80	45	-60	0
	FE	0.1	2	1	EXPONENTIAL	0.4	15	15	20	45	-60	0
				2	SPHERICAL	0.5	200	200	80	45	-60	0
	NI	0.1	2	1	EXPONENTIAL	0.45	10	10	35	45	-60	0
				2	SPHERICAL	0.45	70	70	35	45	-60	0
	PD	0.2	2	1	EXPONENTIAL	0.5	20	20	15	45	-60	0
				2	SPHERICAL	0.3	40	40	15	45	-60	0
	PT	0.3	2	1	EXPONENTIAL	0.5	15	15	15	45	-60	0
				2	SPHERICAL	0.2	40	40	15	45	-60	0
	S	0.1	2	1	EXPONENTIAL	0.35	30	30	85	45	-60	0
2				SPHERICAL	0.55	175	175	85	45	-60	0	
SG	0.1	2	1	EXPONENTIAL	0.3	100	100	40	45	-60	0	
			2	SPHERICAL	0.6	100	100	140	45	-60	0	
3	CA	0.1	2	1	EXPONENTIAL	0.55	40	40	130	35	-65	0
				2	SPHERICAL	0.35	450	650	130	35	-65	0
	CO	0.25	2	1	EXPONENTIAL	0.6	100	125	60	35	-65	0
				2	SPHERICAL	0.15	1800	1500	60	35	-65	0
	CR	0.15	2	1	EXPONENTIAL	0.3	110	225	100	35	-65	0
				2	SPHERICAL	0.55	1200	650	100	35	-65	0
	FE	0.15	2	1	EXPONENTIAL	0.3	60	20	80	35	-65	0
				2	SPHERICAL	0.55	2500	2500	250	35	-65	0
	NI	0.1	3	1	EXPONENTIAL	0.5	70	175	40	35	-65	0
				2	SPHERICAL	0.2	1000	175	40	35	-65	0
				3	SPHERICAL	0.2	1000	750	40	35	-65	0
	PD	0.3	2	1	EXPONENTIAL	0.45	50	70	30	35	-65	0
				2	EXPONENTIAL	0.25	400	300	30	35	-65	0
	PT	0.3	2	1	EXPONENTIAL	0.6	110	110	20	35	-65	0
2				SPHERICAL	0.1	1200	550	50	35	-65	0	
S	0.1	3	1	EXPONENTIAL	0.45	80	200	55	35	-65	0	
			2	SPHERICAL	0.35	750	200	55	35	-65	0	
			3	SPHERICAL	0.1	750	600	55	35	-65	0	
SG	0.2	2	1	EXPONENTIAL	0.45	175	50	35	35	-65	0	
			2	SPHERICAL	0.35	1000	900	200	35	-65	0	
4	CA	0.3	2	1	EXPONENTIAL	0.45	100	80	20	45	-60	0
				2	SPHERICAL	0.15	450	450	20	45	-60	0
				3	SPHERICAL	0.1	450	450	180	45	-60	0
	CO	0.3	2	1	EXPONENTIAL	0.55	60	100	55	45	-60	0
				2	SPHERICAL	0.15	600	200	55	45	-60	0
	CR	0.15	2	1	EXPONENTIAL	0.1	75	150	100	45	-60	0
				2	SPHERICAL	0.75	2500	600	100	45	-60	0
	FE	0.25	3	1	EXPONENTIAL	0.25	40	125	125	45	-60	0
				2	SPHERICAL	0.1	1500	125	125	45	-60	0
				3	SPHERICAL	0.4	1500	1500	125	45	-60	0
	NI	0.2	3	1	EXPONENTIAL	0.45	50	135	50	45	-60	0
				2	SPHERICAL	0.15	2000	135	60	45	-60	0
				3	SPHERICAL	0.2	2000	1000	60	45	-60	0
	PD	0.2	3	1	EXPONENTIAL	0.65	25	50	25	45	-60	0
2				SPHERICAL	0.05	550	150	25	45	-60	0	
3				SPHERICAL	0.1	550	300	25	45	-60	0	
PT	0.3	2	1	EXPONENTIAL	0.55	25	50	25	45	-60	0	
			2	SPHERICAL	0.15	450	225	25	45	-60	0	
S	0.1	3	1	EXPONENTIAL	0.5	55	120	60	45	-60	0	
			2	SPHERICAL	0.15	1000	150	75	45	-60	0	
			3	SPHERICAL	0.25	1000	800	75	45	-60	0	
SG	0.25	2	1	EXPONENTIAL	0.55	85	40	110	45	-60	0	
			2	SPHERICAL	0.2	450	250	110	45	-60	0	

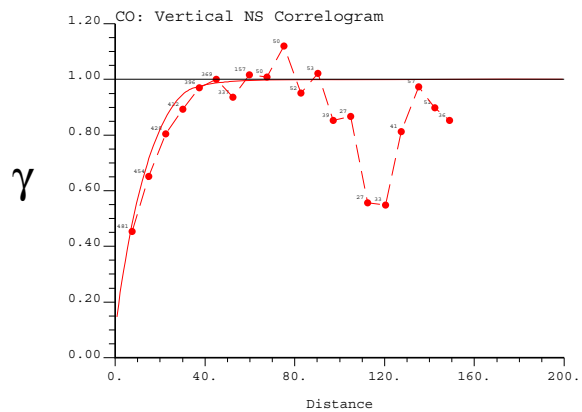
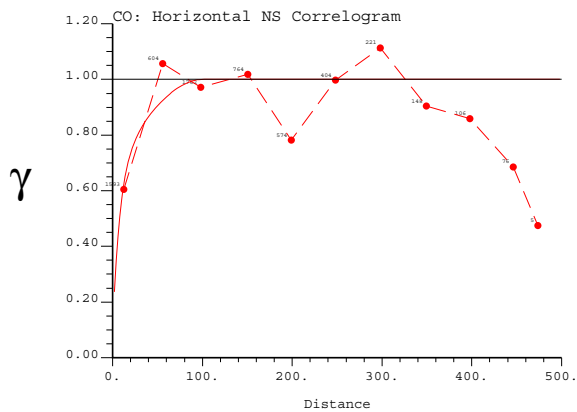
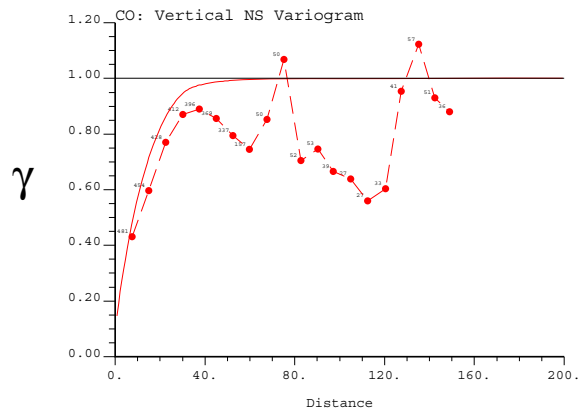
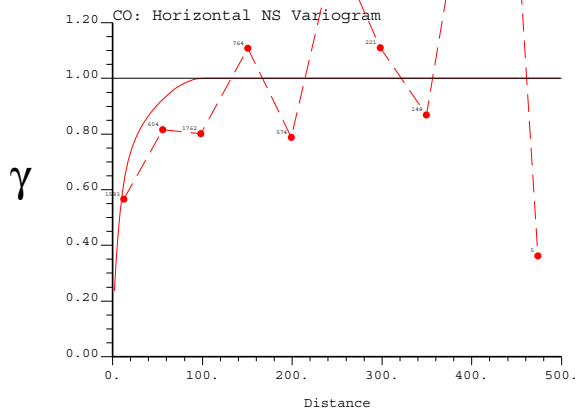
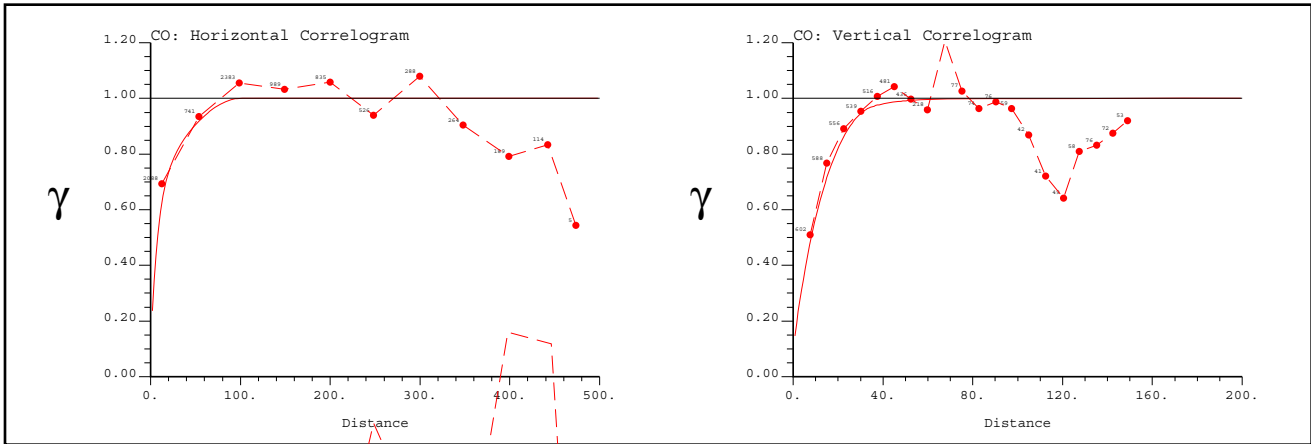
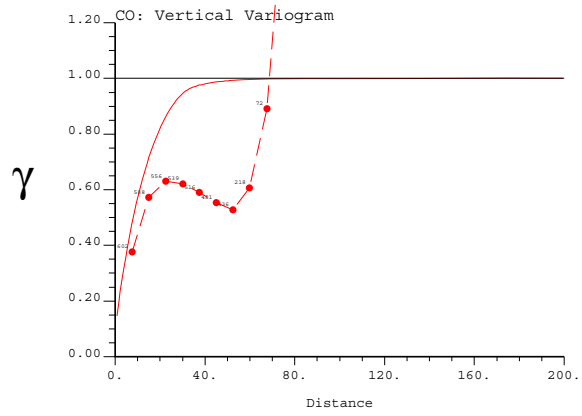
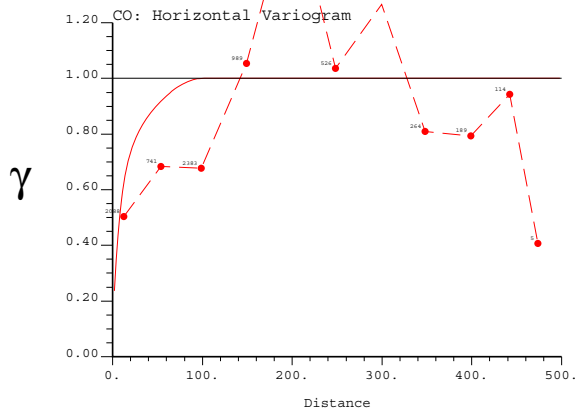
Domain	Variable	CO	NST	IST	Type	CC	A_HMAX	A_HMIN	A_VERT	ANG1	ANG2	ANG3	
5	CA	0.3	2	1	EXPONENTIAL	0.5	40	80	20	45	-60	0	
				2	SPHERICAL	0.2	325	650	20	45	-60	0	
	CO	0.3	2	1	EXPONENTIAL	0.55	85	50	55	45	-60	0	
				2	SPHERICAL	0.15	600	500	55	45	-60	0	
	CR	0.15	2	1	EXPONENTIAL	0.35	1200	225	100	45	-60	0	
				2	SPHERICAL	0.5	1200	1000	100	45	-60	0	
	FE	0.2	3	1	EXPONENTIAL	0.4	50	90	100	45	-60	0	
				2	EXPONENTIAL	0.15	1200	90	100	45	-60	0	
		NI	0.2	2	3	SPHERICAL	0.25	1200	1200	100	45	-60	0
					1	EXPONENTIAL	0.45	50	80	40	45	-60	0
	PD	0.3	2	2	SPHERICAL	0.35	800	600	40	45	-60	0	
				1	EXPONENTIAL	0.55	40	80	20	45	-60	0	
	PT	0.3	2	2	SPHERICAL	0.15	300	400	20	45	-60	0	
				1	EXPONENTIAL	0.55	25	40	20	45	-60	0	
	S	0.2	2	2	SPHERICAL	0.15	170	225	20	45	-60	0	
				1	EXPONENTIAL	0.3	130	130	75	45	-60	0	
	SG	0.2	2	2	SPHERICAL	0.5	1100	600	75	45	-60	0	
				1	EXPONENTIAL	0.6	140	30	85	45	-60	0	
6+7	CA	0.2	2	2	SPHERICAL	0.2	200	180	85	45	-60	0	
				1	EXPONENTIAL	0.65	50	80	30	45	-60	0	
	CO	0.1	2	2	SPHERICAL	0.15	150	300	30	45	-60	0	
				1	EXPONENTIAL	0.65	110	125	40	45	-60	0	
	CR	0.15	1	2	SPHERICAL	0.25	450	400	40	45	-60	0	
				1	EXPONENTIAL	0.85	850	550	80	45	-60	0	
	FE	0.1	2	1	EXPONENTIAL	0.4	150	100	135	45	-60	0	
				2	SPHERICAL	0.5	1800	1250	135	45	-60	0	
	NI	0.1	2	1	EXPONENTIAL	0.65	50	100	40	45	-60	0	
				2	SPHERICAL	0.25	550	850	40	45	-60	0	
	PD	0.2	2	1	EXPONENTIAL	0.65	30	60	40	45	-60	0	
				2	SPHERICAL	0.15	350	350	40	45	-60	0	
	PT	0.3	2	1	EXPONENTIAL	0.55	30	70	20	45	-60	0	
				2	SPHERICAL	0.15	375	375	20	45	-60	0	
	S	0.2	2	1	EXPONENTIAL	0.4	70	50	65	45	-60	0	
				2	SPHERICAL	0.4	550	900	65	45	-60	0	
	SG	0.1	2	1	EXPONENTIAL	0.7	140	85	90	45	-60	0	
				2	SPHERICAL	0.2	500	85	90	45	-60	0	

Calculated spatial metrics with the modelled variogram structure superimposed on the various metrics are shown on the following pages. In all cases, the left column corresponds to the down dip direction (blue lines, defined by azimuth of ANG1 and dip of ANG2 in preceding tables) and the along-strike direction (red lines, defined by azimuth of ANG1+90 degrees and dip of zero degrees). The right side columns correspond to the third principle direction (defined by azimuth of ANG1 degrees and dip of 90+ANG2), which lies perpendicular to the plane defined by the down dip and along strike directions. In each direction, the calculated, experimental values are shown as dashed lines, while the fitted model is shown as a solid line.

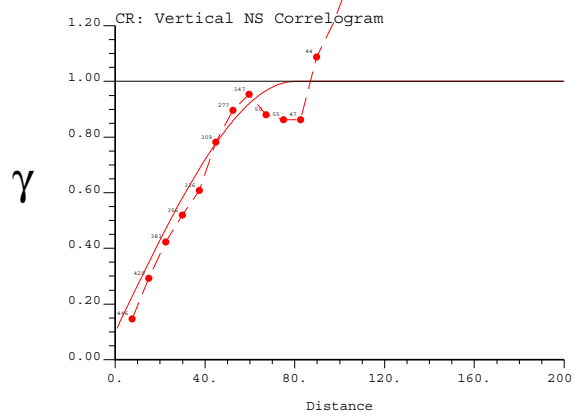
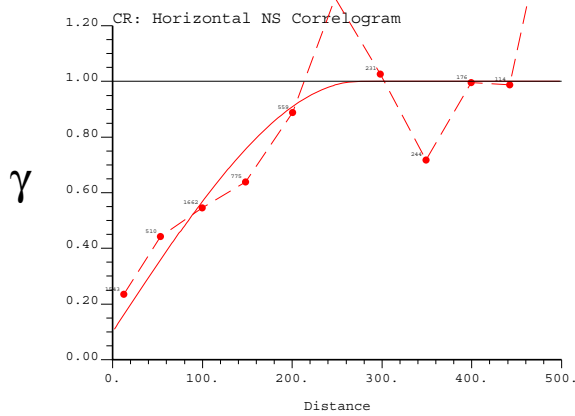
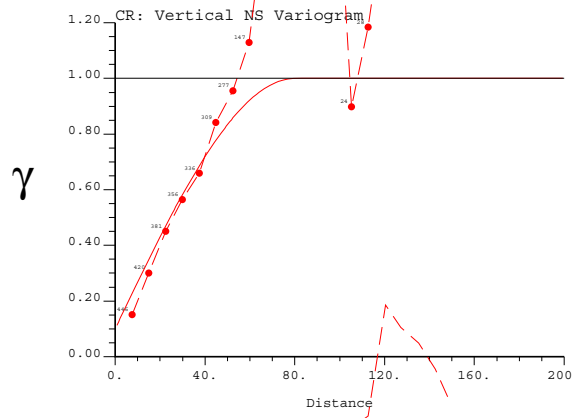
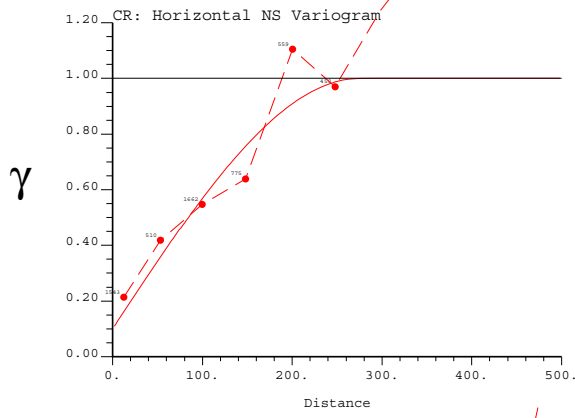
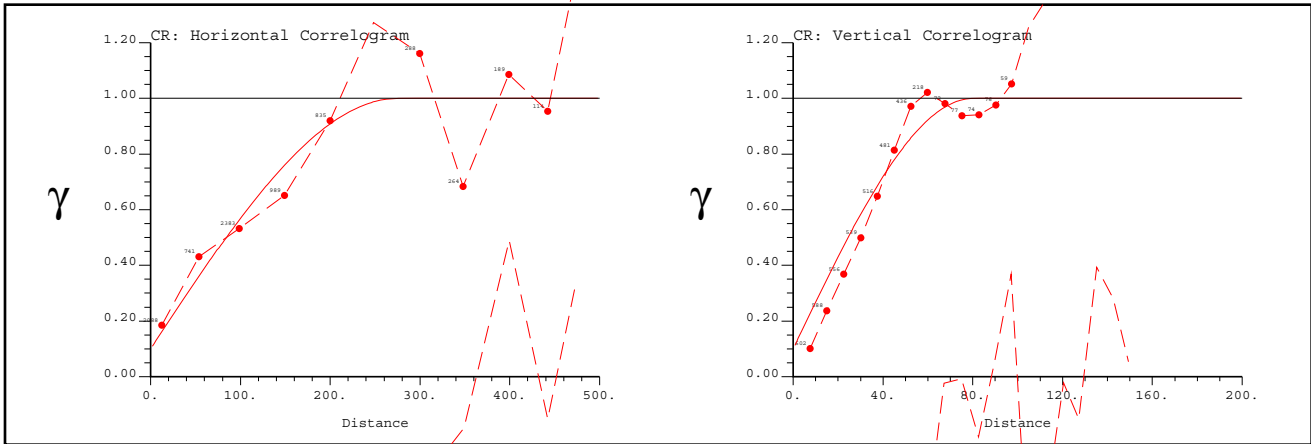
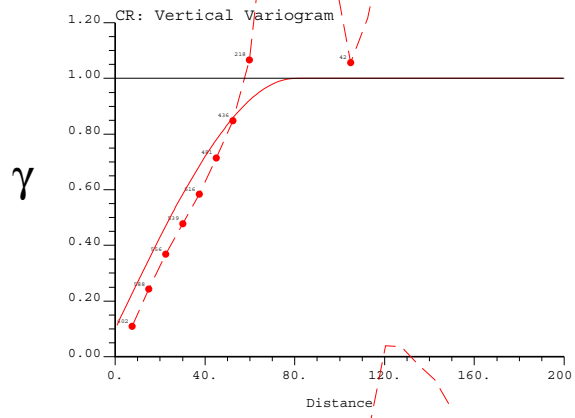
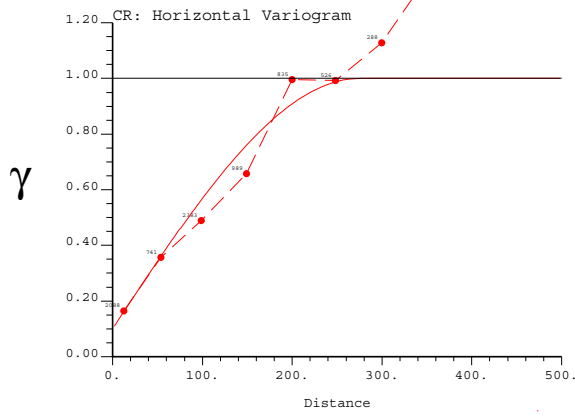
Zone 12: CA Variograms



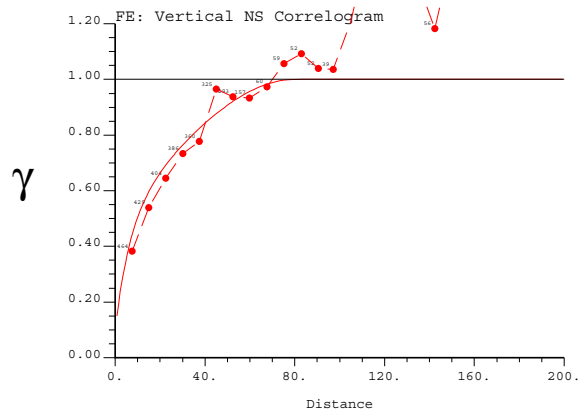
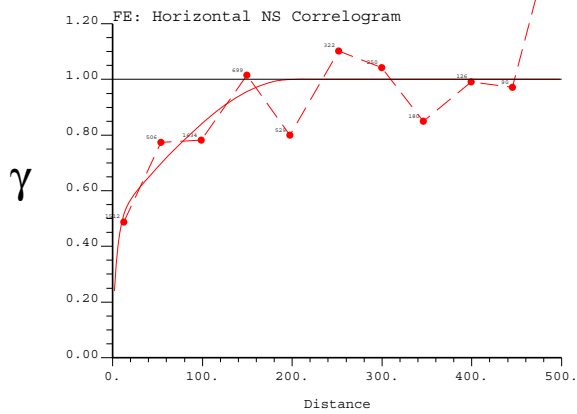
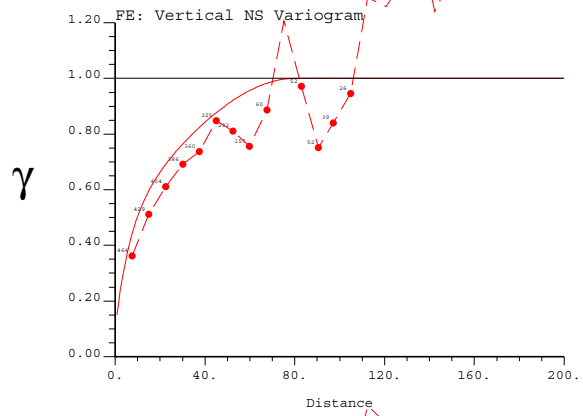
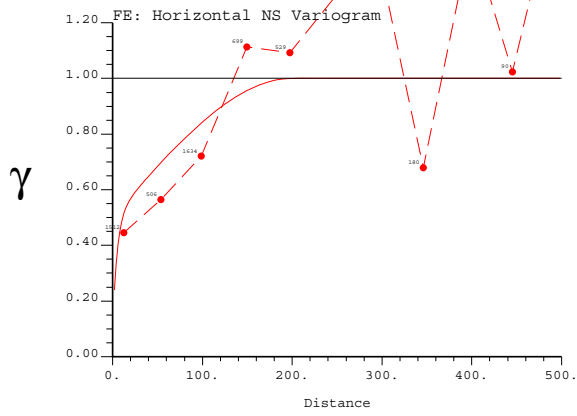
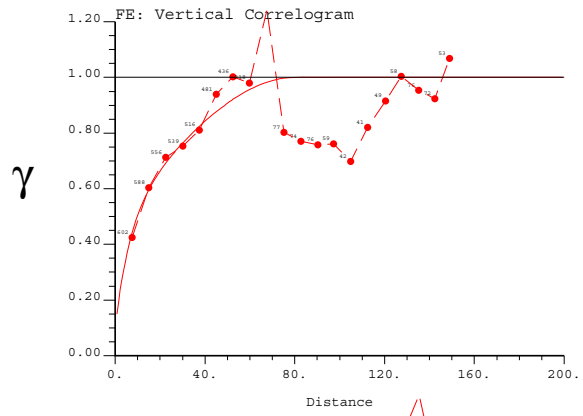
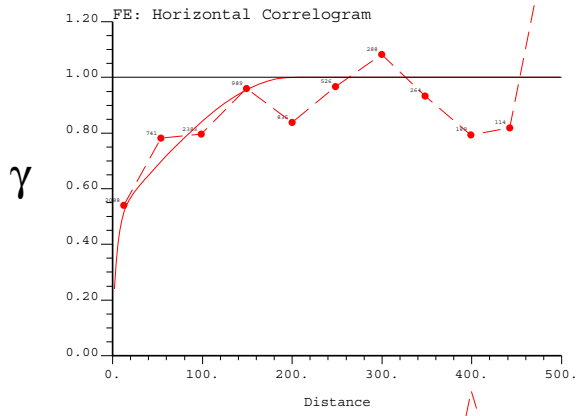
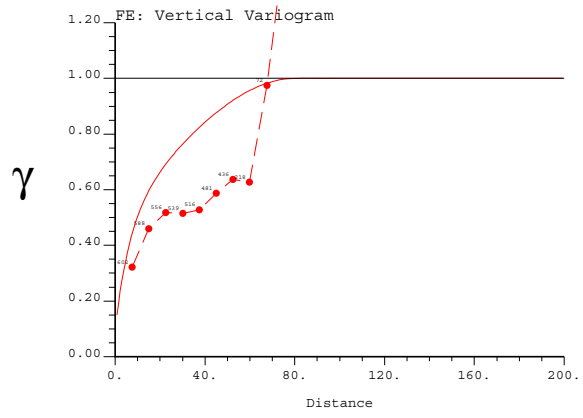
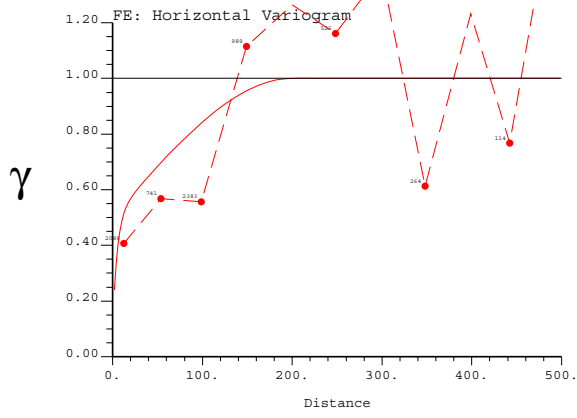
Zone 12: CO Variograms



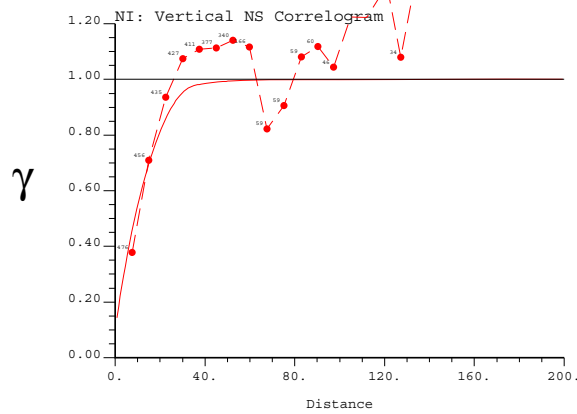
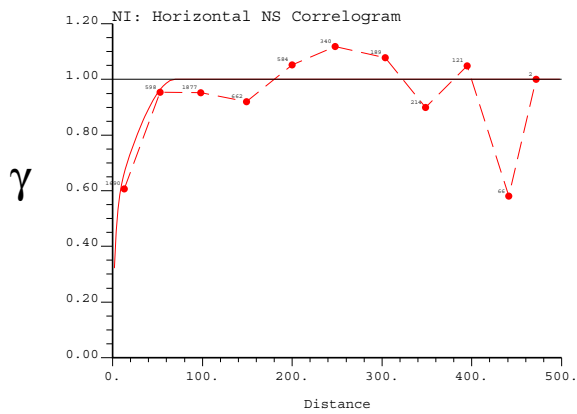
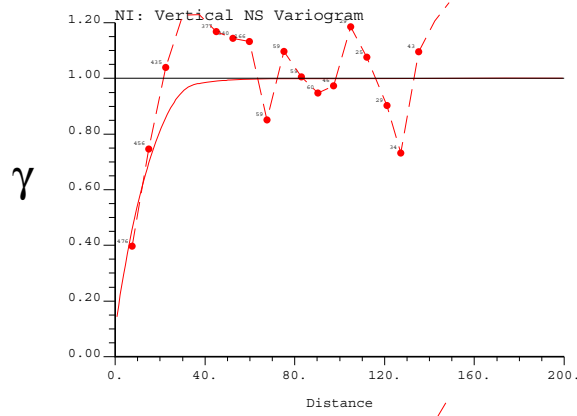
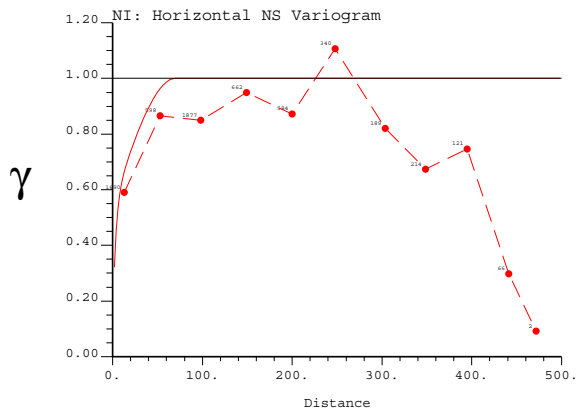
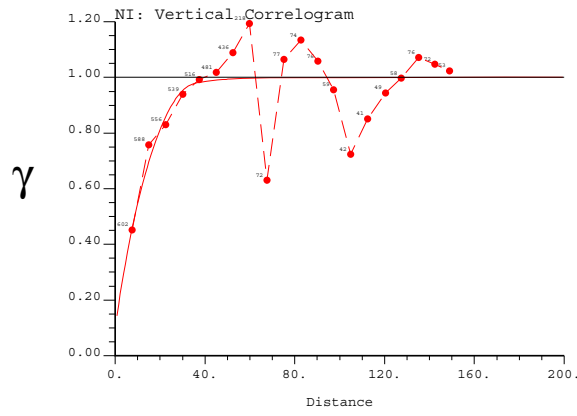
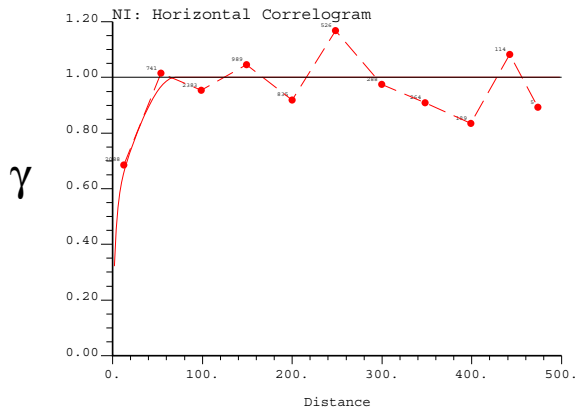
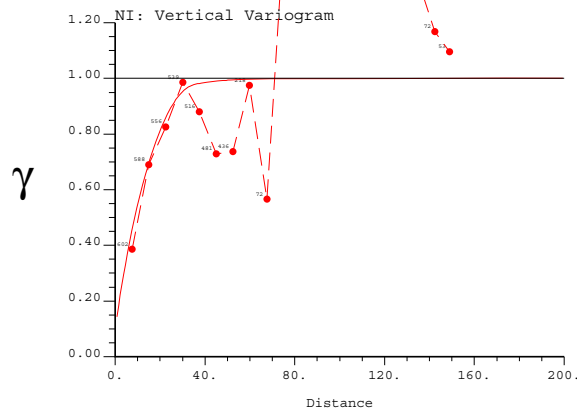
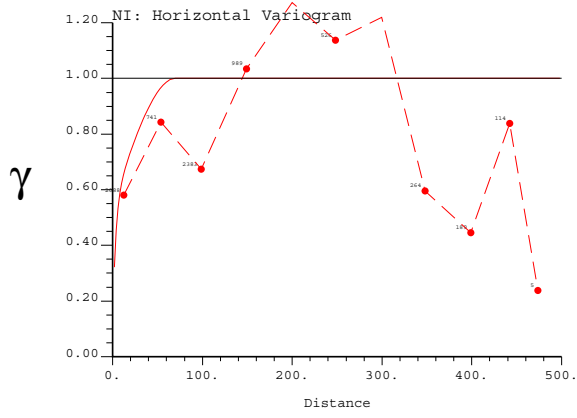
Zone 12: CR Variograms



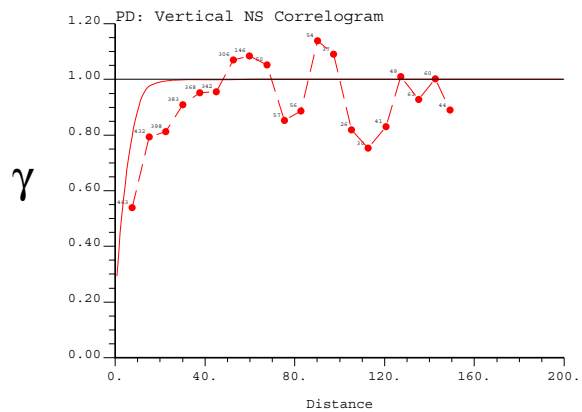
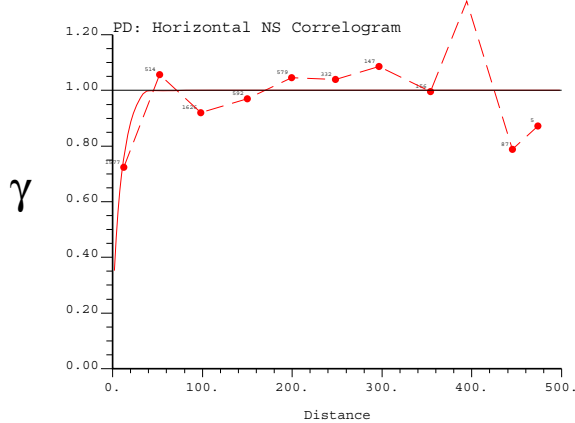
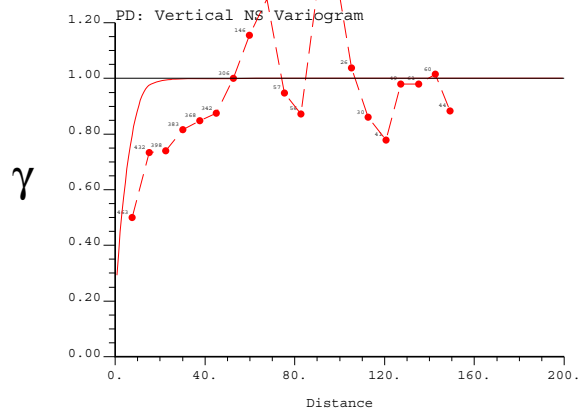
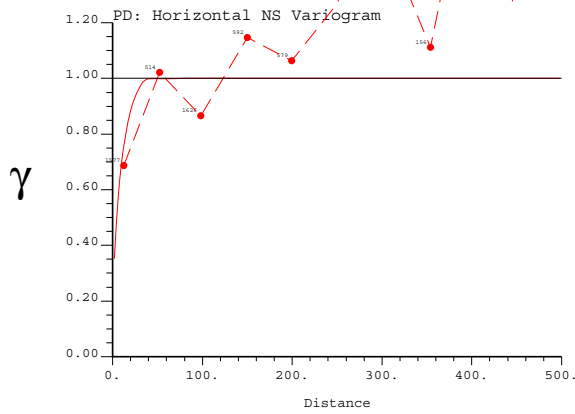
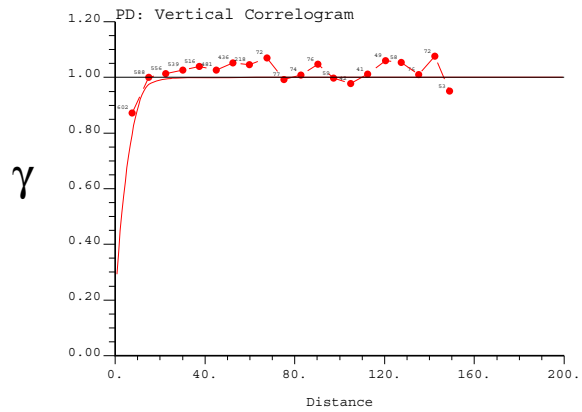
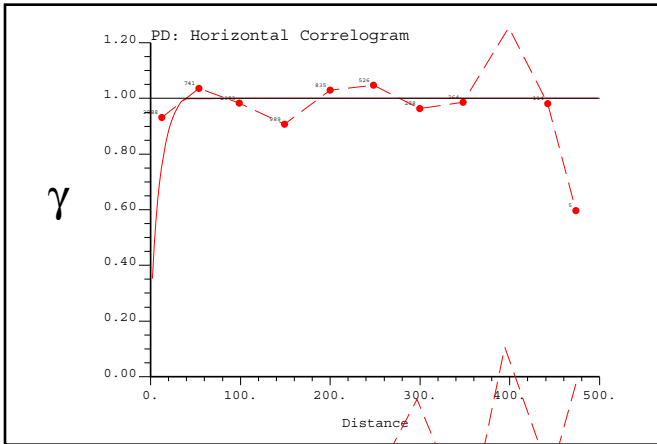
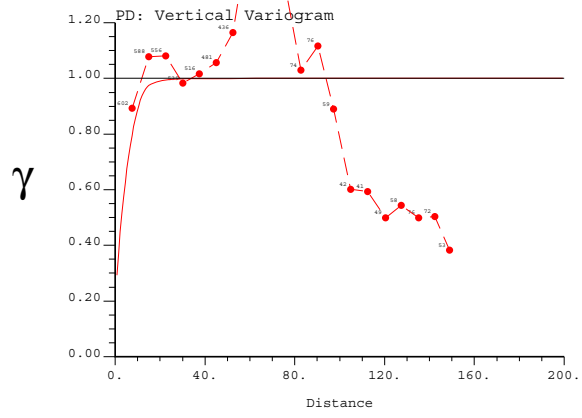
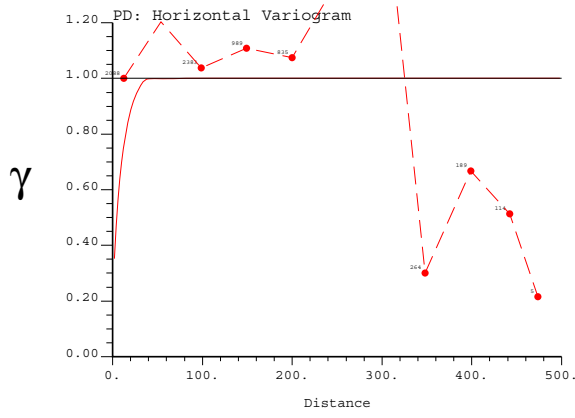
Zone 12: FE Variograms



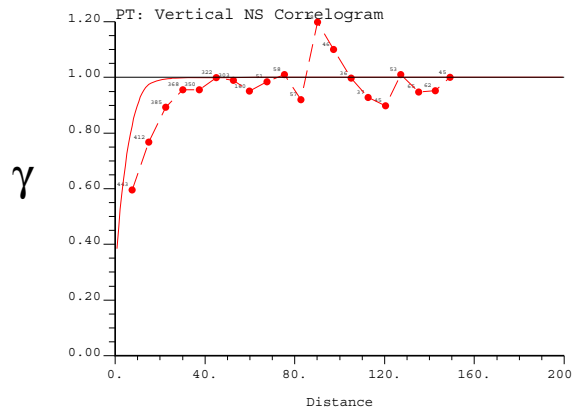
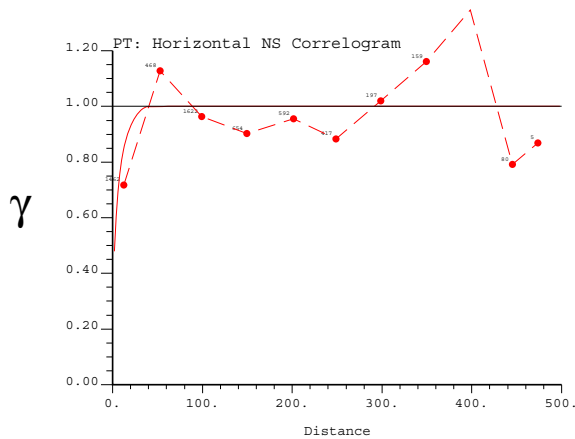
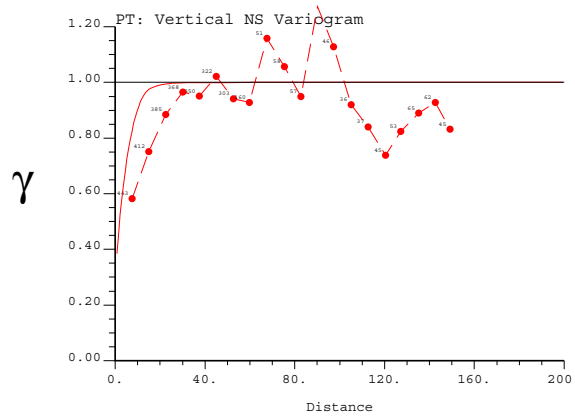
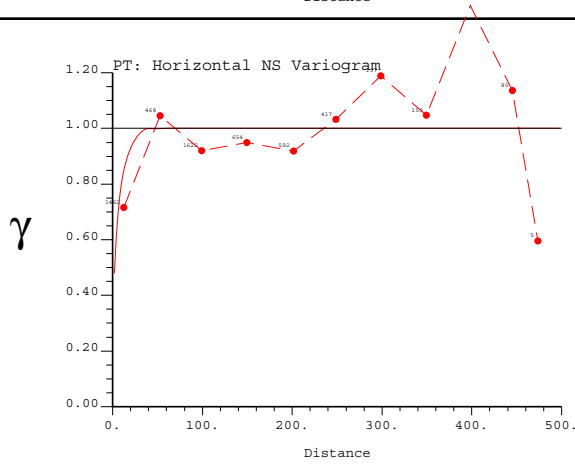
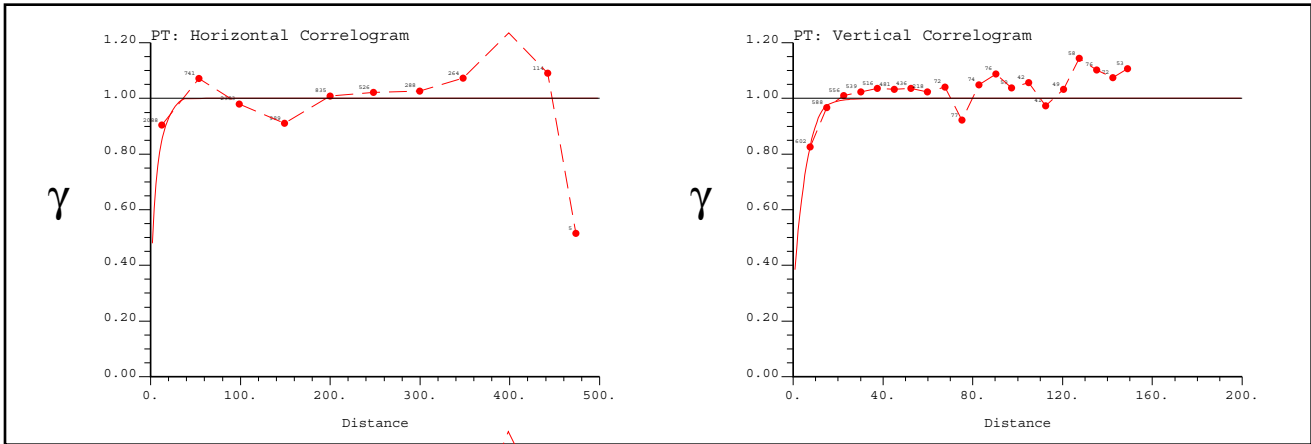
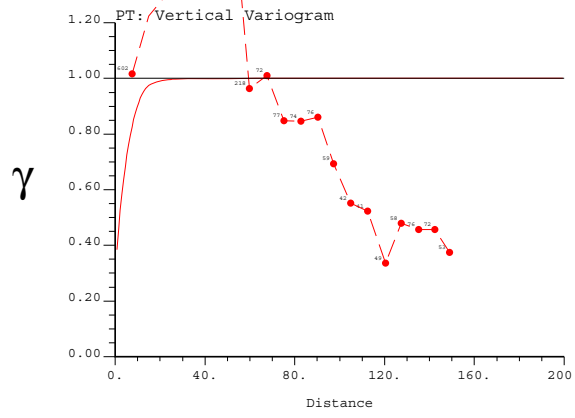
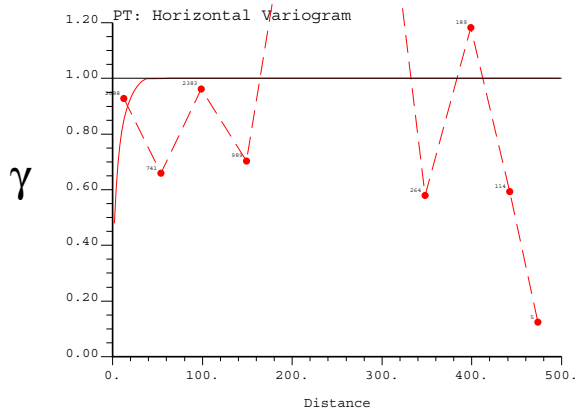
Zone 12: NI Variograms



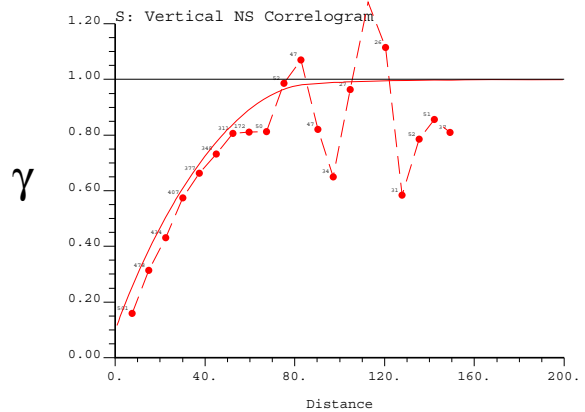
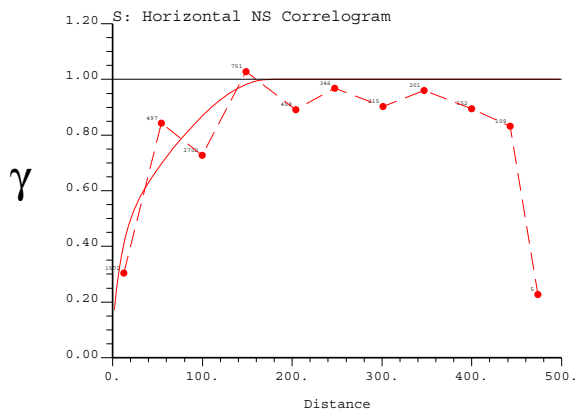
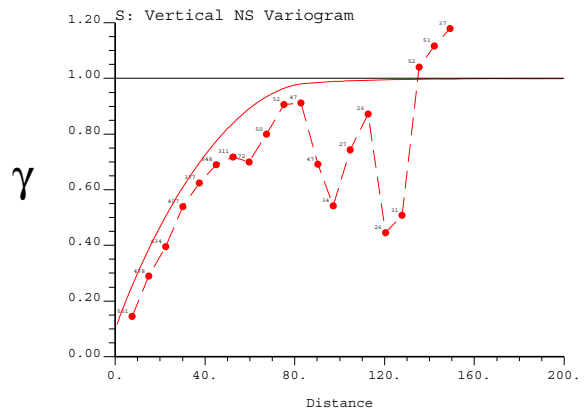
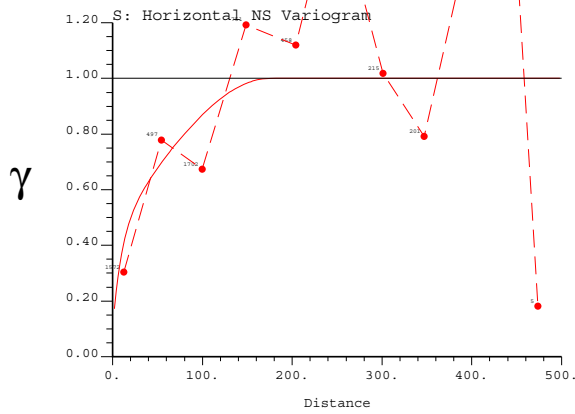
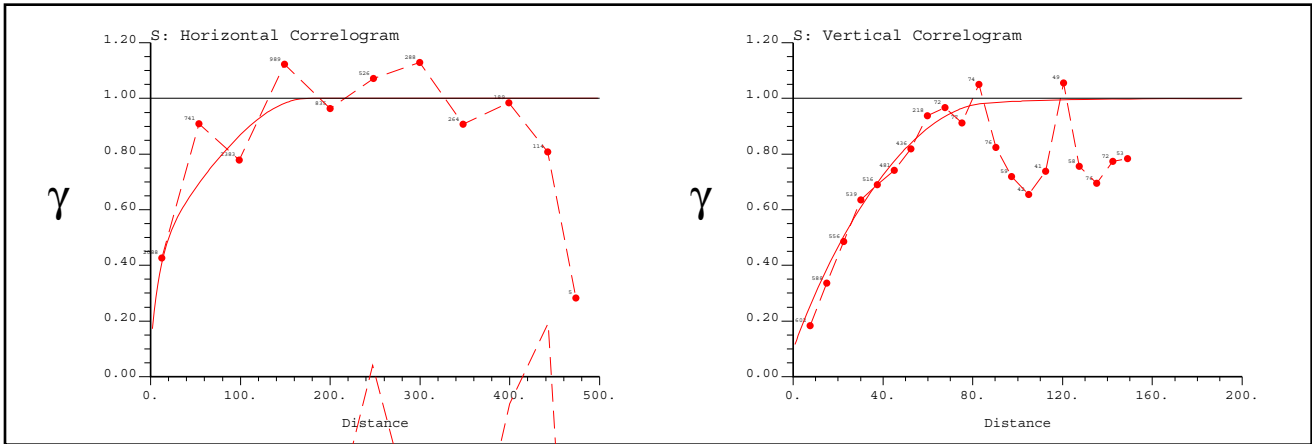
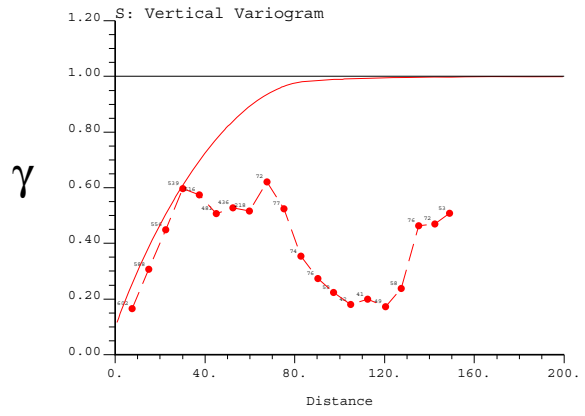
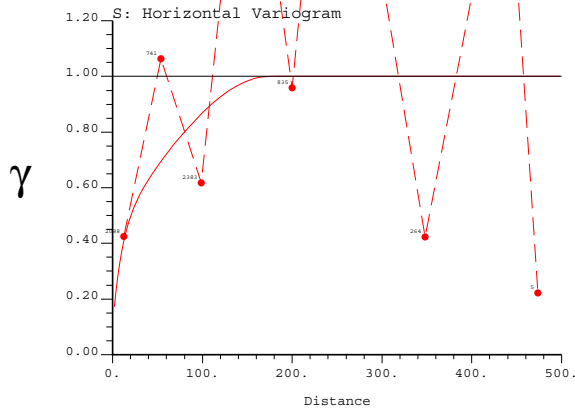
Zone 12: PD Variograms



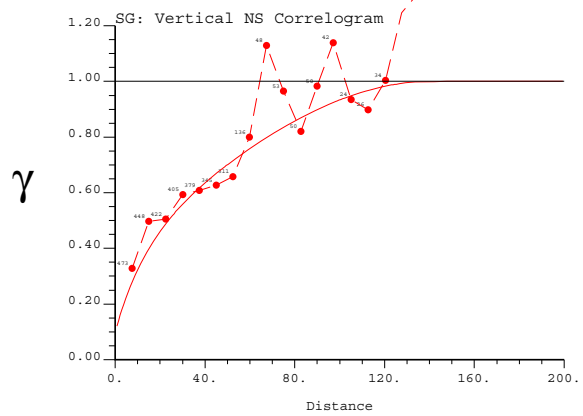
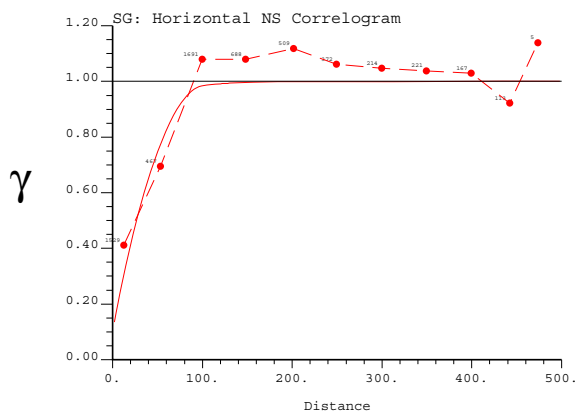
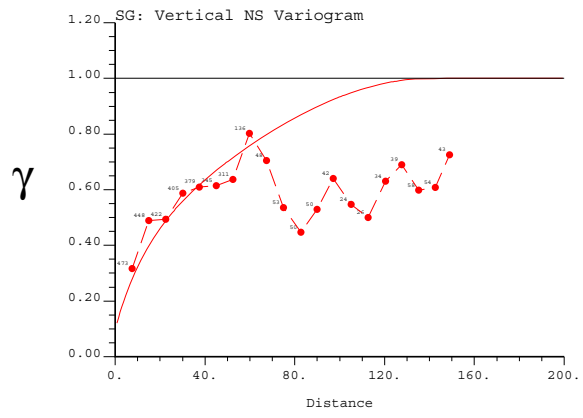
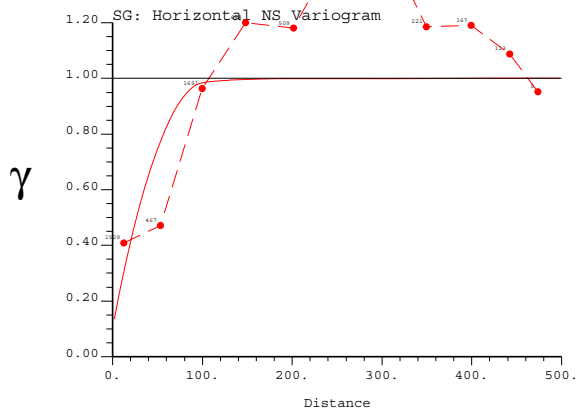
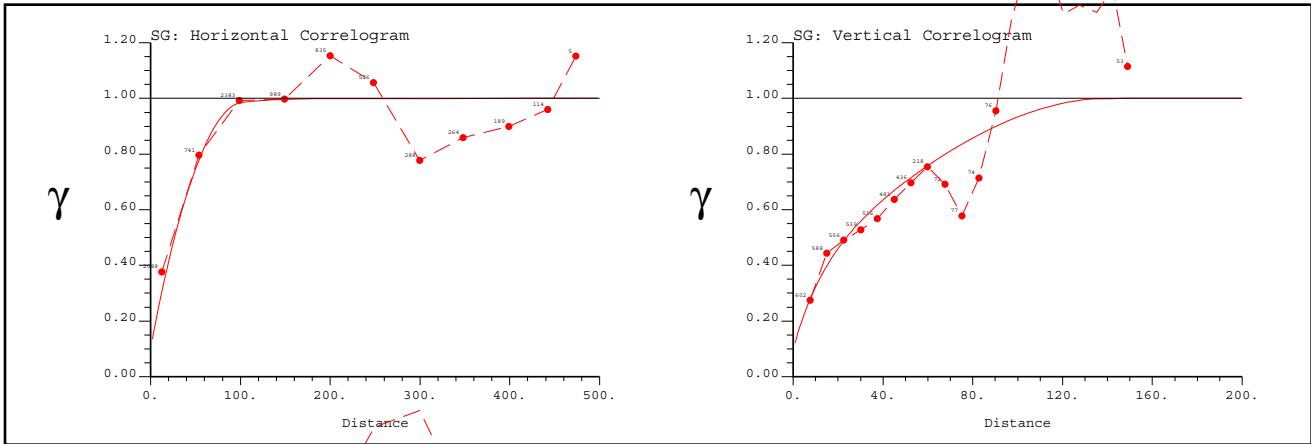
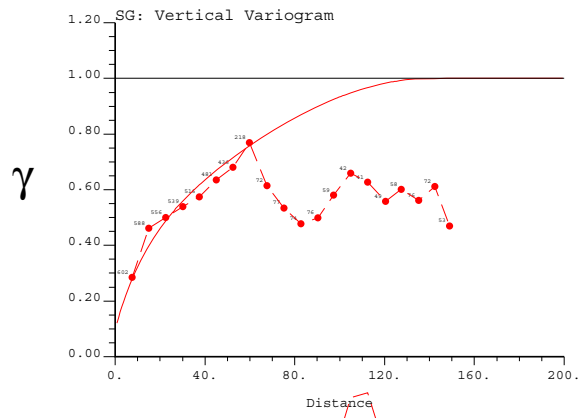
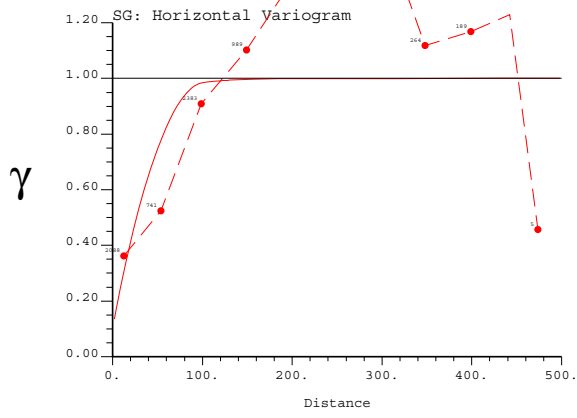
Zone 12: PT Variograms



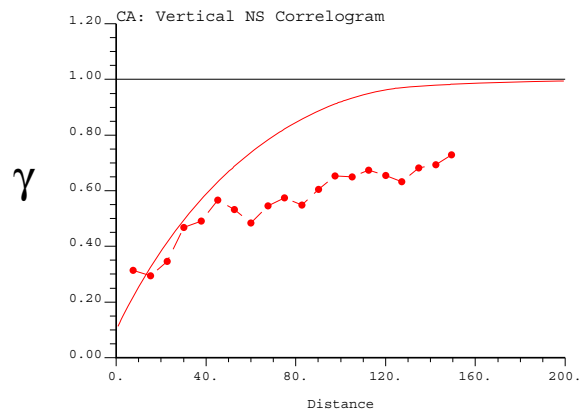
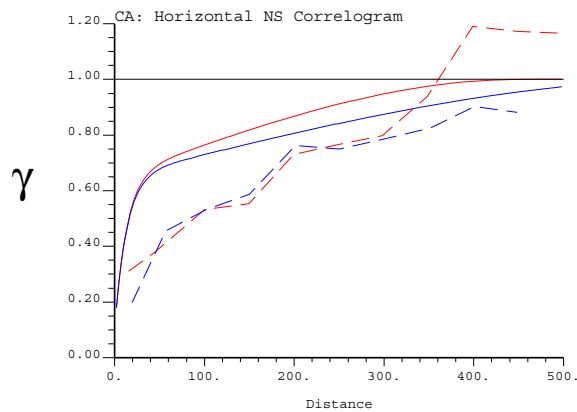
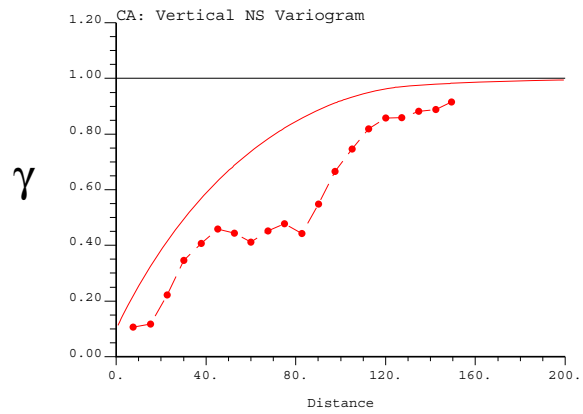
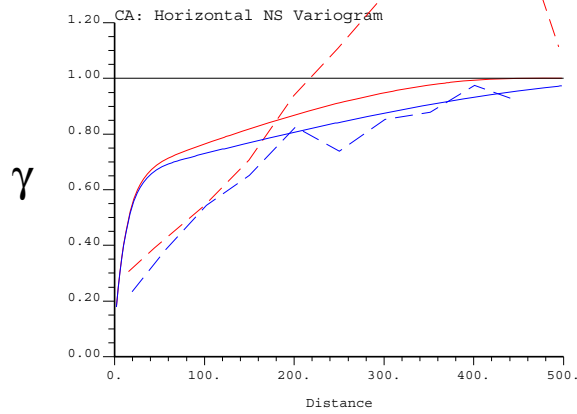
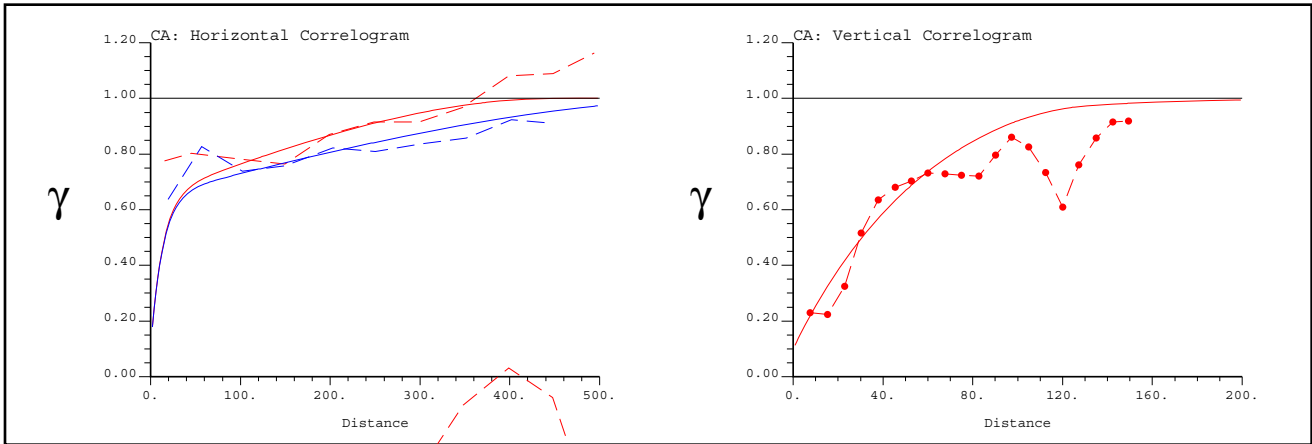
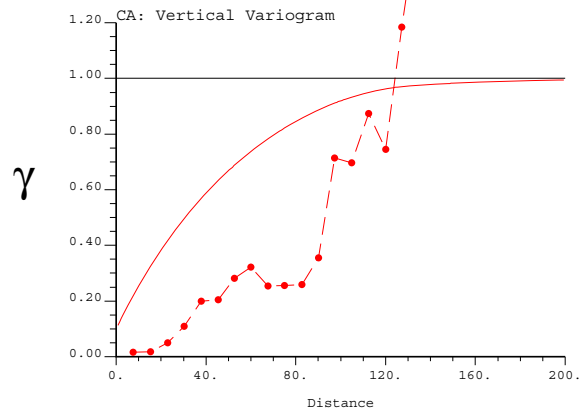
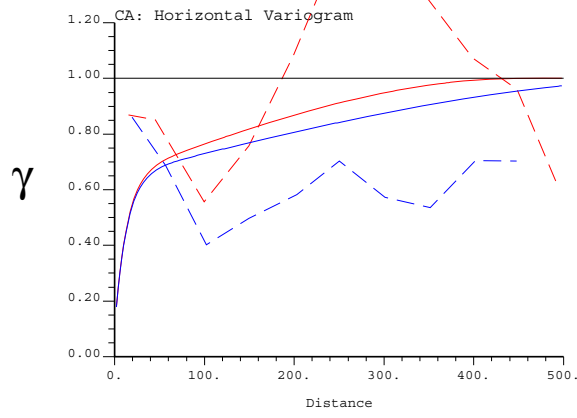
Zone 12: S Variograms



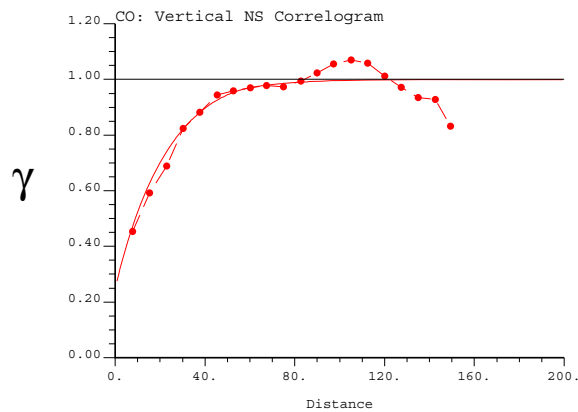
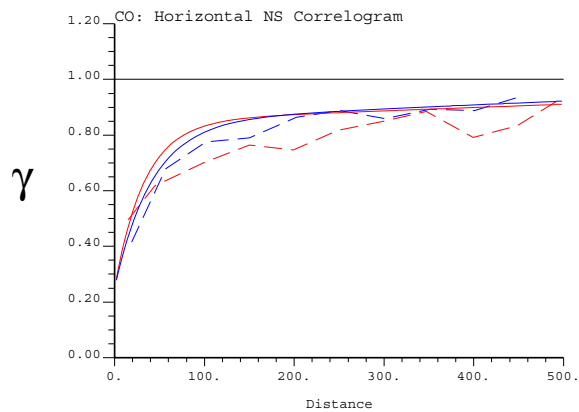
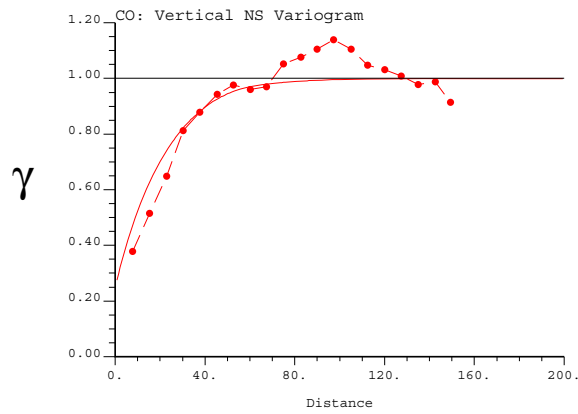
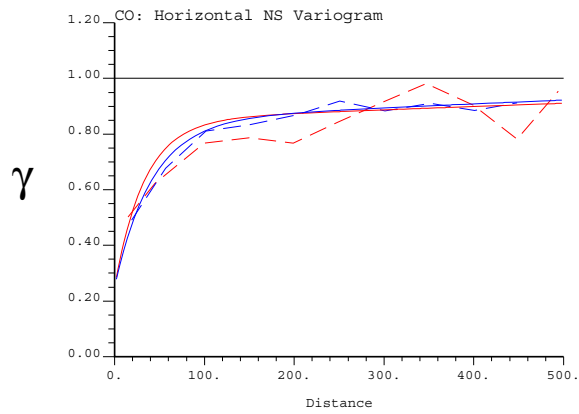
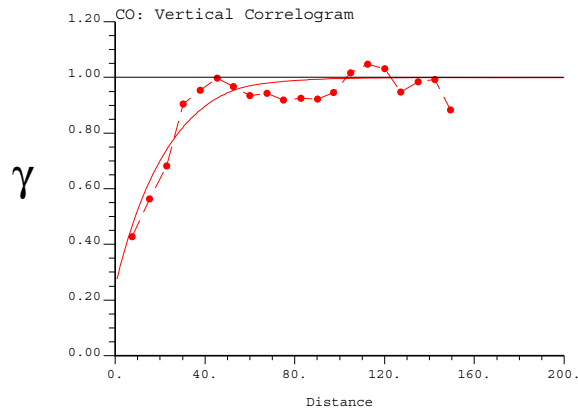
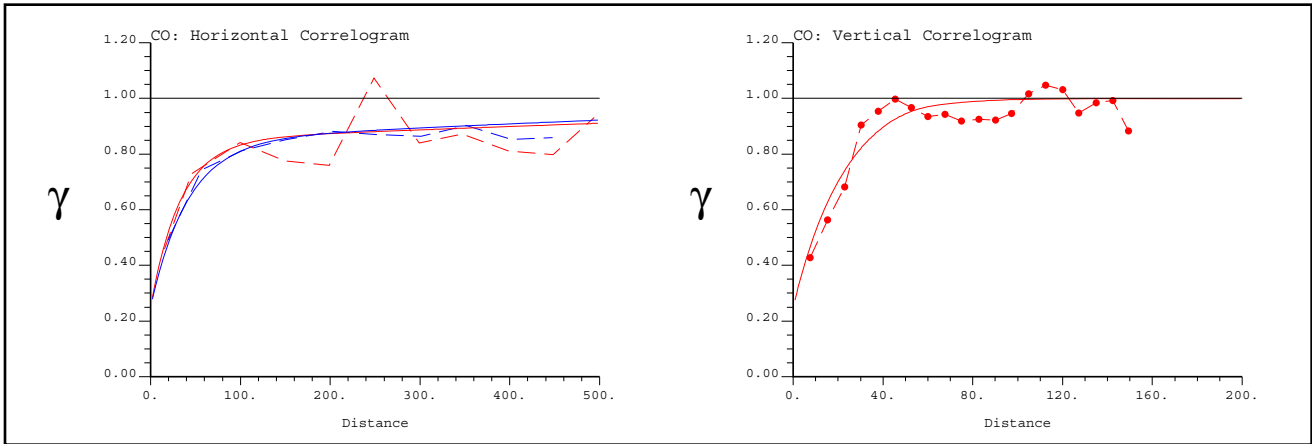
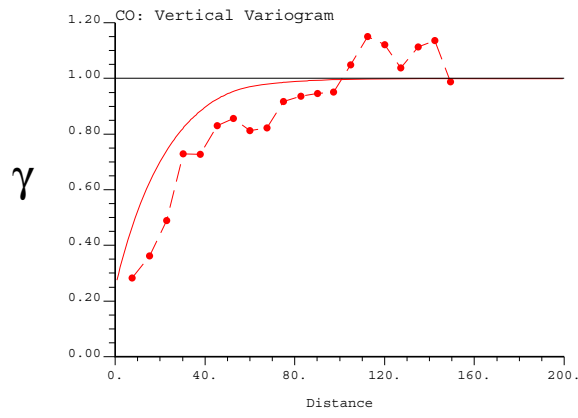
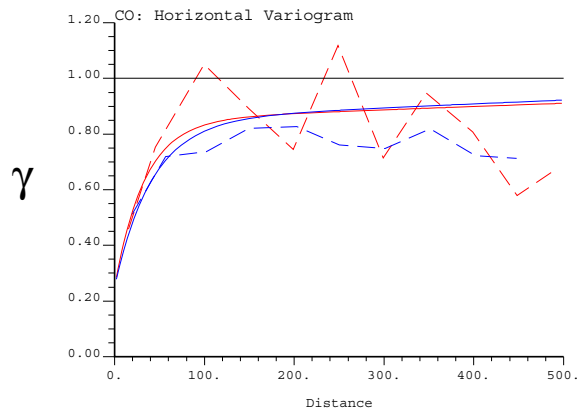
Zone 12: SG Variograms



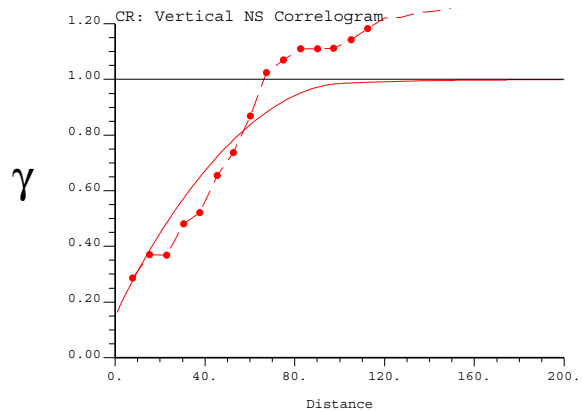
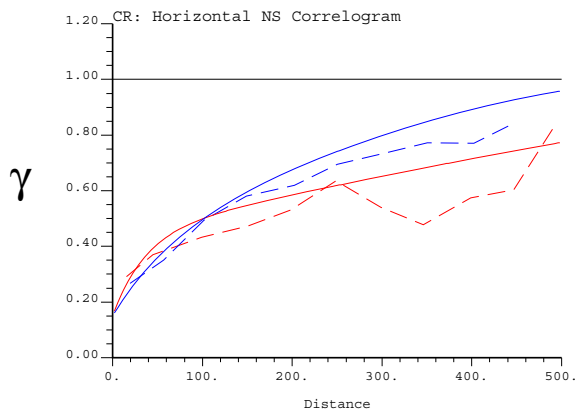
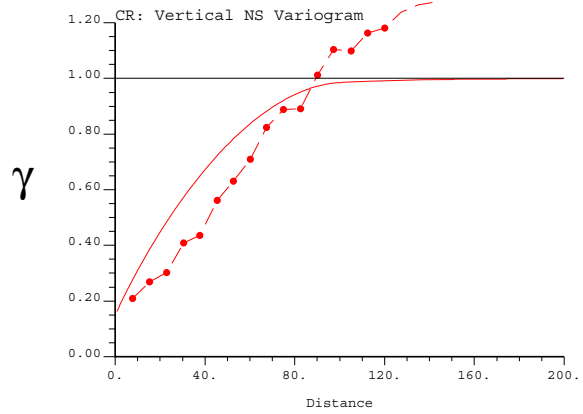
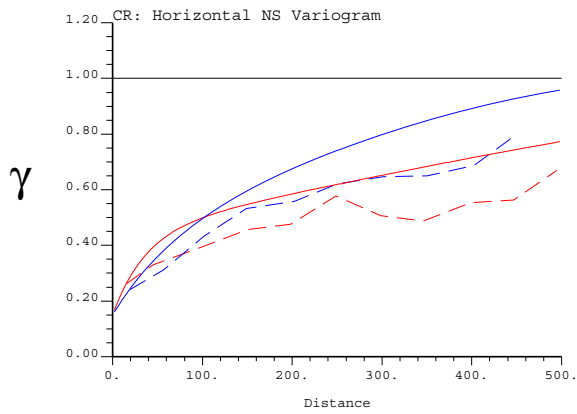
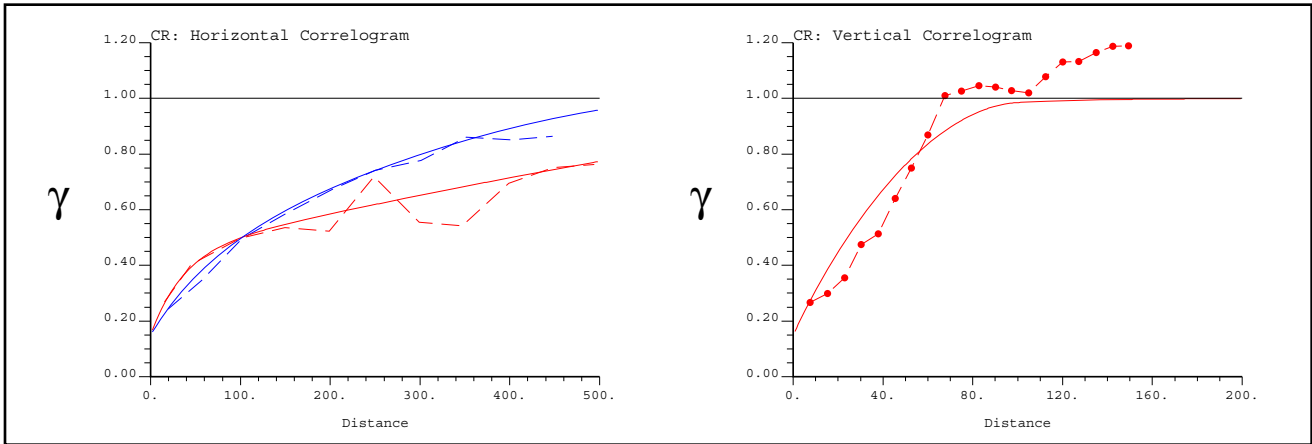
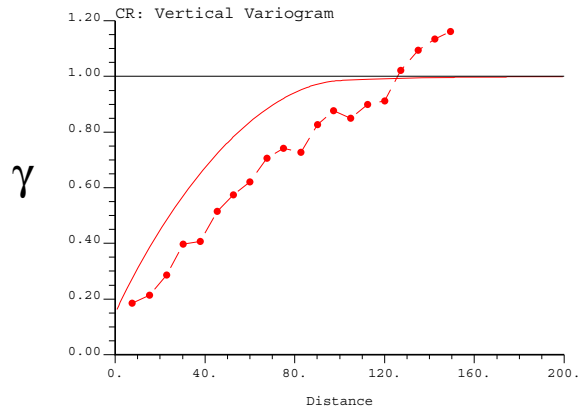
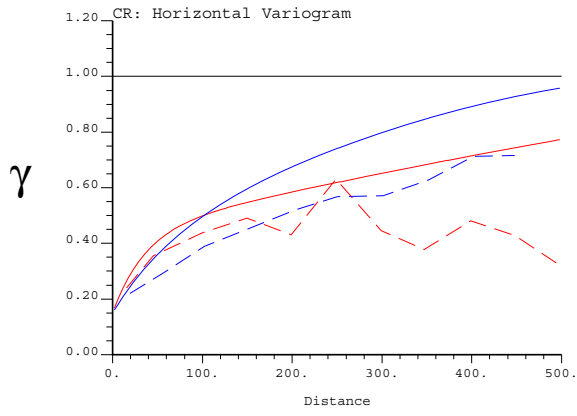
Zone 3: CA Variograms



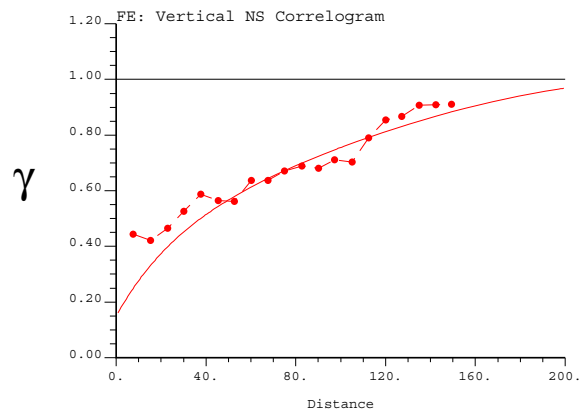
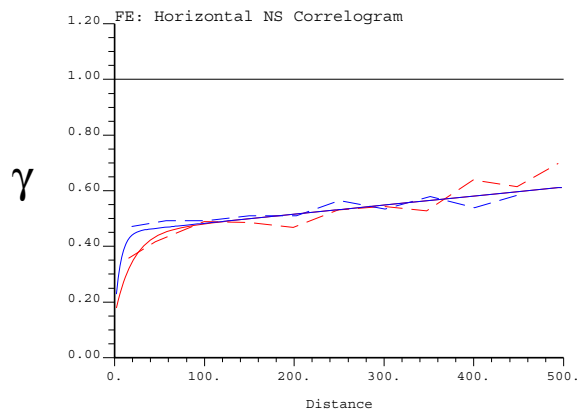
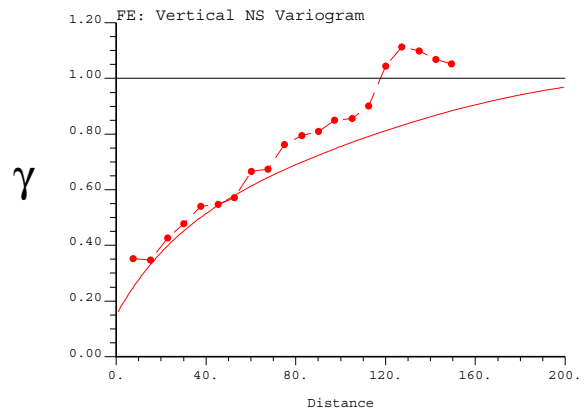
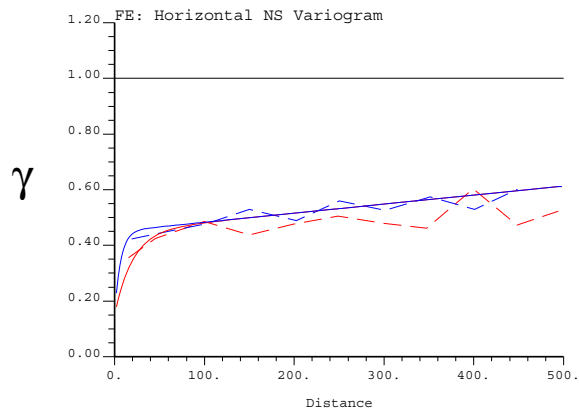
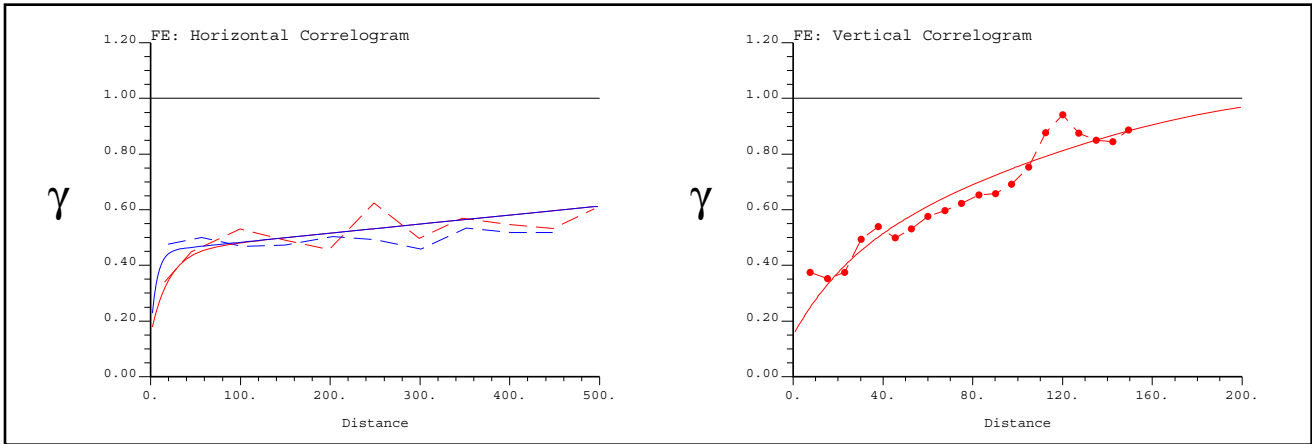
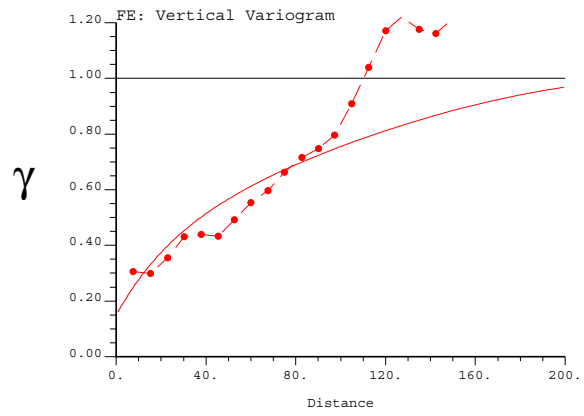
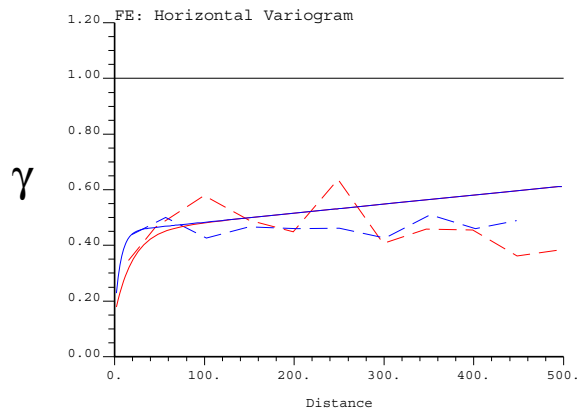
Zone 3: CO Variograms



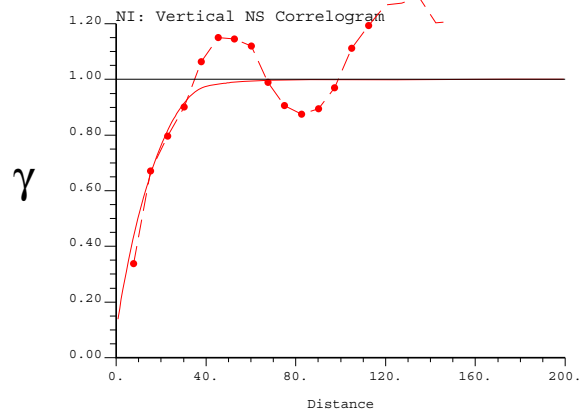
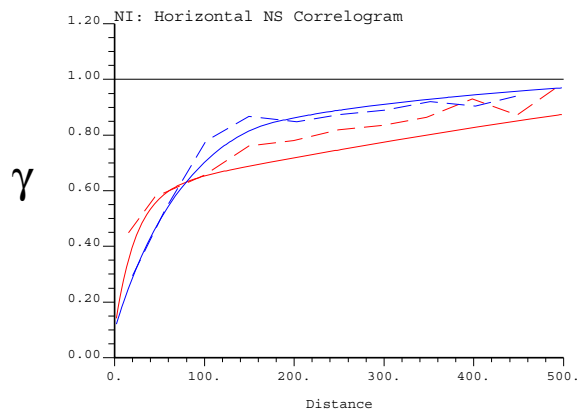
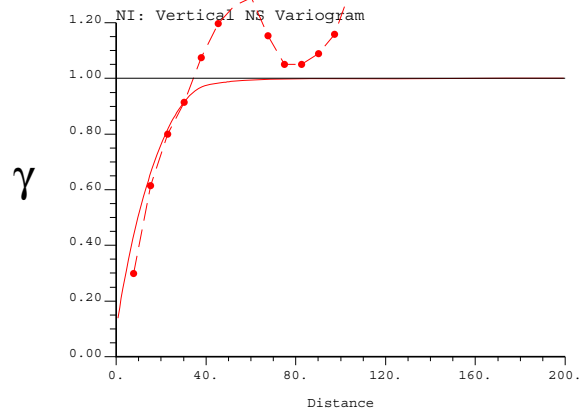
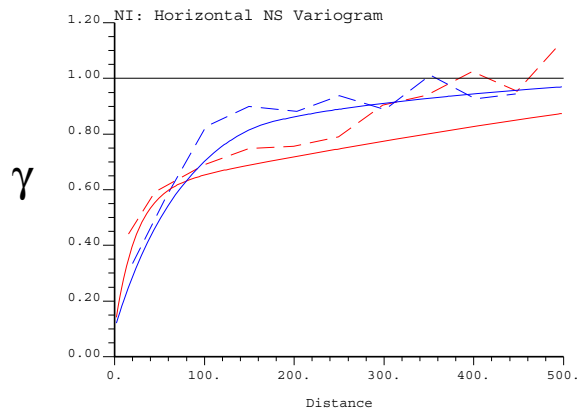
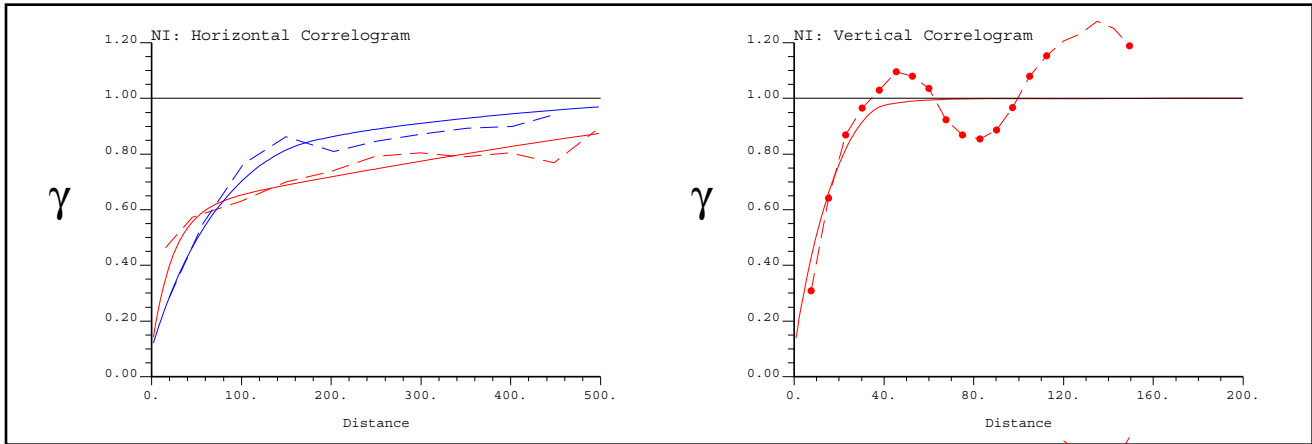
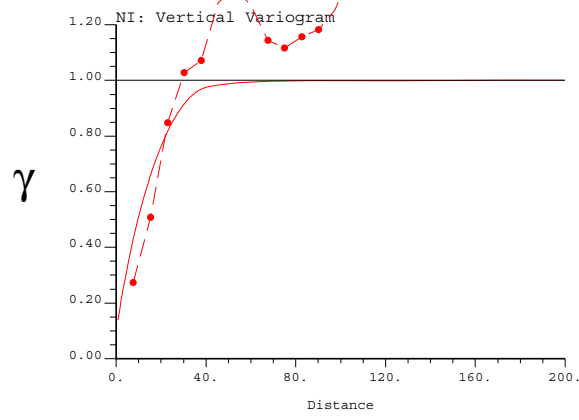
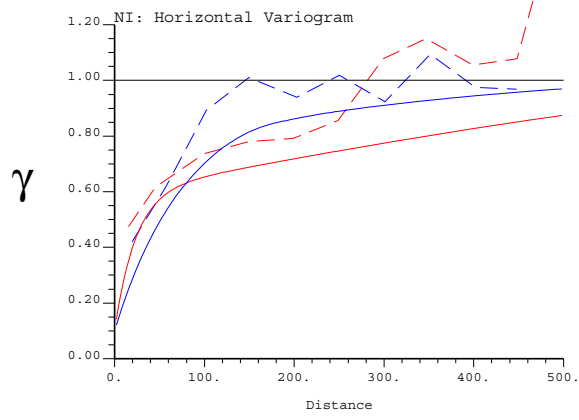
Zone 3: CR Variograms



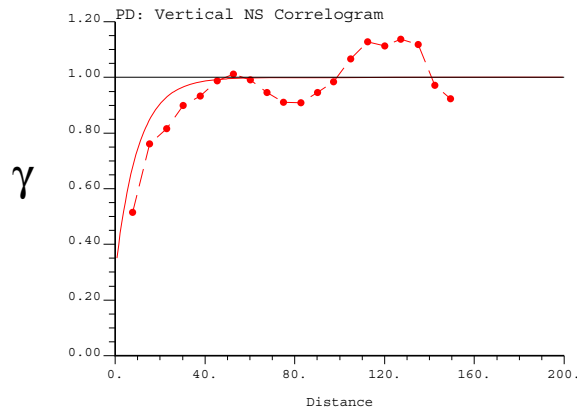
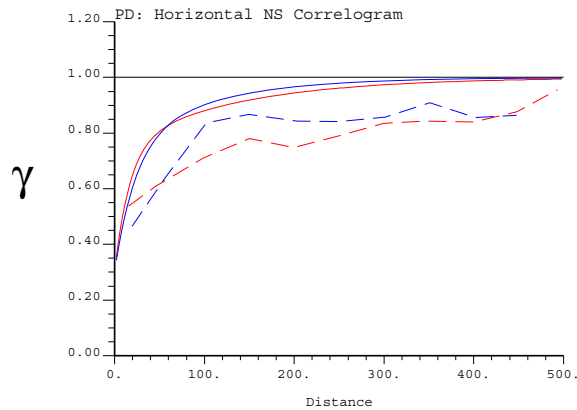
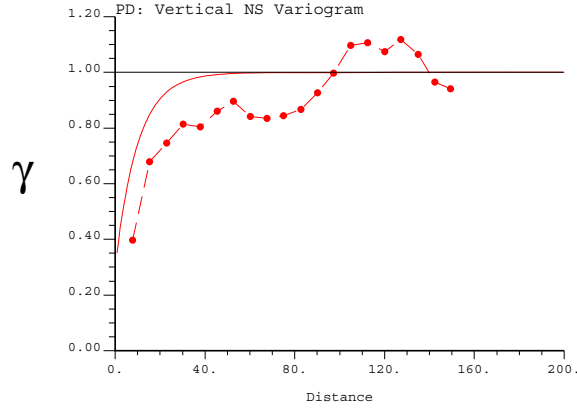
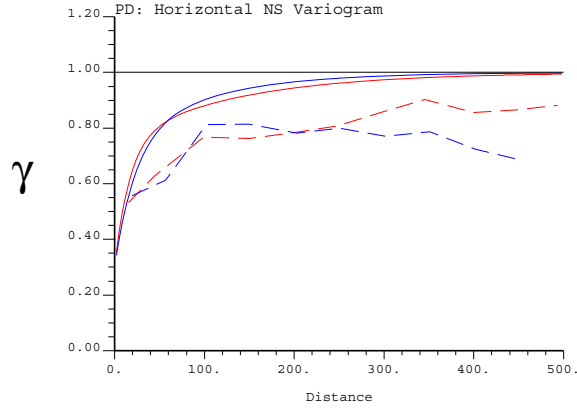
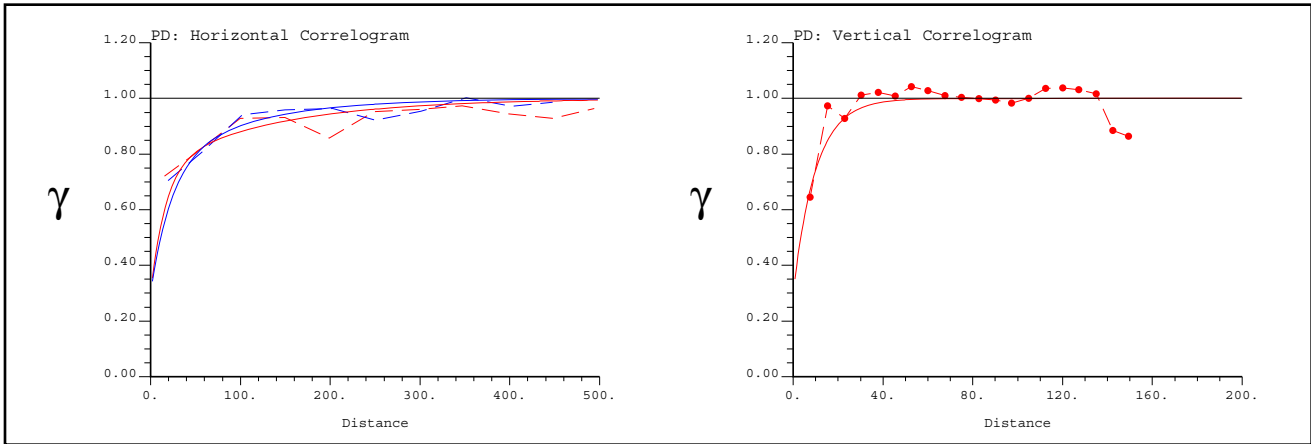
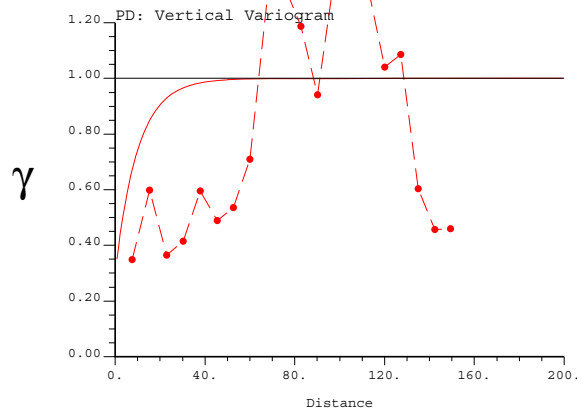
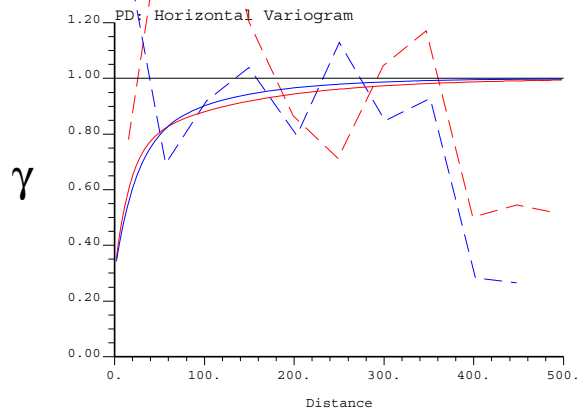
Zone 3: FE Variograms



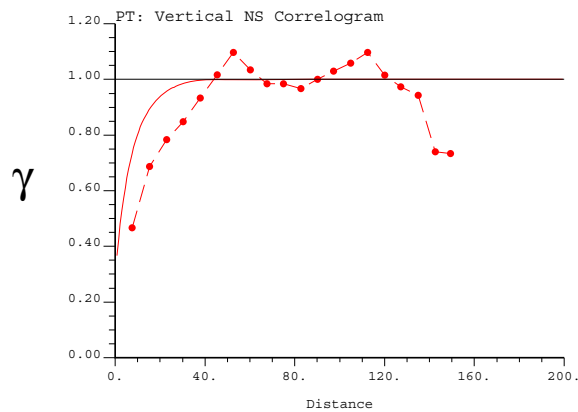
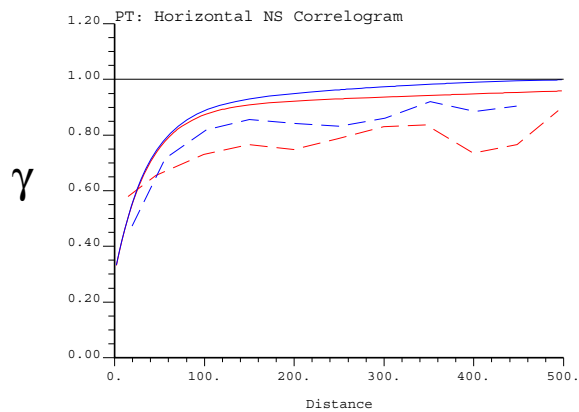
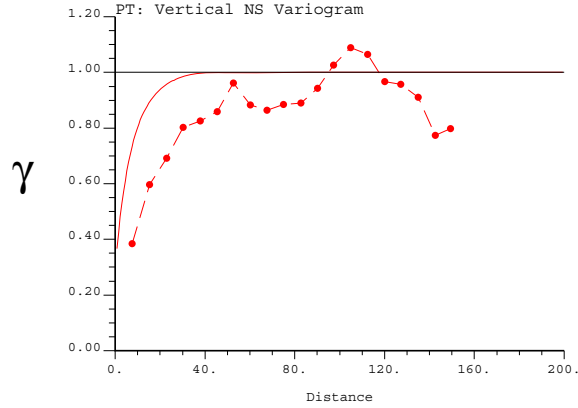
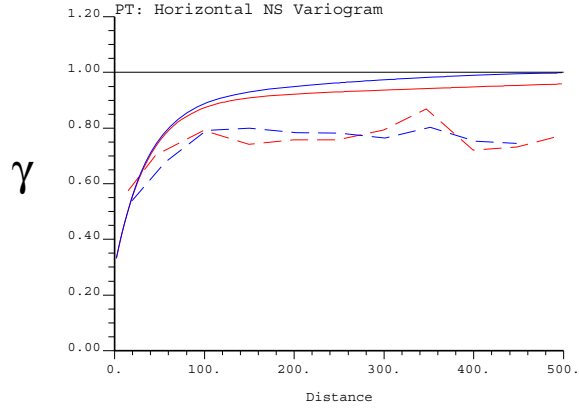
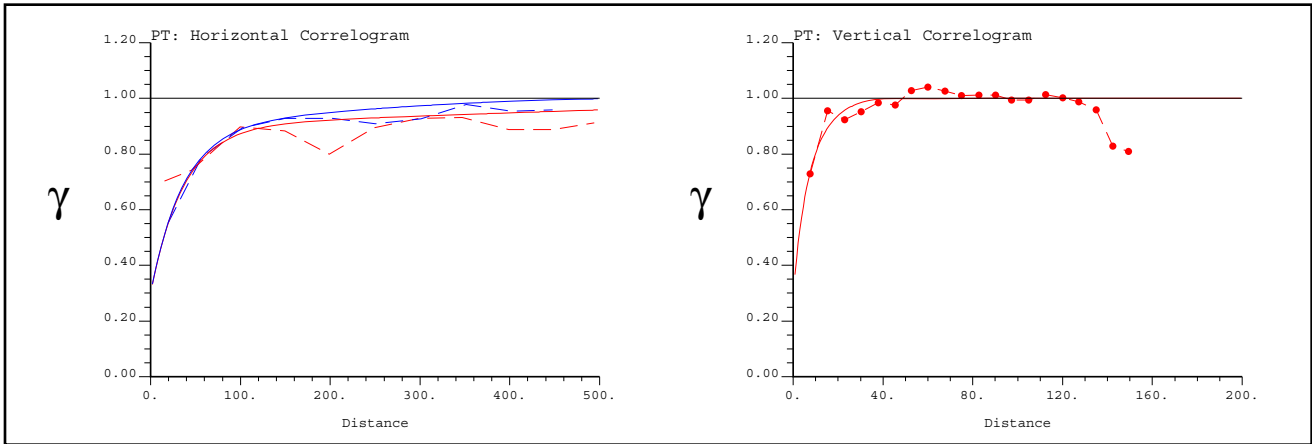
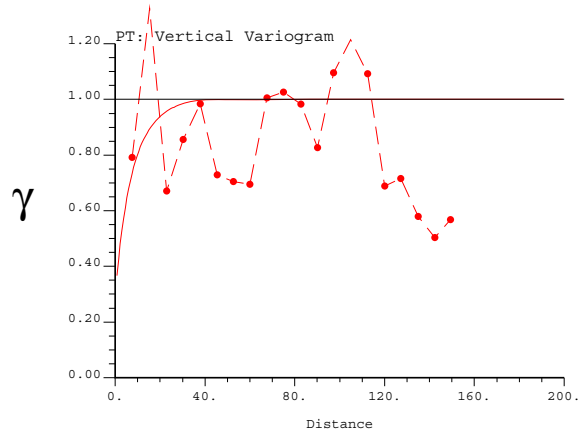
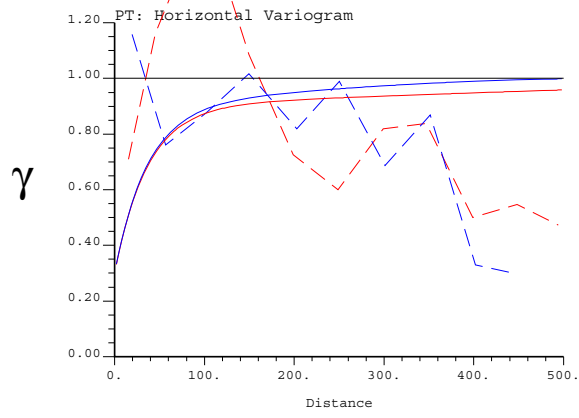
Zone 3: NI Variograms



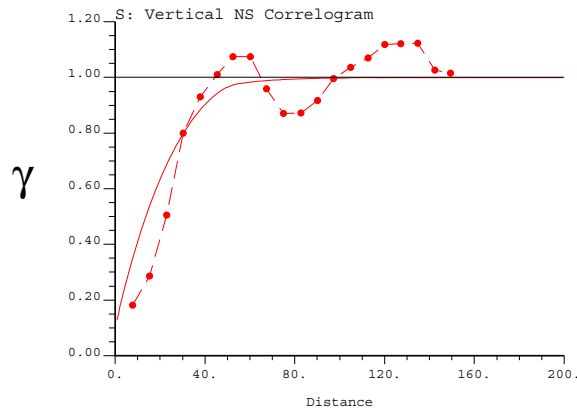
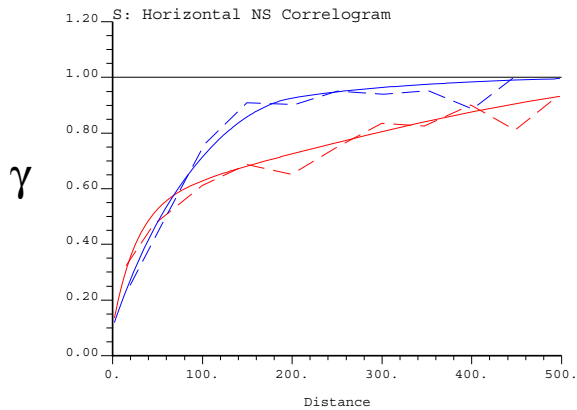
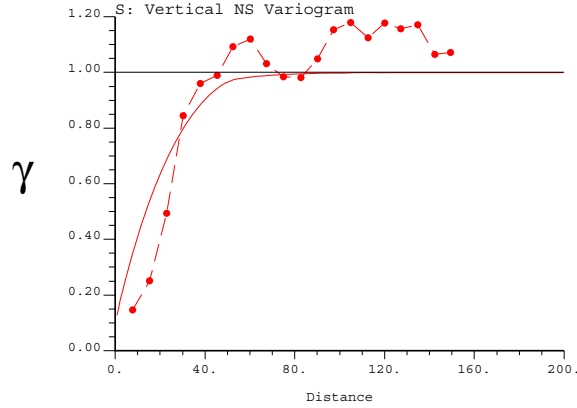
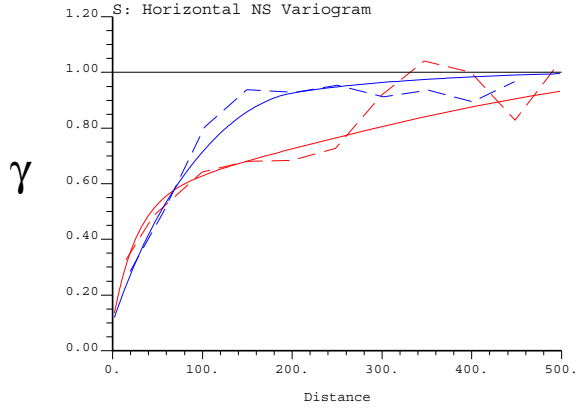
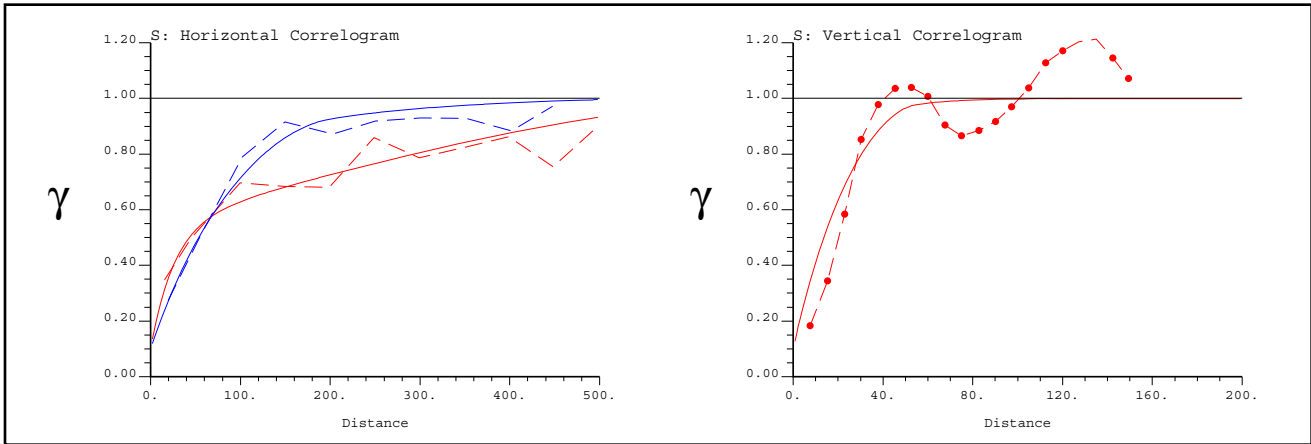
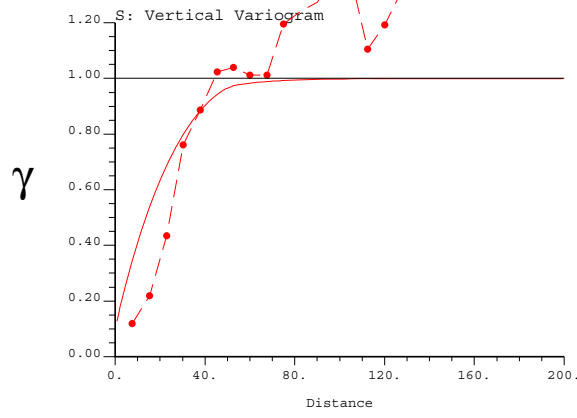
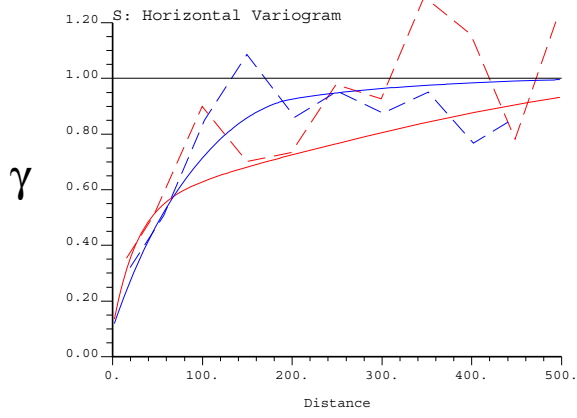
Zone 3: PD Variograms



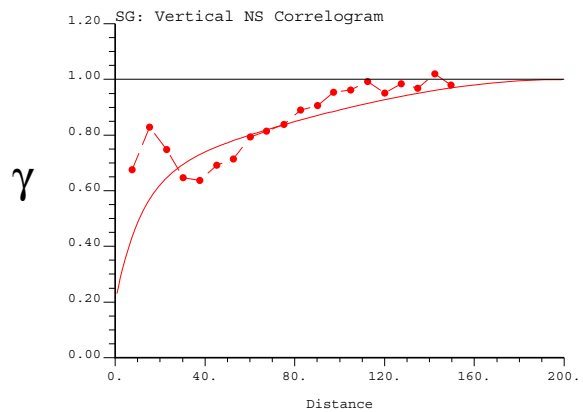
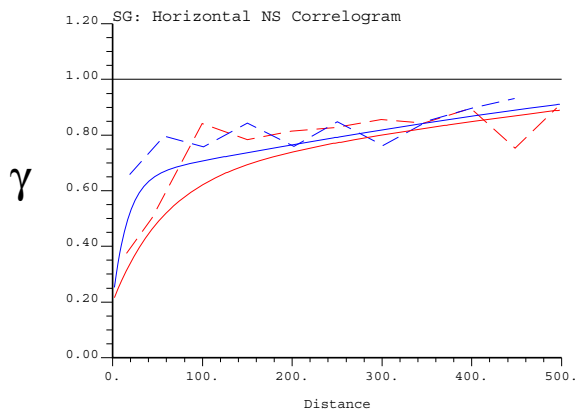
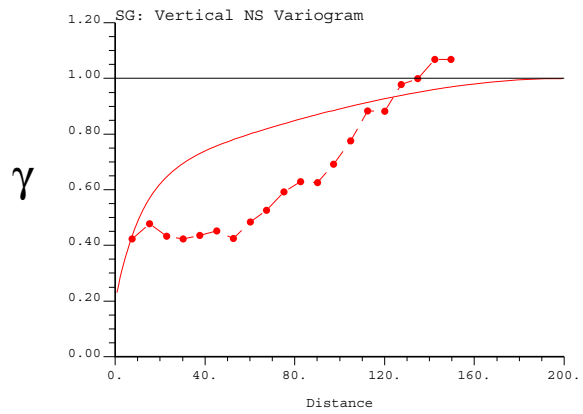
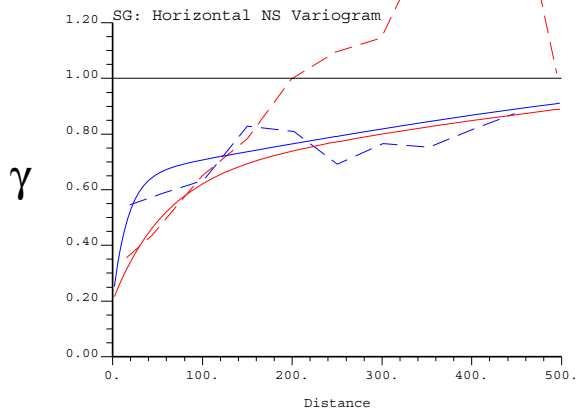
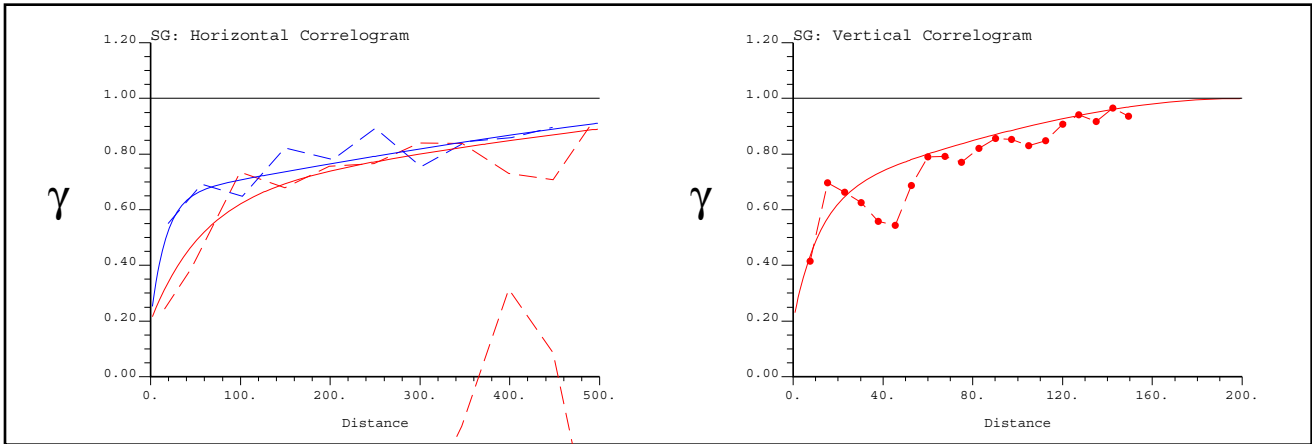
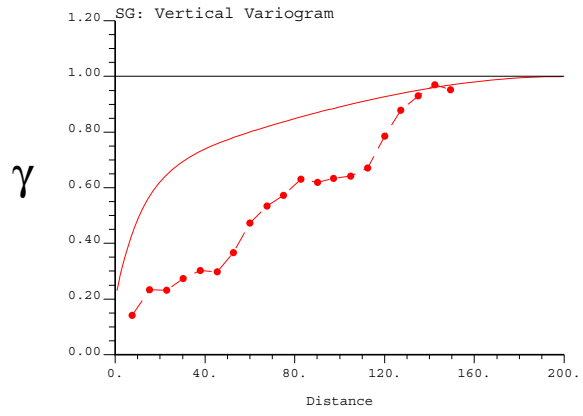
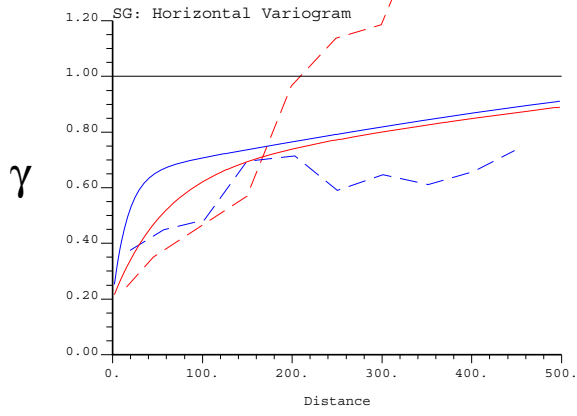
Zone 3: PT Variograms



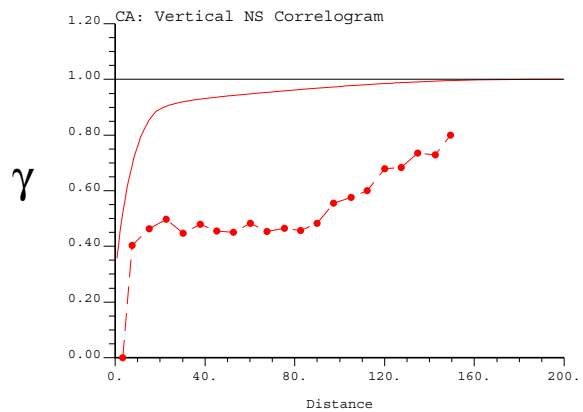
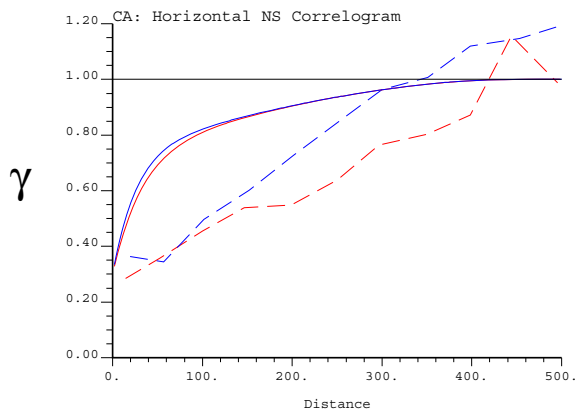
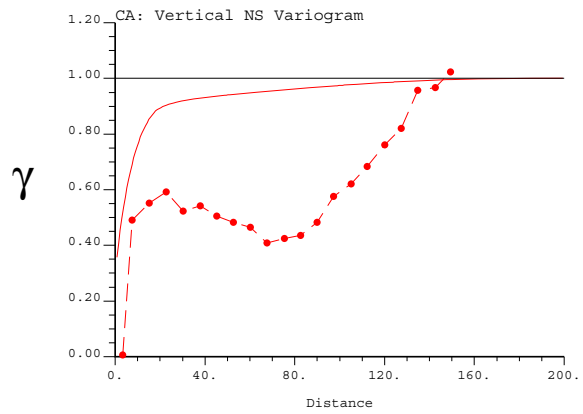
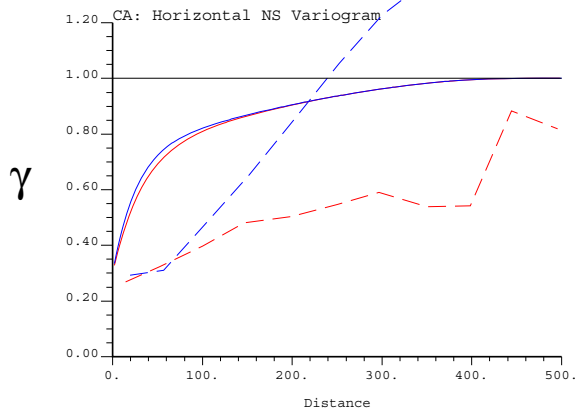
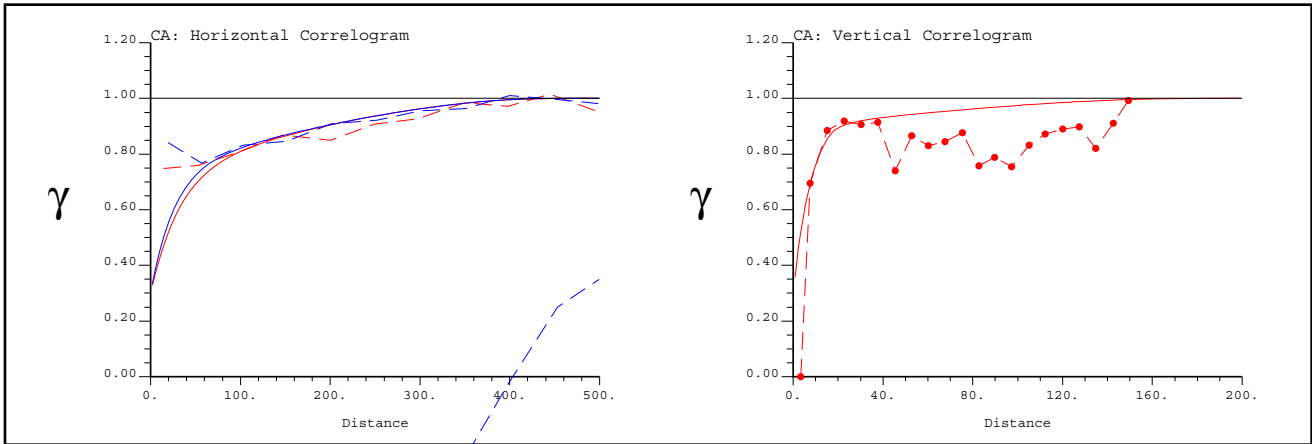
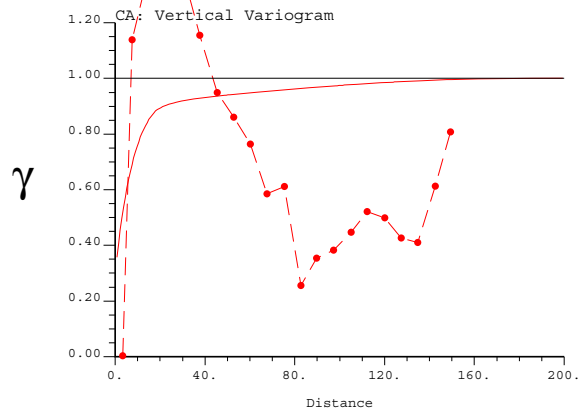
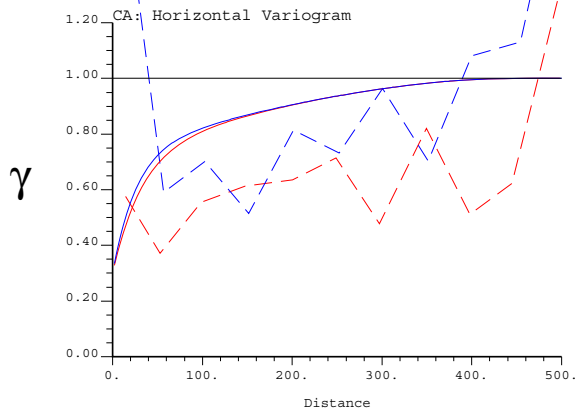
Zone 3: S Variograms



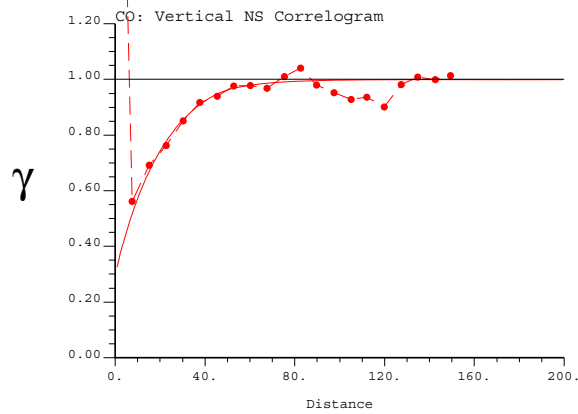
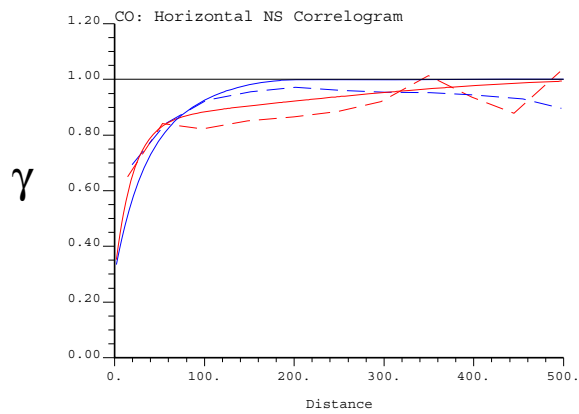
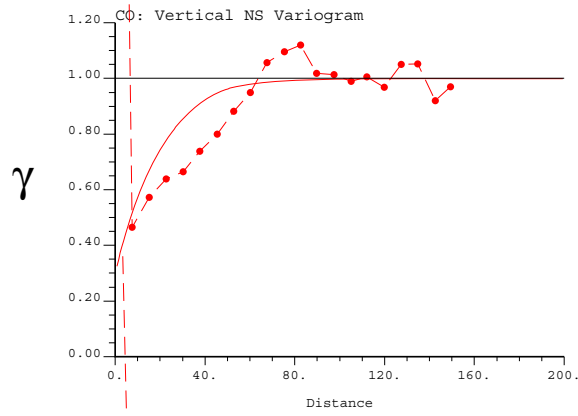
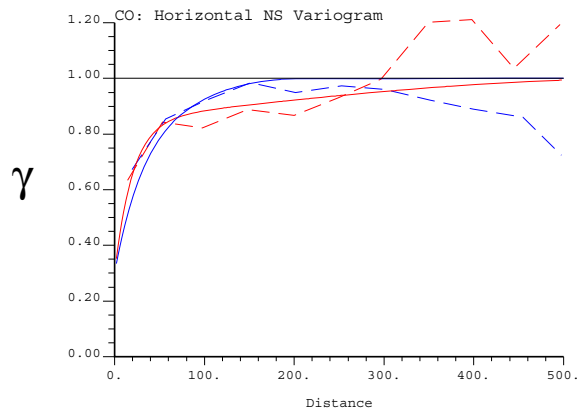
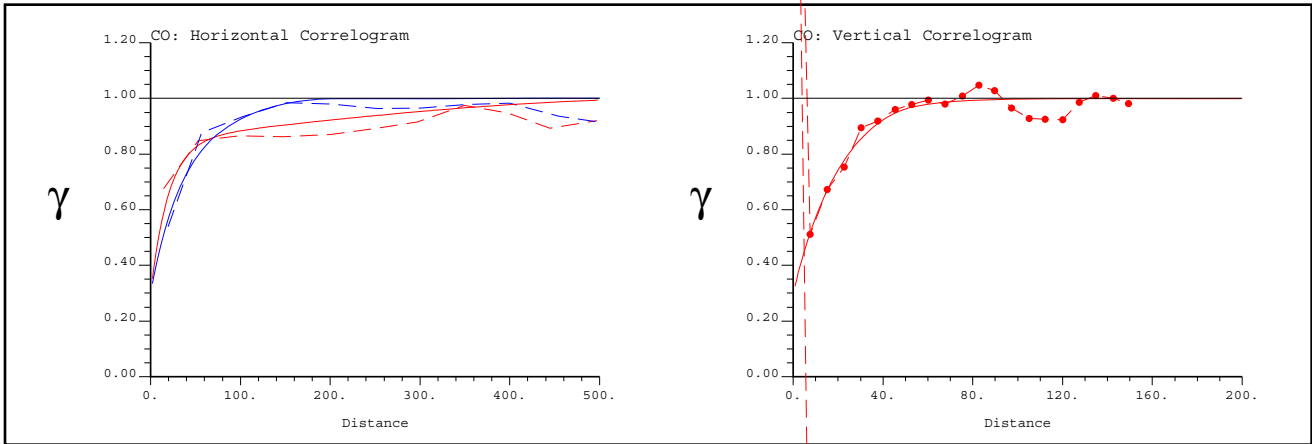
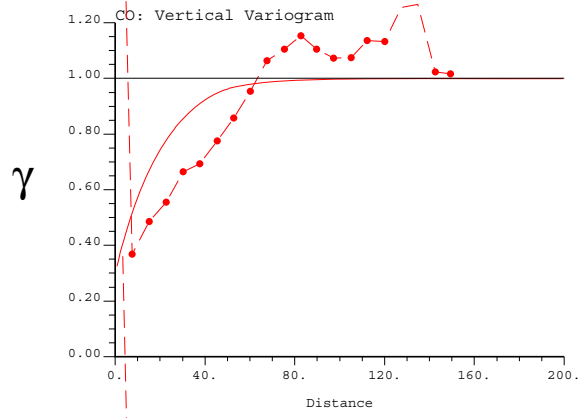
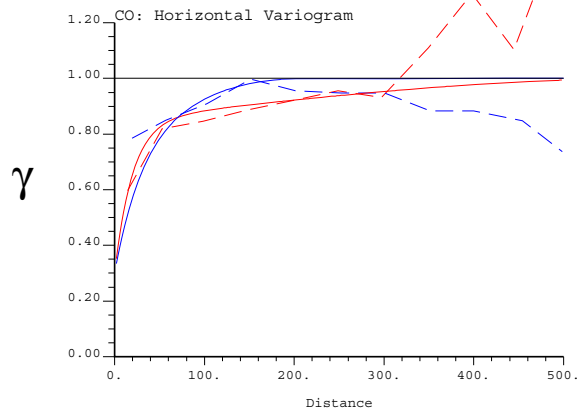
Zone 3: SG Variograms



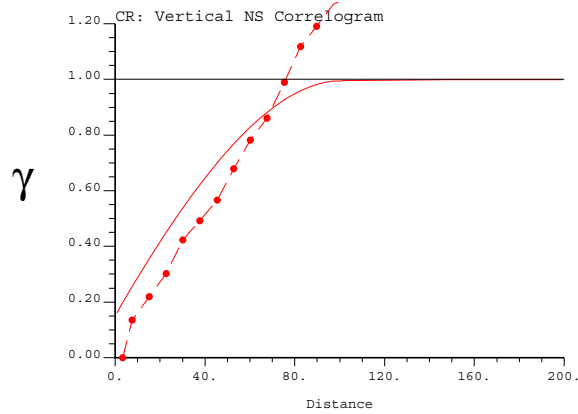
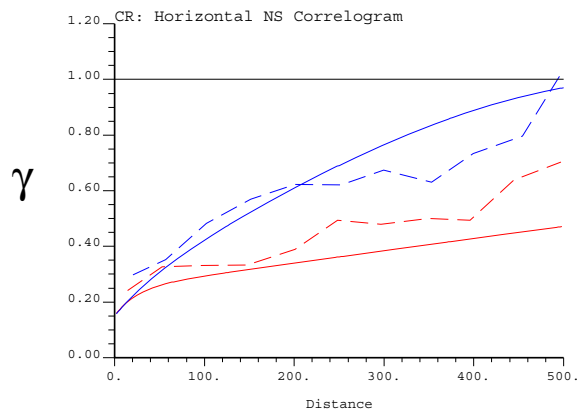
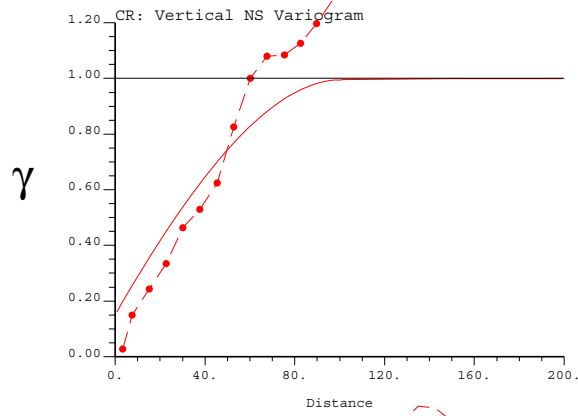
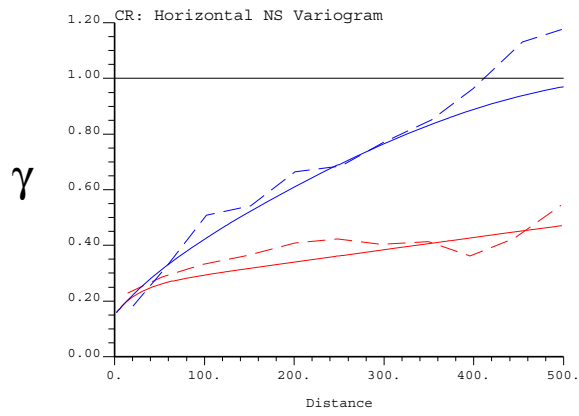
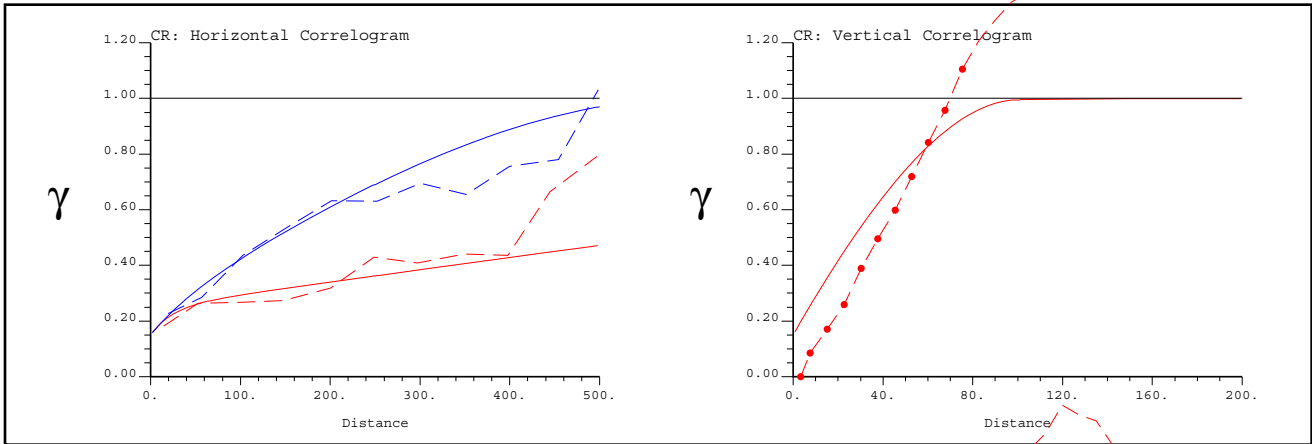
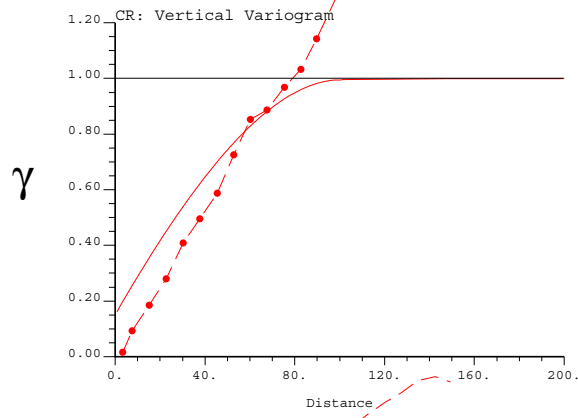
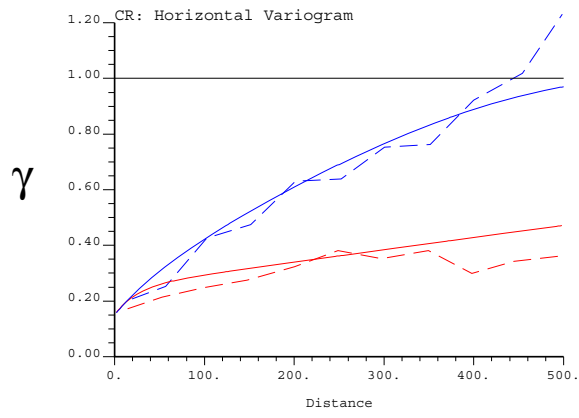
Zone 4: CA Variograms



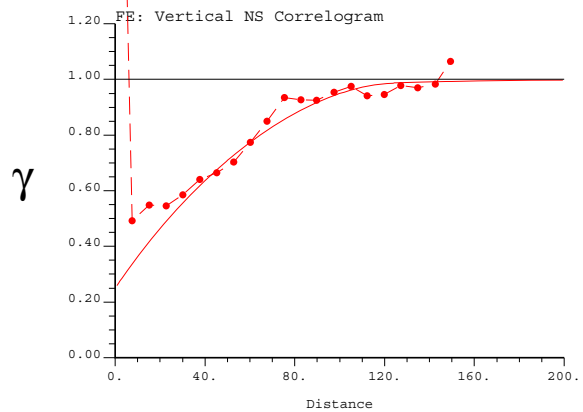
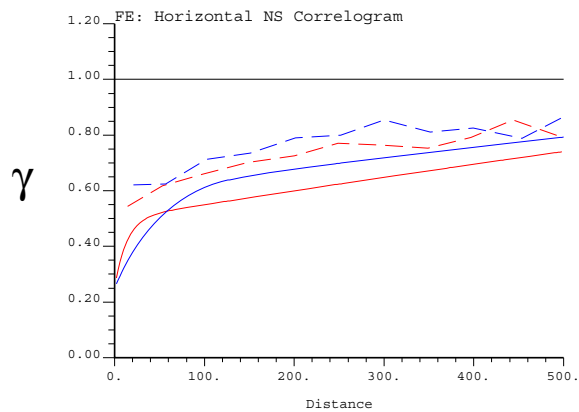
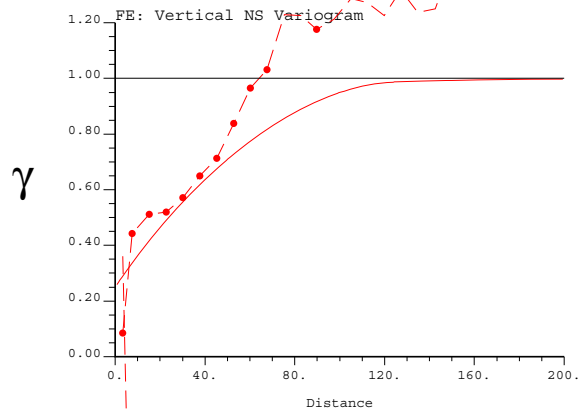
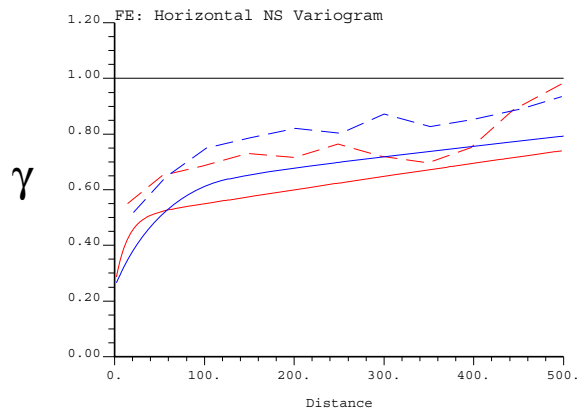
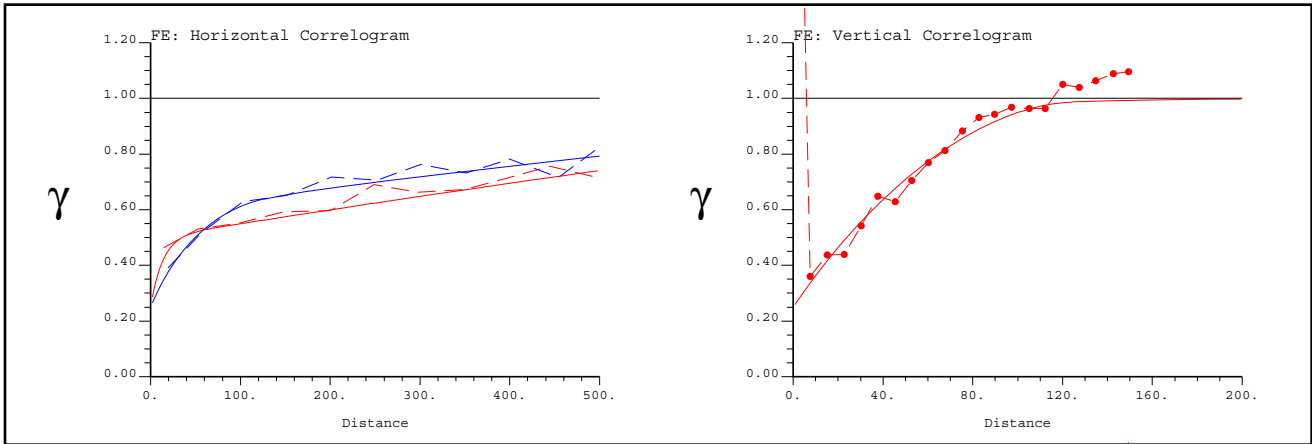
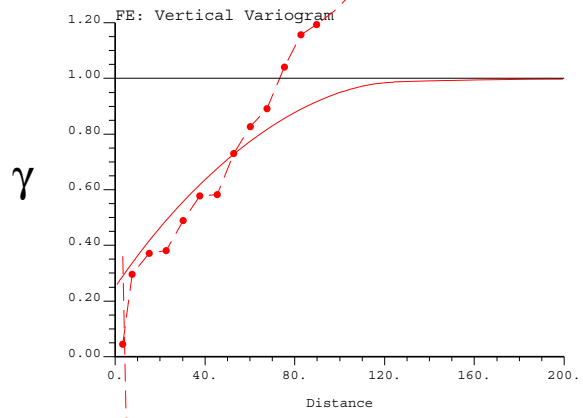
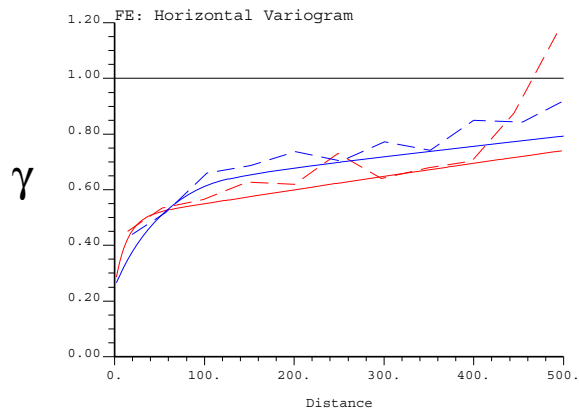
Zone 4: CO Variograms



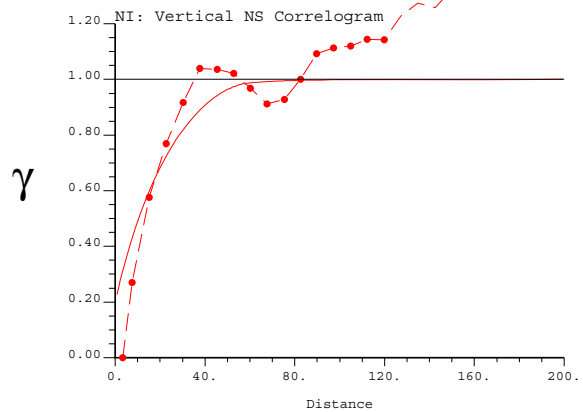
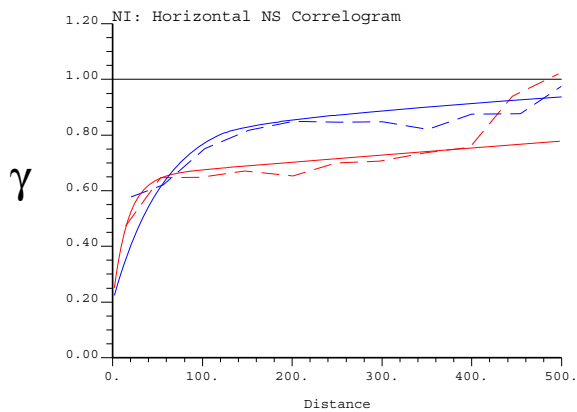
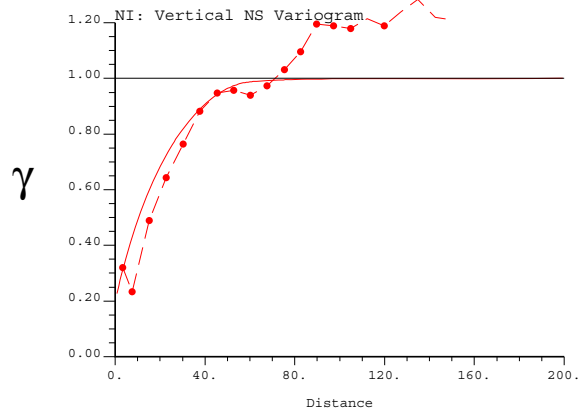
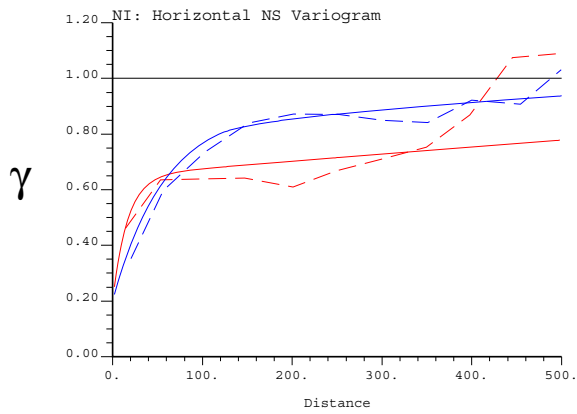
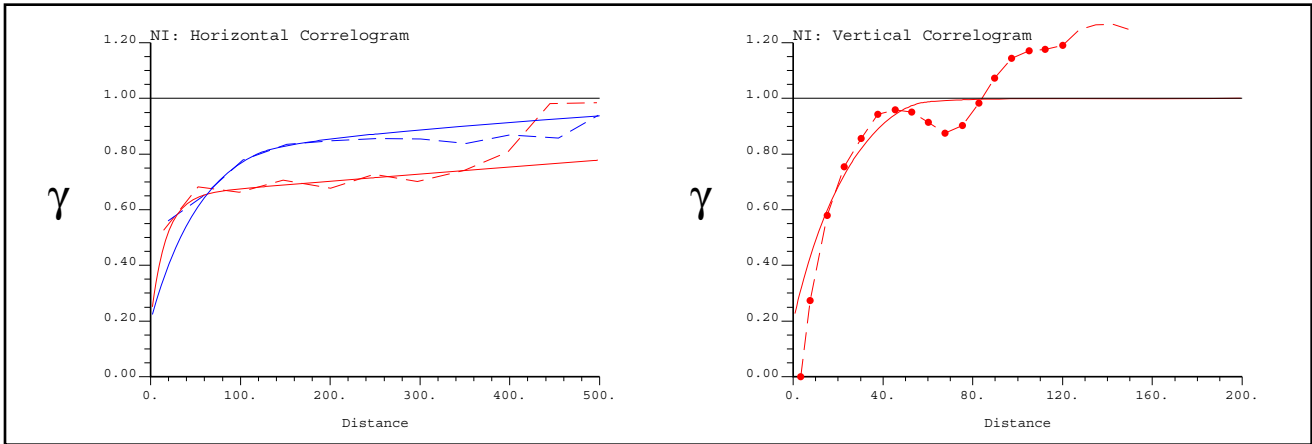
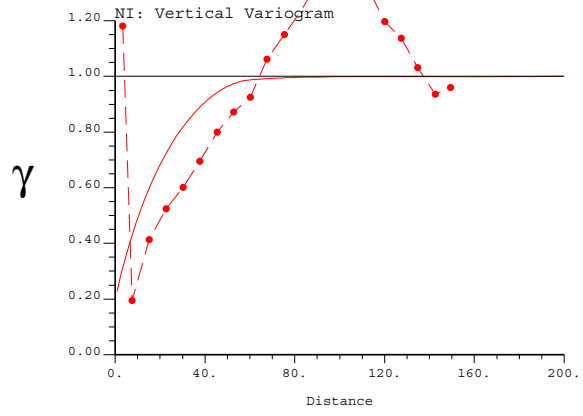
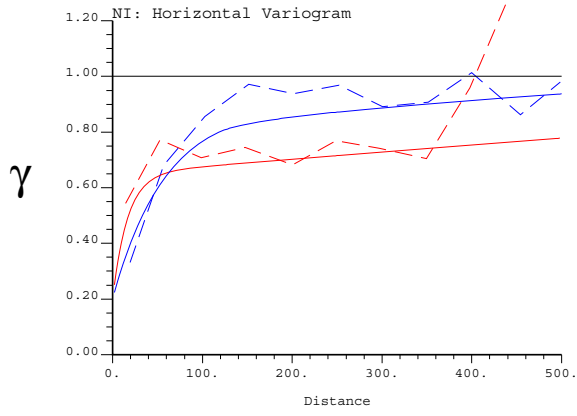
Zone 4: CR Variograms



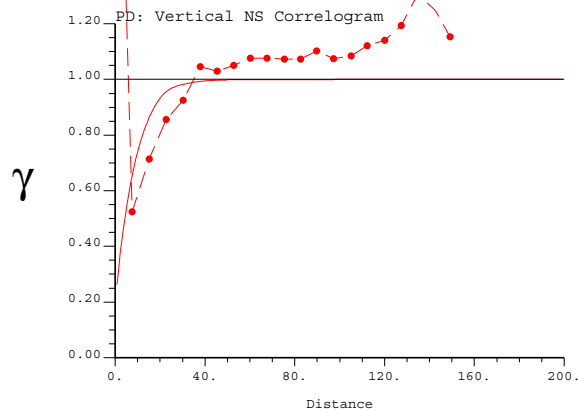
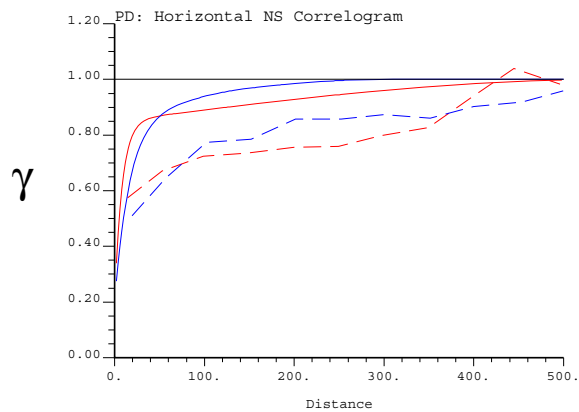
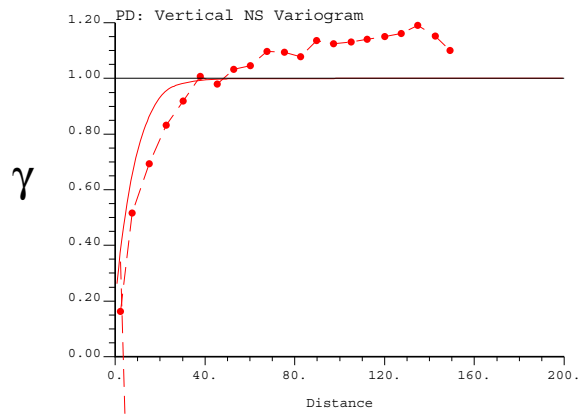
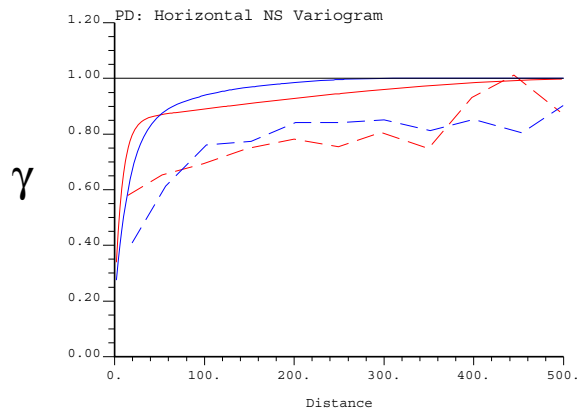
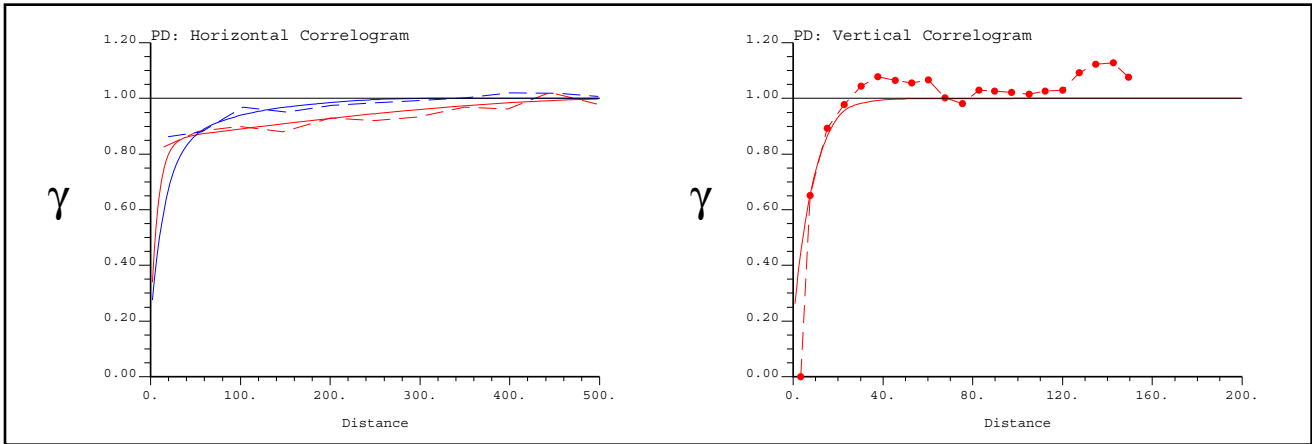
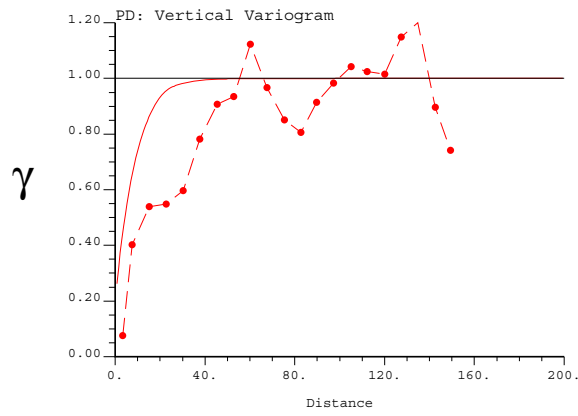
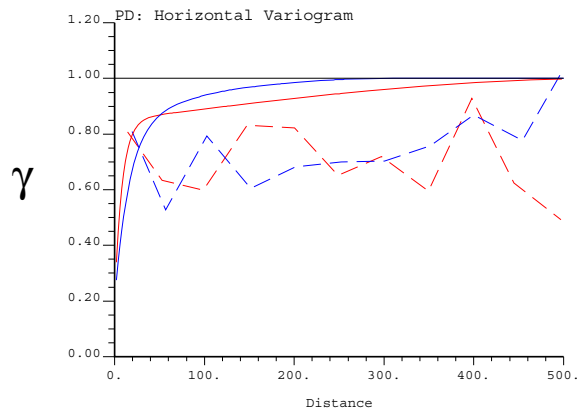
Zone 4: FE Variograms



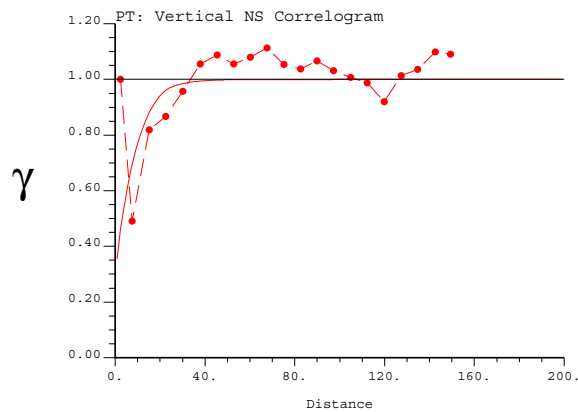
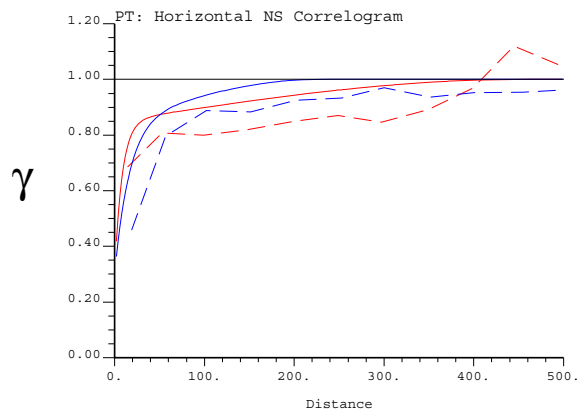
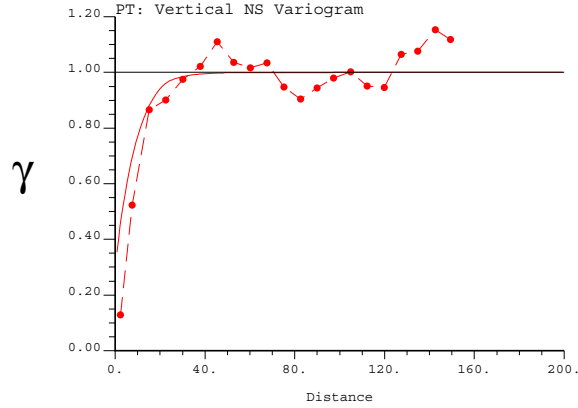
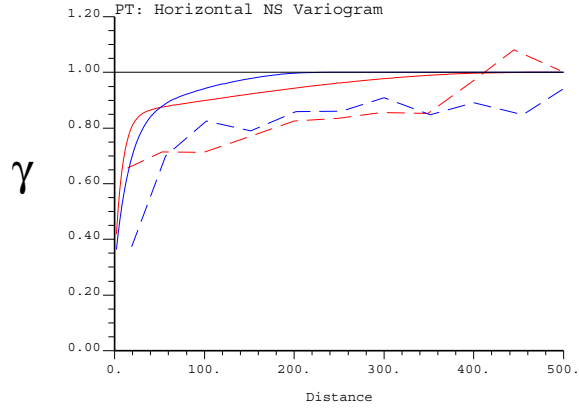
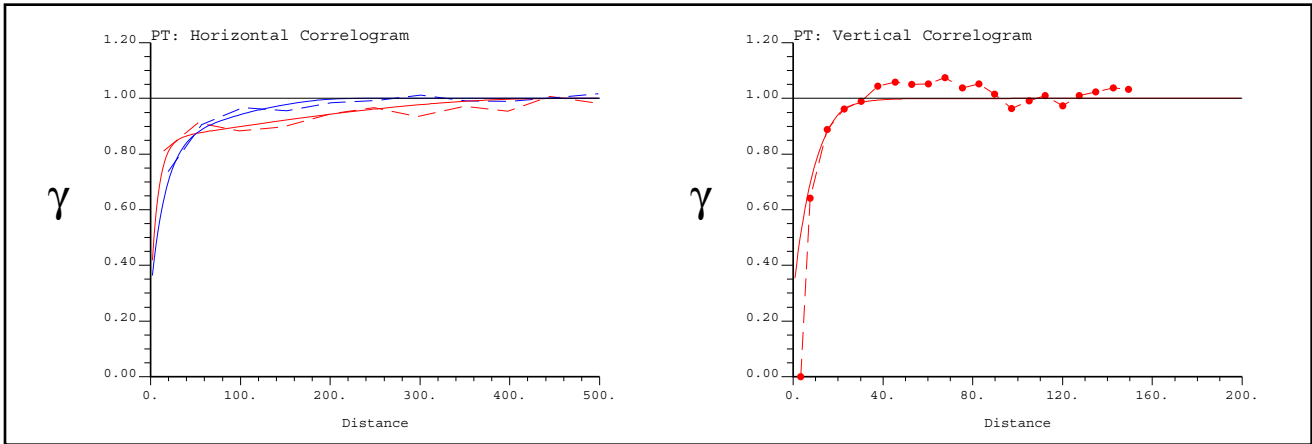
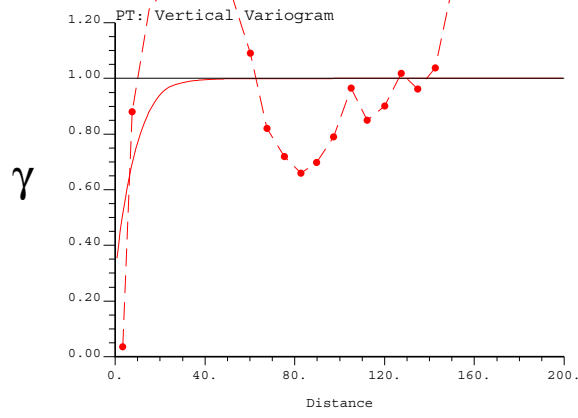
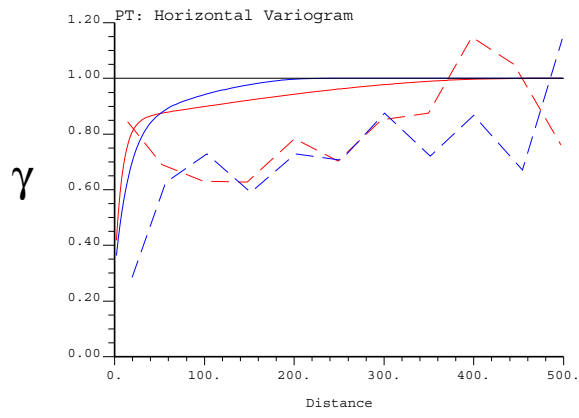
Zone 4: NI Variograms



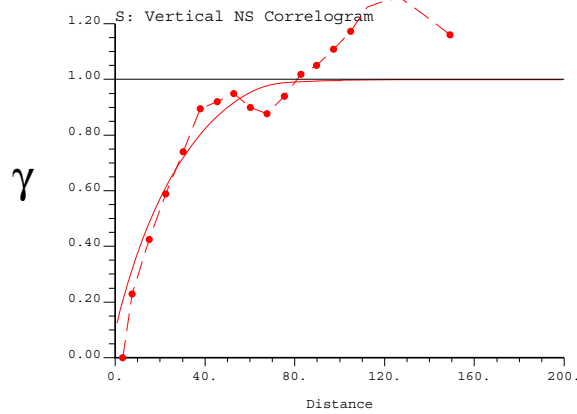
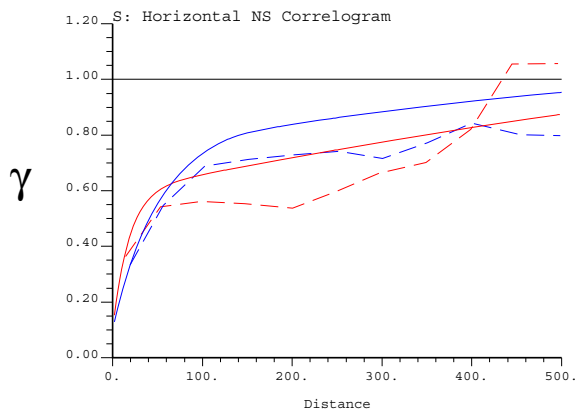
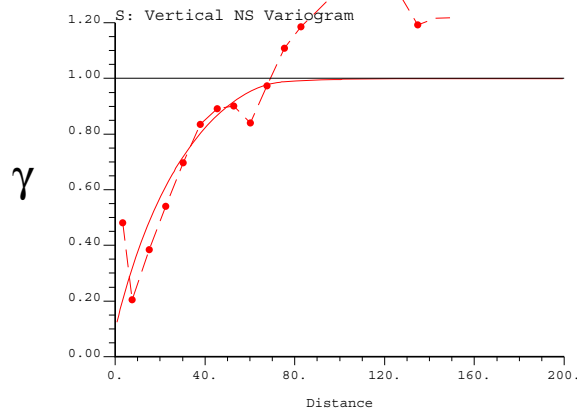
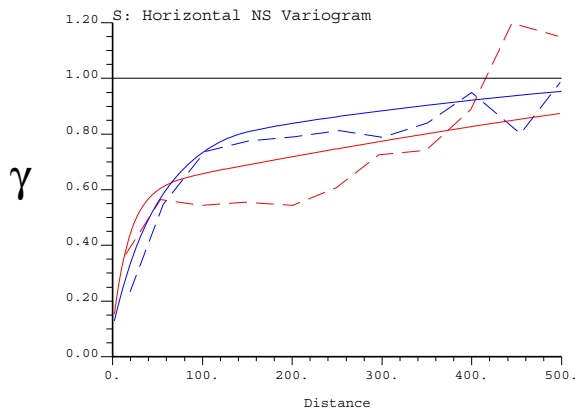
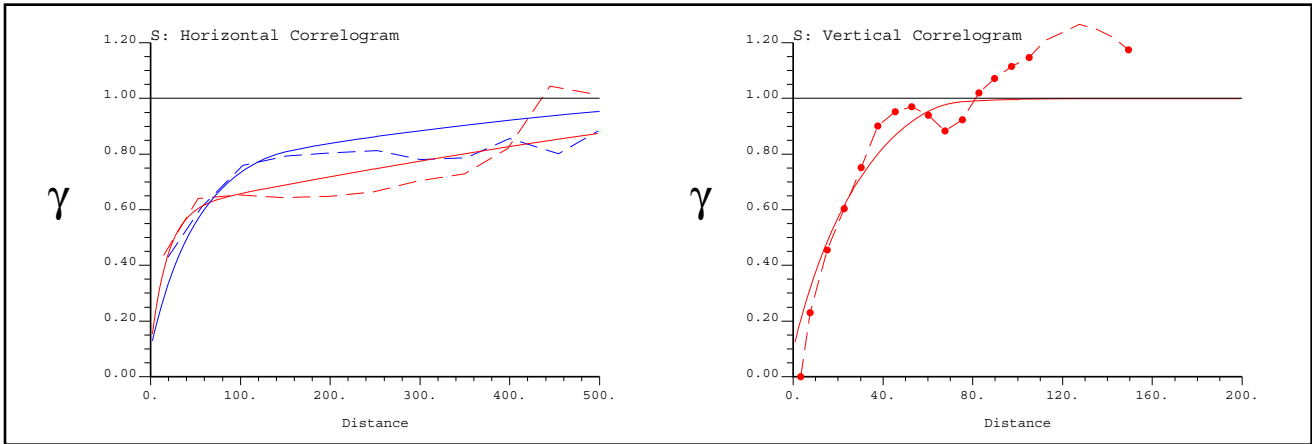
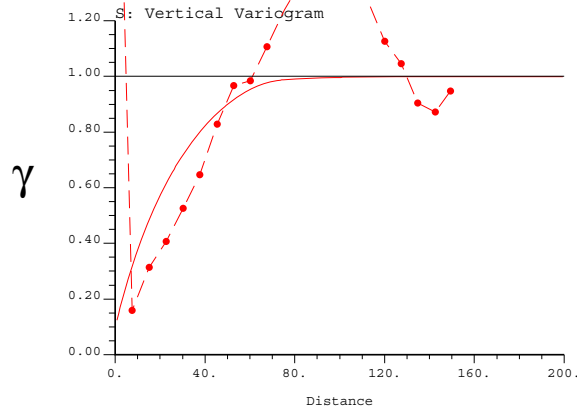
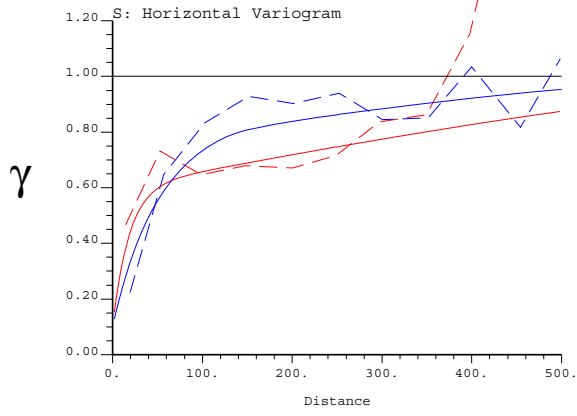
Zone 4: PD Variograms



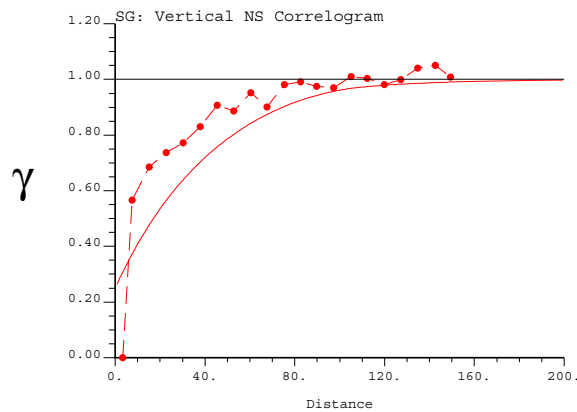
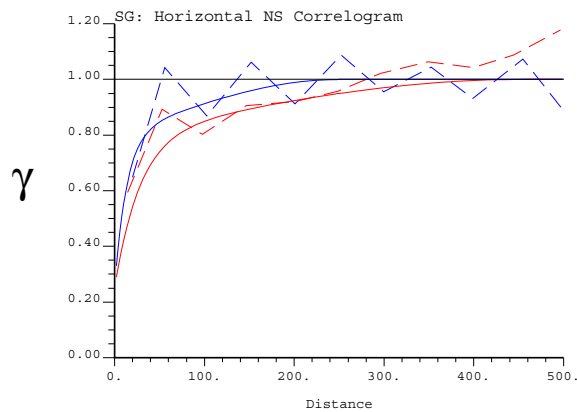
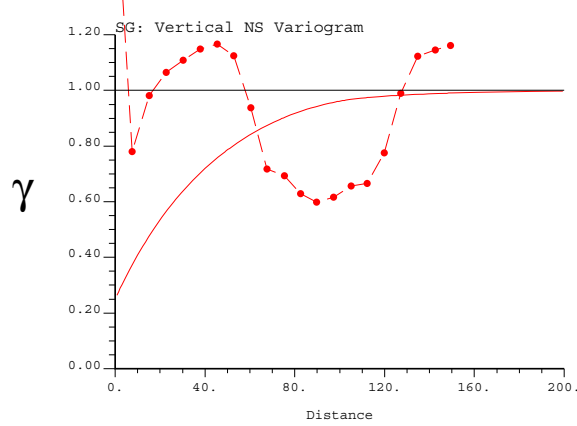
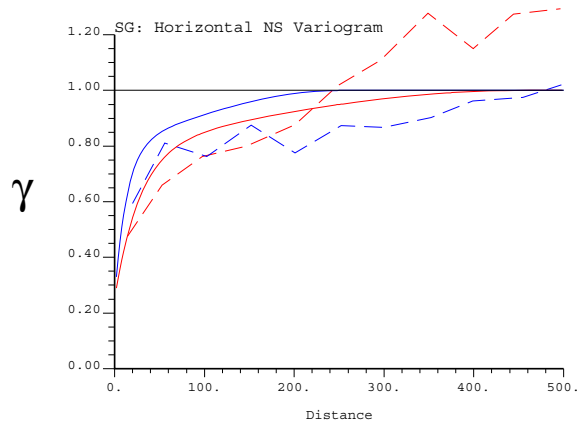
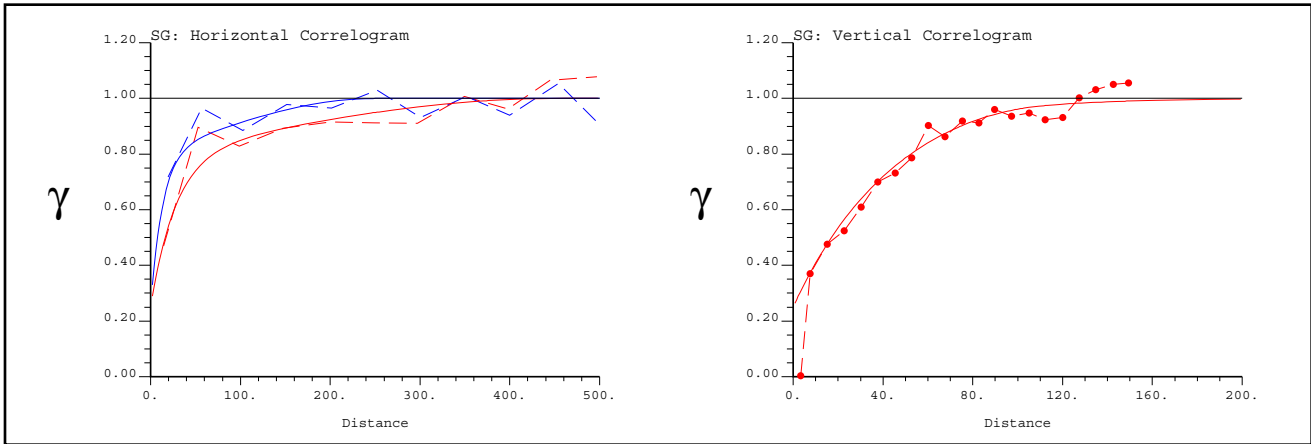
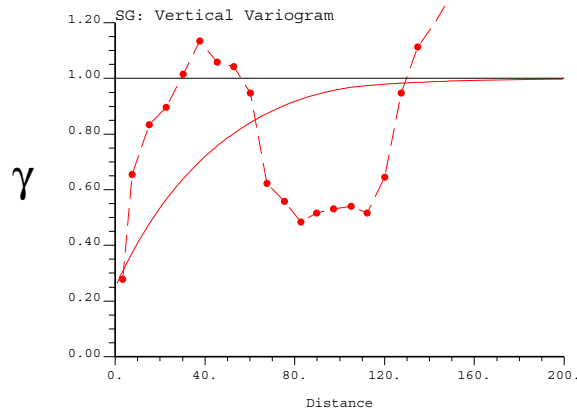
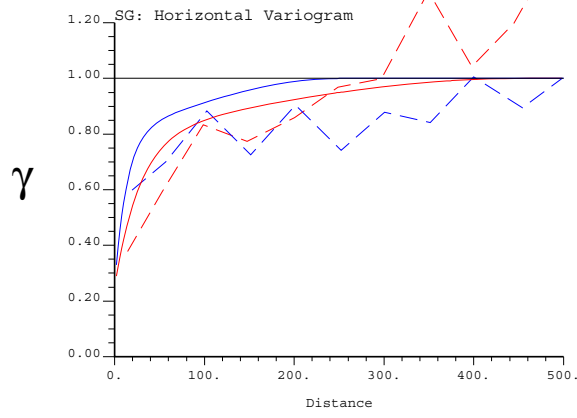
Zone 4: PT Variograms



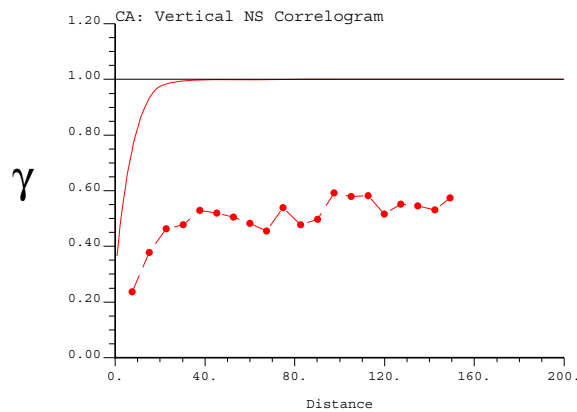
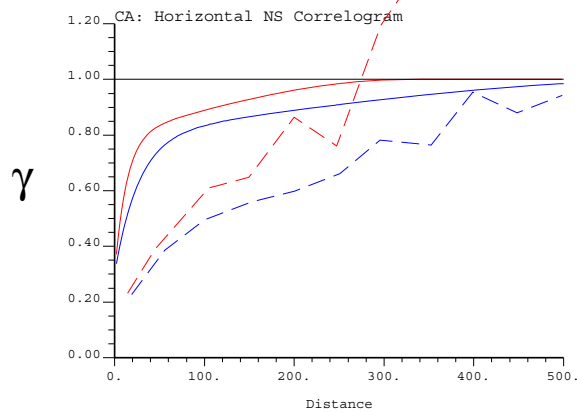
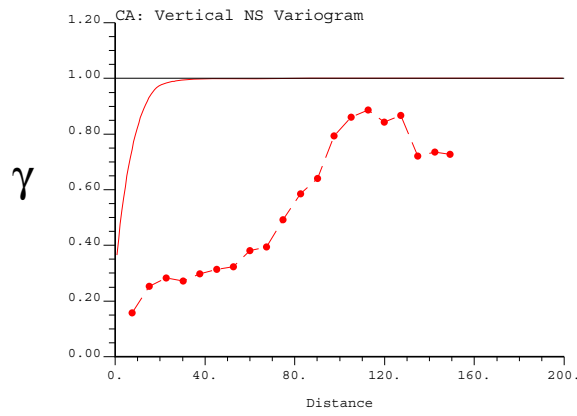
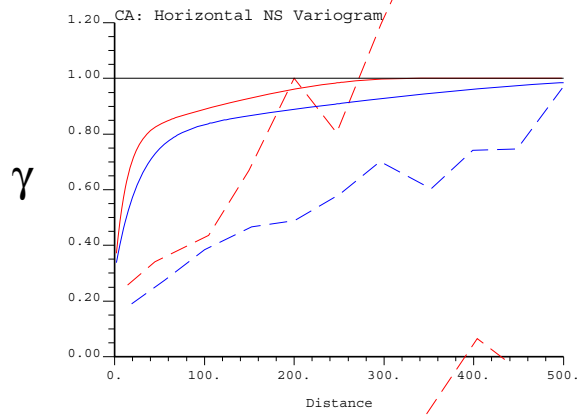
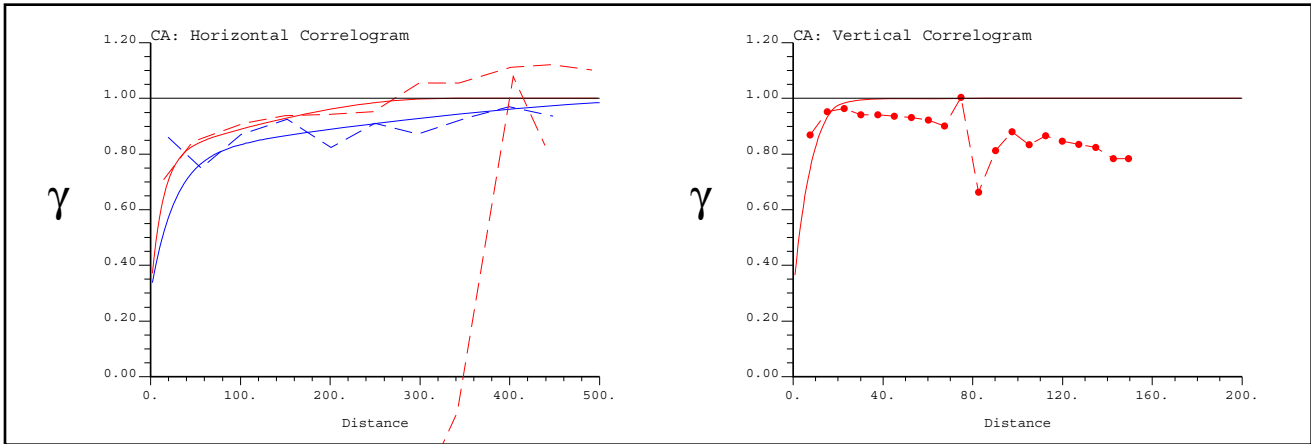
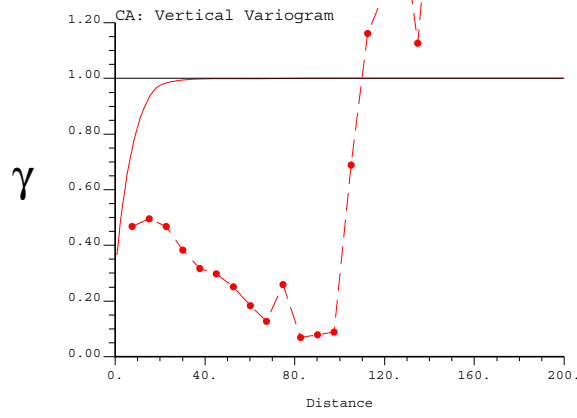
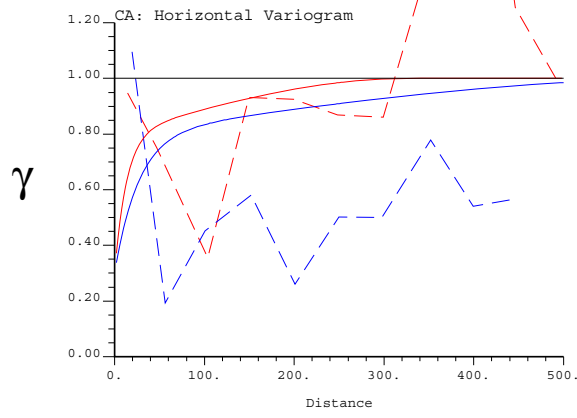
Zone 4: S Variograms



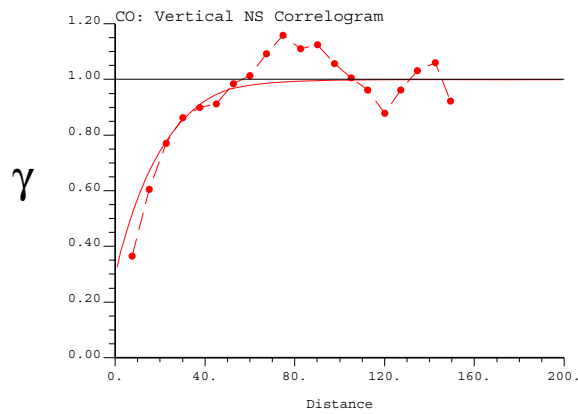
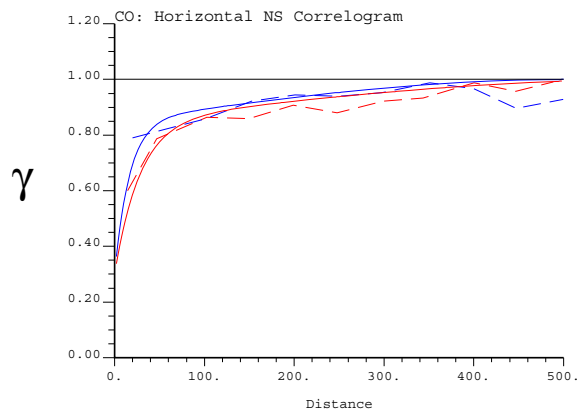
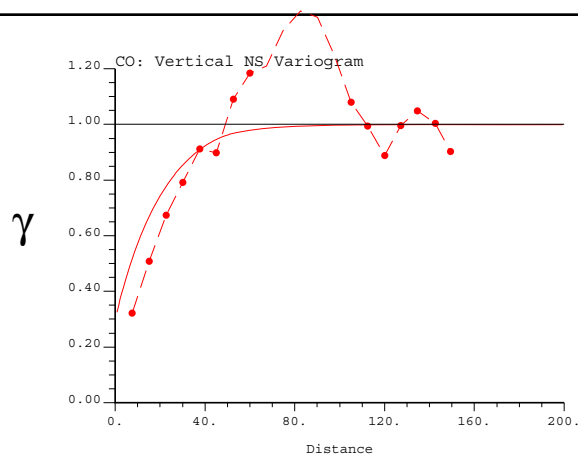
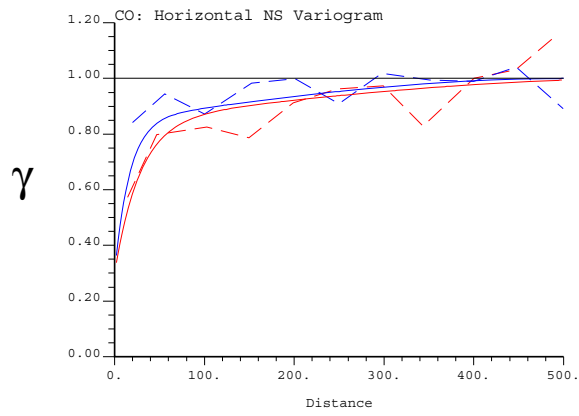
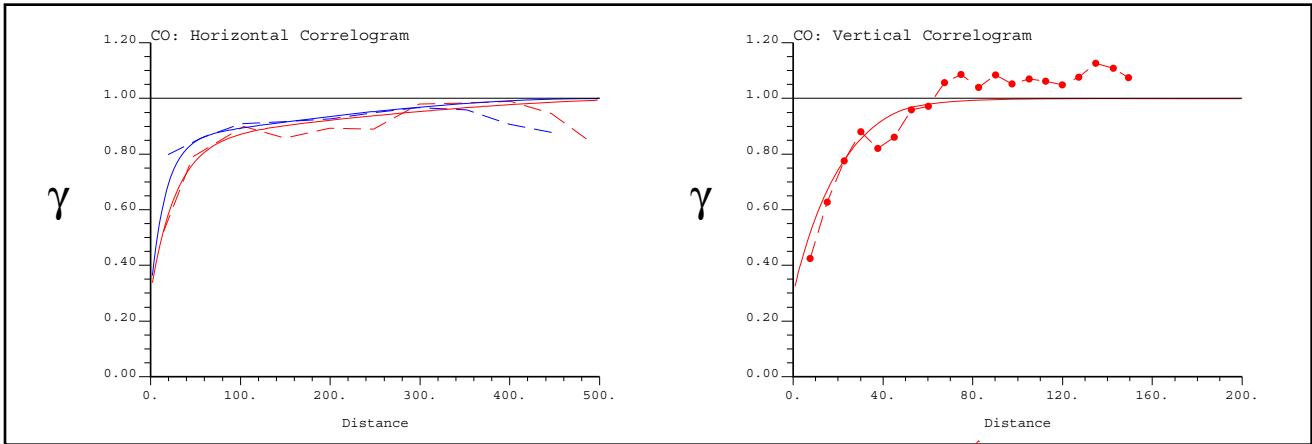
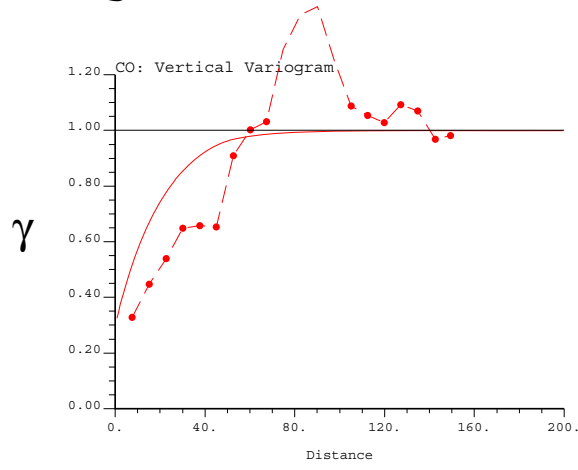
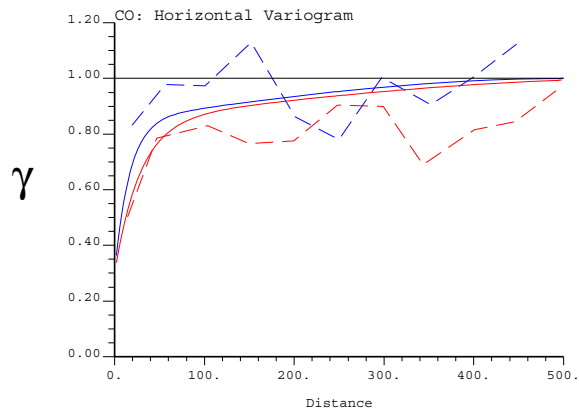
Zone 4: SG Variograms



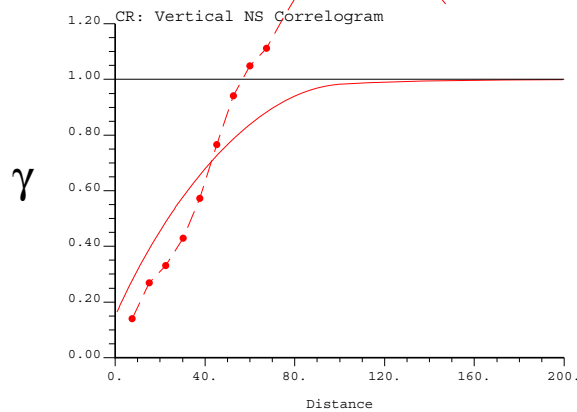
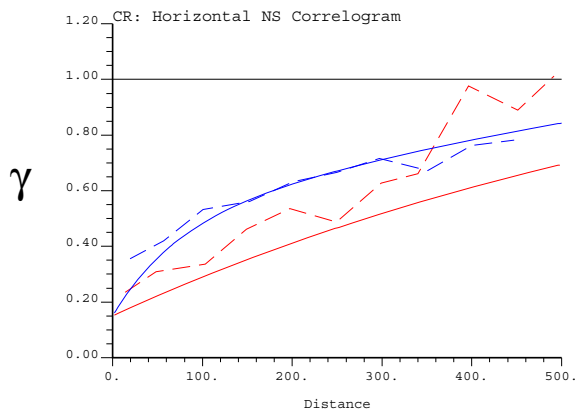
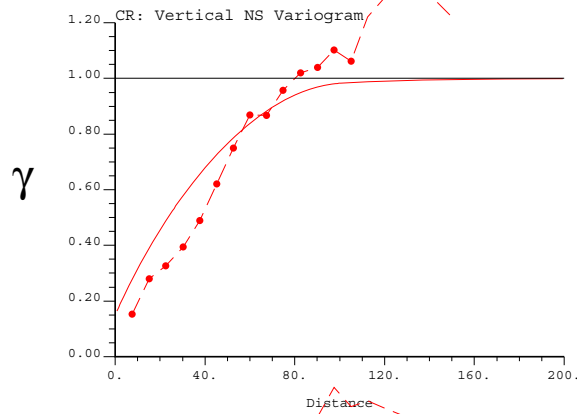
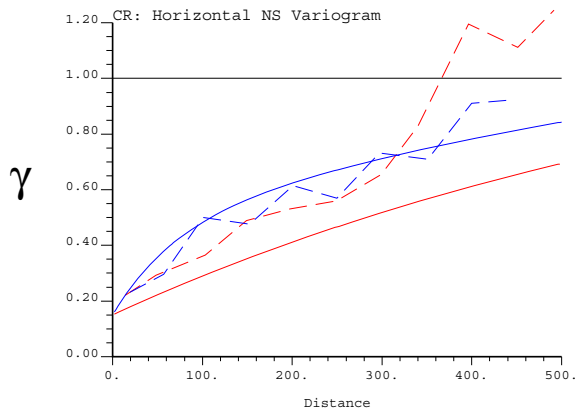
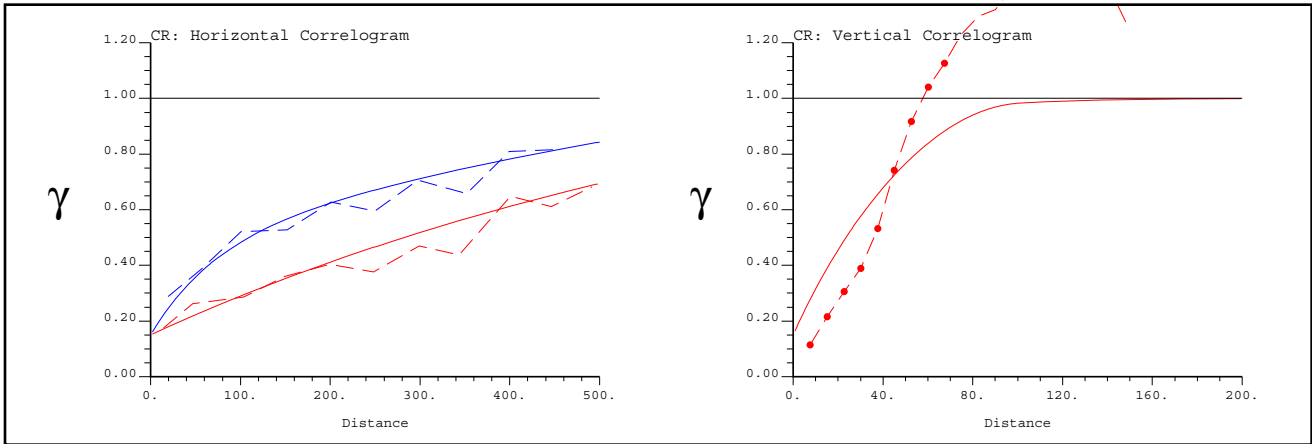
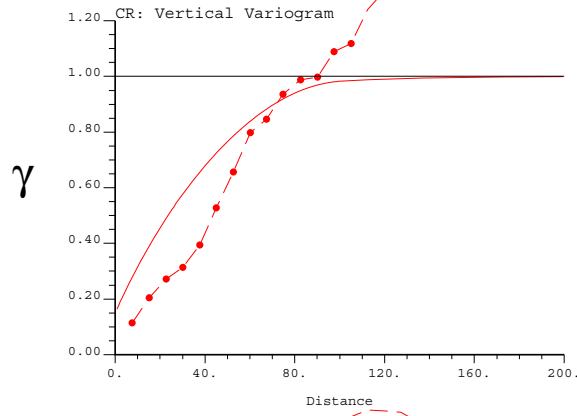
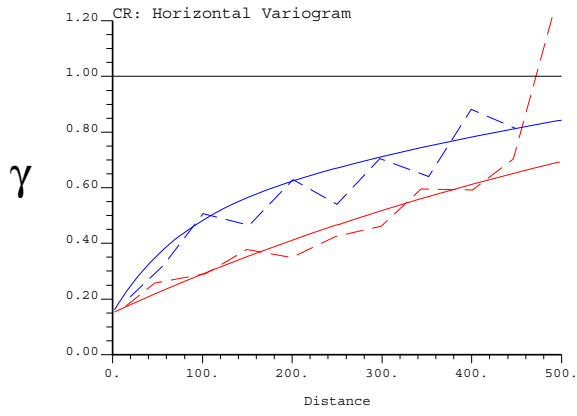
Zone 5: CA Variograms



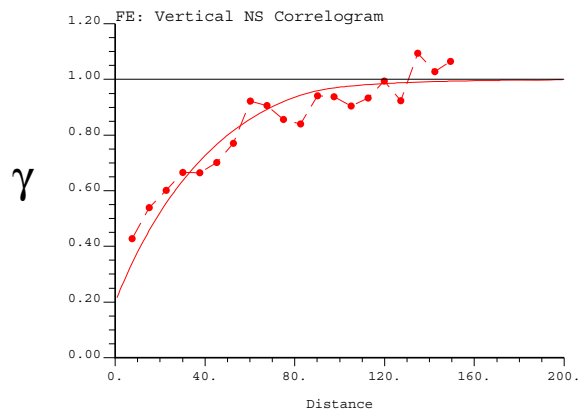
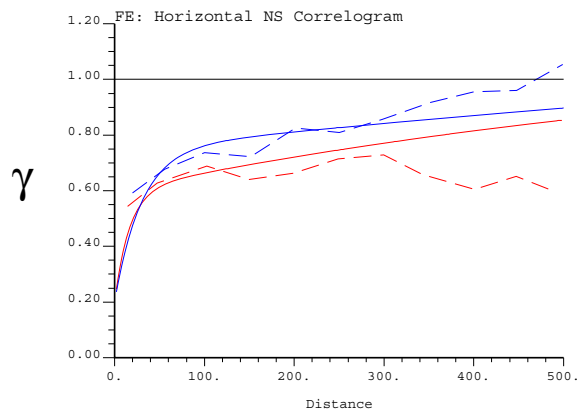
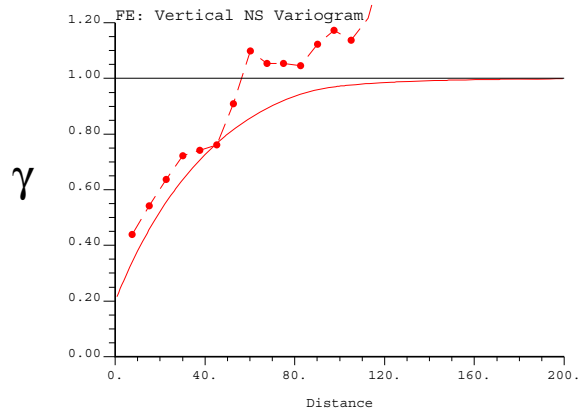
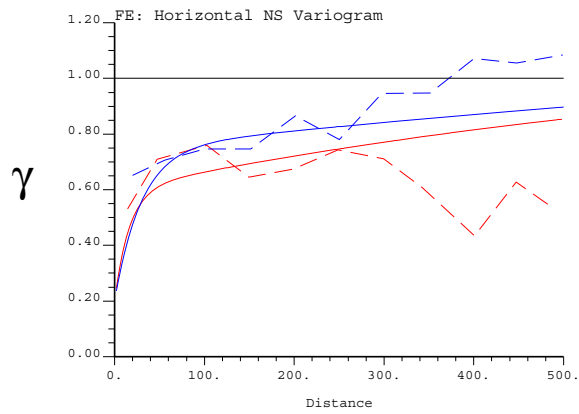
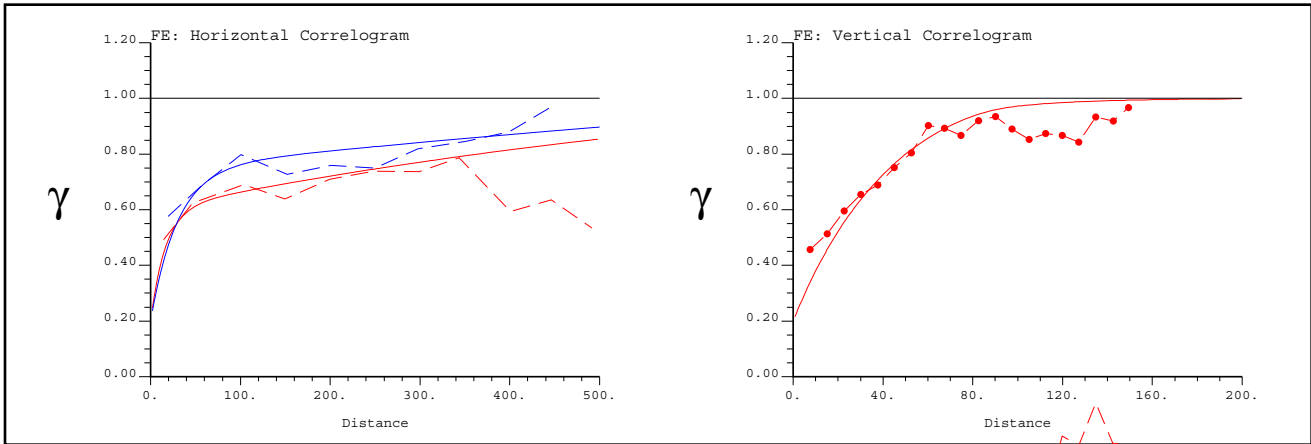
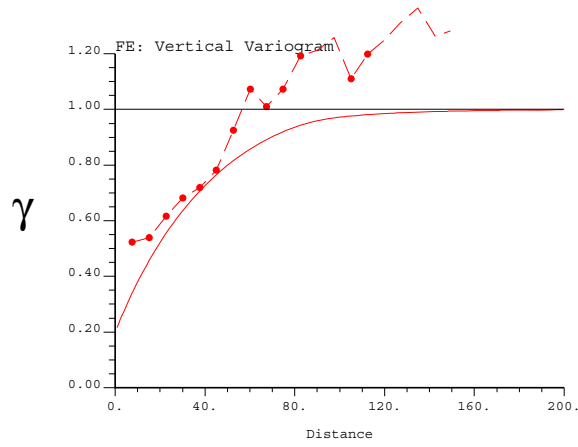
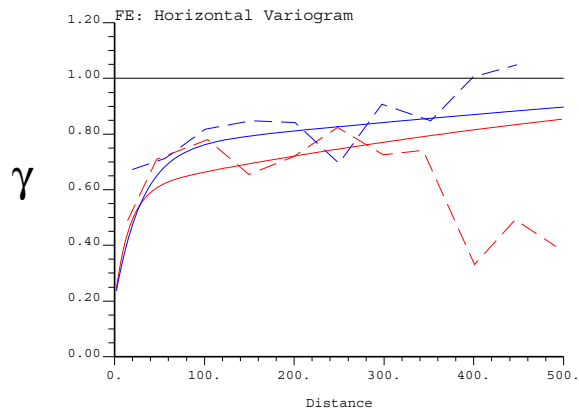
Zone 5: CO Variograms



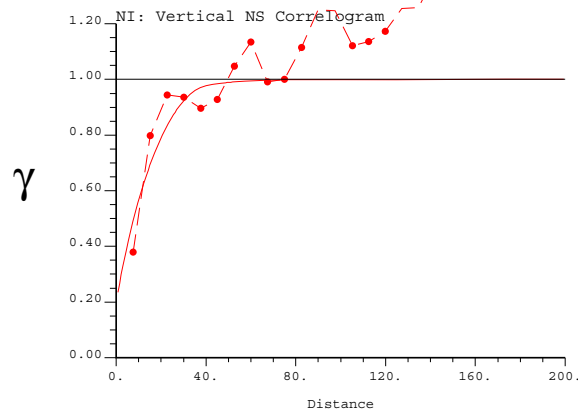
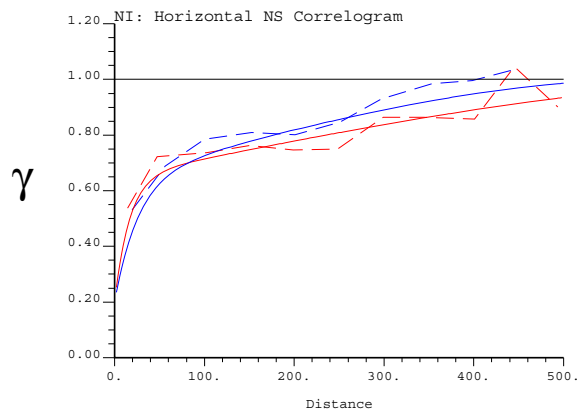
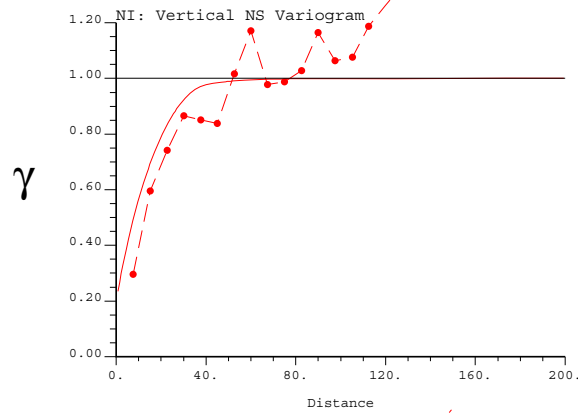
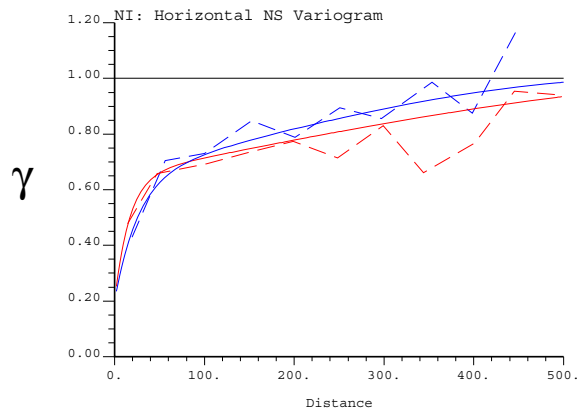
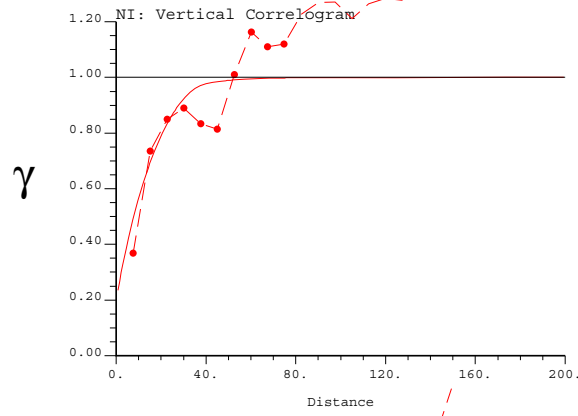
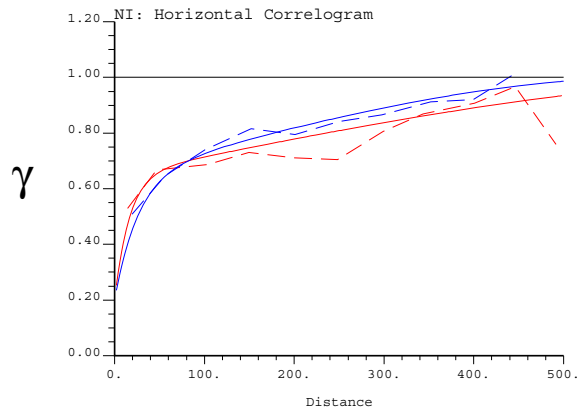
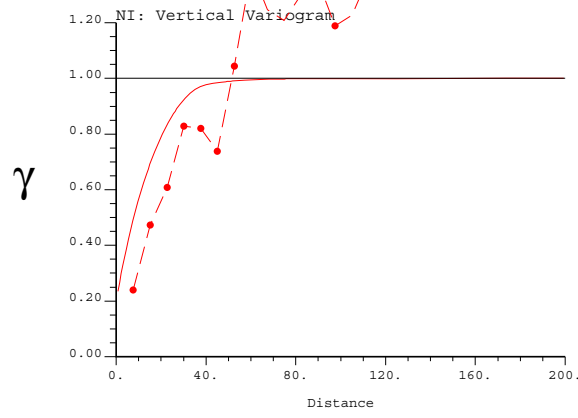
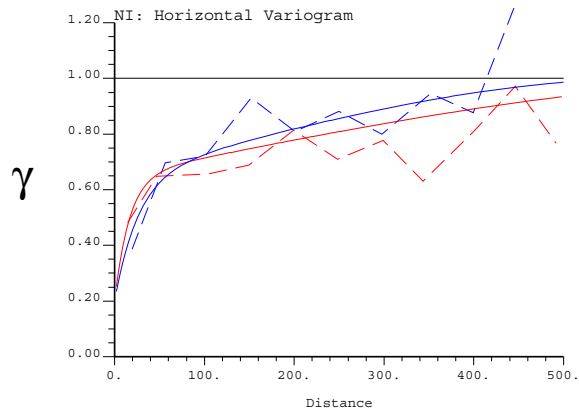
Zone 5: CR Variograms



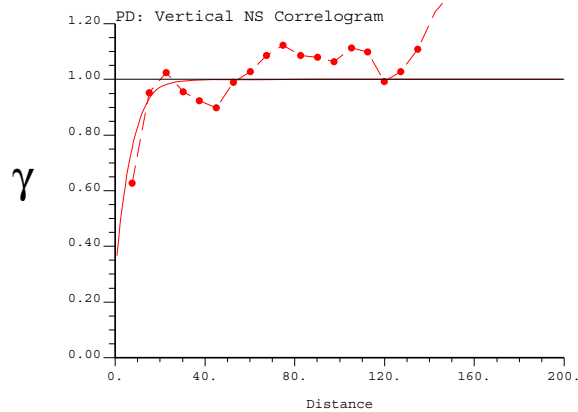
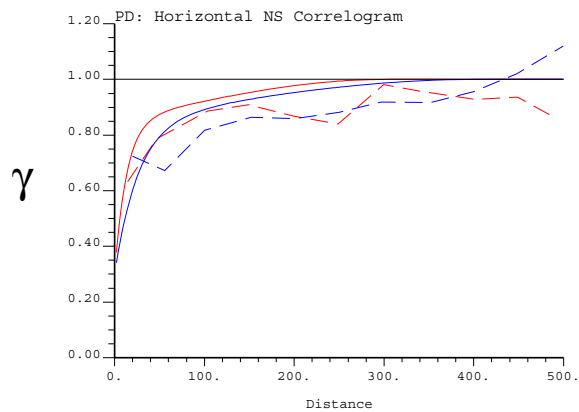
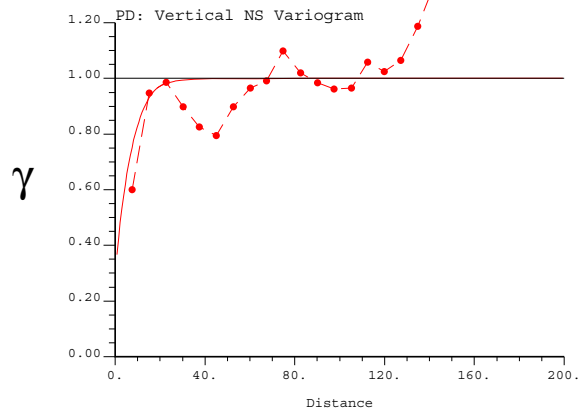
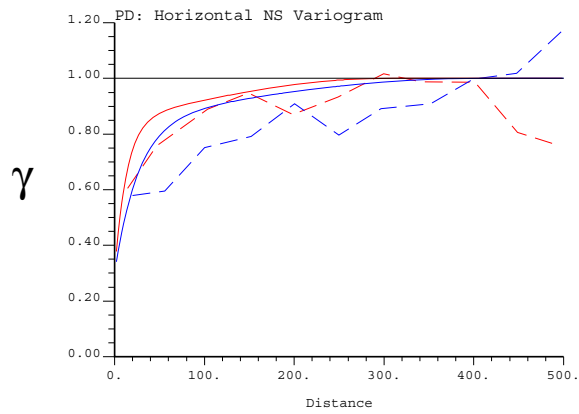
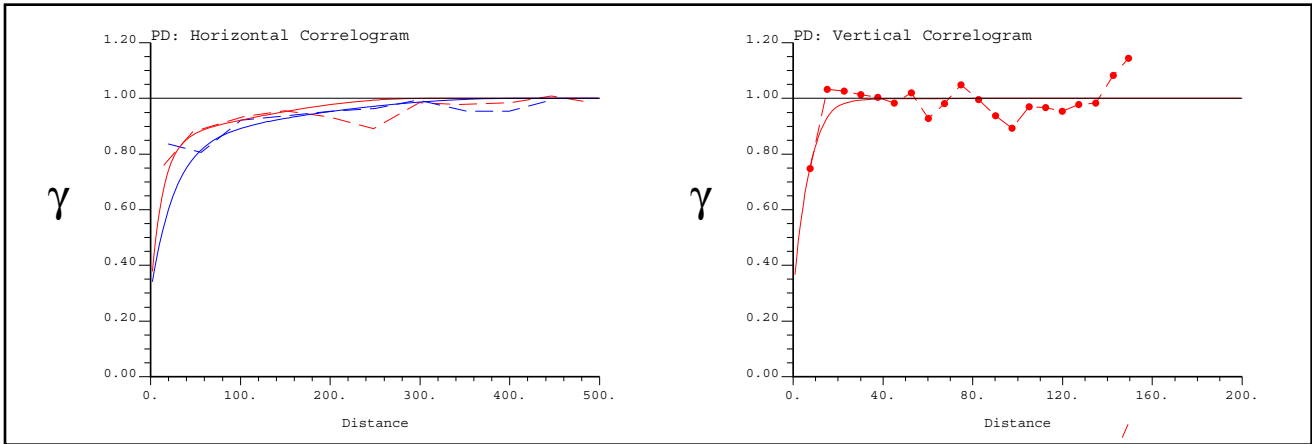
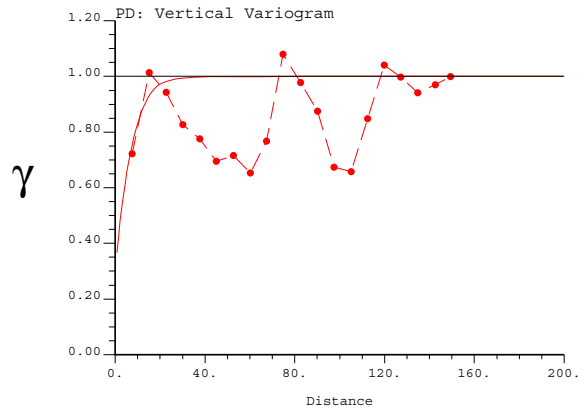
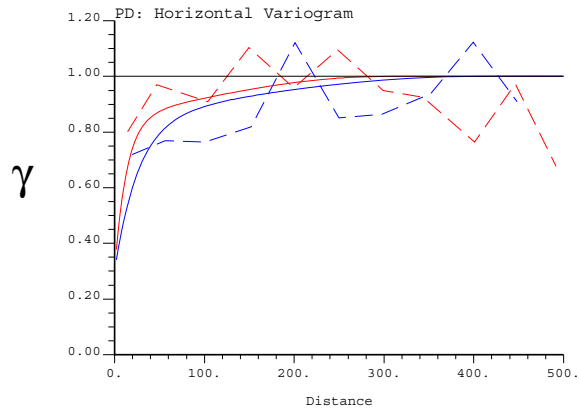
Zone 5: FE Variograms



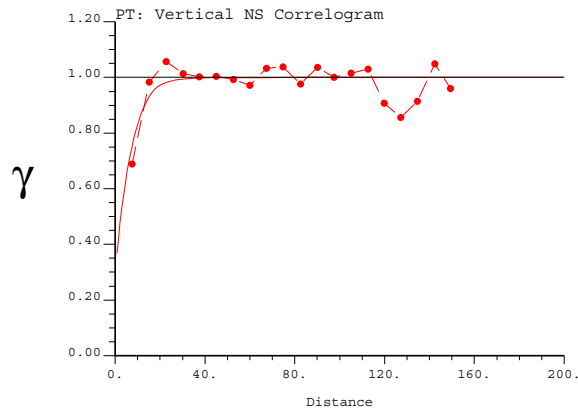
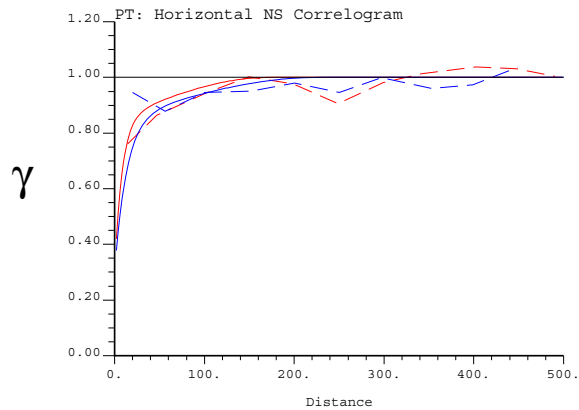
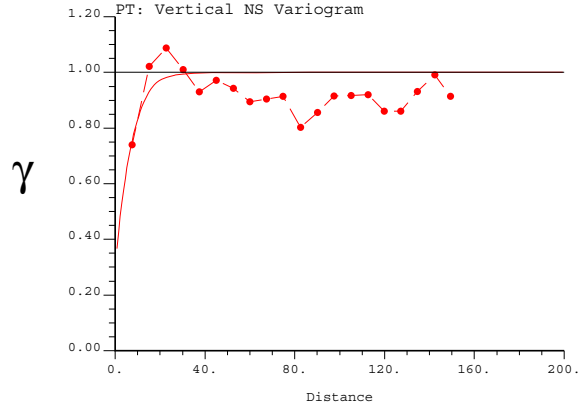
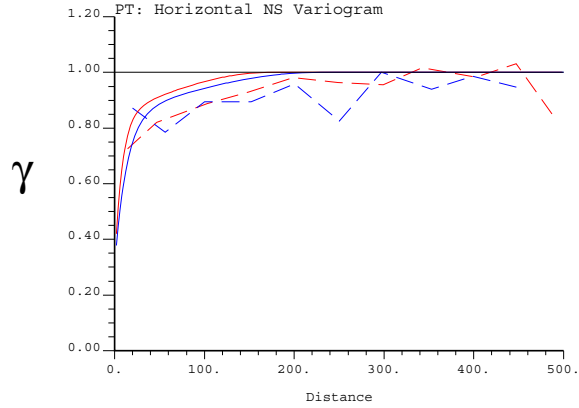
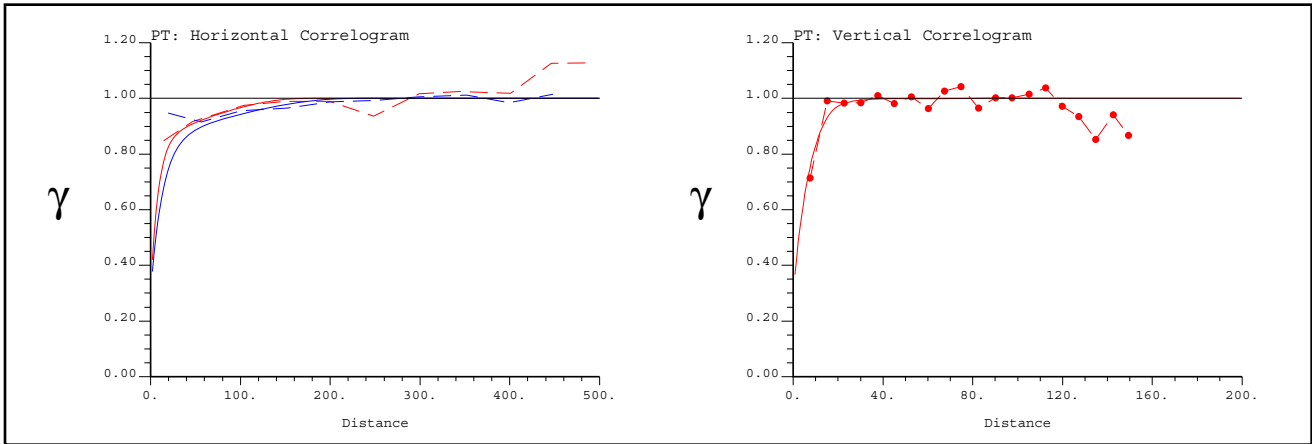
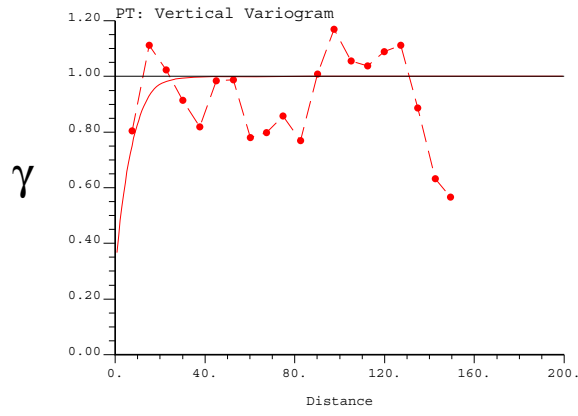
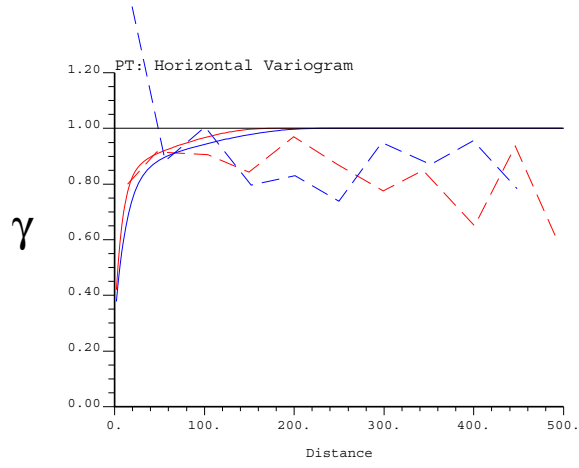
Zone 5: NI Variograms



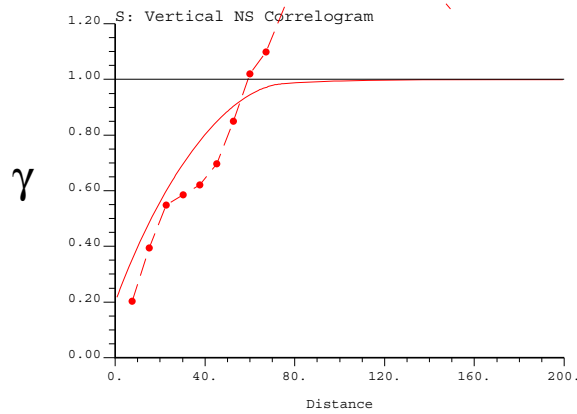
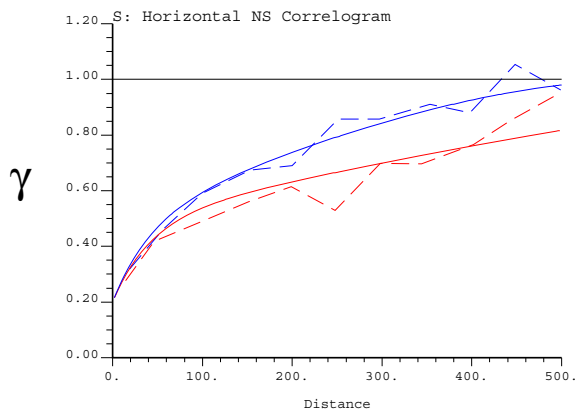
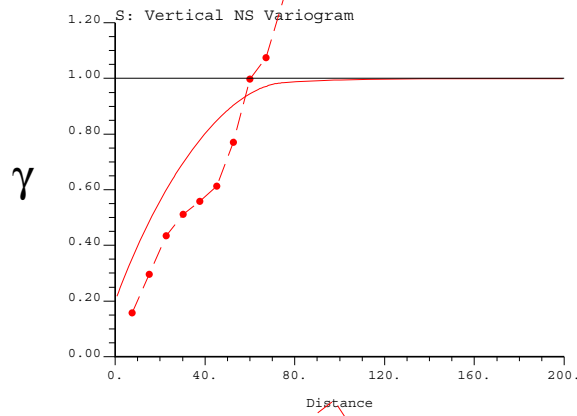
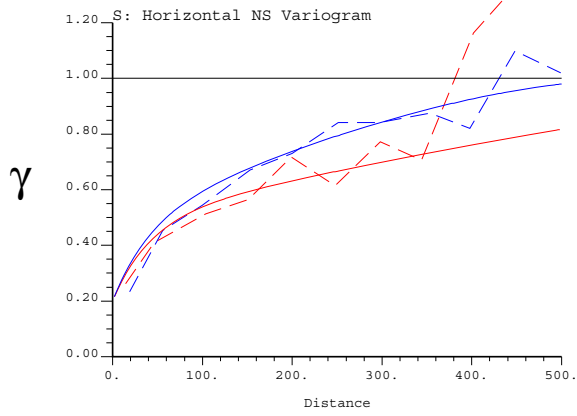
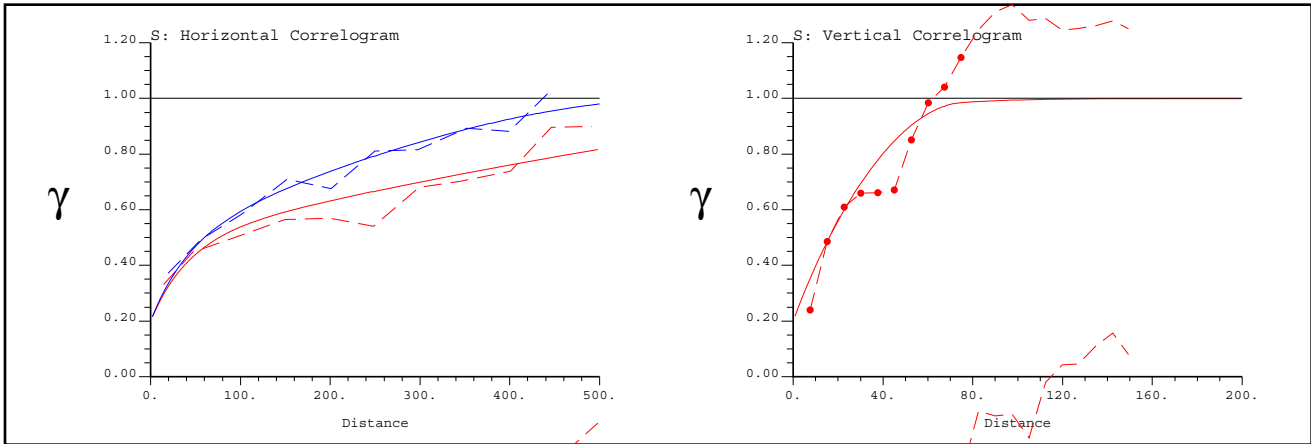
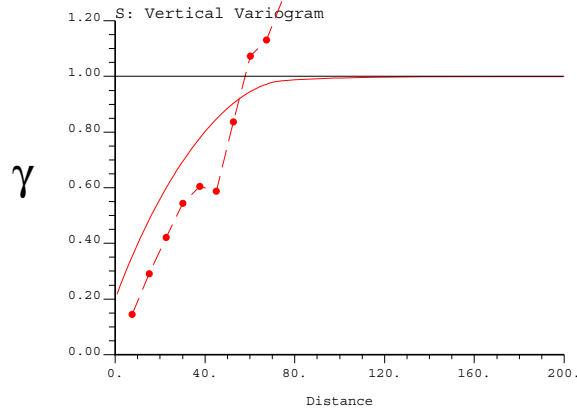
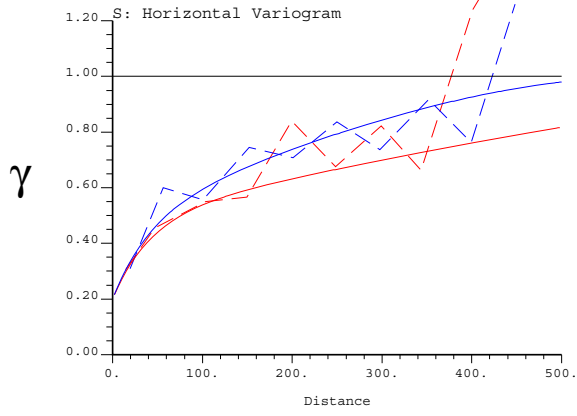
Zone 5: PD Variograms



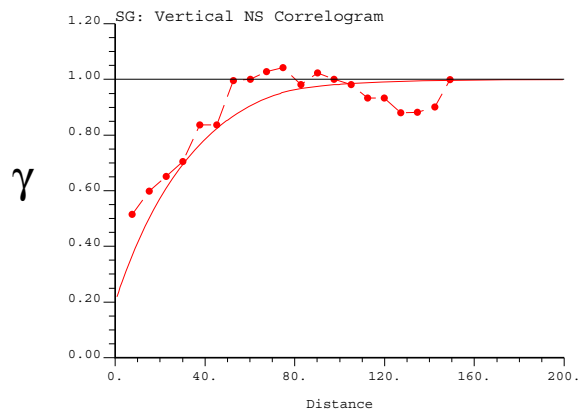
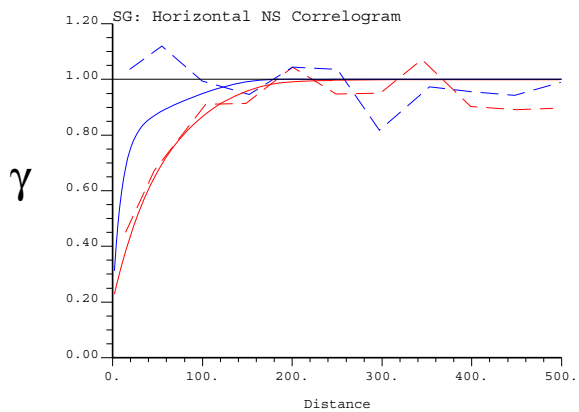
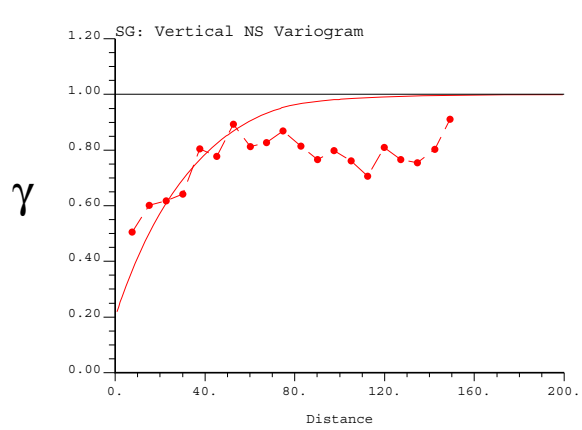
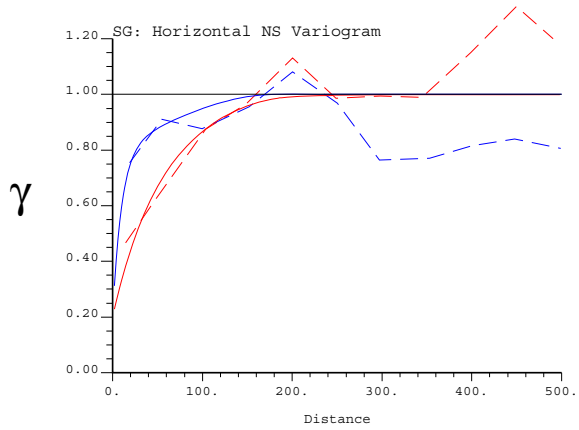
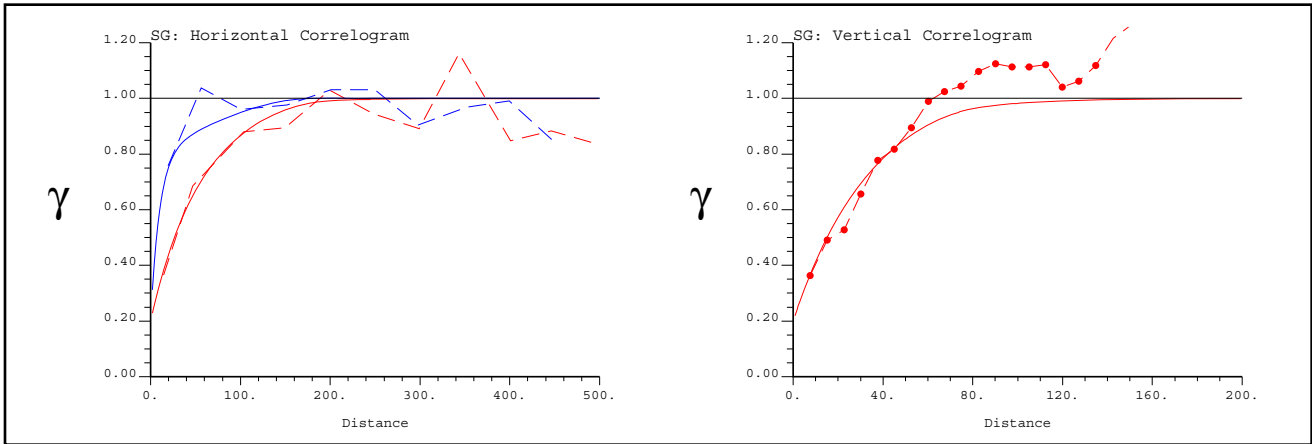
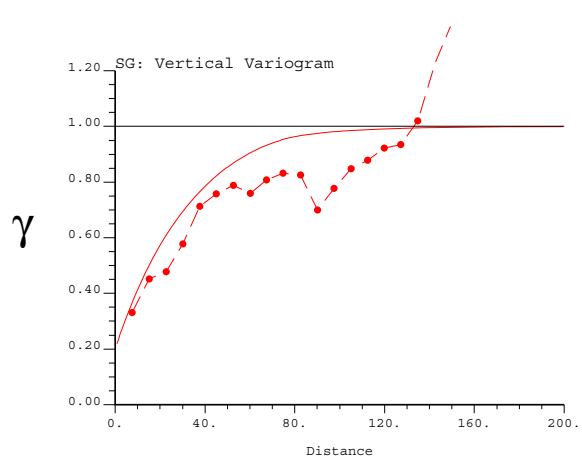
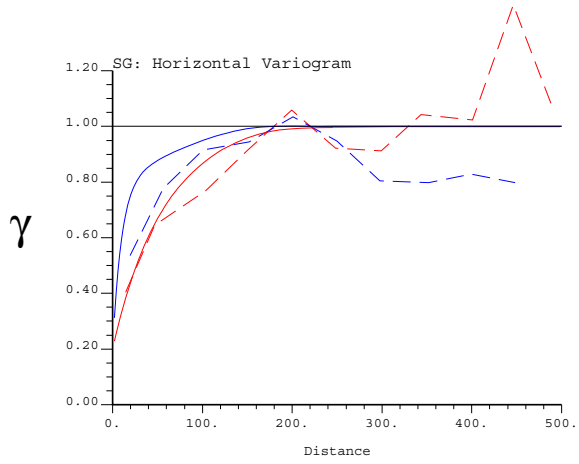
Zone 5: PT Variograms



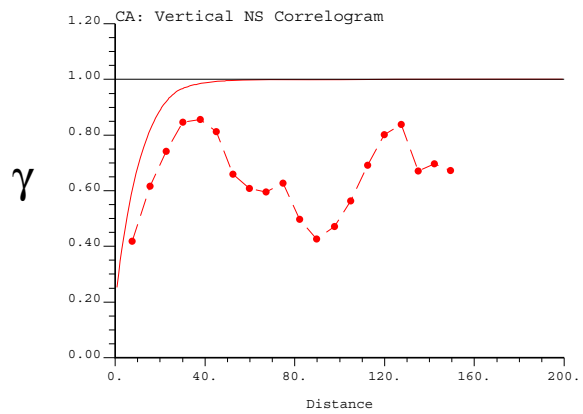
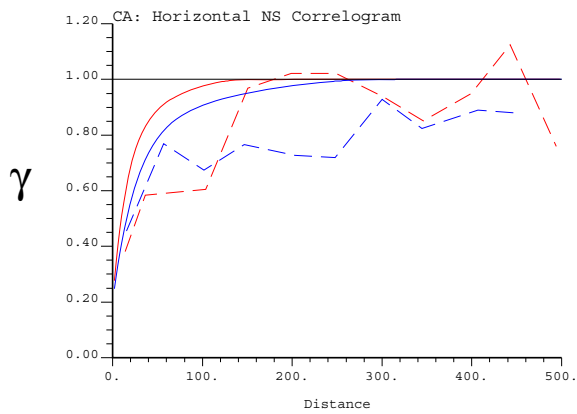
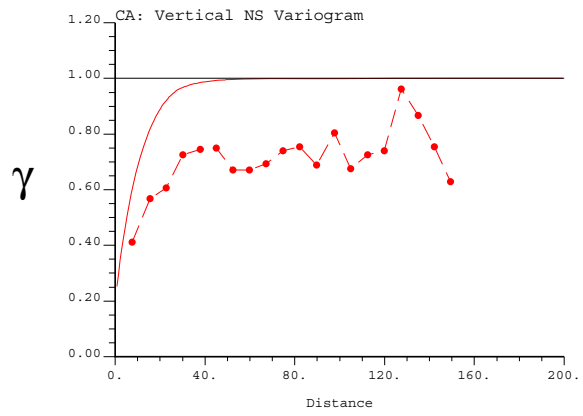
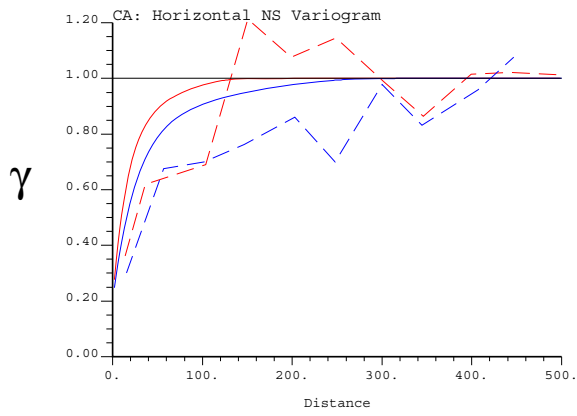
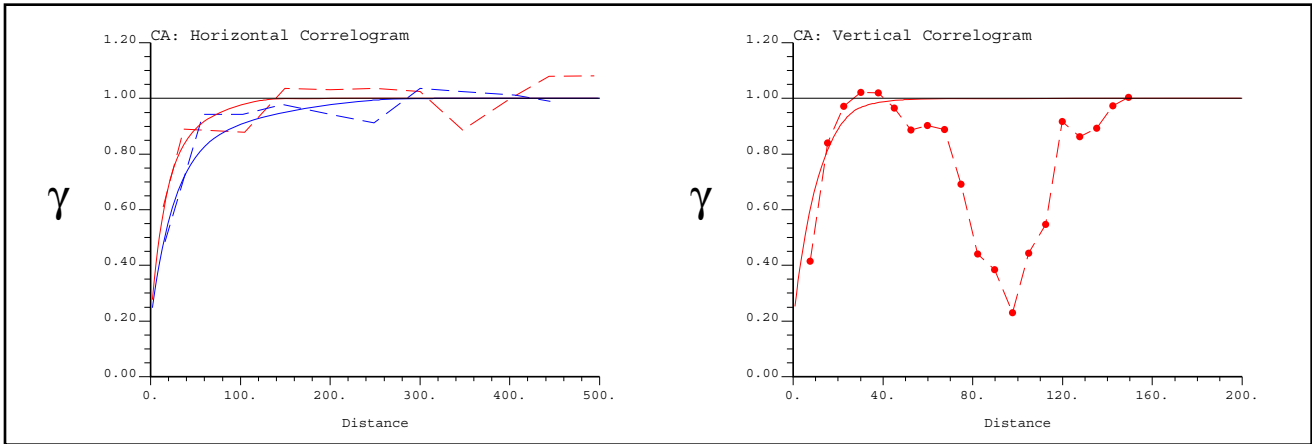
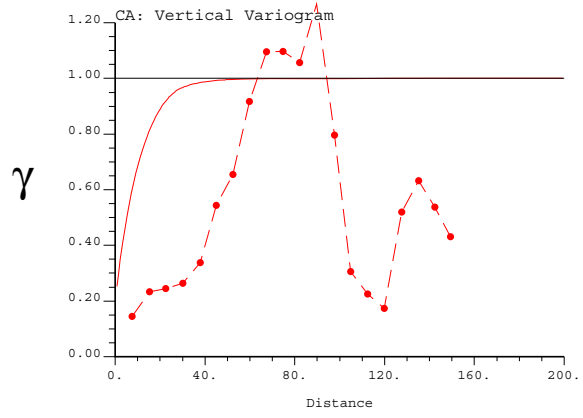
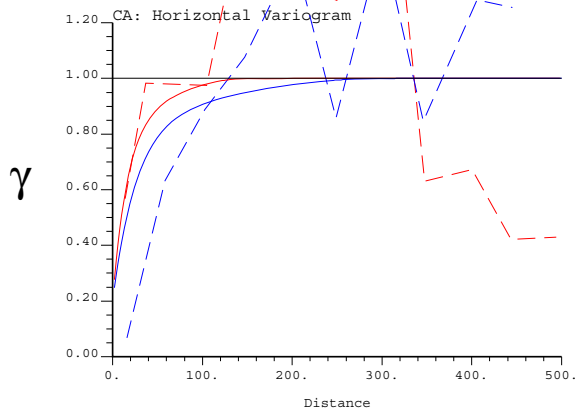
Zone 5: S Variograms



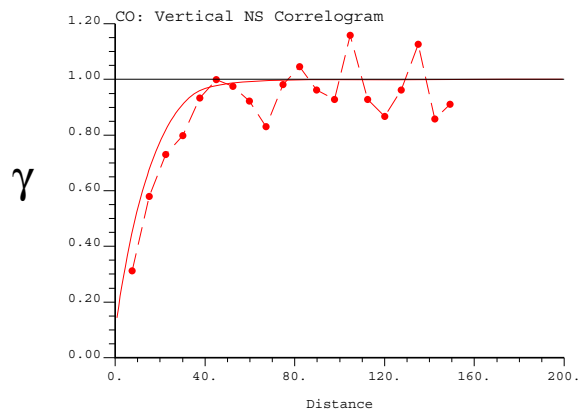
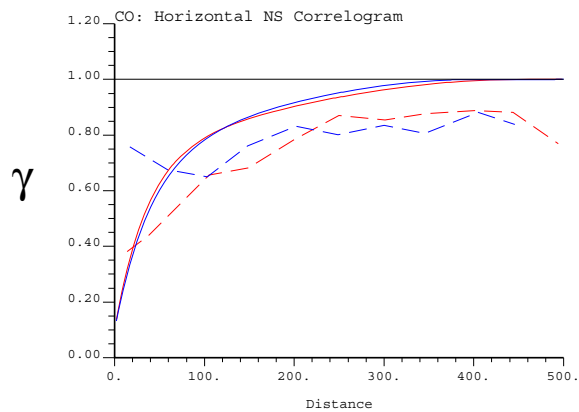
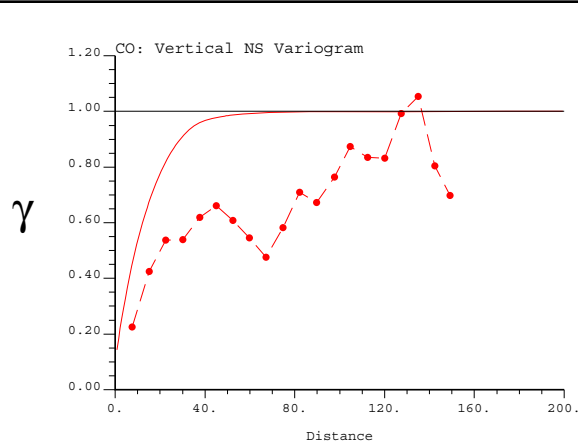
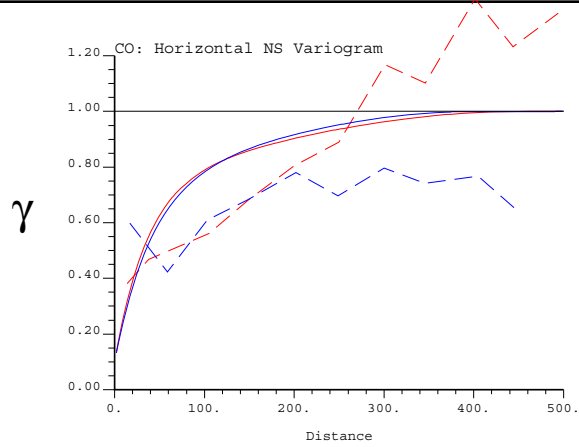
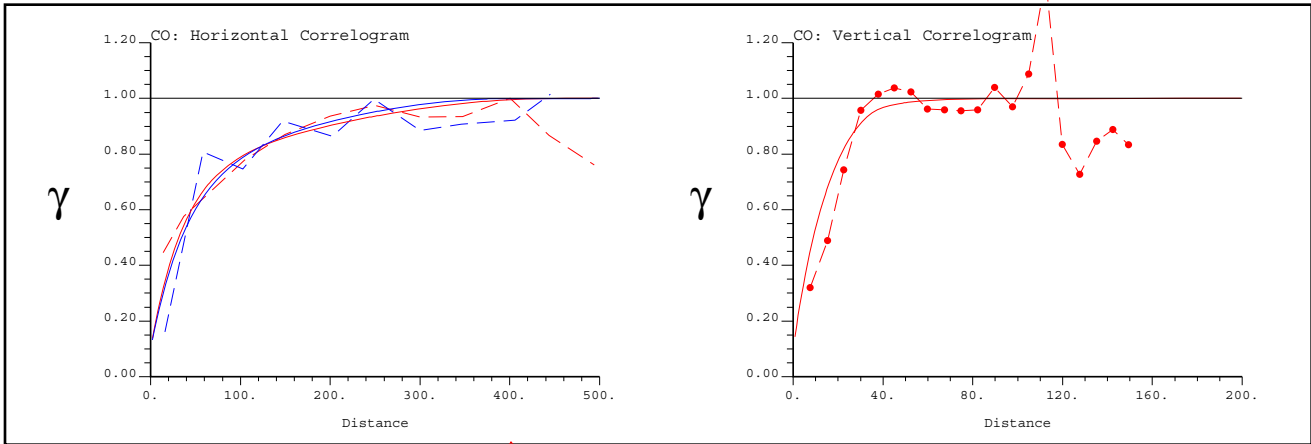
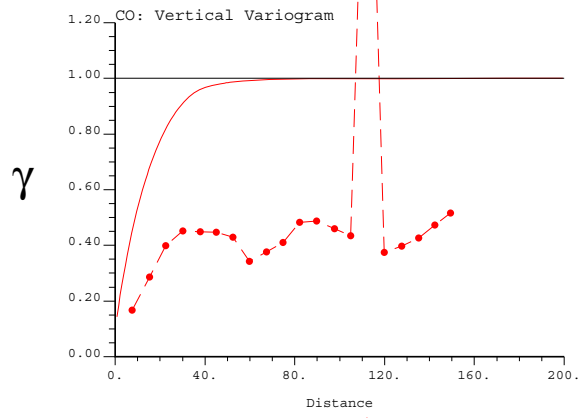
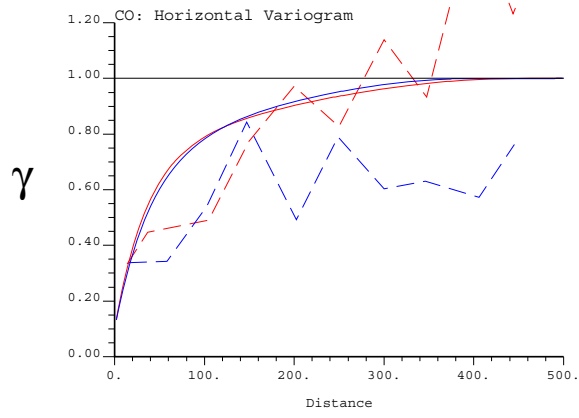
Zone 5: SG Variograms



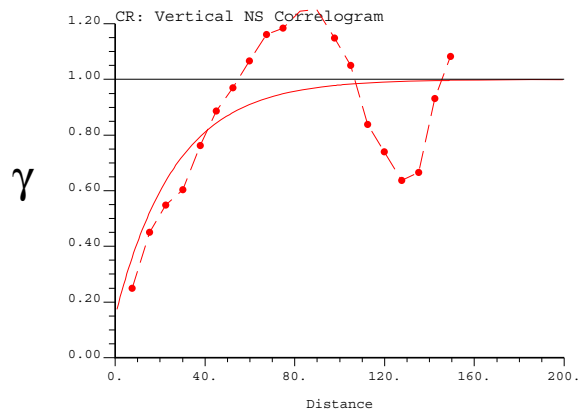
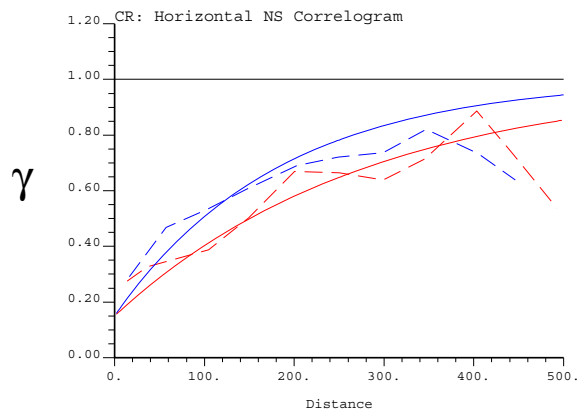
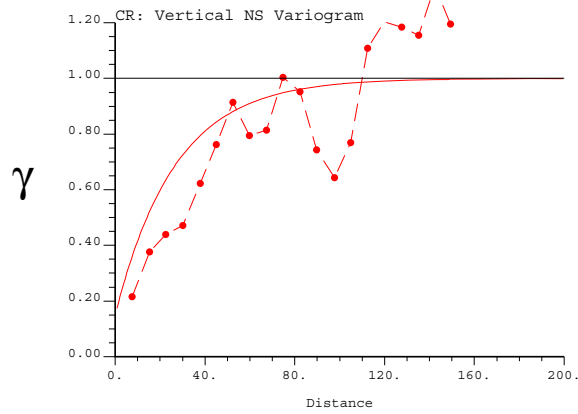
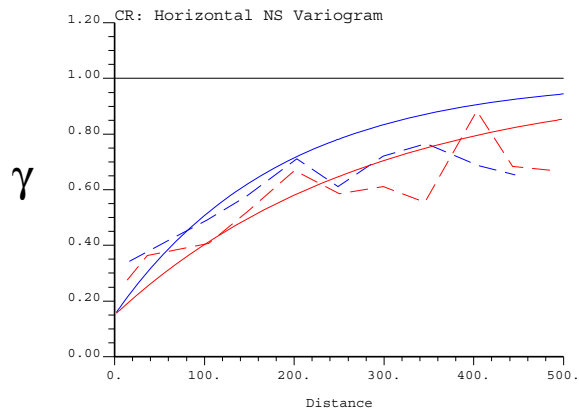
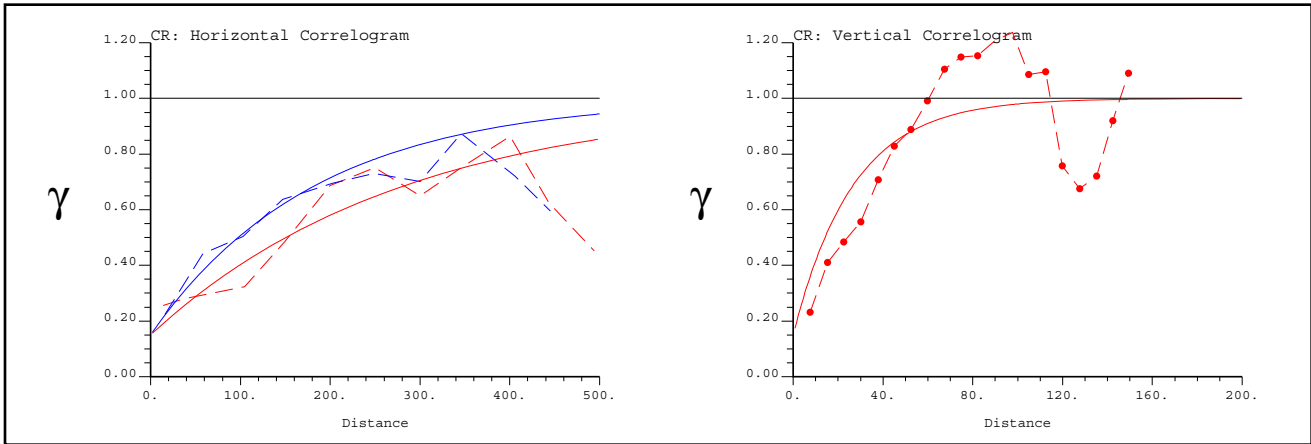
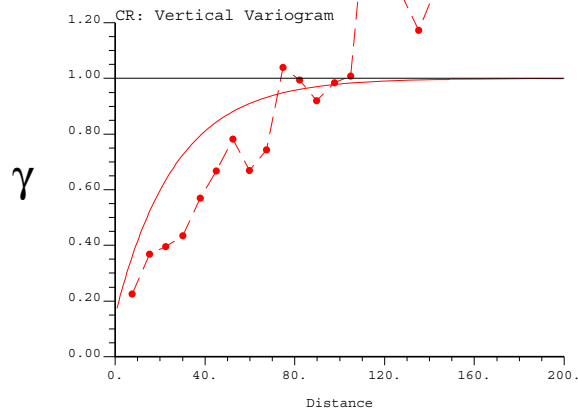
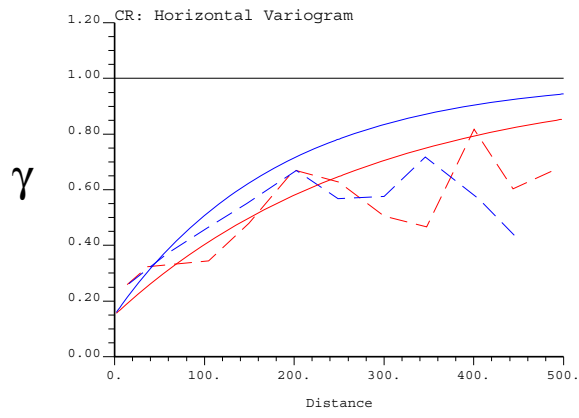
Zone 67: CA Variograms



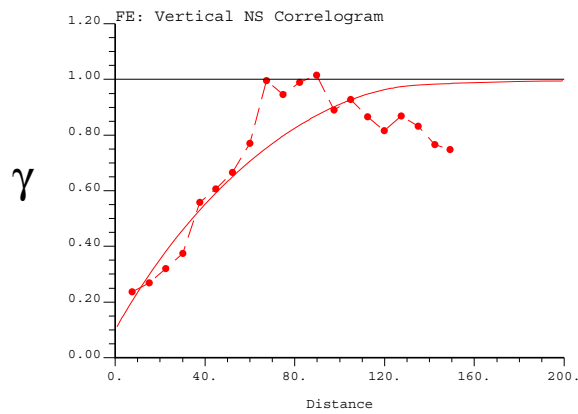
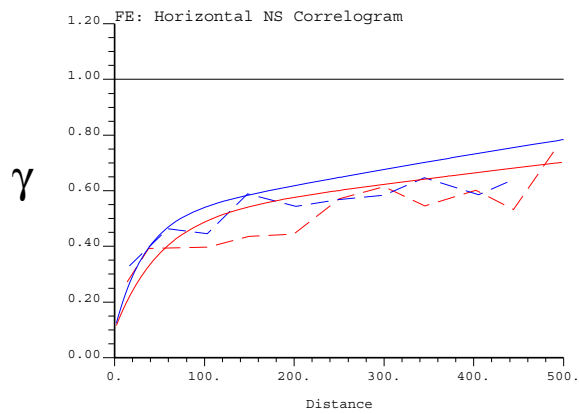
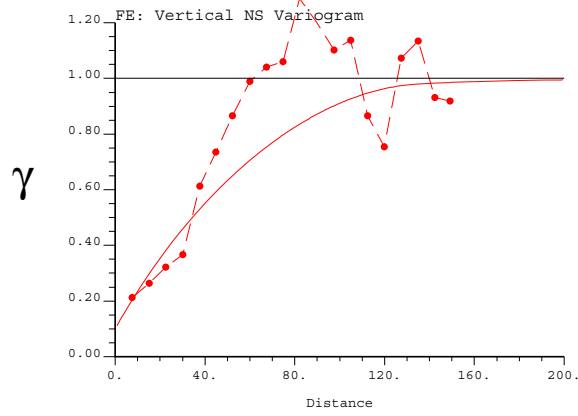
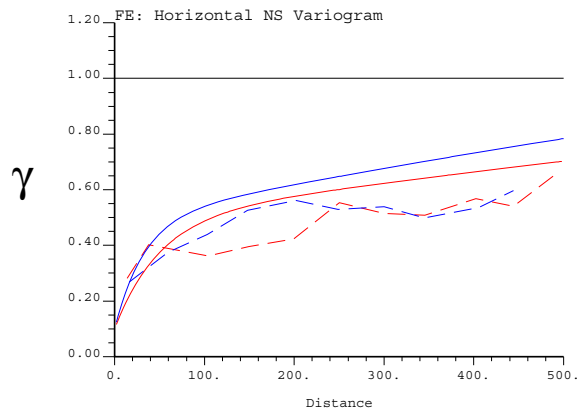
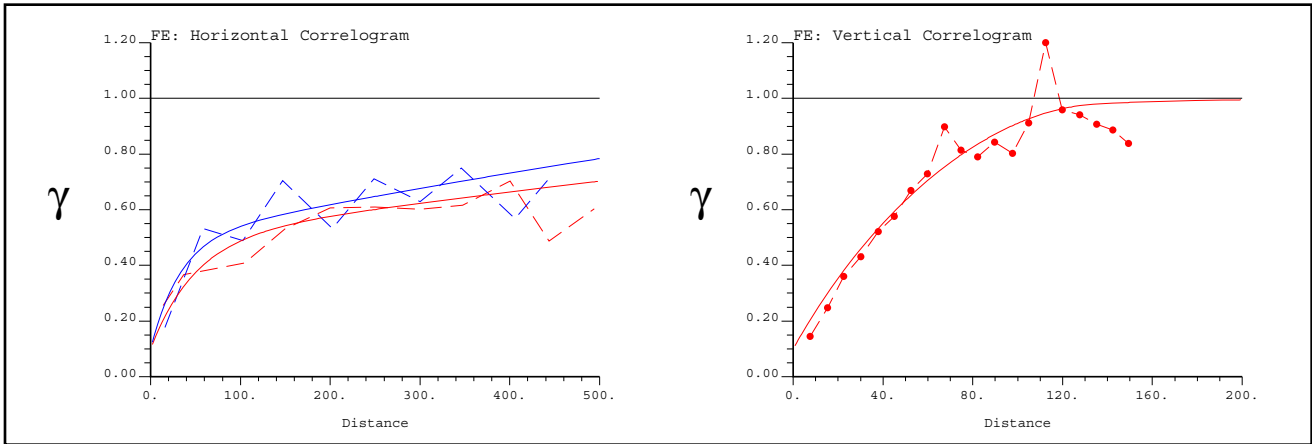
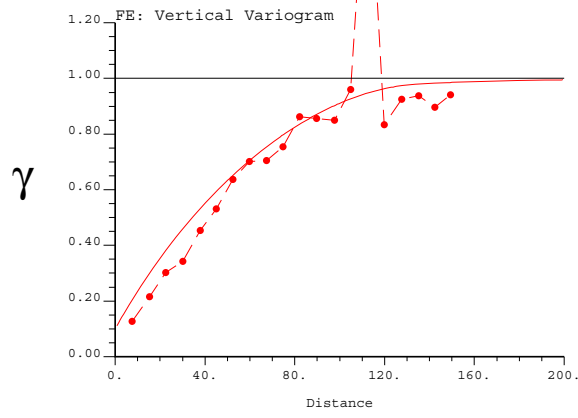
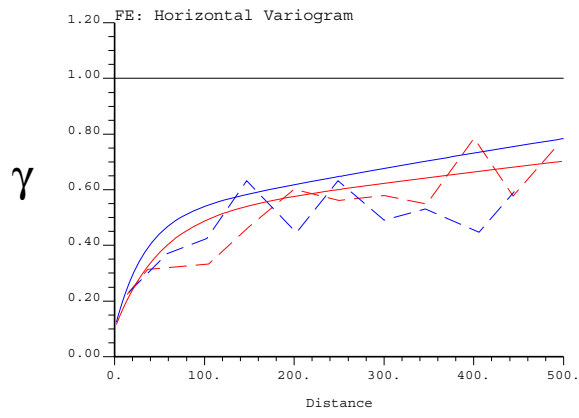
Zone 67: CO Variograms



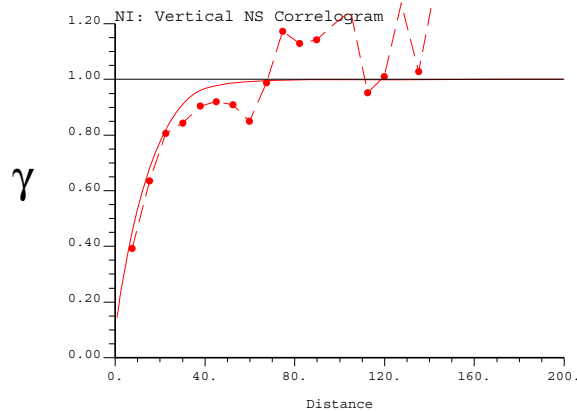
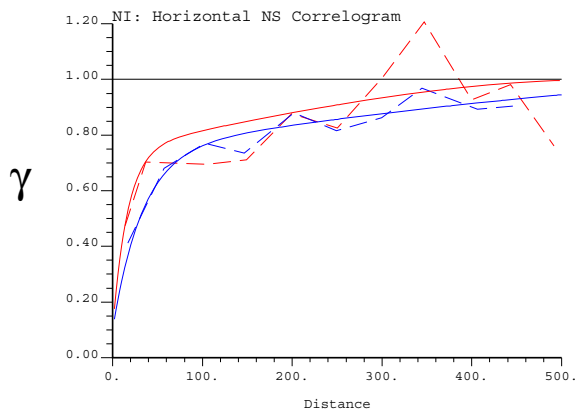
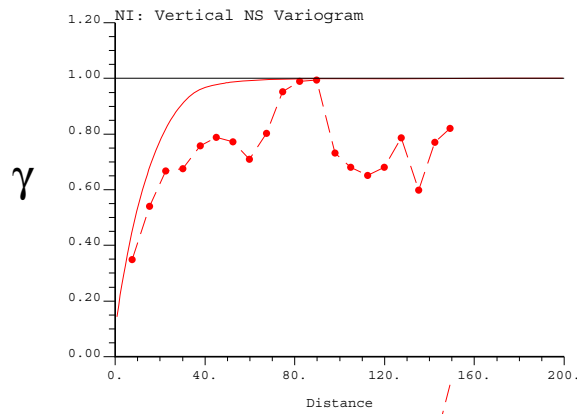
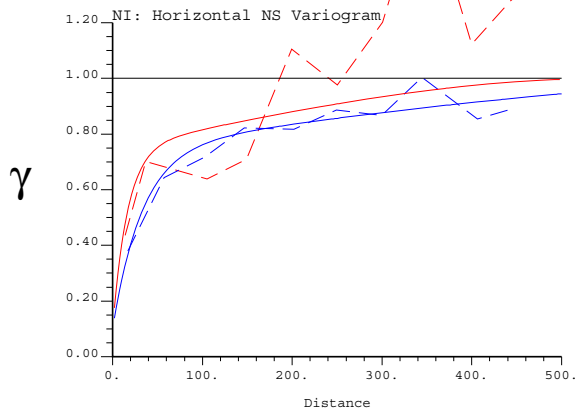
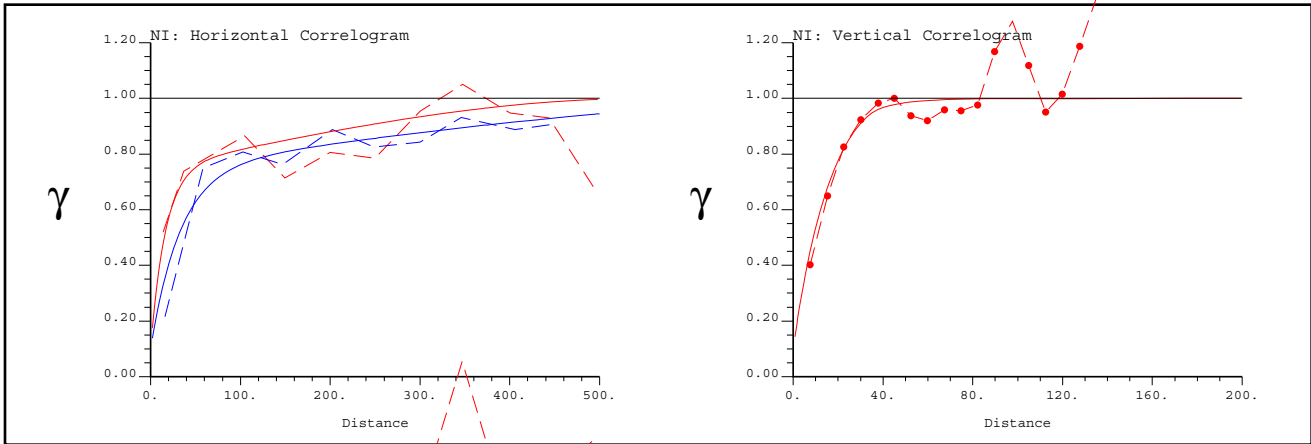
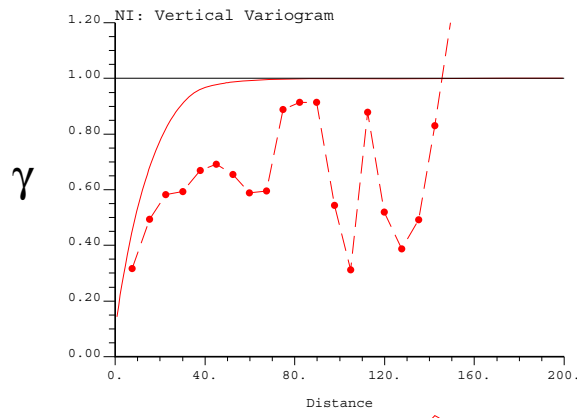
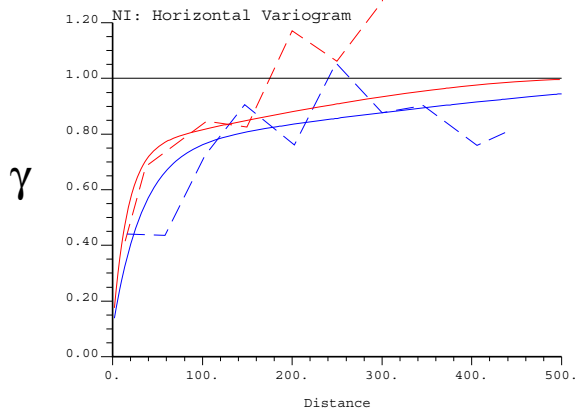
Zone 67: CR Variograms



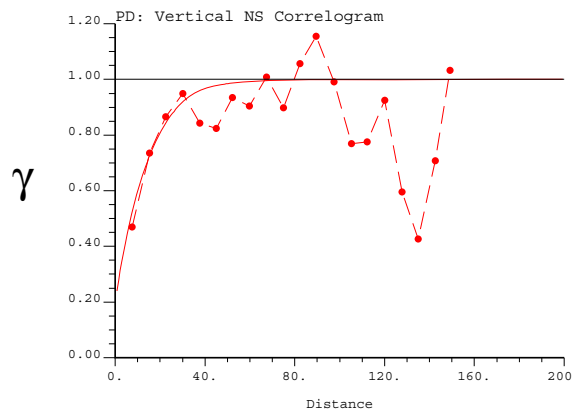
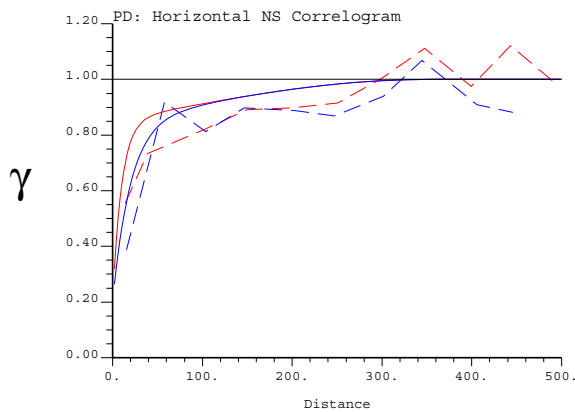
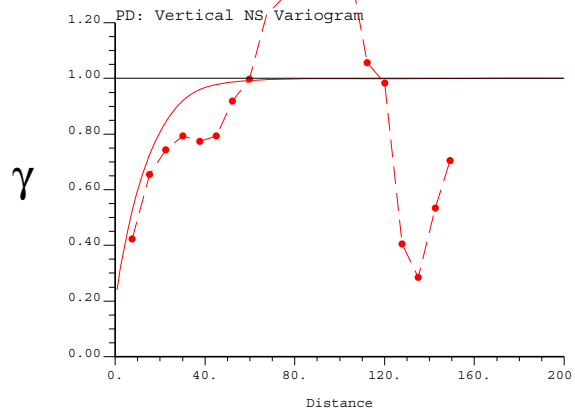
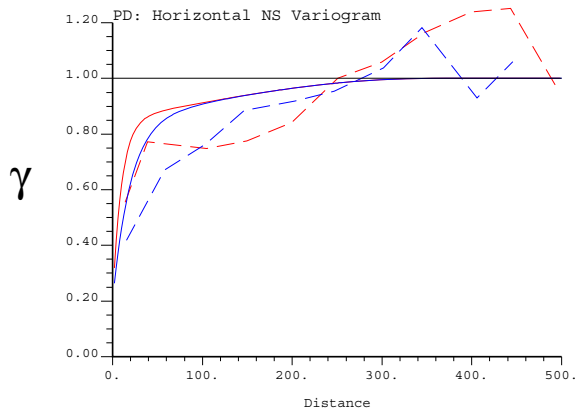
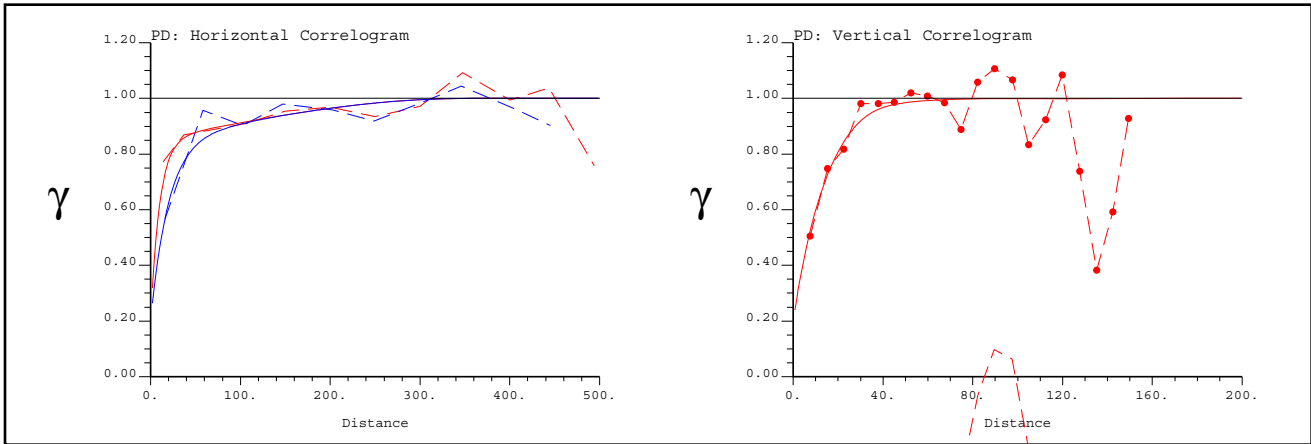
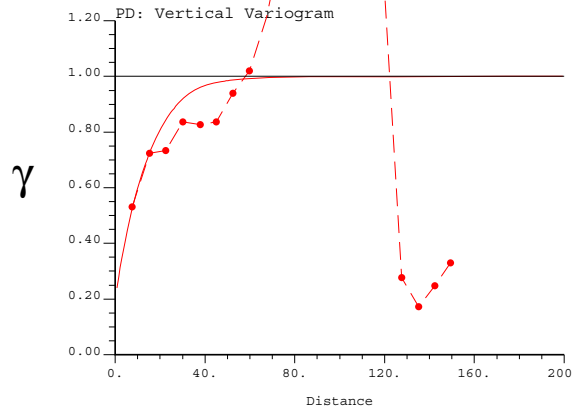
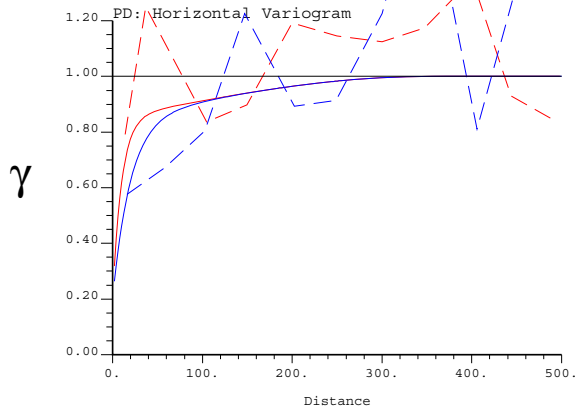
Zone 67: FE Variograms



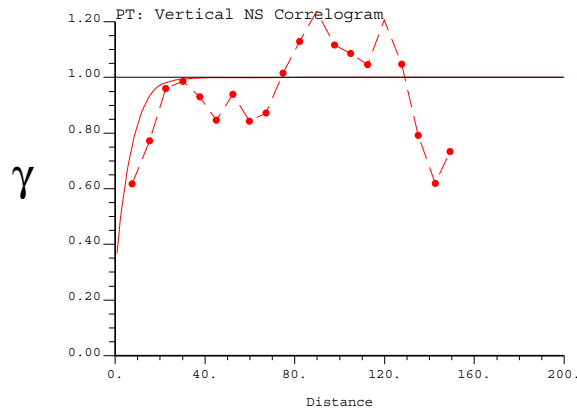
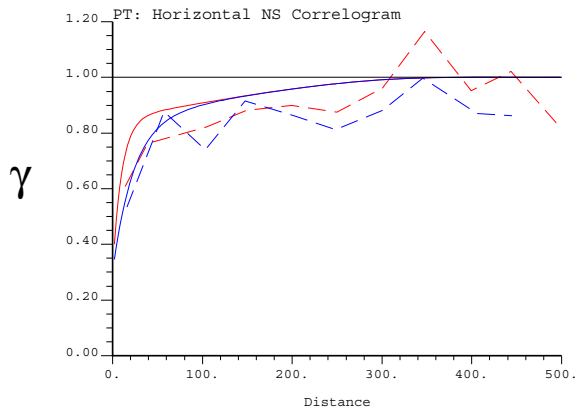
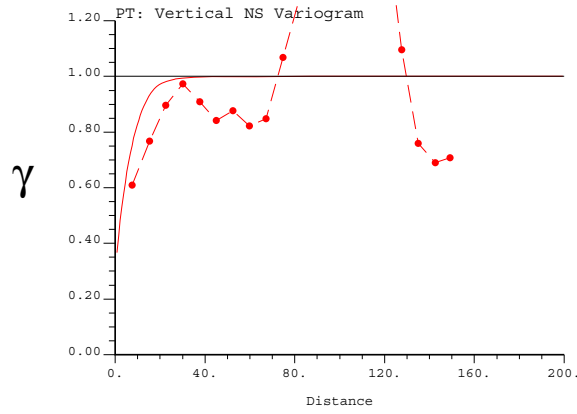
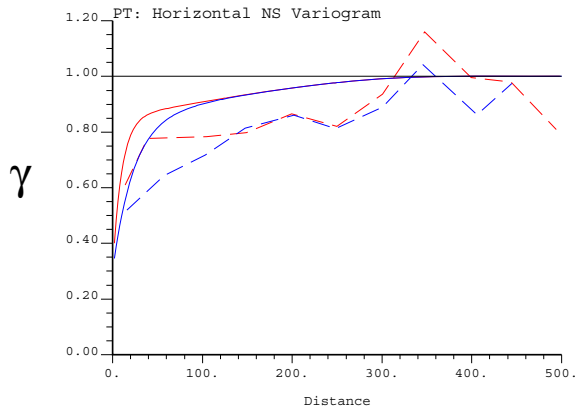
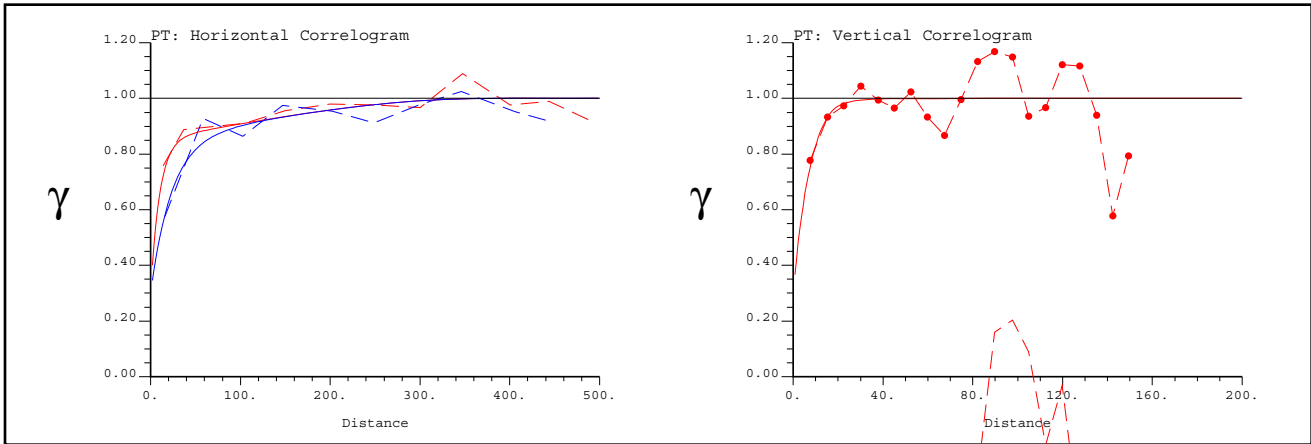
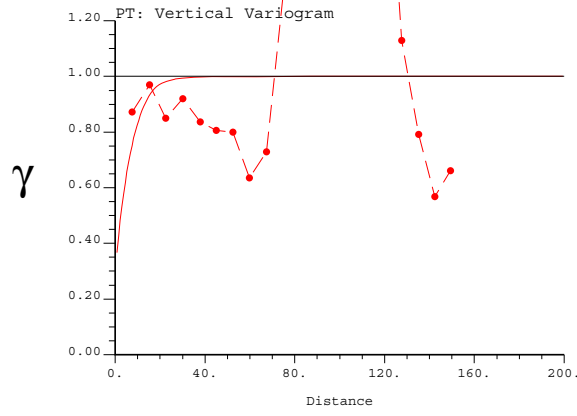
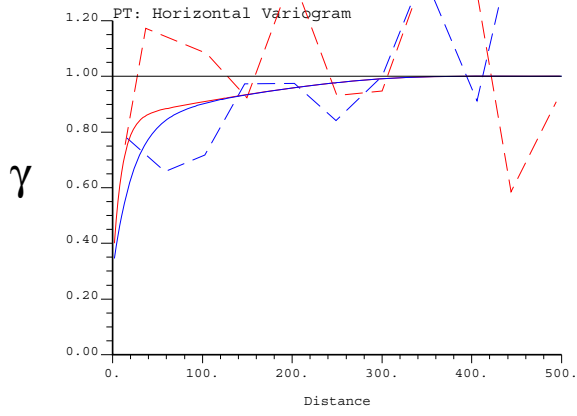
Zone 67: NI Variograms



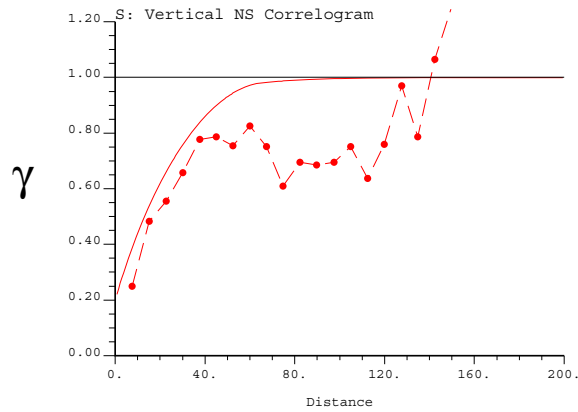
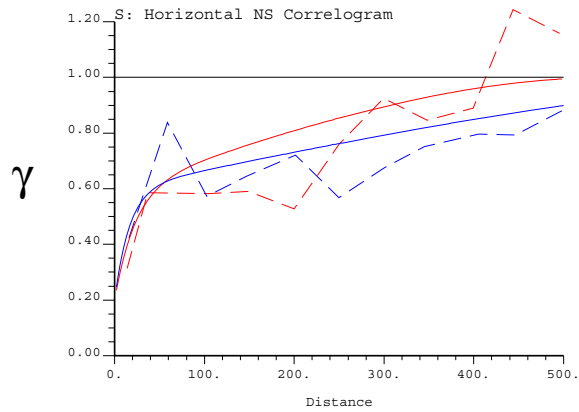
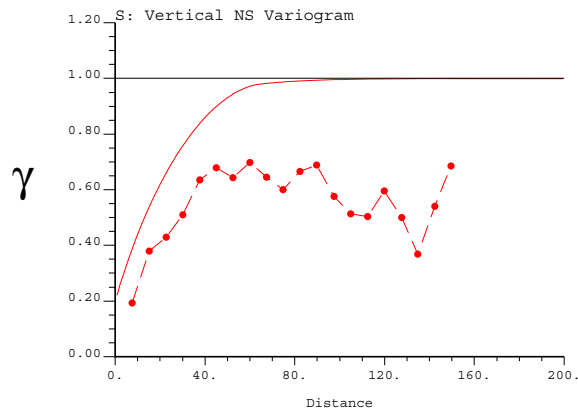
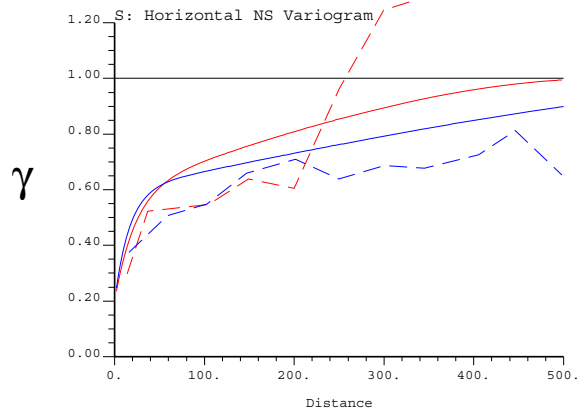
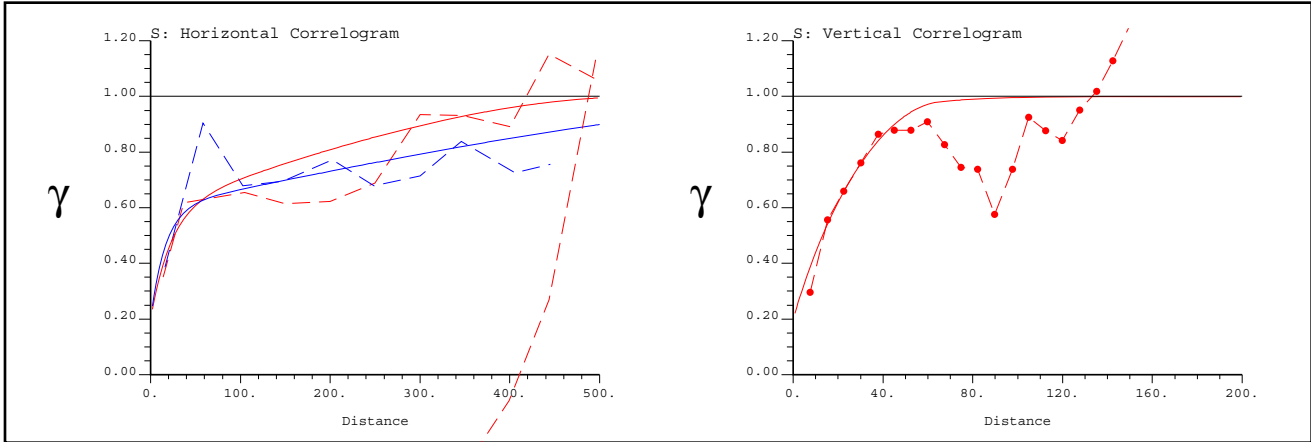
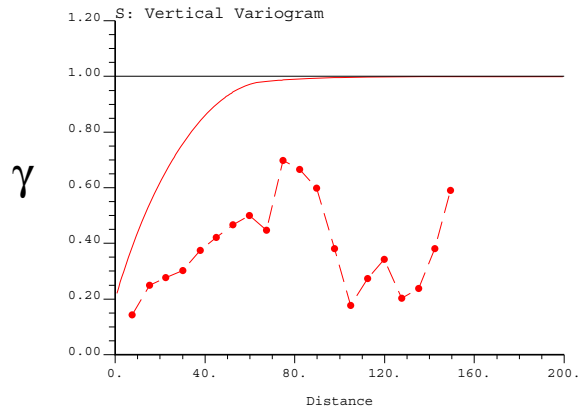
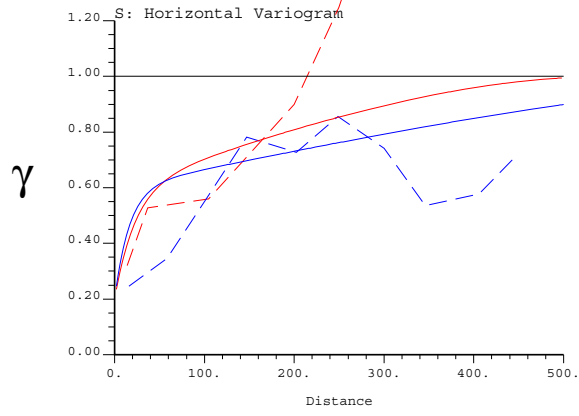
Zone 67: PD Variograms



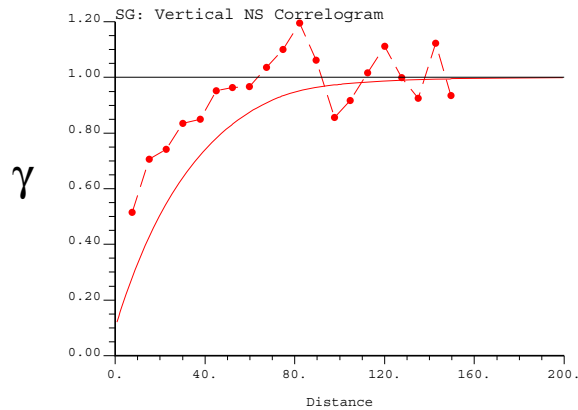
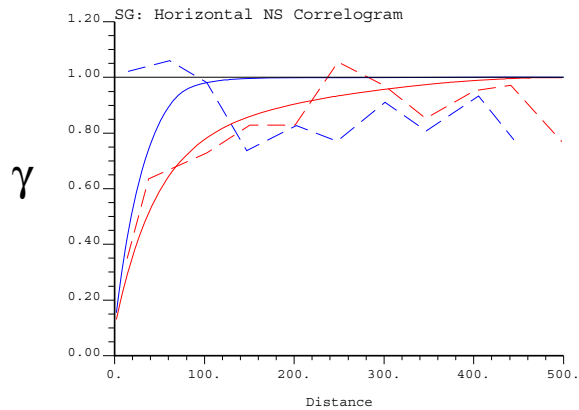
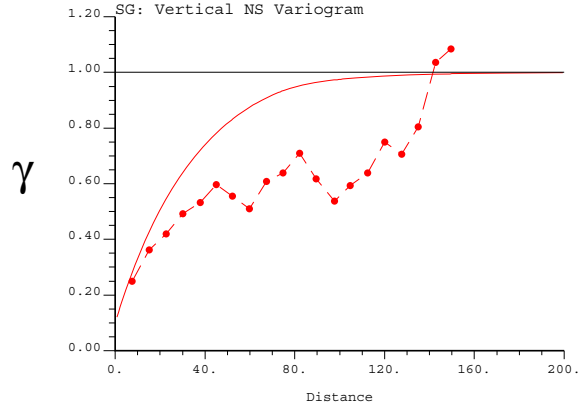
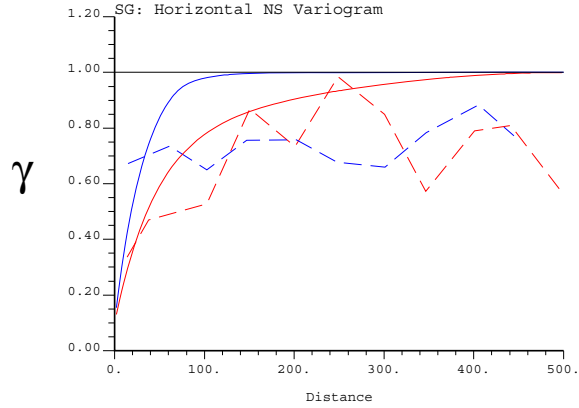
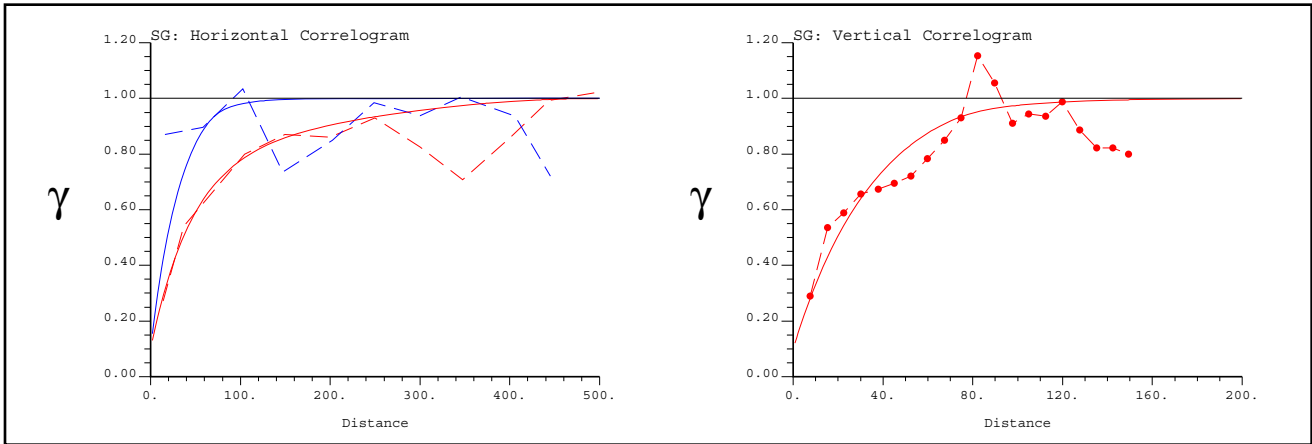
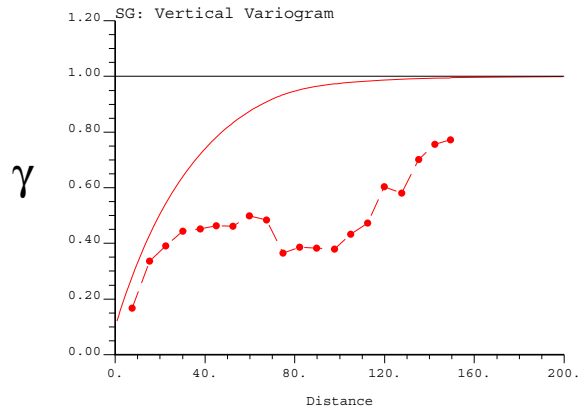
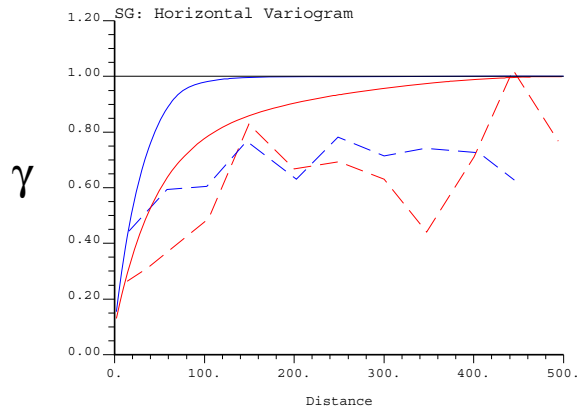
Zone 67: PT Variograms



Zone 67: S Variograms



Zone 67: SG Variograms



APPENDIX C

Estimation Parameters for Main Elements

The following tables provide parameters used in the resource estimation of Calcium, Cobalt, Chromium, Iron, Nickel, Palladium, Platinum, Sulfur and Specific Gravity for each of the seven domains. Parameters are provided in Datamine Studio 3 convention. The last table in this appendix provides a comparison of the average grade of percent Nickel for ordinary kriging and inverse power distance squared.

Table C-1: Estimation Parameters for Domain 1 with Octant Search (Estimation Pass 1)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole
Ca	80	80	120	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Co	100	100	35	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Cr	275	275	80	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Fe	200	200	80	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Ni	70	70	35	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Pd	40	40	15	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Pt	40	40	15	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
S	175	175	85	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
SG	100	100	140	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4

Table C-1: Estimation Parameters for Domain 1 without Octant Search (Estimation Pass 2 and 3)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	80	80	120	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Co	100	100	35	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Cr	275	275	80	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Fe	200	200	80	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Ni	70	70	35	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pd	40	40	15	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pt	40	40	15	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
S	175	175	85	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
SG	100	100	140	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4

Table C-2: Estimation Parameters for Domain 2 with Octant Search (Estimation Pass 1)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole
Ca	80	80	120	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Co	100	100	35	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Cr	275	275	80	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Fe	200	200	80	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Ni	70	70	35	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Pd	40	40	15	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Pt	40	40	15	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
S	175	175	85	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
SG	100	100	140	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4

Table C-2: Estimation Parameters for Domain 2 without Octant Search (Estimation Pass 2 and 3)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	80	80	120	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Co	100	100	35	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Cr	275	275	80	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Fe	200	200	80	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Ni	70	70	35	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pd	40	40	15	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pt	40	40	15	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
S	175	175	85	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
SG	100	100	140	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4

Table C-3: Estimation Parameters for Domain 3 with Octant Search (Estimation Pass 1)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 samp	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	450	650	130	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Co	850	1200	60	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Cr	850	650	100	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Fe	850	1200	250	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Ni	850	750	40	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Pd	400	300	30	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Pt	850	550	50	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
S	750	600	55	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
SG	850	900	200	305	-65	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4

Table C-3: Estimation Parameters for Domain 3 without Octant Search (Estimation Pass 2 and 3)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 samp	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	450	650	130	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Co	850	1200	60	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Cr	850	650	100	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Fe	850	1200	250	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Ni	850	750	40	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pd	400	300	30	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pt	850	550	50	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
S	750	600	55	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
SG	850	900	200	305	-65	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4

Table C-4: Estimation Parameters for Domain 4 with Octant Search (Estimation Pass 1)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 samp	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	450	450	180	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Co	600	200	55	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Cr	900	600	100	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Fe	900	1000	125	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Ni	900	1000	60	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Pd	550	300	25	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Pt	450	225	25	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
S	900	800	75	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
SG	450	250	110	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4

Table C-4: Estimation Parameters for Domain 4 without Octant Search (Estimation Pass 2 and 3)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 samp	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	450	450	180	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Co	600	200	55	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Cr	900	600	100	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Fe	900	1000	125	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Ni	900	1000	60	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pd	550	300	25	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pt	450	225	25	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
S	900	800	75	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
SG	450	250	110	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4

Table C-5: Estimation Parameters for Domain 5 with Octant Search (Estimation Pass 1)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole
Ca	325	650	20	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Co	600	500	55	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Cr	975	975	100	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Fe	975	975	100	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Ni	800	600	40	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Pd	300	400	20	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Pt	170	225	20	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
S	975	600	75	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
SG	200	180	85	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4

Table C-5: Estimation Parameters for Domain 5 without Octant Search (Estimation Pass 2 and 3)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	325	650	20	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Co	600	500	55	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Cr	975	975	100	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Fe	975	975	100	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Ni	800	600	40	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pd	300	400	20	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pt	170	225	20	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
S	975	600	75	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
SG	200	180	85	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4

Table C-6: Estimation Parameters for Domain 6 with Octant Search (Estimation Pass 1)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole
Ca	150	300	30	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Co	450	400	40	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Cr	850	550	80	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Fe	925	675	135	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Ni	550	675	40	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Pd	350	350	40	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
Pt	375	375	20	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
S	550	675	65	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4
SG	500	85	90	315	-60	0	3	2	3	9	12	0	0	0	0	0	1	3	2	5	4

Table C-6: Estimation Parameters for Domain 6 without Octant Search (Estimation Pass 2 and 3)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	150	300	30	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Co	450	400	40	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Cr	850	550	80	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Fe	925	675	135	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Ni	550	675	40	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pd	350	350	40	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pt	375	375	20	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
S	550	675	65	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
SG	500	85	90	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4

Table C-7: Estimation Parameters for Domain 7 with Octant Search (Estimation Pass 1)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	150	300	30	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Co	450	400	40	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Cr	775	550	80	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Fe	775	1250	135	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Ni	550	850	40	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Pd	350	350	40	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
Pt	375	375	20	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
S	550	900	65	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4
SG	500	85	90	315	-60	0	3	2	3	9	12	0	0	0	0	0	0	1	3	2	5	4

Table C-7: Estimation Parameters for Domain 7 without Octant Search (Estimation Pass 2 and 3)

Element	Dist 1	Dist 2	Dist 3	Ang 1	Ang 2	Ang 3	Axis 1	Axis 2	Axis 3	Min samp	Max samp	SV 2 fact	Min samp	MaxSV 3 fact	Min samp	Max samp	Oct meth	Min Oct	Min / Oct	Max / Oct	Max comp / hole	
Ca	150	300	30	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Co	450	400	40	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Cr	775	550	80	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Fe	775	1250	135	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Ni	550	850	40	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pd	350	350	40	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
Pt	375	375	20	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
S	550	900	65	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4
SG	500	85	90	315	-60	0	3	2	3	9	12	2	5	15	10	3	15	0	0	0	0	4

APPENDIX D

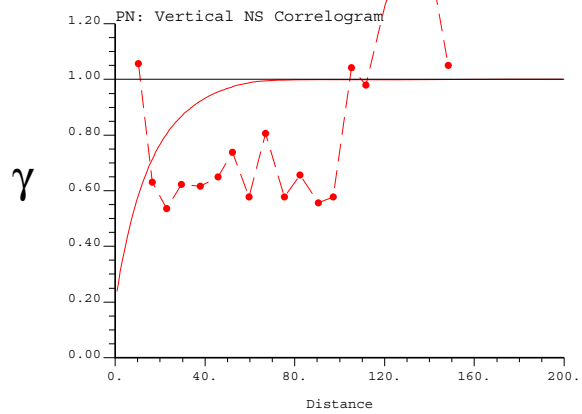
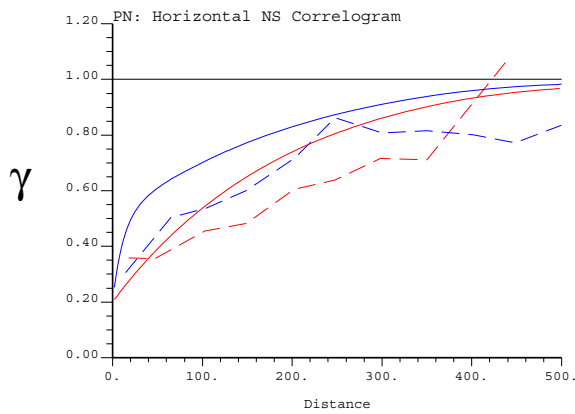
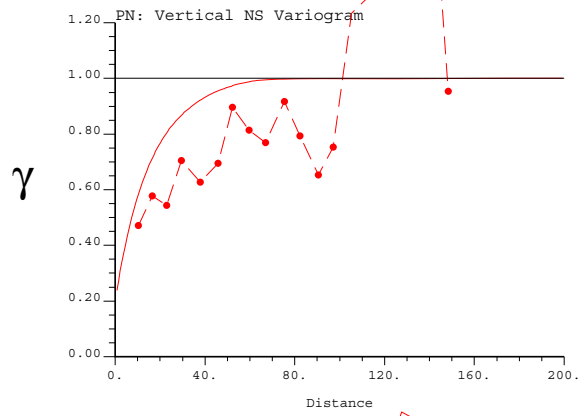
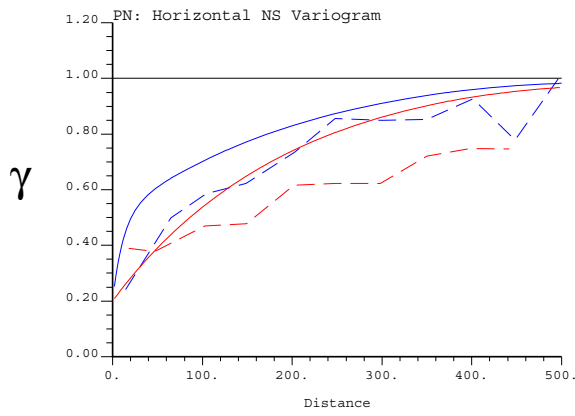
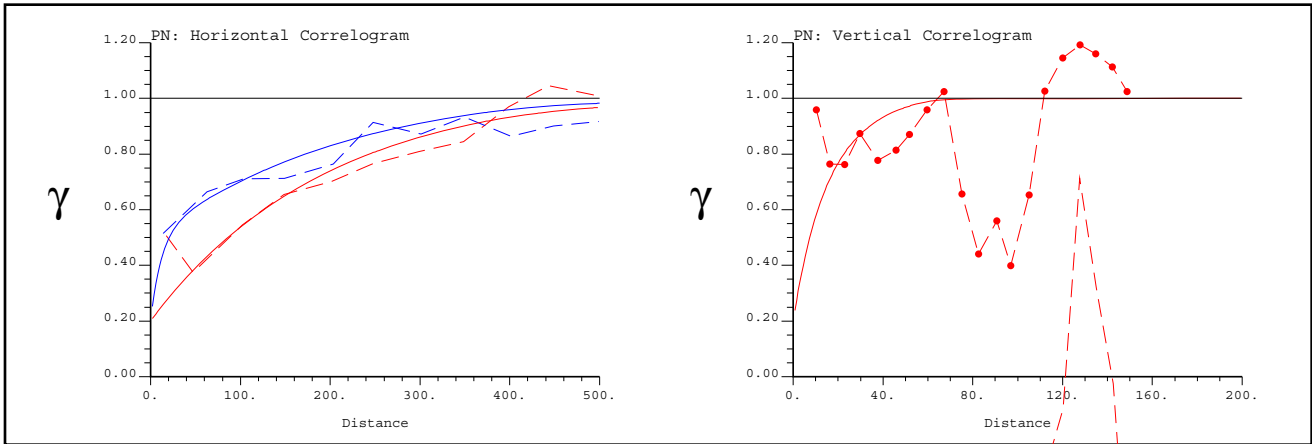
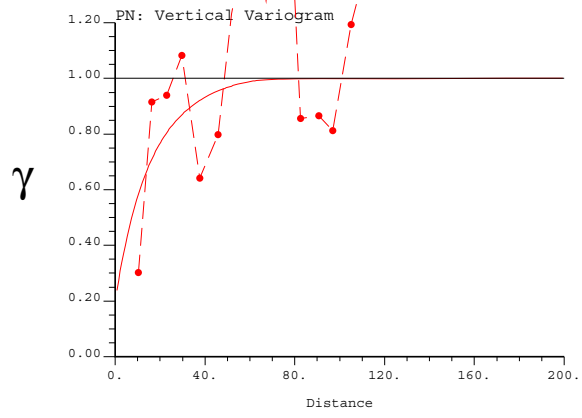
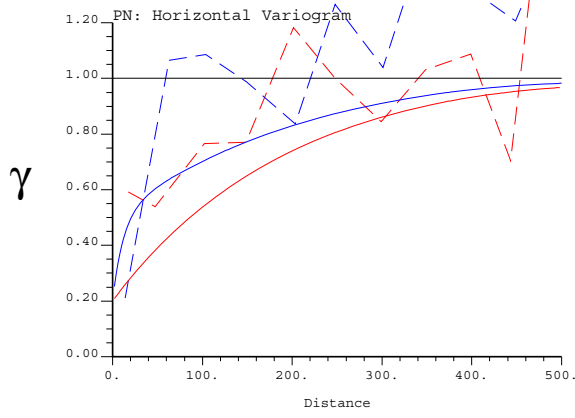
Variogram Models for Estimation of Mineral Abundances

Table D1: Royal Nickel Dumont Project Variograms Used for Mineral Abundance Estimation. Note That Angles ANG1, ANG2 and ANG3 Conform to GSLip Conventions.

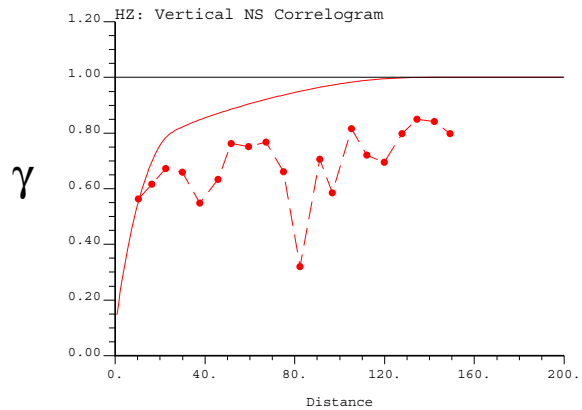
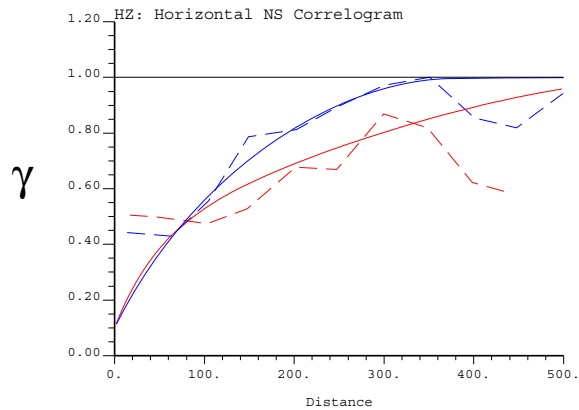
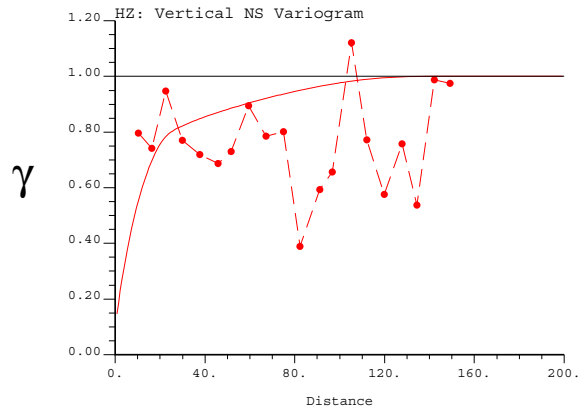
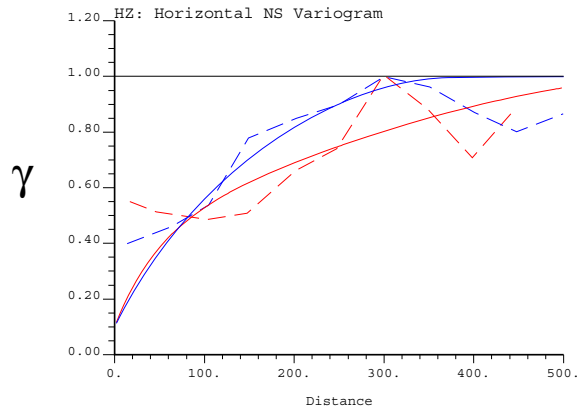
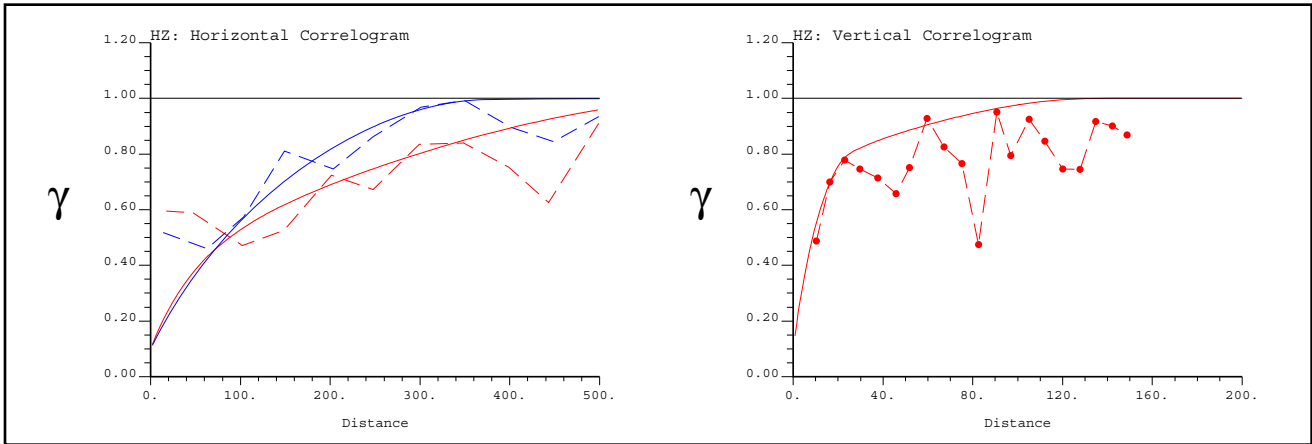
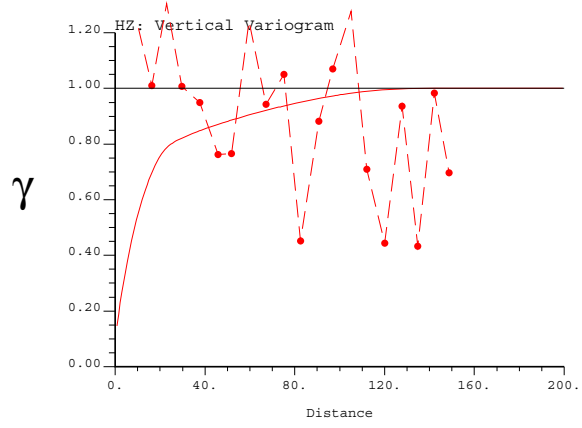
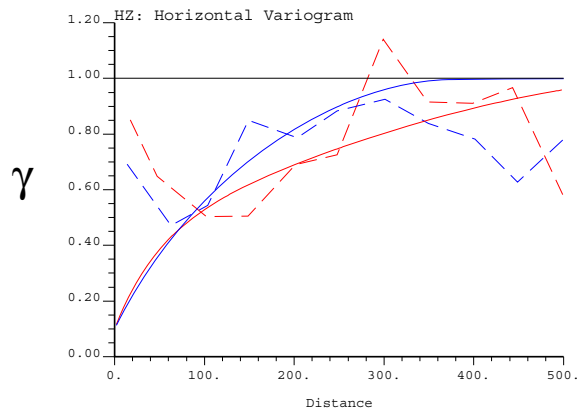
Domain	Variable	CO	No. Structure	Structure	Type	CC	A_HMAX	A_HMIN	A_VERT	ANG1	ANG2	ANG3
ALL	PN	0.2	3	1	2	0.3	500	35	40	45	-60	0
				2	2	0.35	500	500	40	45	-60	0
				3	1	0.15	500	500	70	45	-60	0
	HZ	0.1	3	1	2	0.35	150	250	25	45	-60	0
				2	1	0.3	650	375	25	45	-60	0
				3	1	0.25	650	375	135	45	-60	0
	AW	0.2	3	1	2	0.3	50	275	40	45	-60	0
				2	2	0.25	350	275	40	45	-60	0
				3	1	0.25	350	275	200	45	-60	0
	OL	0.1	2	1	2	0.3	250	800	160	45	-60	0
				2	1	0.6	1750	800	160	45	-60	0
	MT	0.1	2	1	2	0.35	100	120	70	45	-60	0
				2	1	0.55	1600	800	160	45	-60	0
	SP	0.1	2	1	1	0.45	125	125	100	45	-60	0
				2	1	0.45	1500	550	100	45	-60	0
	CG	0.1	3	1	2	0.4	75	125	150	45	-60	0
				2	1	0.2	500	700	150	45	-60	0
	SPLFE	0.1	2	3	1	0.3	500	700	150	45	-60	0
				1	2	0.4	150	500	300	45	-60	0
	SPFE	0.15	2	2	1	0.5	2000	750	300	45	-60	0
				1	1	0.15	500	900	200	45	-60	0
BRU	0.2	2	1	2	0.4	80	40	25	45	-60	0	
			2	1	0.4	2000	450	160	45	-60	0	

Calculated spatial metrics with the modelled variogram structure superimposed on the various metrics are shown on the following pages. In all cases, the left column of figures corresponds to the down dip direction (blue lines, defined by azimuth of ANG1 and dip of ANG2 in preceding tables) and the along-strike direction (red lines, defined by azimuth of ANG1+90 degrees and dip of zero degrees). The right side columns correspond to the third principle direction (defined by azimuth of ANG1 degrees and dip of 90+ANG2), which lies perpendicular to the plane defined by the down dip and along strike directions. In each direction, the calculated, experimental values are shown as dashed lines, while the fitted model is shown as a solid line.

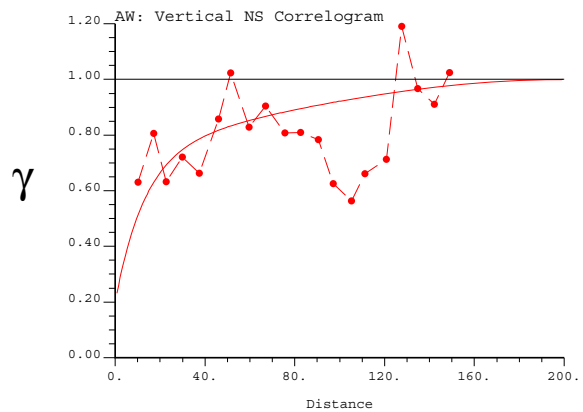
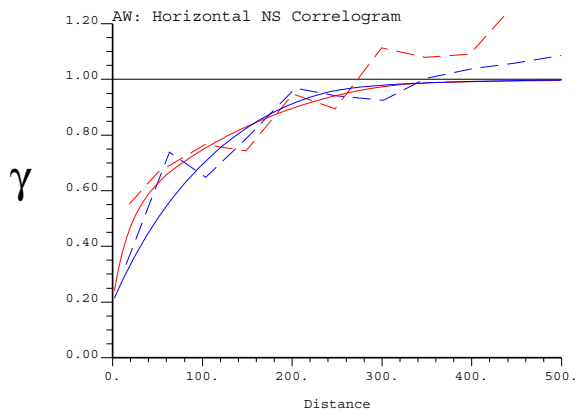
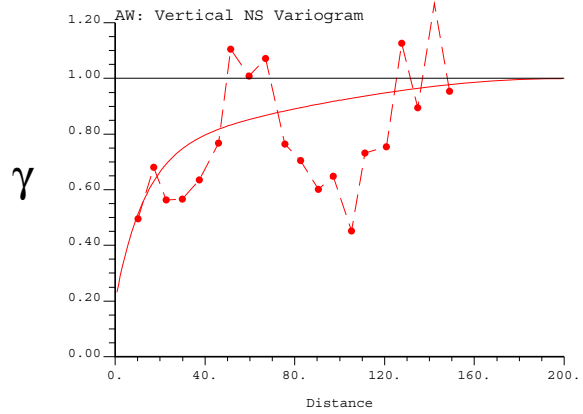
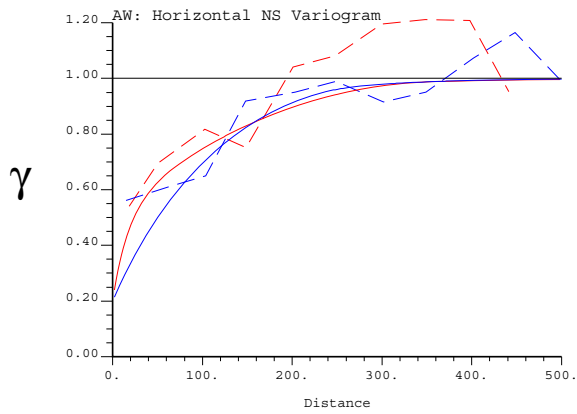
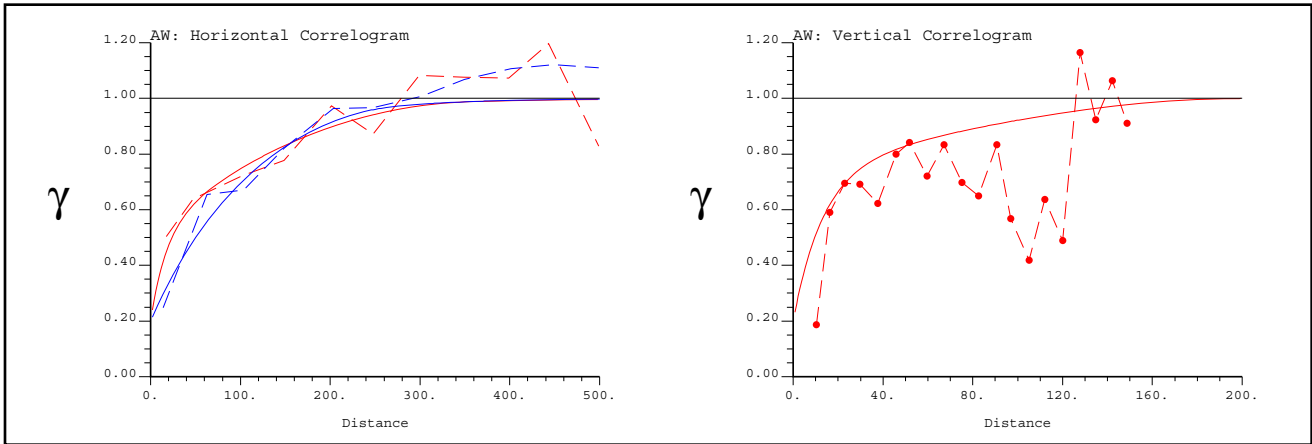
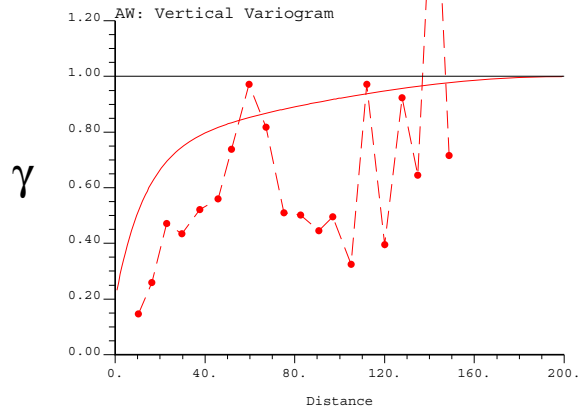
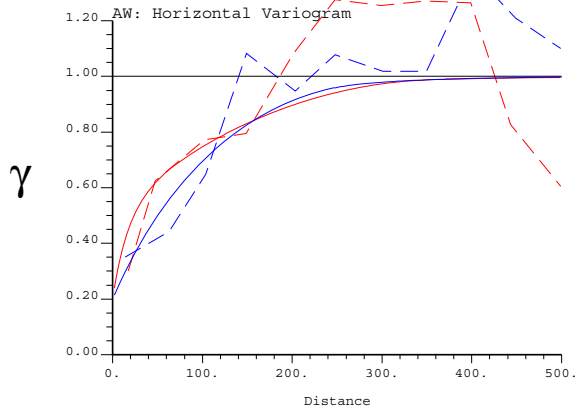
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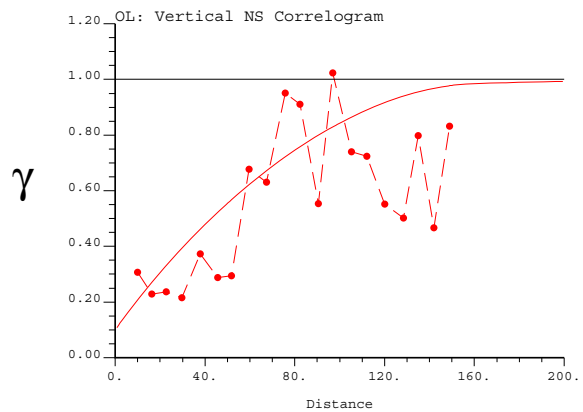
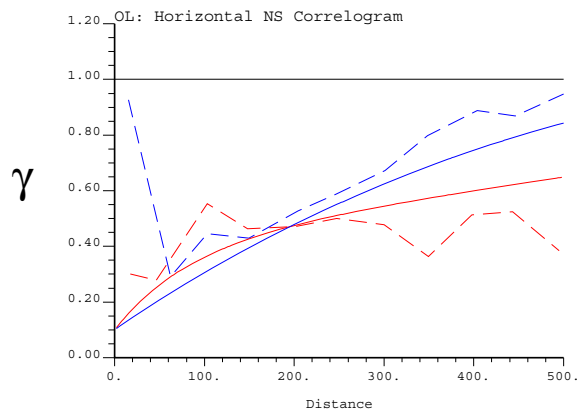
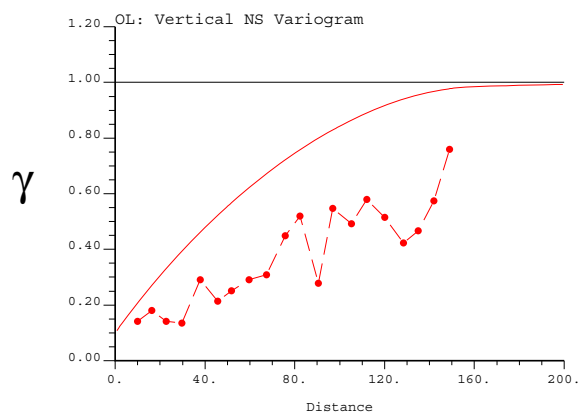
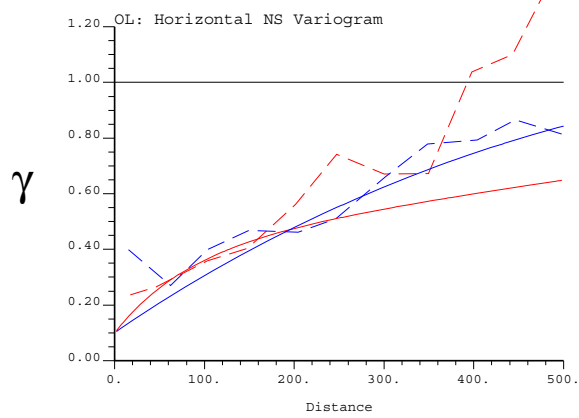
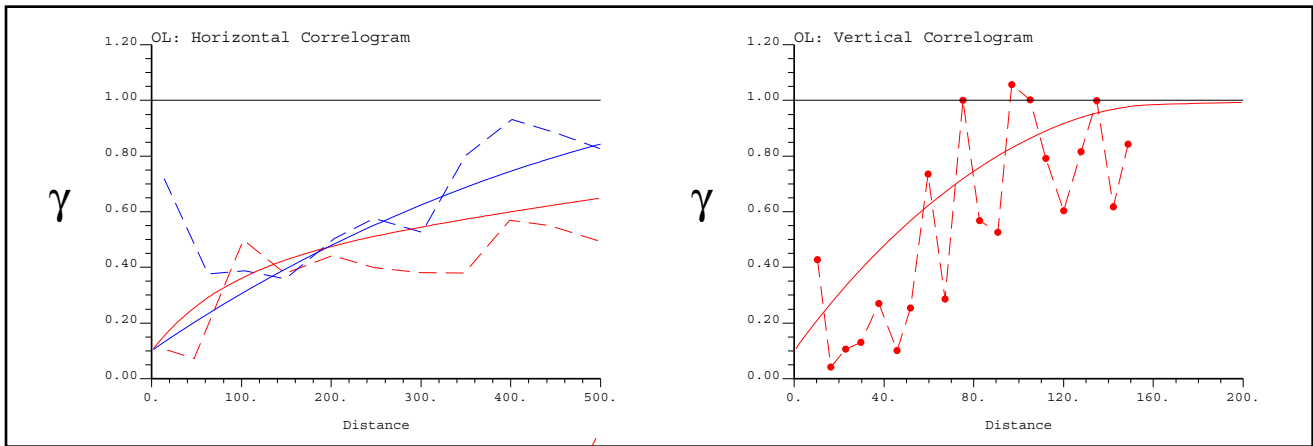
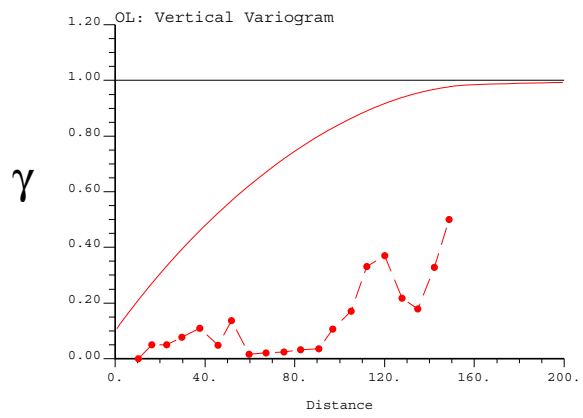
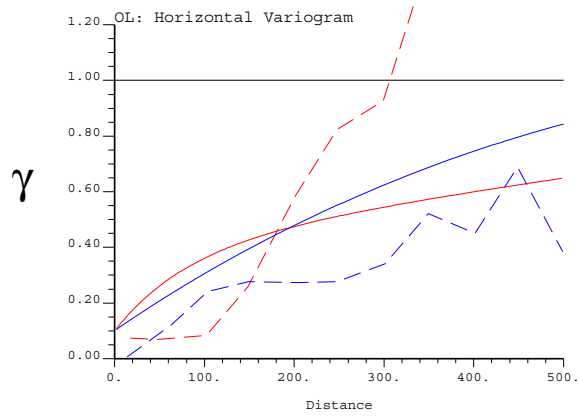
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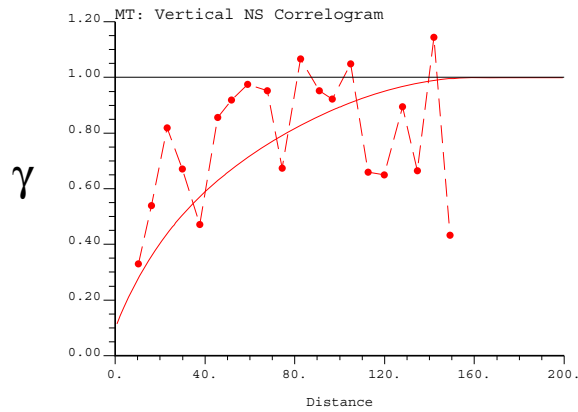
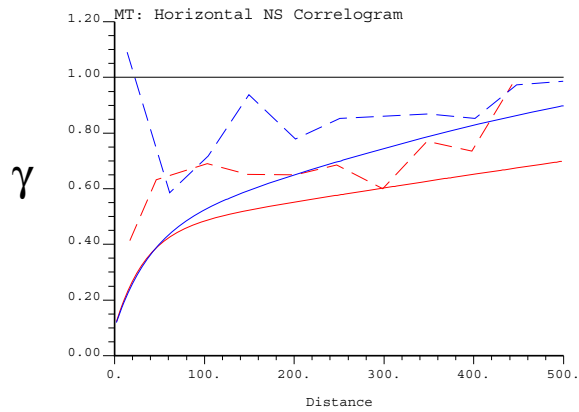
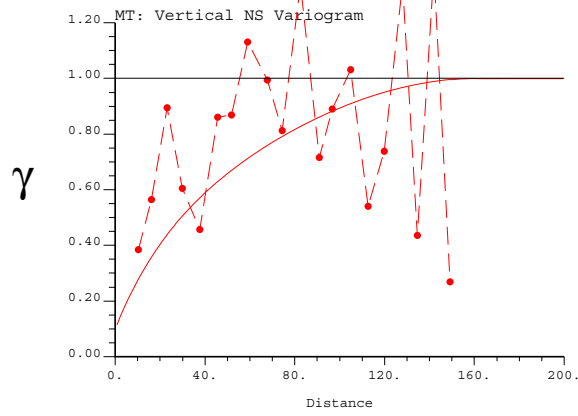
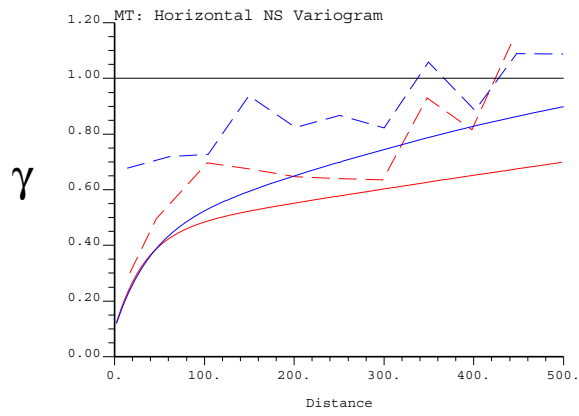
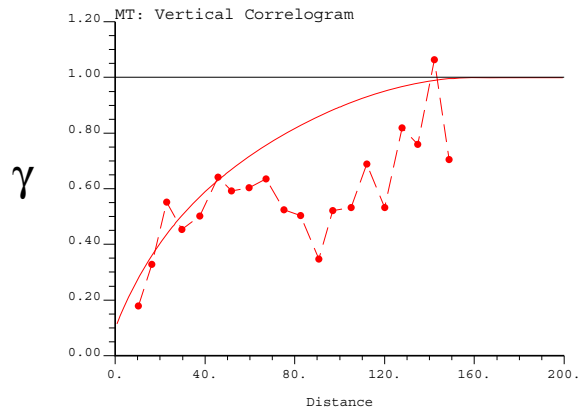
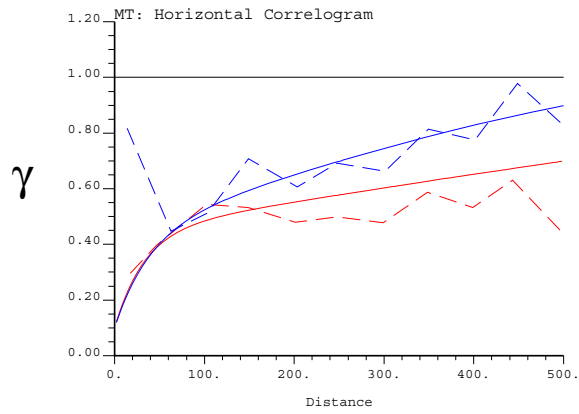
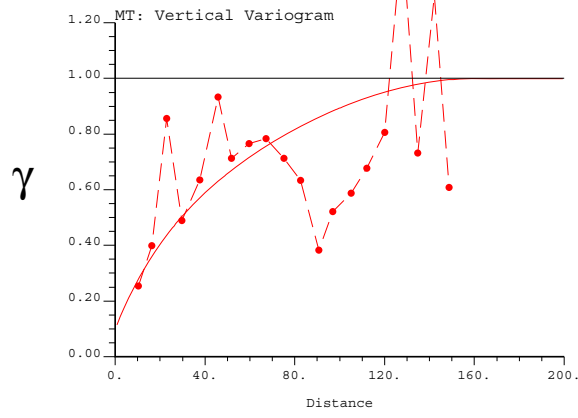
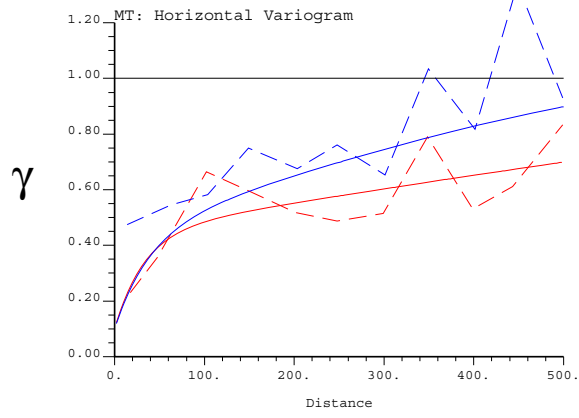
Zone all: AW Variograms



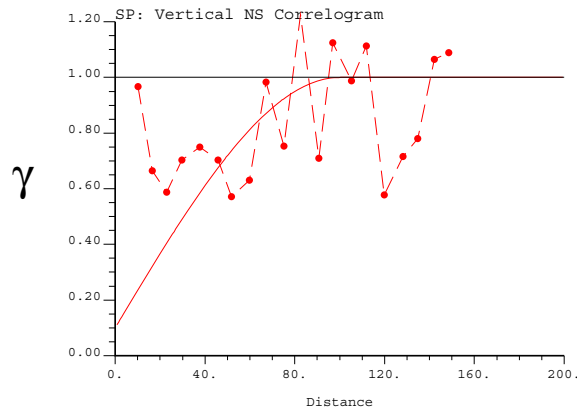
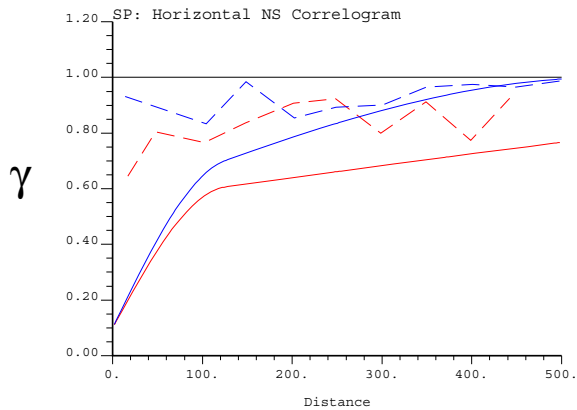
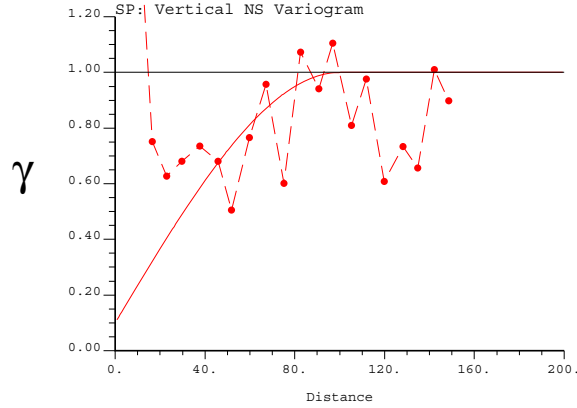
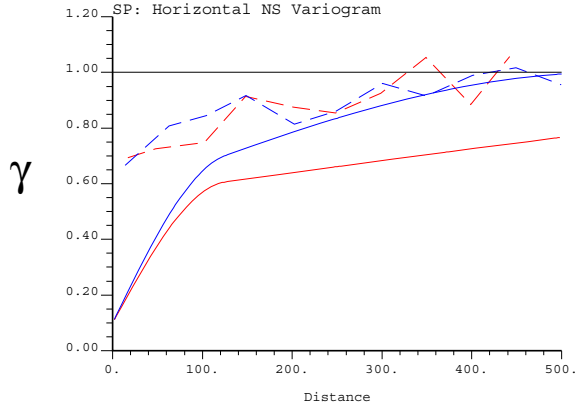
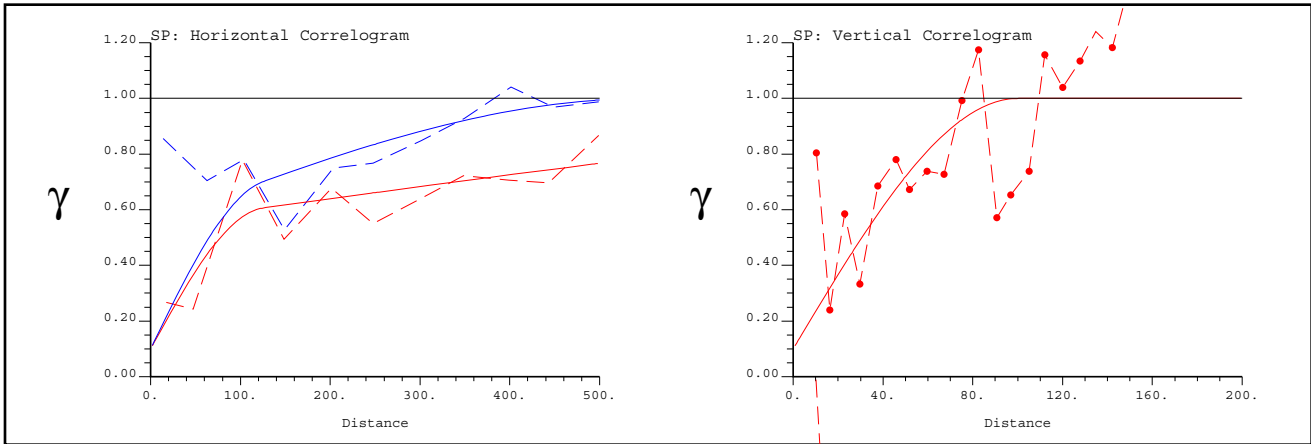
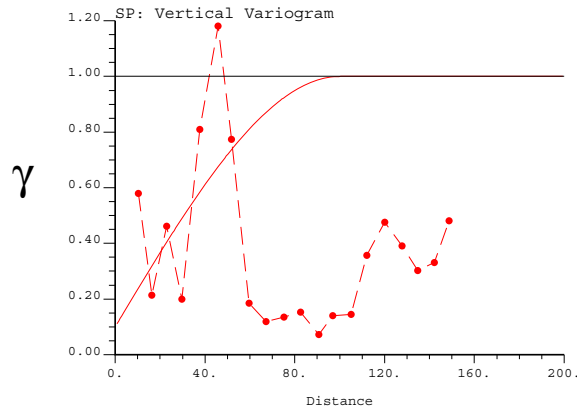
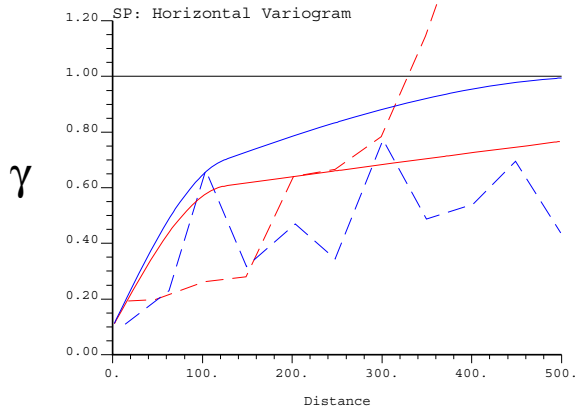
Zone all: OL Variograms



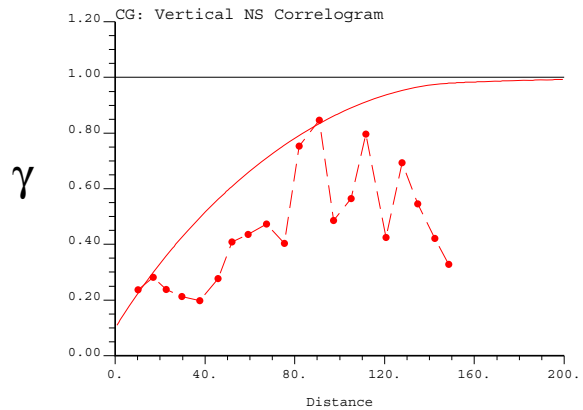
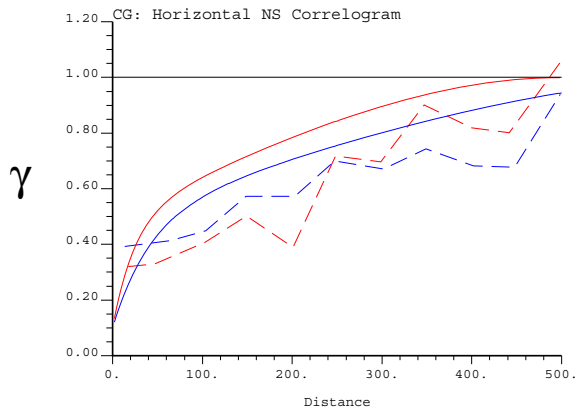
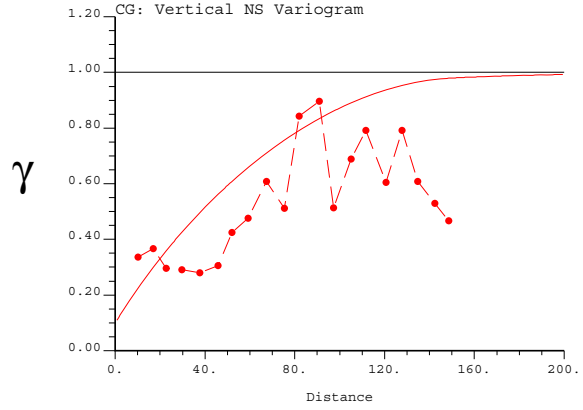
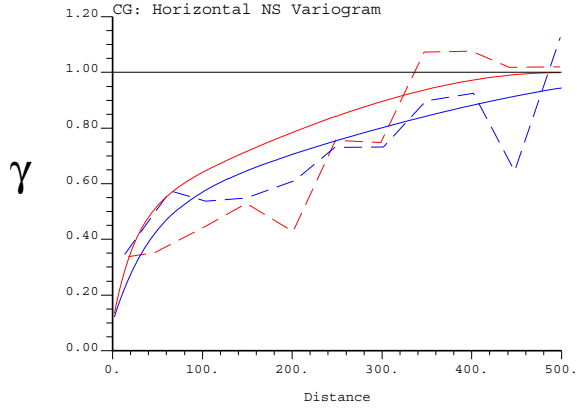
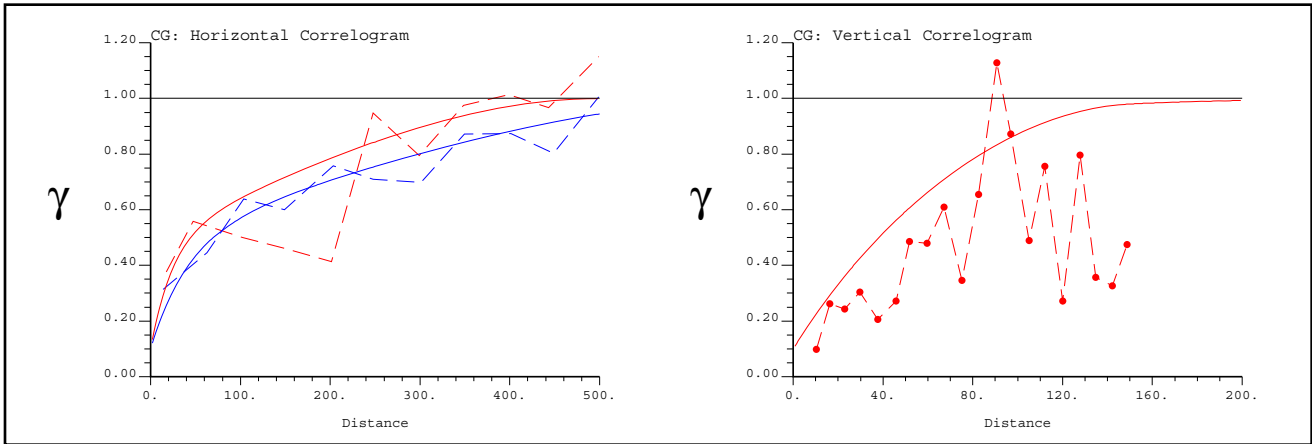
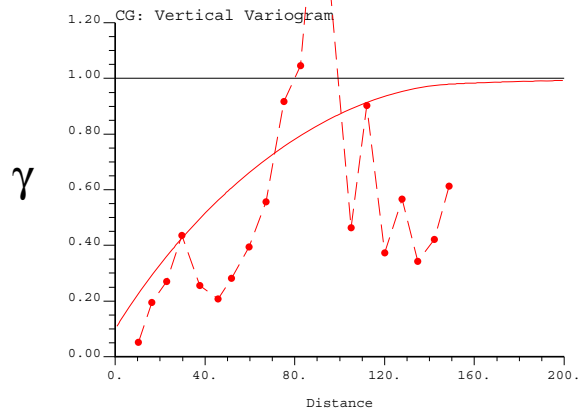
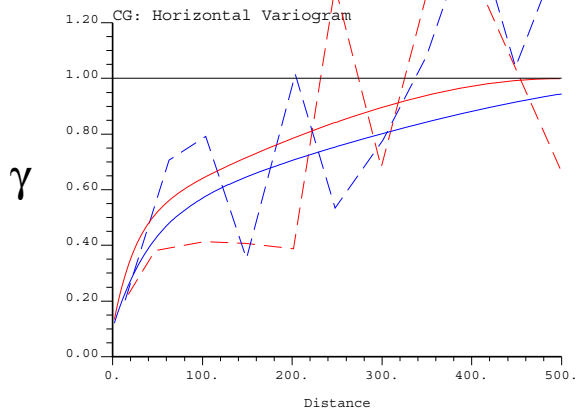
Zone all: MT Variograms



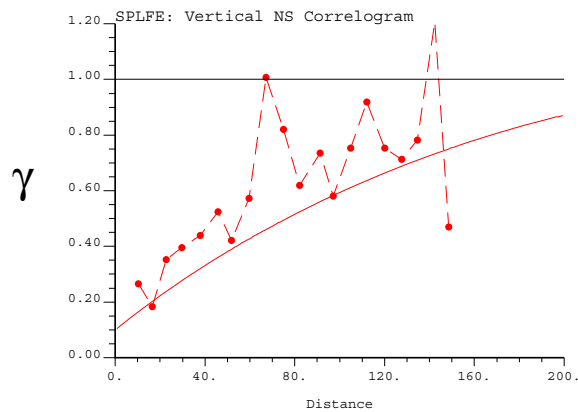
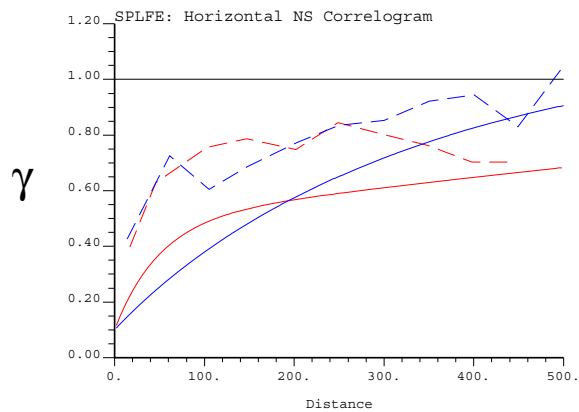
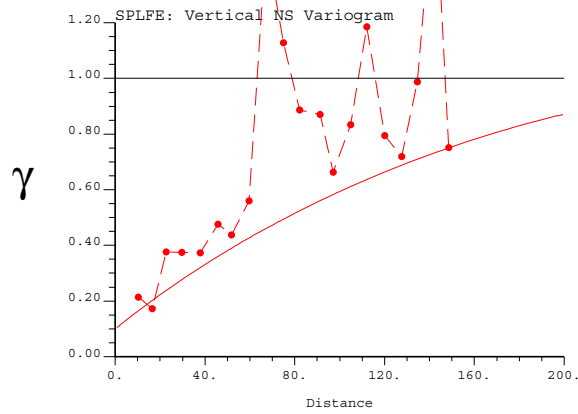
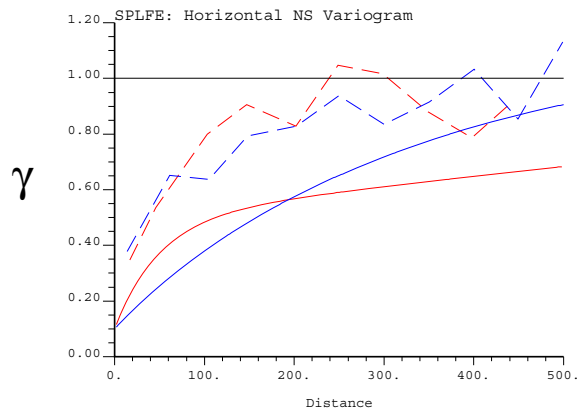
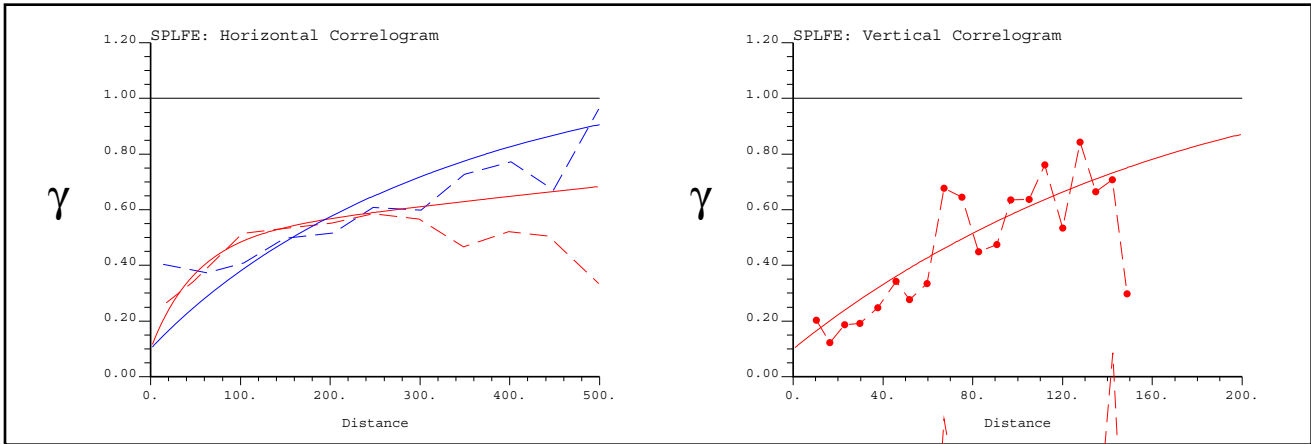
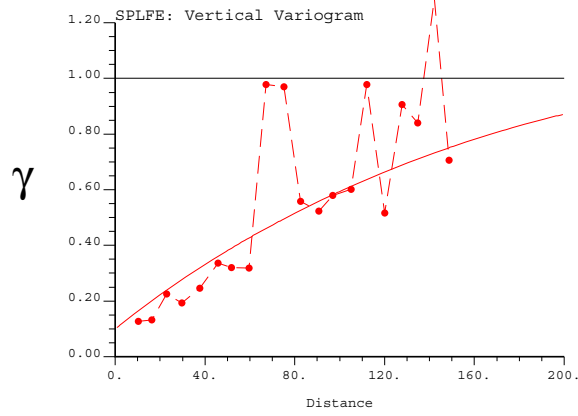
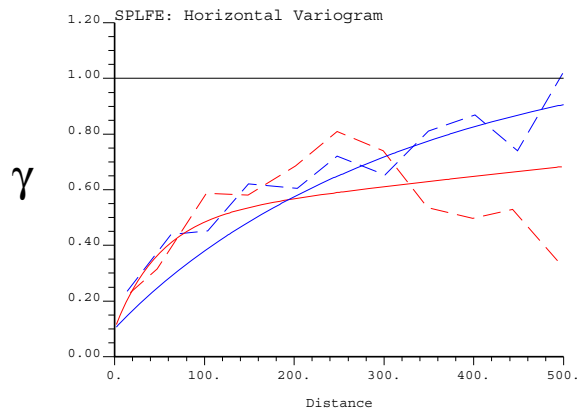
Zone all: SP Variograms



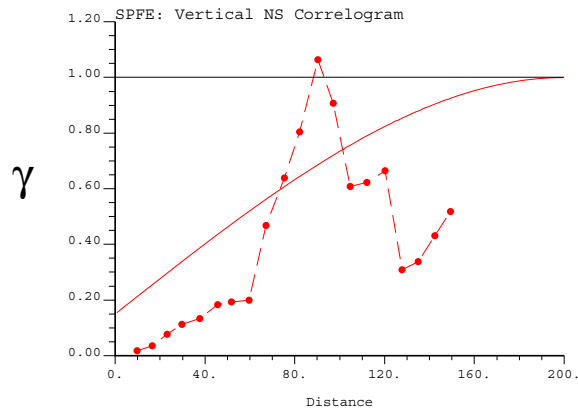
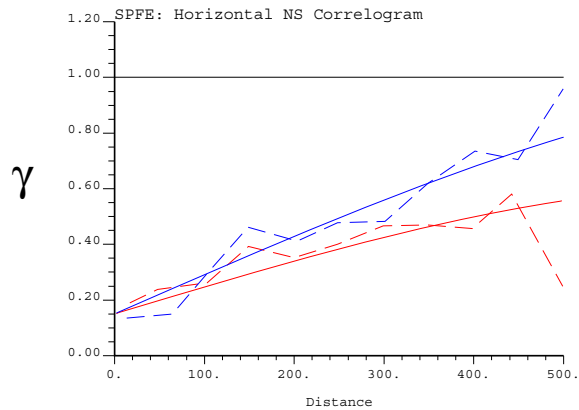
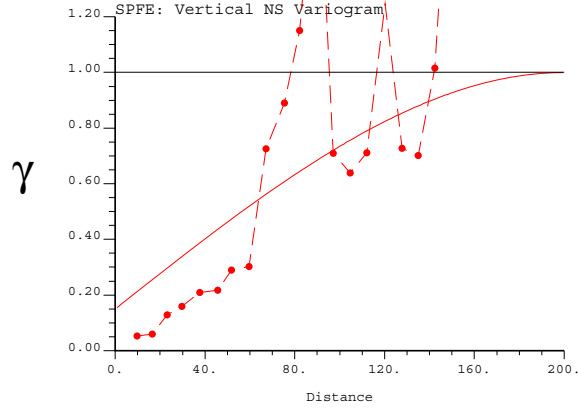
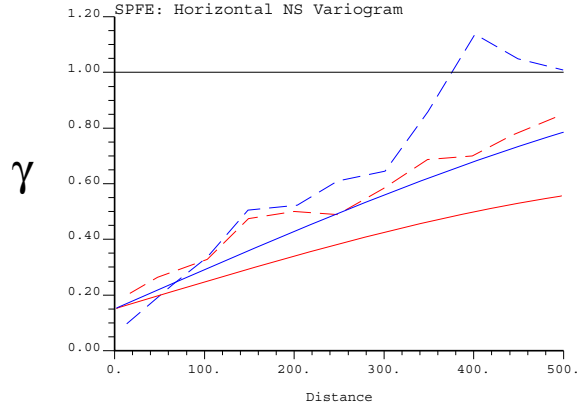
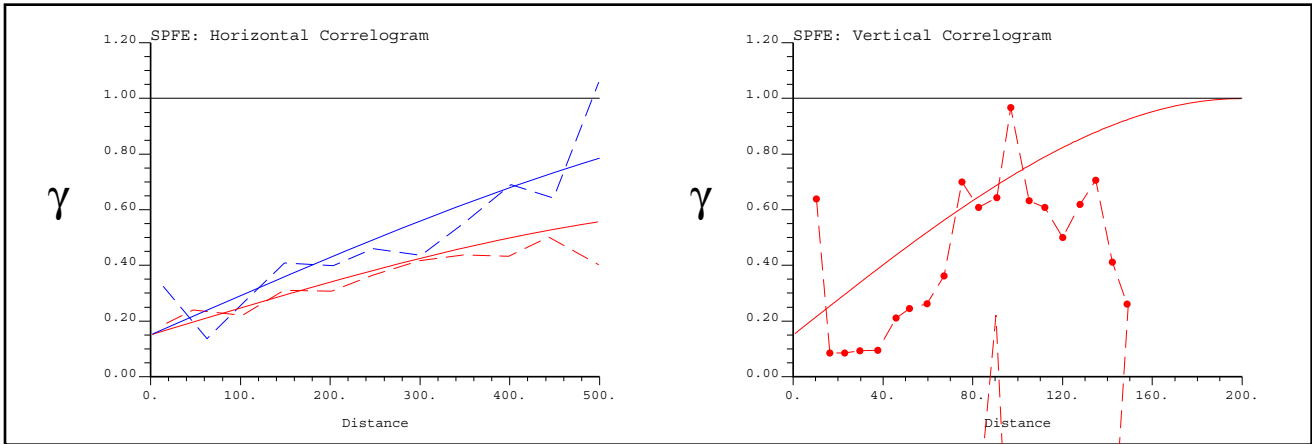
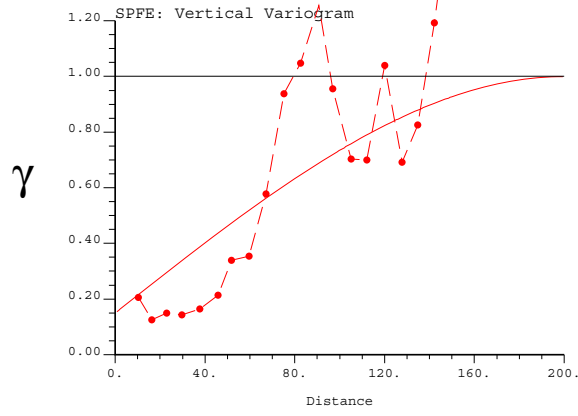
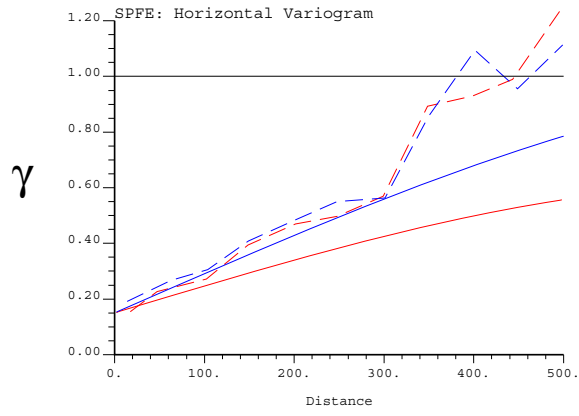
Zone all: CG Variograms



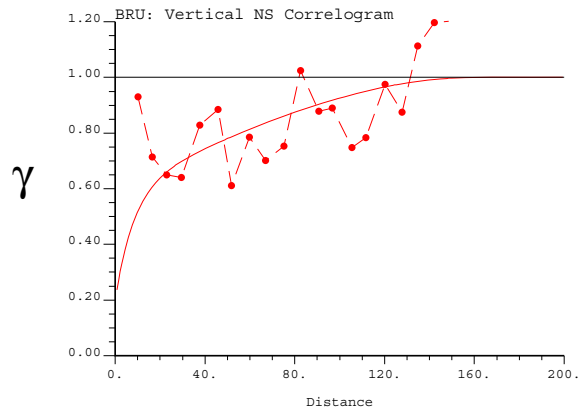
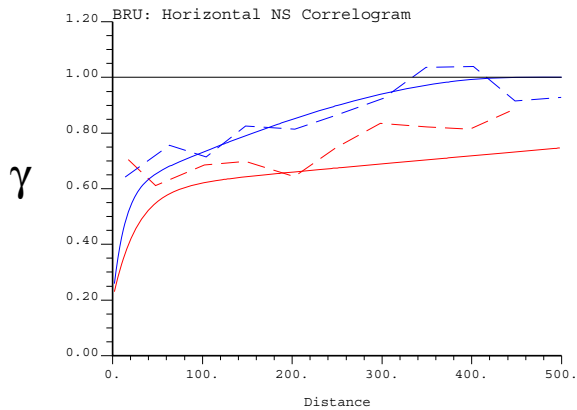
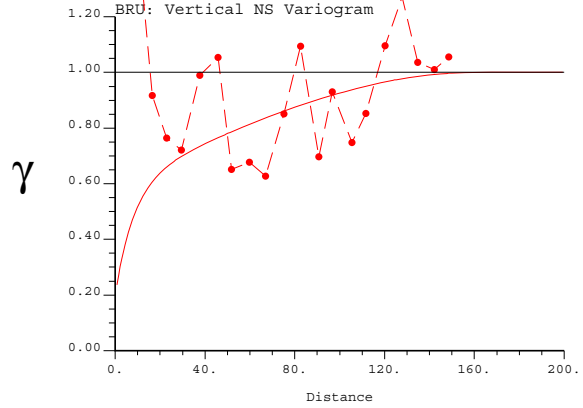
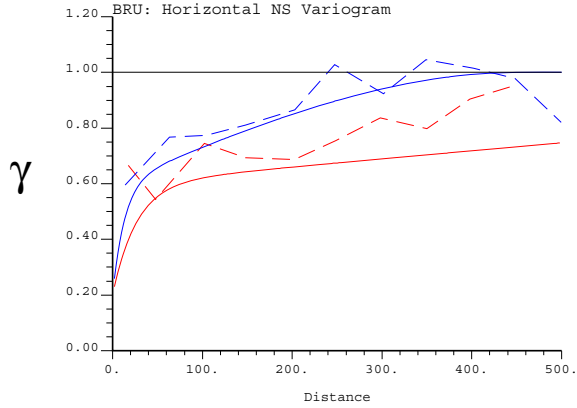
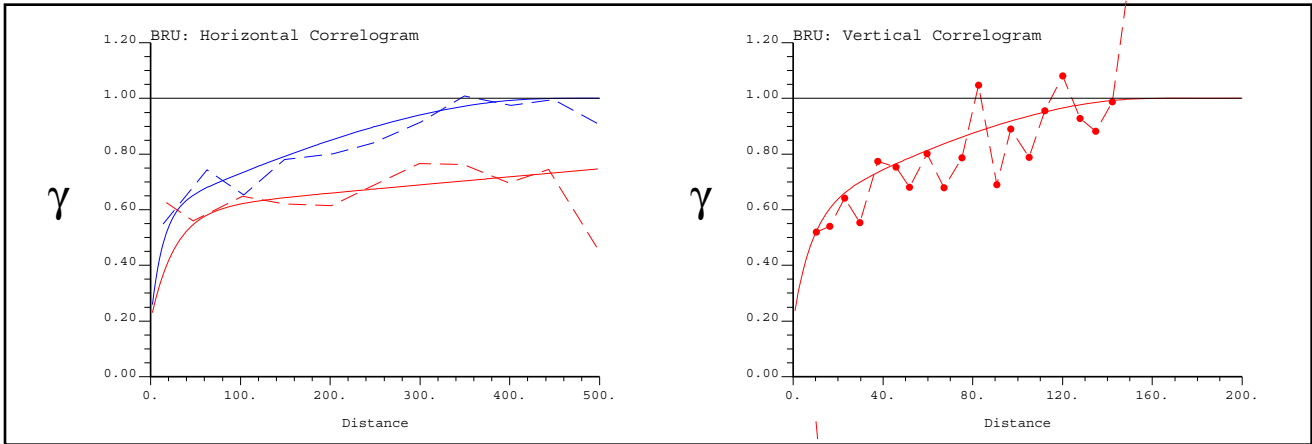
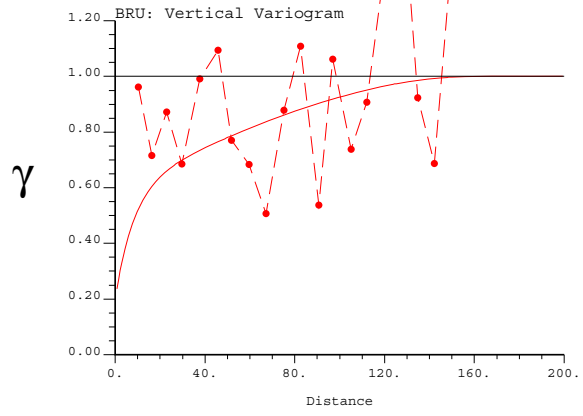
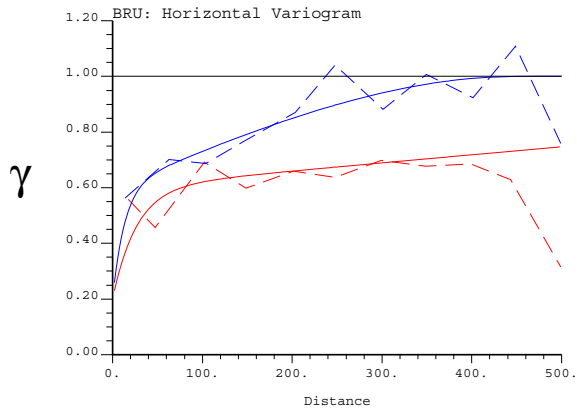
Zone all: SPLFE Variograms



Zone all: SPFE Variograms



Zone all: BRU Variograms



APPENDIX E

Block Model Validation – Elements

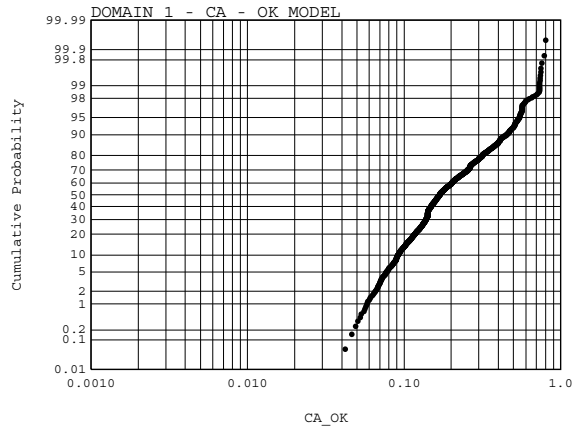
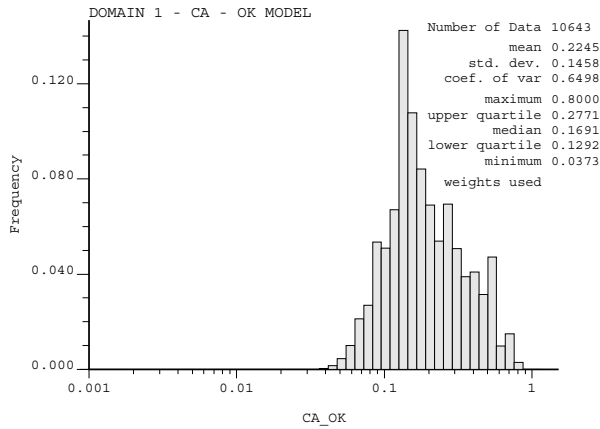
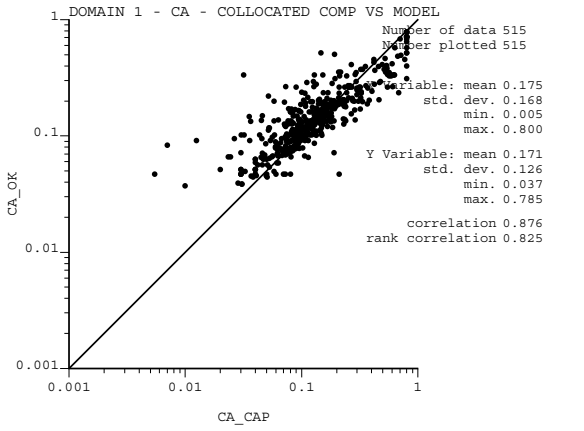
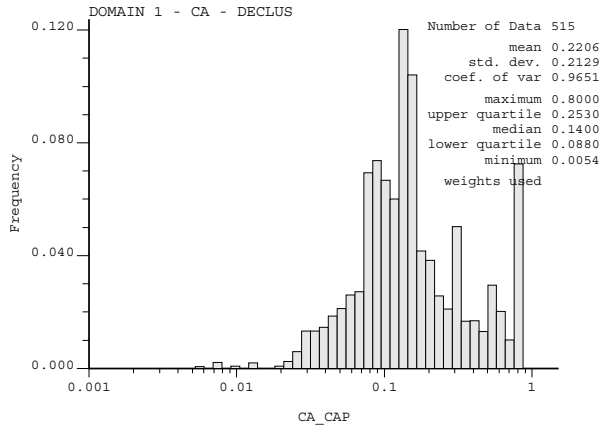
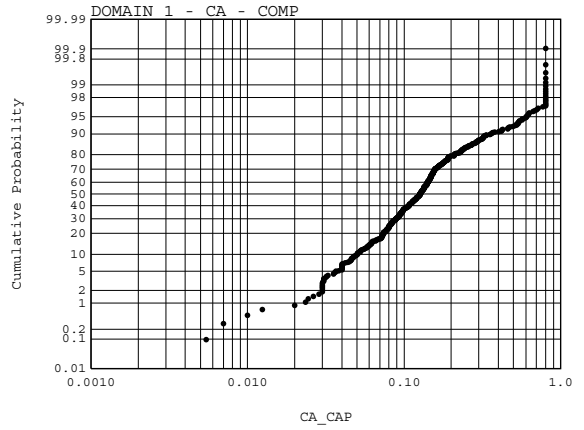
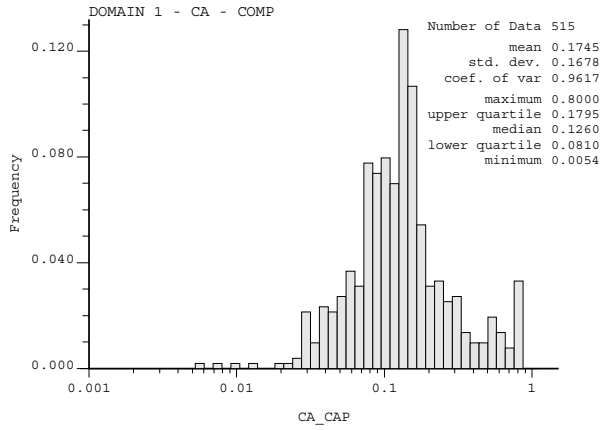
Table 1: Capped Composites

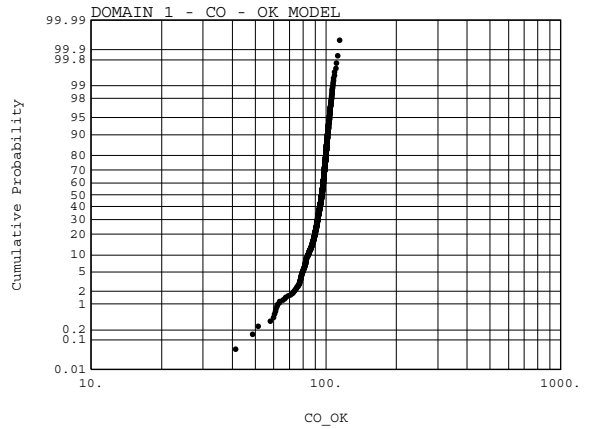
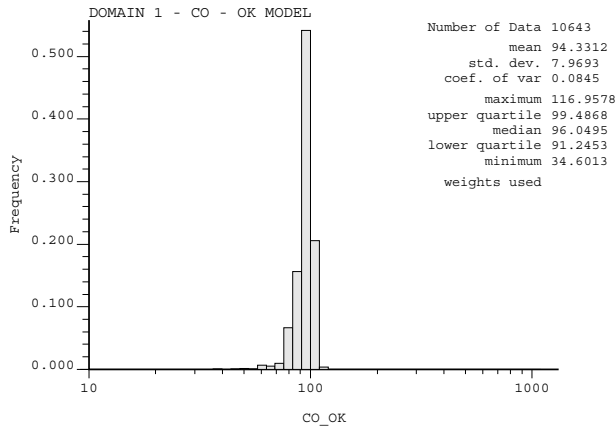
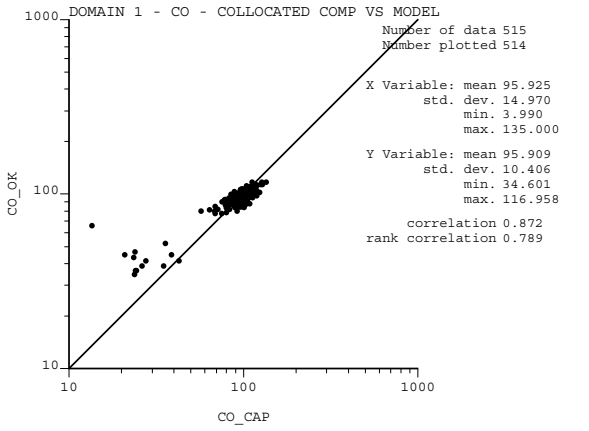
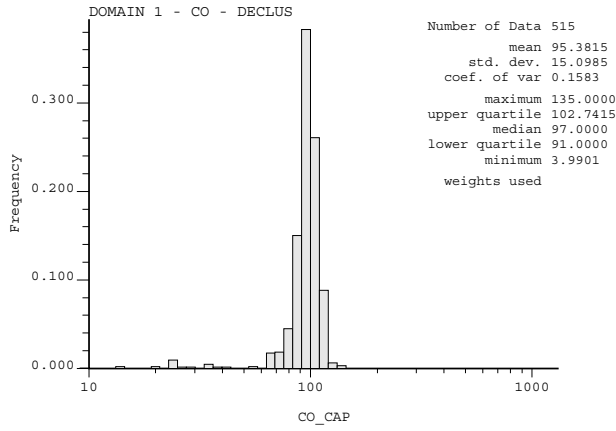
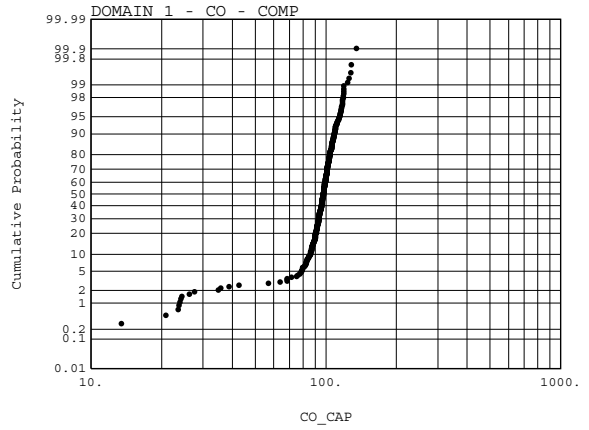
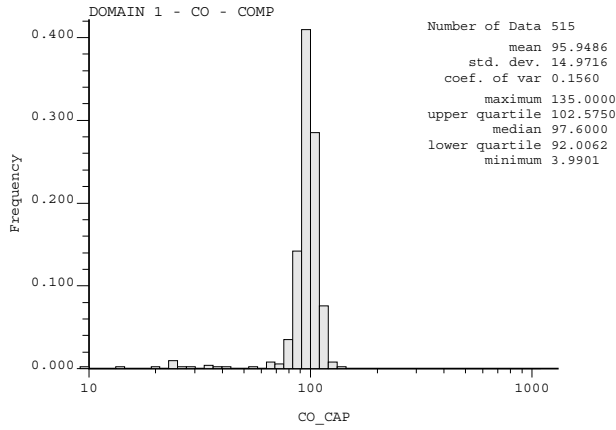
7.5 m Capped Composites						
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
1	CA	515	0.18	0.17	0.005	0.8
	CO	515	96.167	14.68	3.99	135
	CR	515	1666.512	1160.004	43.257	4100
	FE	515	4.527	0.815	0.166	7
	NI	515	0.244	0.045	0.01	0.34
	PD	515	0.01	0.012	0.001	0.055
	PT	515	0.007	0.007	0.002	0.028
	S	515	0.065	0.046	0.005	0.21
SG	515	2.608	0.065	2.39	2.841	
2	CA	481	0.12	0.128	0.01	0.5
	CO	481	99.825	10.384	35.388	125
	CR	481	1530.882	845.105	471.694	3750
	FE	481	4.7	0.636	3.303	6.8
	NI	481	0.249	0.037	0.057	0.35
	PD	481	0.009	0.013	0.001	0.045
	PT	481	0.007	0.006	0.002	0.022
	S	481	0.063	0.045	0.005	0.21
SG	481	2.605	0.08	2.434	2.99	
3	CA	4111	0.065	0.064	0.005	0.36
	CO	4111	111.938	17.923	0.5	200
	CR	4111	1302.962	535.174	0.5	3200
	FE	4111	5.136	1.102	0.005	8.75
	NI	4111	0.276	0.097	0	0.875
	PD	4111	0.027	0.059	0.001	0.7
	PT	4111	0.016	0.027	0.002	0.34
	S	4111	0.102	0.127	0.005	0.85
SG	4111	2.561	0.085	2.265	3.093	
4	CA	3263	0.081	0.069	0.005	0.6
	CO	3263	111.067	17.442	0.5	200
	CR	3263	1686.802	859.381	0.5	3750
	FE	3263	5.309	1.066	0.005	9.75
	NI	3263	0.278	0.093	0	0.75
	PD	3263	0.02	0.031	0.001	0.285
	PT	3263	0.012	0.017	0.002	0.14
	S	3263	0.086	0.101	0.005	0.75
SG	3263	2.576	0.045	2.353	2.868	
5	CA	2293	0.079	0.099	0.005	0.6
	CO	2293	106.851	16.115	0.5	180
	CR	2293	1300.315	699.122	0.5	3300
	FE	2293	5.11	1.152	0.005	9.25
	NI	2293	0.275	0.083	0	0.625
	PD	2293	0.019	0.023	0.001	0.14
	PT	2293	0.012	0.012	0.002	0.065
	S	2293	0.082	0.095	0.005	0.45
SG	2293	2.583	0.068	2.386	2.911	
6	CA	940	0.167	0.298	0.005	1.4
	CO	940	101.709	15.516	0.5	140
	CR	940	920.307	547.303	0.5	2600
	FE	940	4.889	1.003	0.005	6.75
	NI	940	0.254	0.067	0	0.55
	PD	940	0.013	0.018	0.001	0.08
	PT	940	0.01	0.013	0.002	0.075
	S	940	0.049	0.054	0.005	0.33
SG	940	2.586	0.073	2.383	2.879	

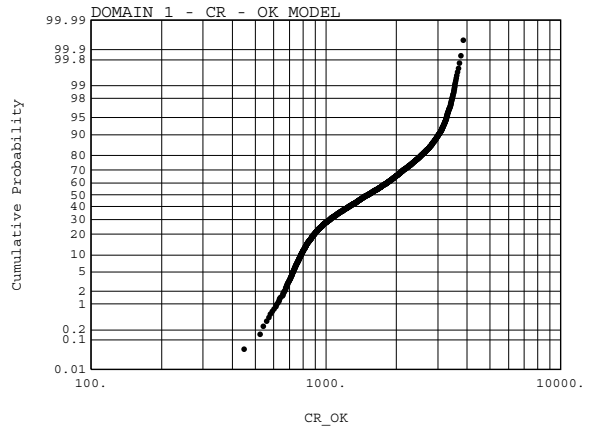
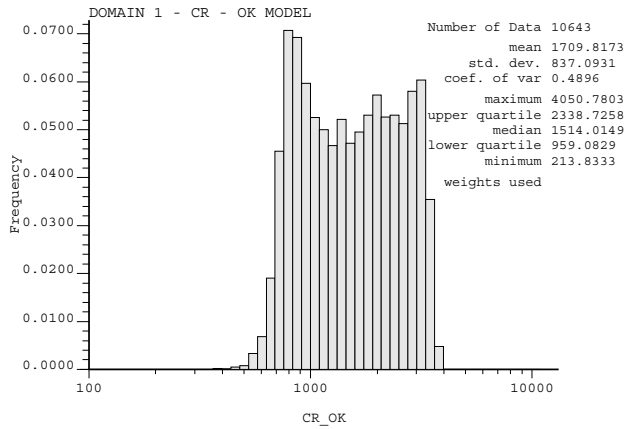
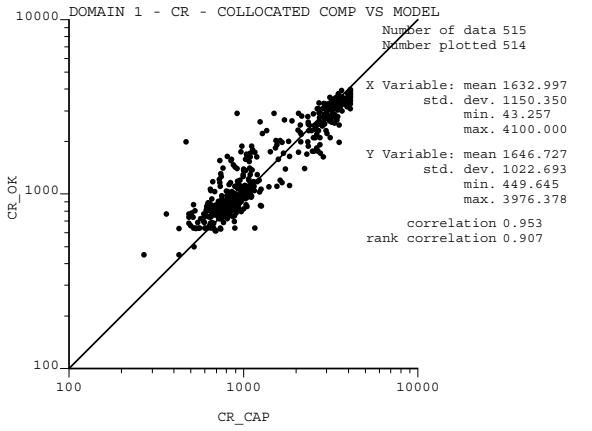
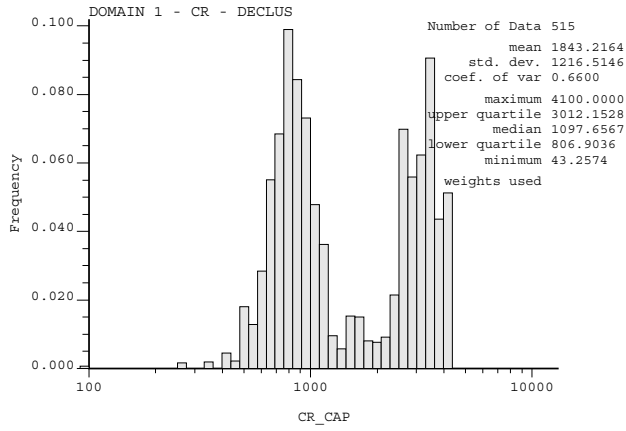
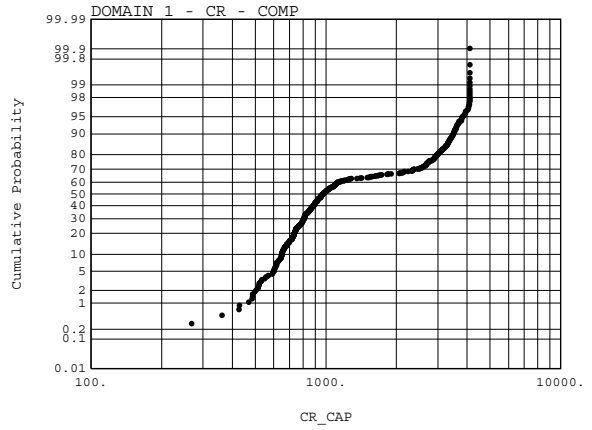
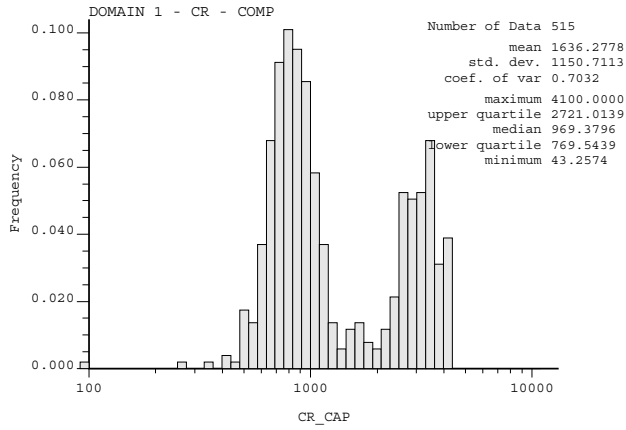
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
7	CA	1102	0.097	0.179	0.005	0.9
	CO	1102	98.487	12.772	0.5	140
	CR	1102	849.559	447.022	0.5	2300
	FE	1102	4.731	0.926	0.005	7.2
	NI	1102	0.246	0.038	0	0.38
	PD	1102	0.007	0.015	0.001	0.11
	PT	1102	0.006	0.007	0.002	0.038
	S	1102	0.029	0.024	0.005	0.105
	SG	1102	2.605	0.093	2.34	3.077

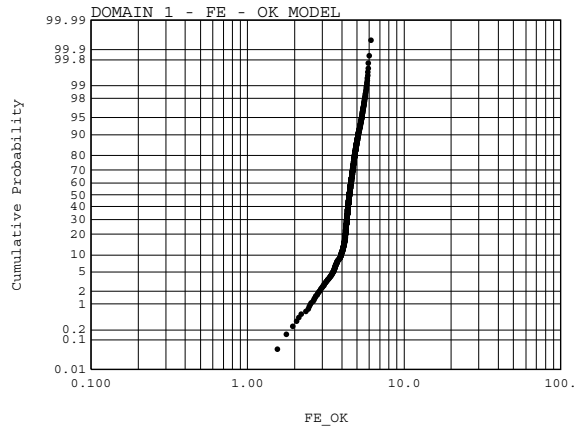
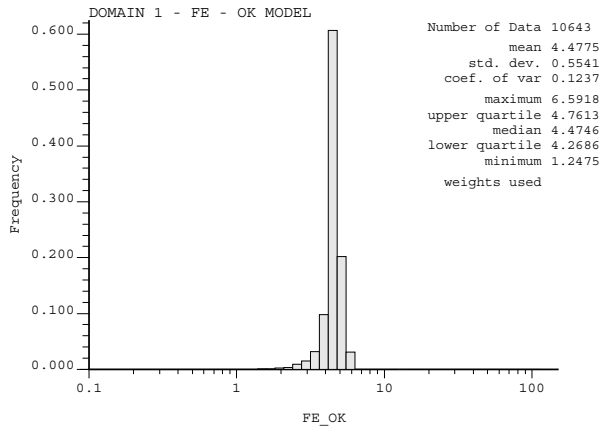
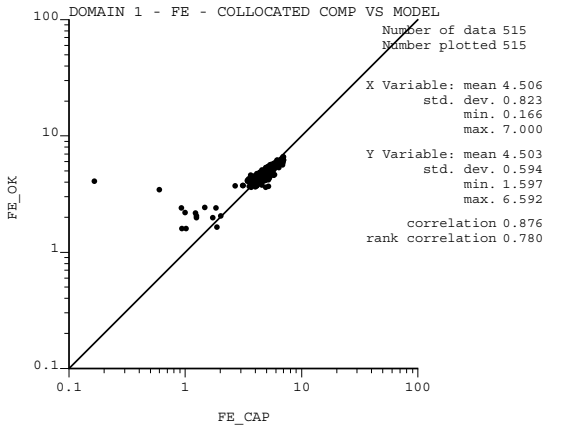
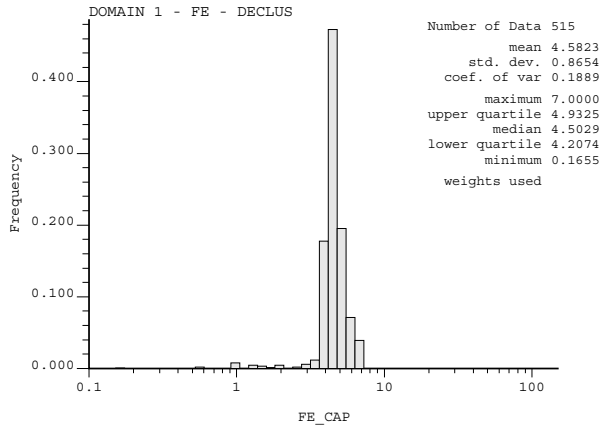
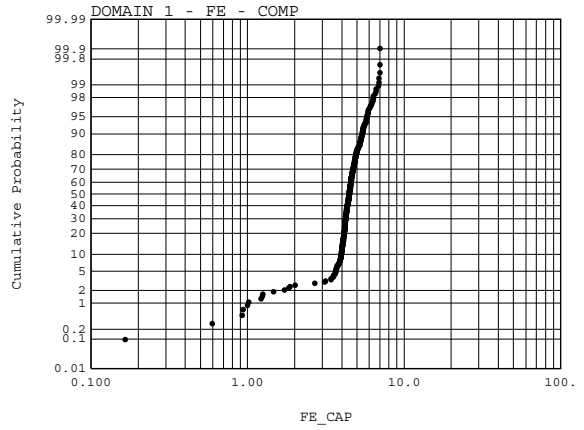
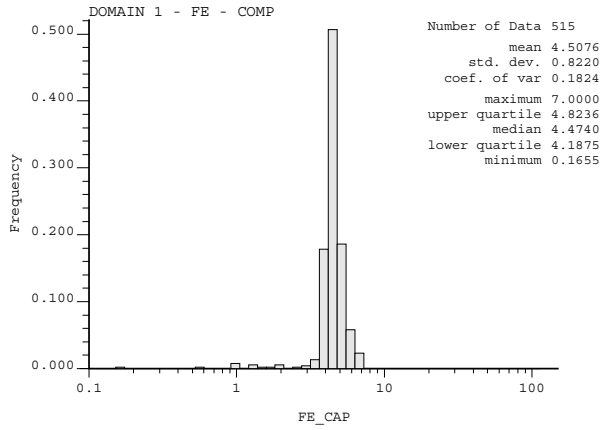
Final Model						
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
1	CA	10643	0.224	0.146	0.037	0.8
	CO	10643	94.331	7.969	34.601	116.958
	CR	10643	1709.817	837.093	213.833	4050.78
	FE	10643	4.478	0.554	1.248	6.592
	NI	10643	0.238	0.025	0.043	0.313
	PD	10643	0.009	0.005	0	0.043
	PT	10643	0.003	0.003	0	0.019
	S	10643	0.063	0.03	0.006	0.193
	SG	10643	2.61	0.037	2.46	2.74
2	CA	7711	0.121	0.076	0.011	0.5
	CO	7711	99.787	4.115	71.13	115.284
	CR	7711	1470.661	559.071	579.461	3451.007
	FE	7711	4.667	0.353	3.471	6.225
	NI	7711	0.25	0.019	0.156	0.31
	PD	7711	0.009	0.005	0	0.047
	PT	7711	0.003	0.003	0	0.021
	S	7711	0.061	0.029	0.014	0.204
	SG	7711	2.607	0.045	2.482	2.859
3	CA	41224	0.081	0.051	0.007	0.263
	CO	41224	111.924	11.153	32.649	178.823
	CR	41224	1321.043	440.135	356.683	3183.511
	FE	41224	5.126	0.838	2.185	7.504
	NI	41224	0.273	0.063	0.053	0.713
	PD	41224	0.025	0.027	0	0.401
	PT	41224	0.011	0.014	0	0.182
	S	41224	0.095	0.087	0.004	0.758
	SG	41224	2.578	0.071	2.346	2.905
4	CA	29277	0.086	0.04	0.008	0.37
	CO	29277	111.693	9.149	55.505	155.366
	CR	29277	1783.958	743.725	512.921	3591.385
	FE	29277	5.365	0.695	2.173	7.492
	NI	29277	0.269	0.061	0.099	0.624
	PD	29277	0.021	0.016	0.001	0.141
	PT	29277	0.01	0.009	0	0.078
	S	29277	0.084	0.071	0.007	0.524
	SG	29277	2.578	0.027	2.443	2.7
5	CA	34513	0.105	0.076	0.008	0.476
	CO	34513	107.388	8.788	37.54	156.796
	CR	34513	1235.414	591.595	360.299	3150.107
	FE	34513	5.163	0.786	1.662	8.202
	NI	34513	0.277	0.057	0.073	0.533
	PD	34513	0.02	0.012	0	0.081
	PT	34513	0.009	0.006	0	0.041
	S	34513	0.091	0.08	0.006	0.413
	SG	34513	2.597	0.05	2.453	2.799

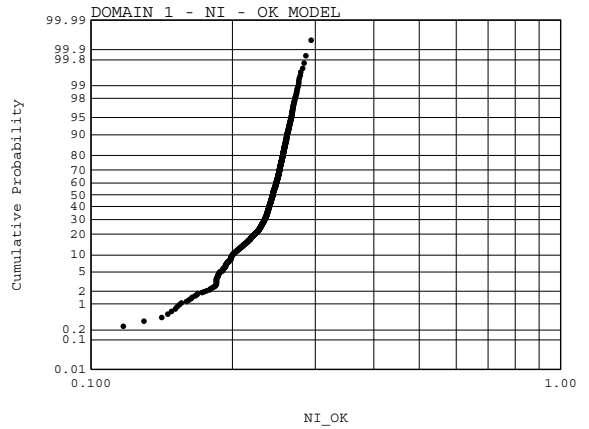
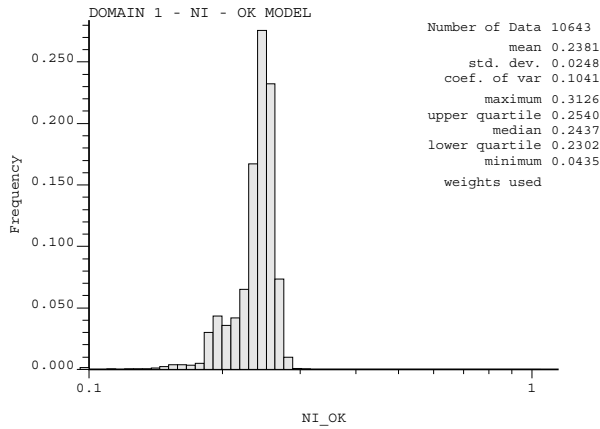
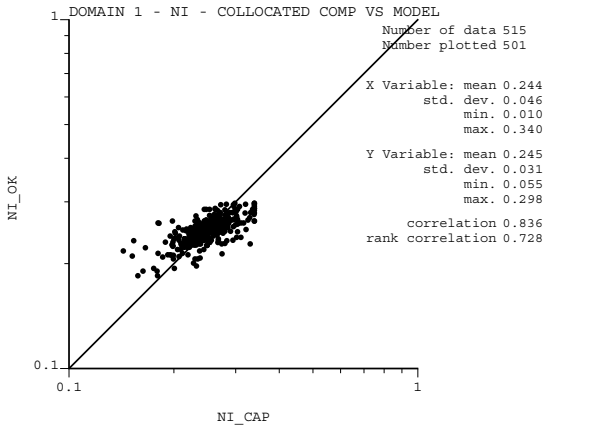
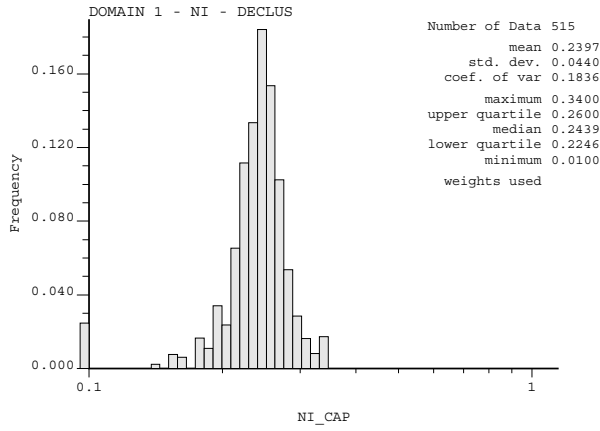
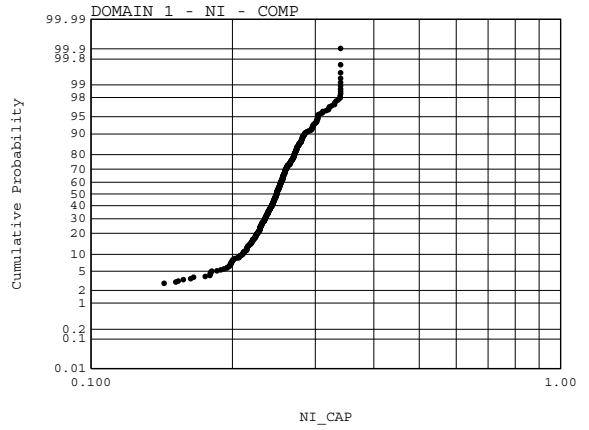
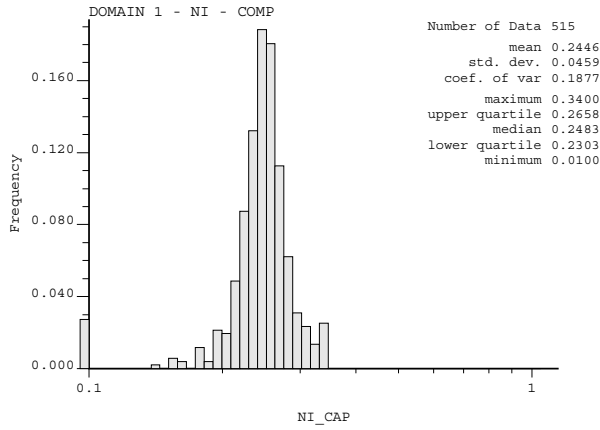
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
	CA	19296	0.174	0.144	0.005	1.098
	CO	19296	102.013	9.152	39.311	136.642
	CR	19296	897.035	421.623	282.052	2367.829
	FE	19296	4.892	0.749	2.175	6.502
6	NI	19296	0.256	0.048	0.082	0.462
	PD	19296	0.013	0.009	0	0.063
	PT	19296	0.007	0.006	0	0.053
	S	19296	0.057	0.047	0.006	0.254
	SG	19296	2.579	0.048	2.434	2.762
	CA	49656	0.105	0.083	0.006	0.852
	CO	49656	96.092	9.943	9.85	132.399
	CR	49656	785.602	344.658	68.186	2169.263
	FE	49656	4.644	0.724	0.639	6.946
7	NI	49656	0.242	0.026	0.034	0.359
	PD	49656	0.005	0.007	0	0.067
	PT	49656	0.002	0.004	0	0.026
	S	49656	0.033	0.023	0.005	0.121
	SG	49656	2.628	0.076	2.4	3.024

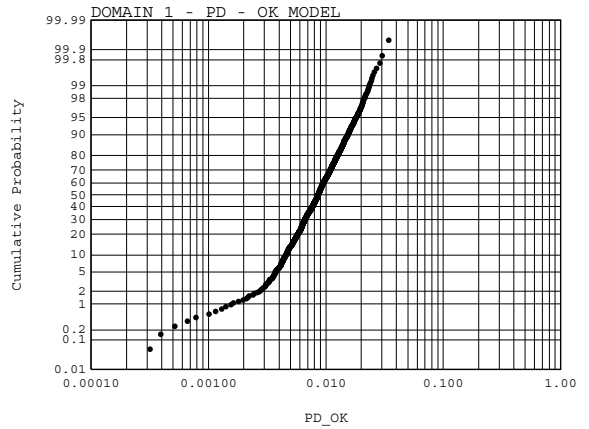
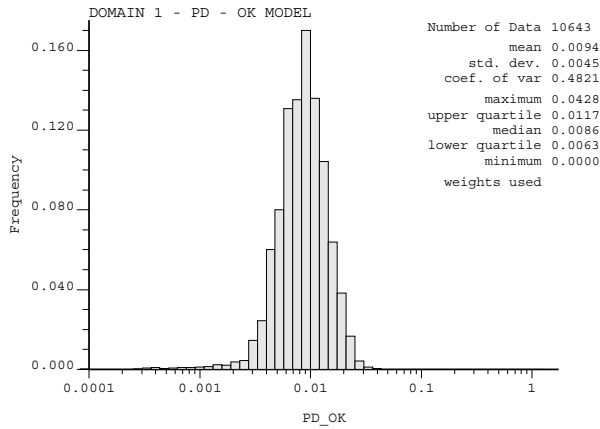
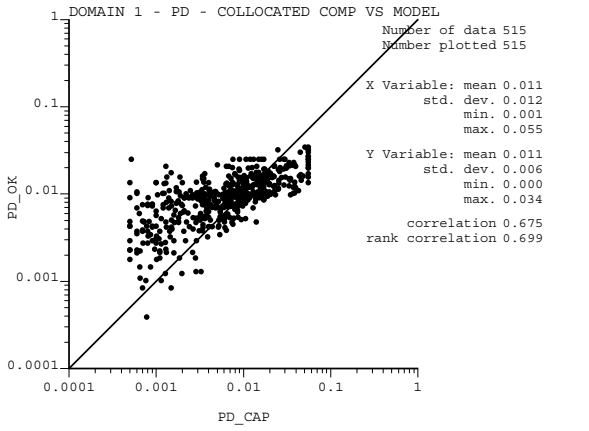
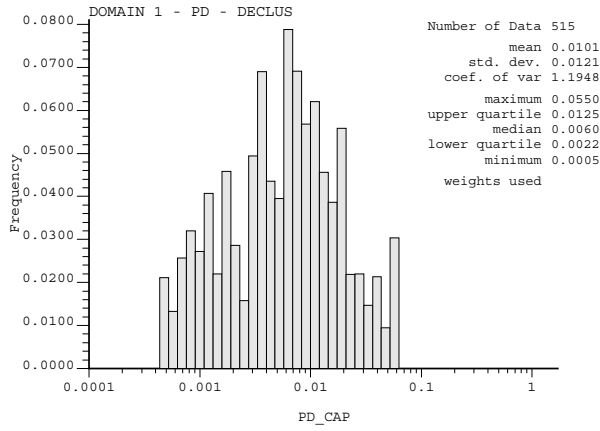
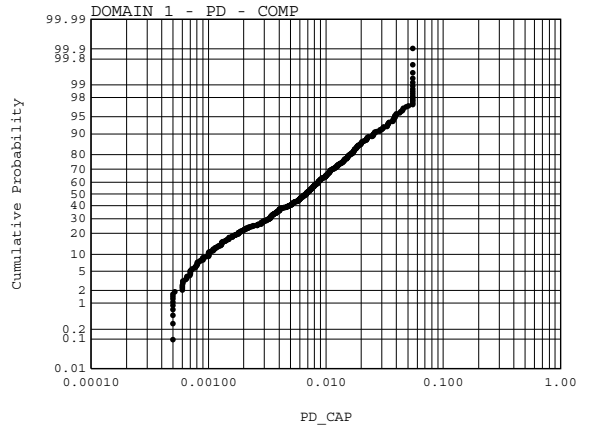
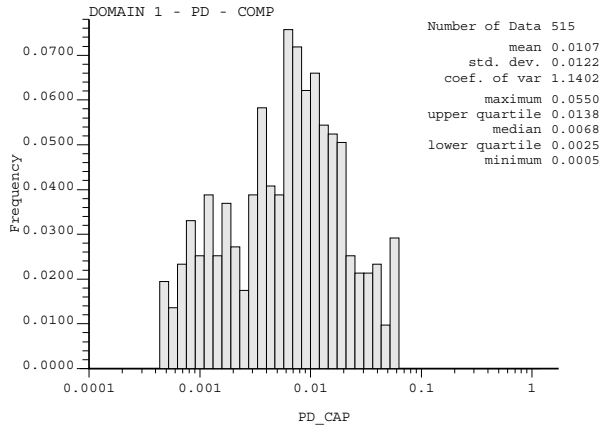


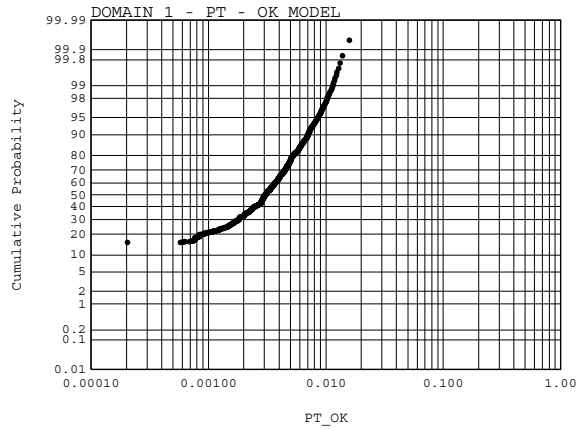
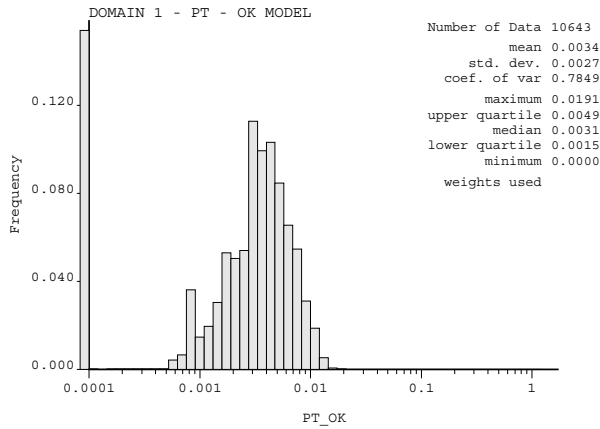
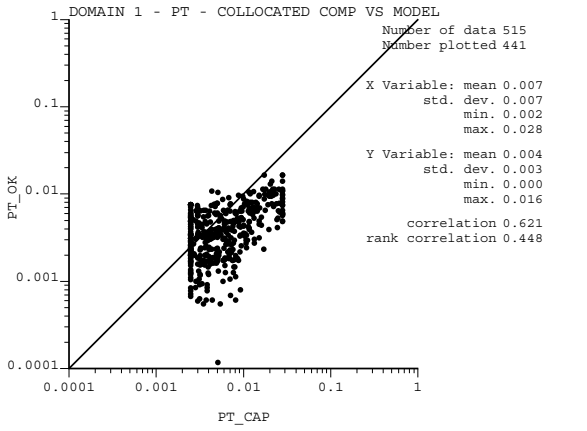
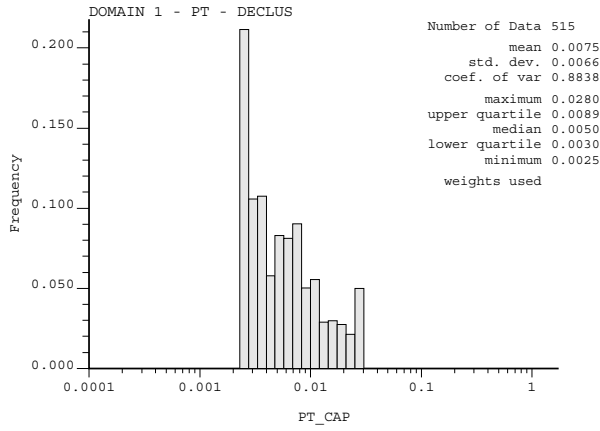
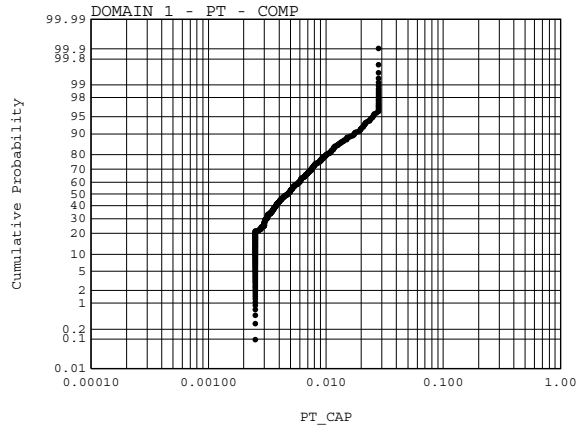
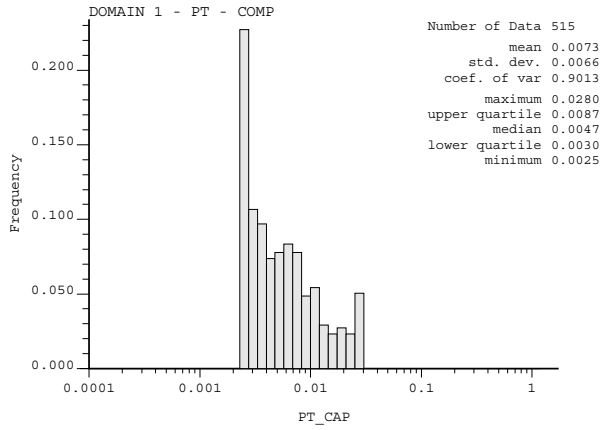


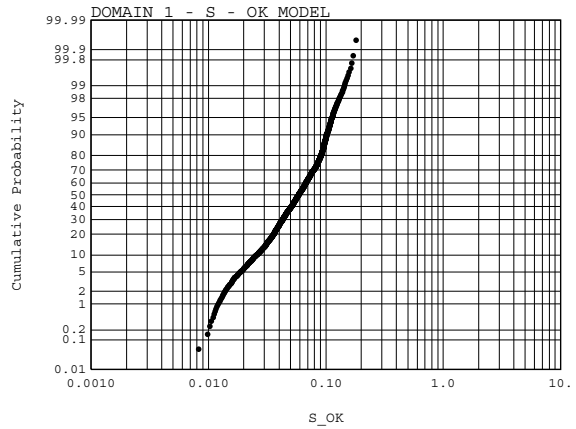
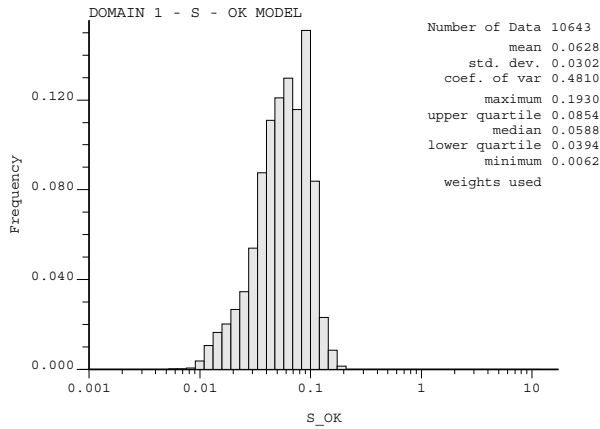
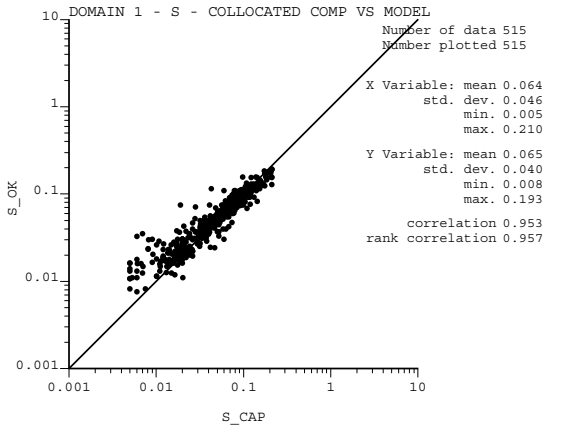
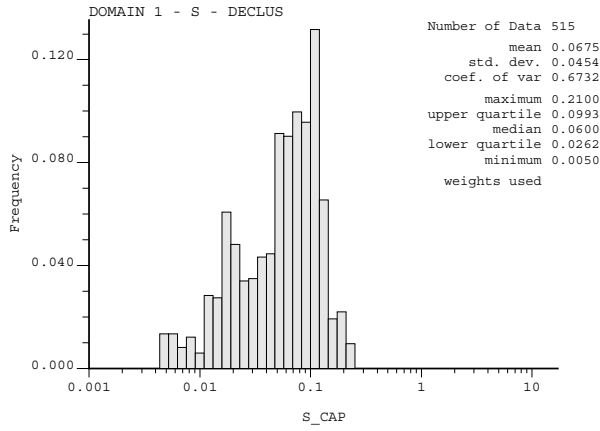
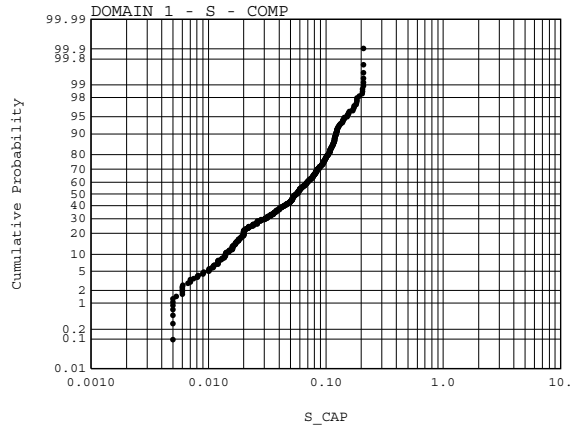
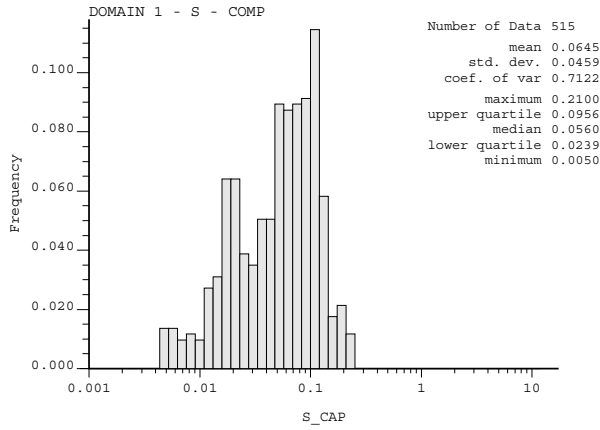


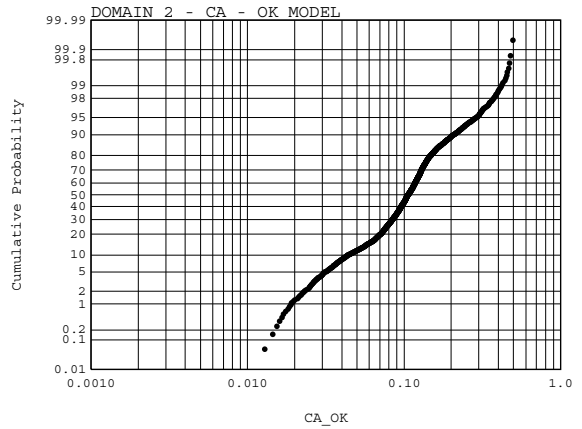
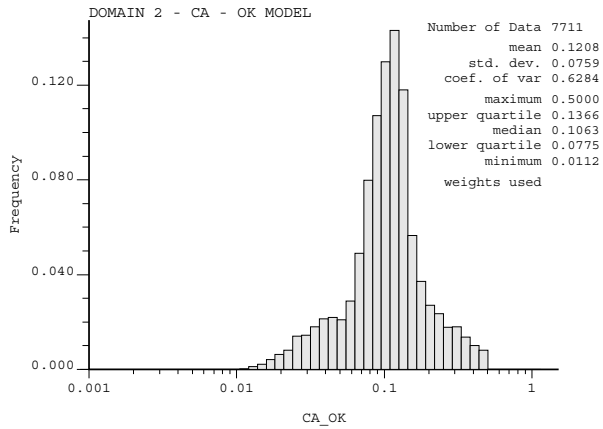
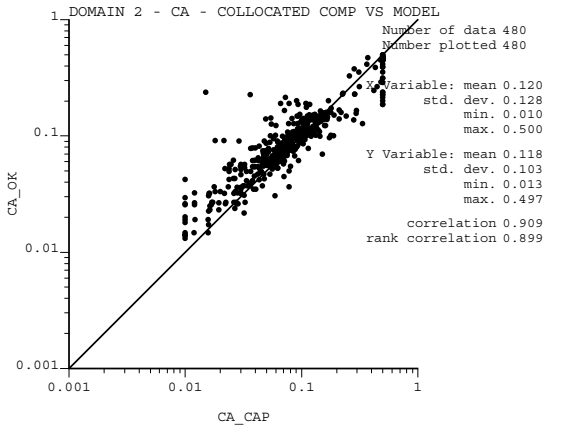
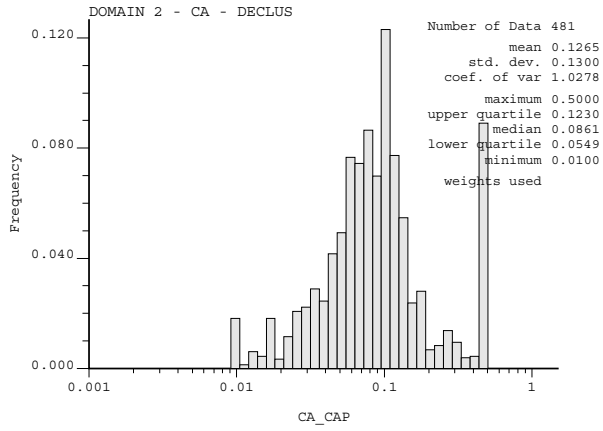
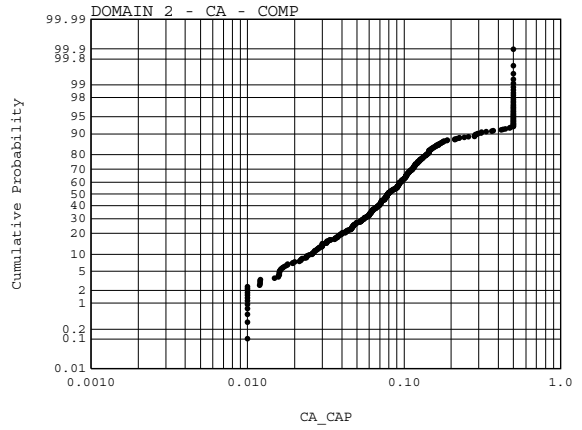
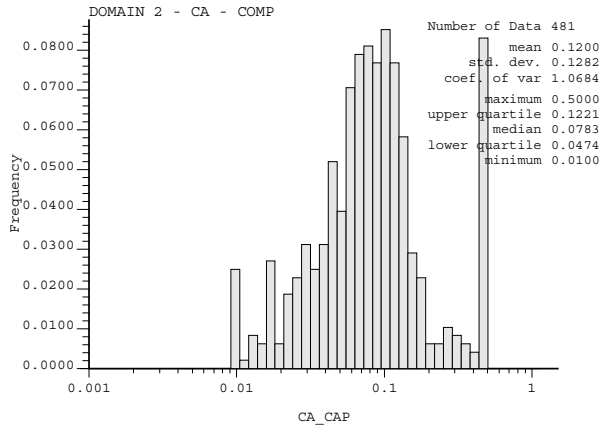


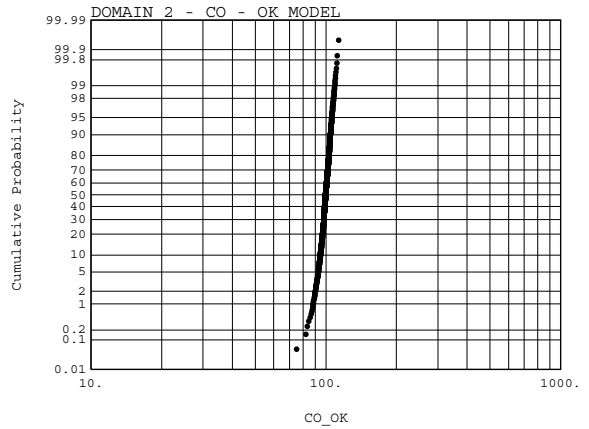
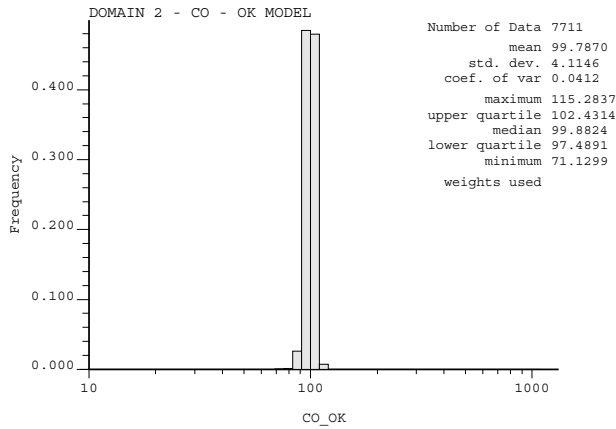
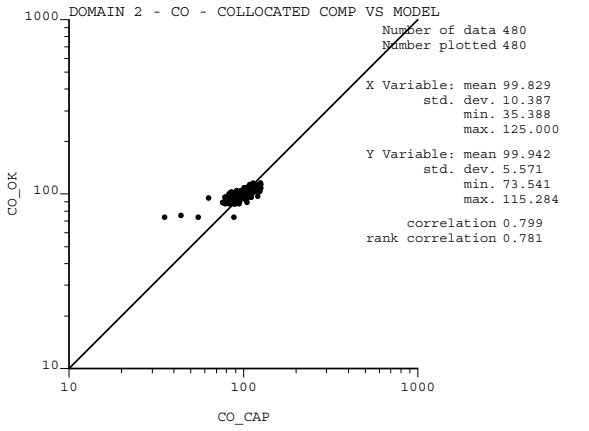
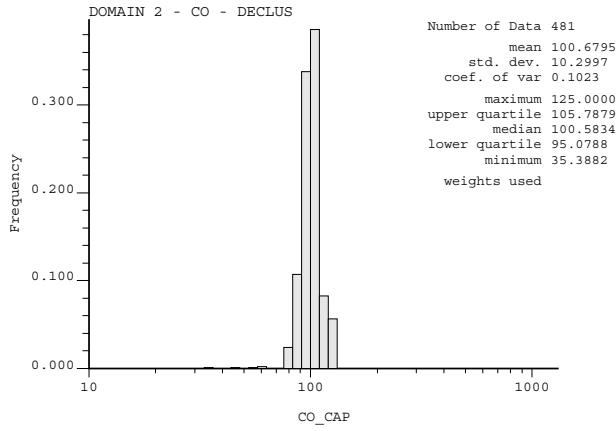
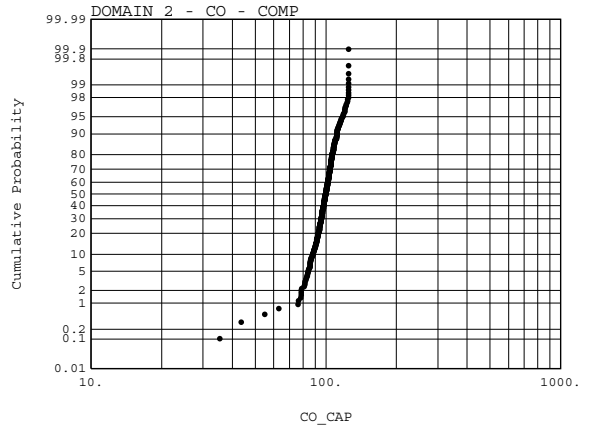
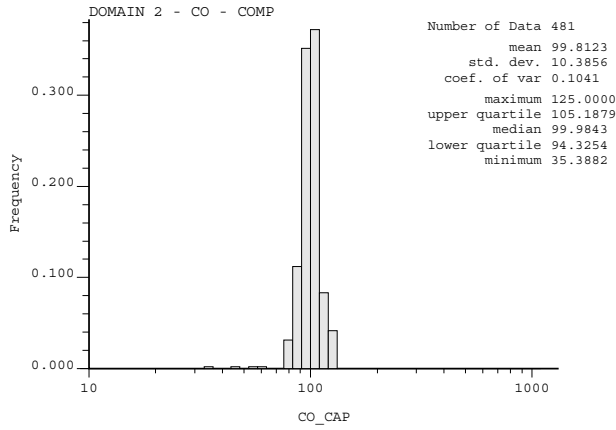


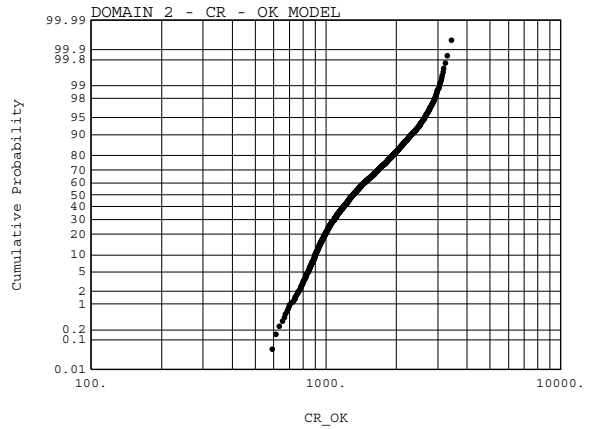
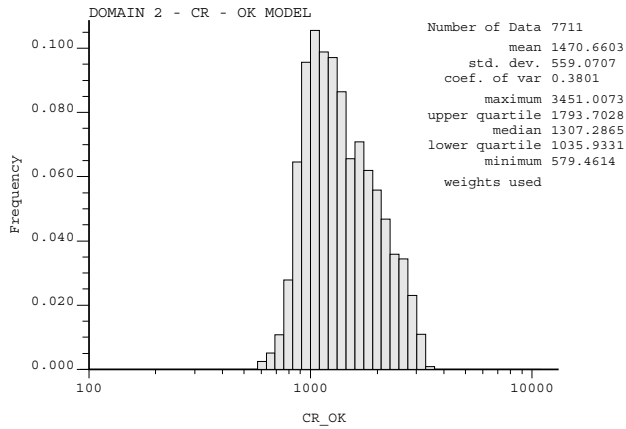
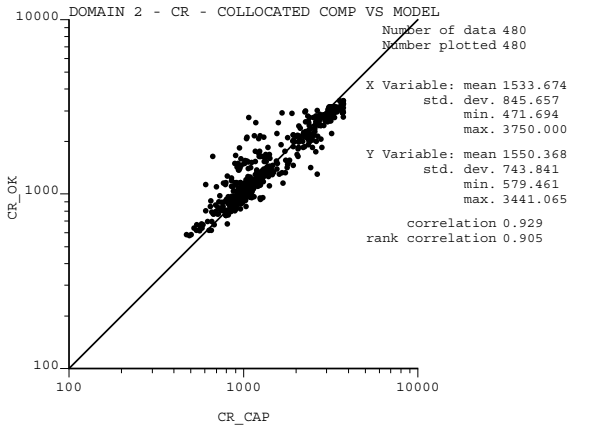
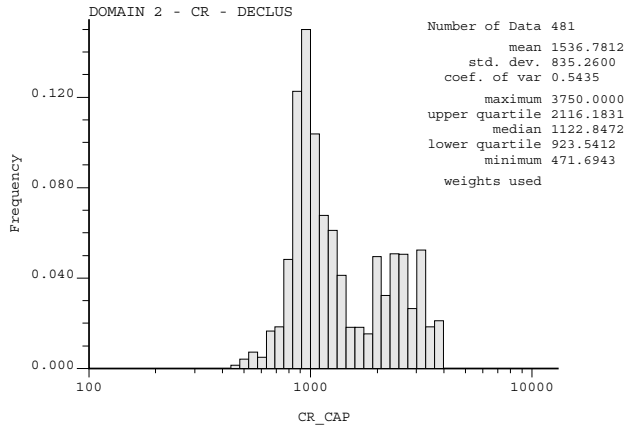
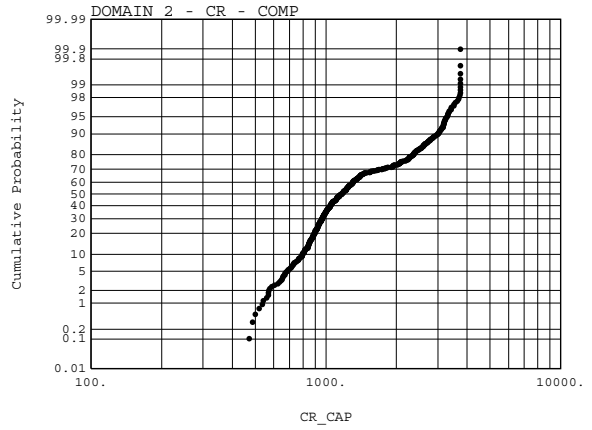
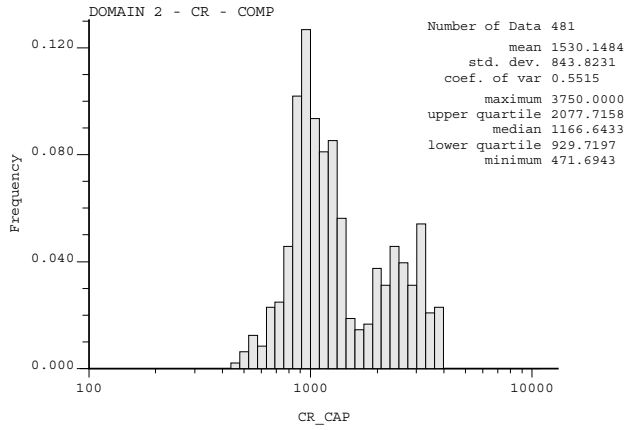


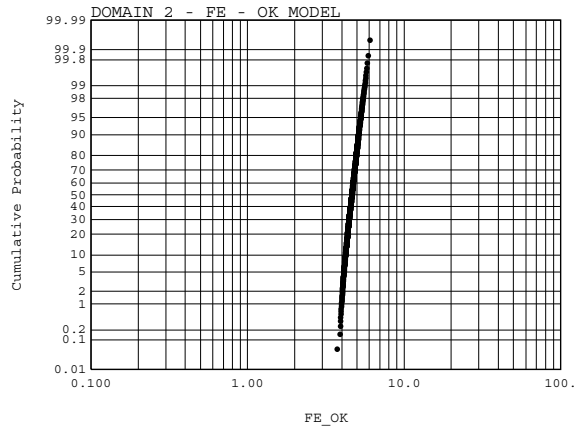
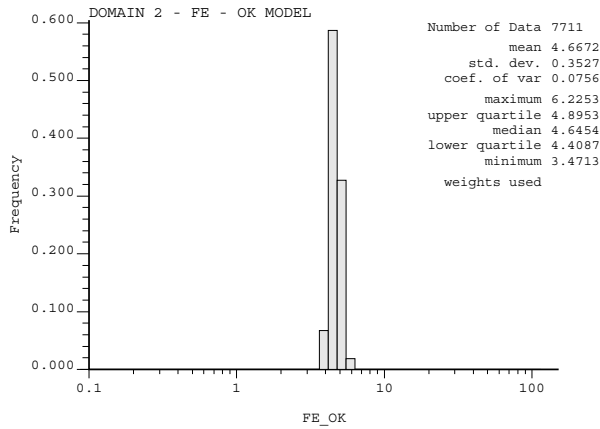
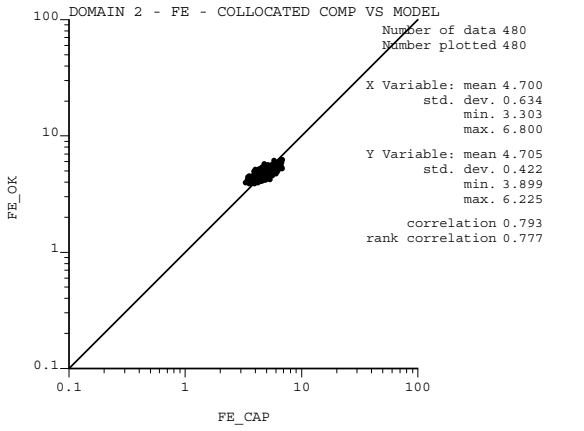
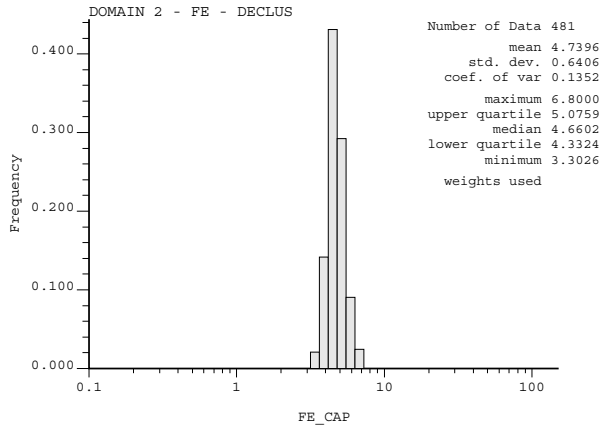
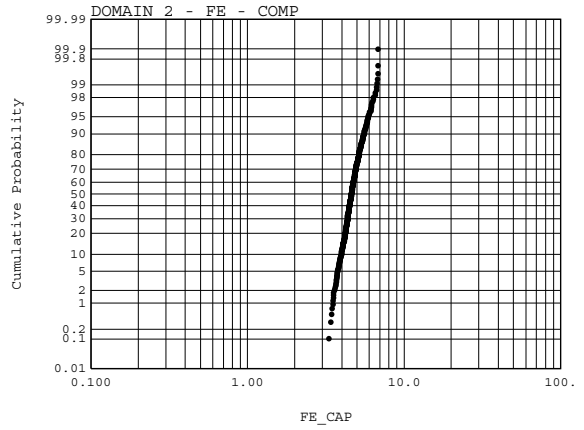
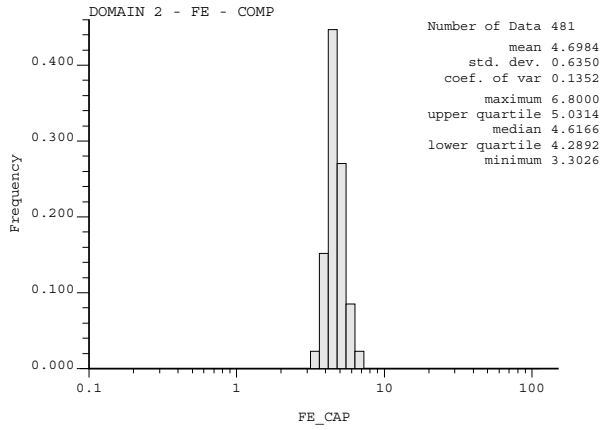


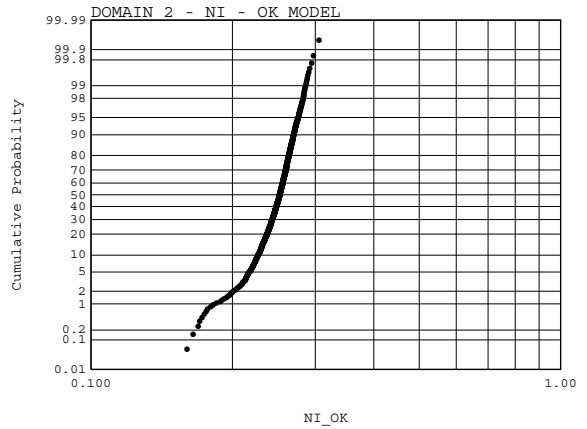
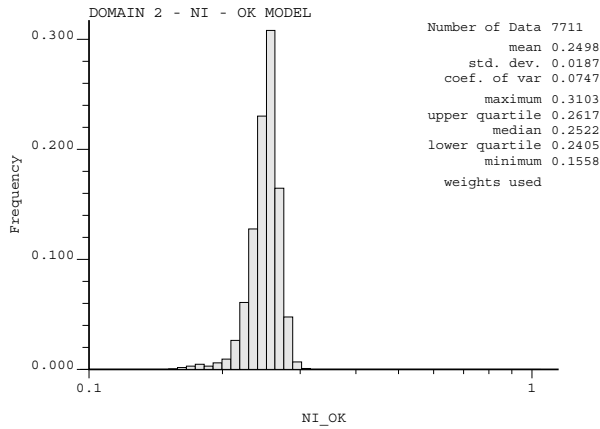
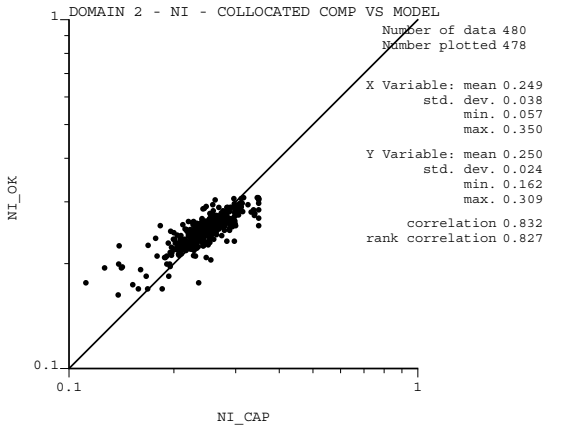
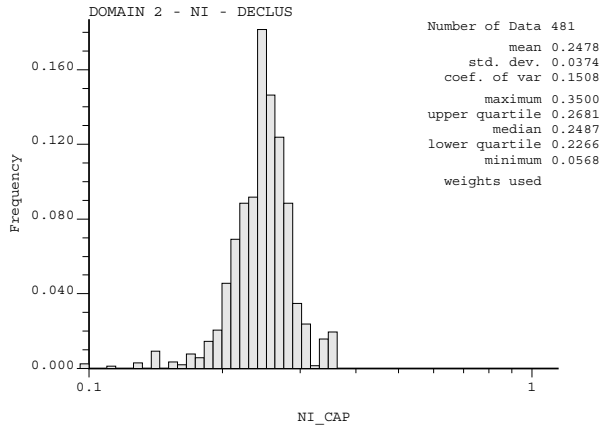
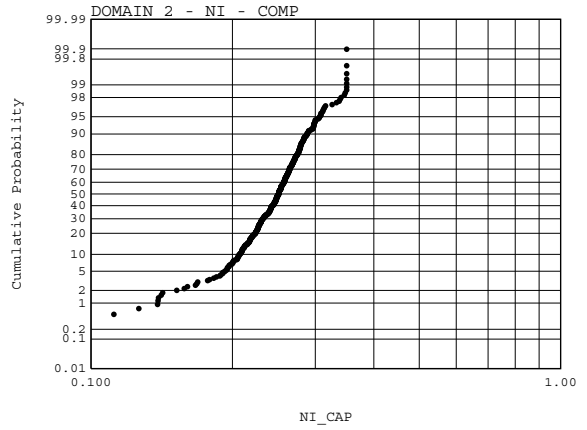
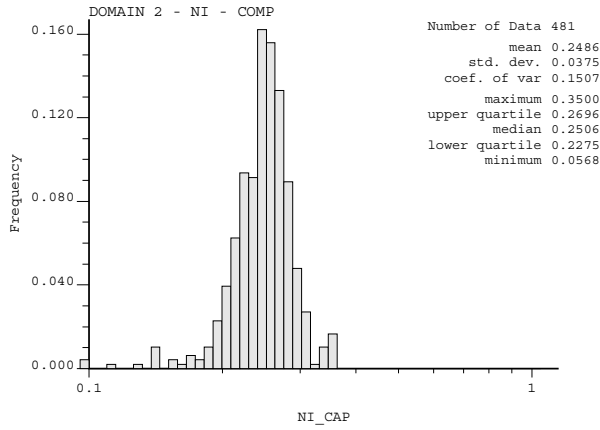


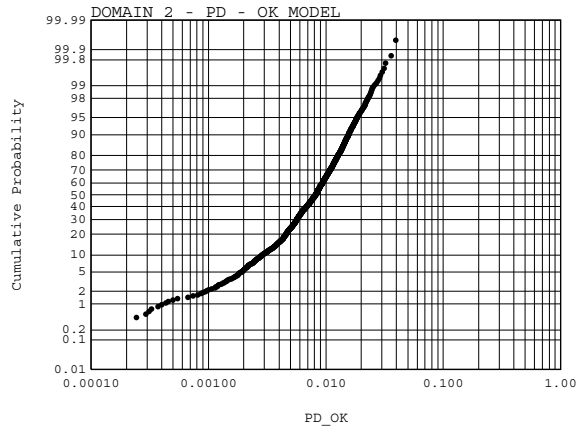
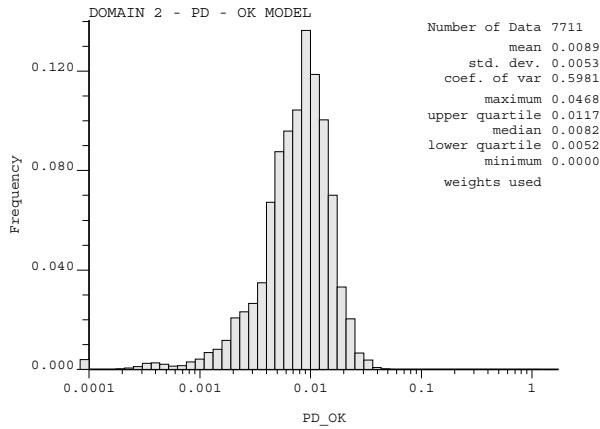
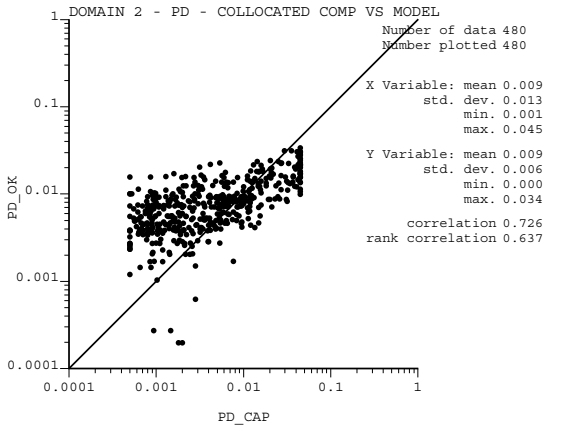
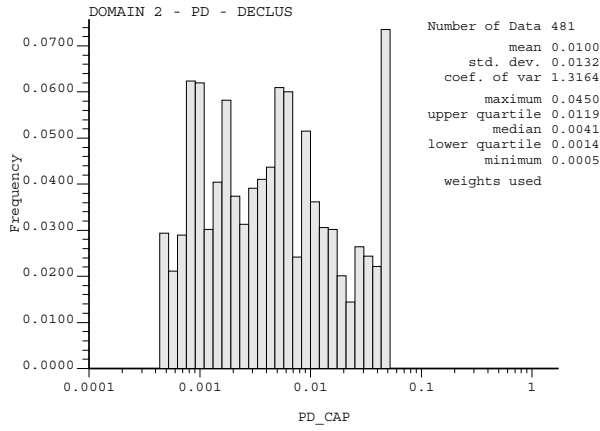
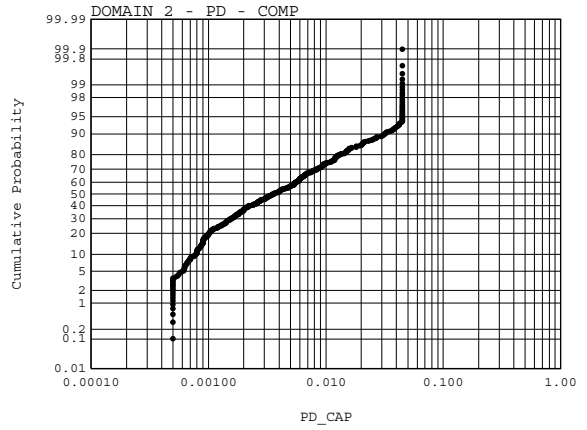
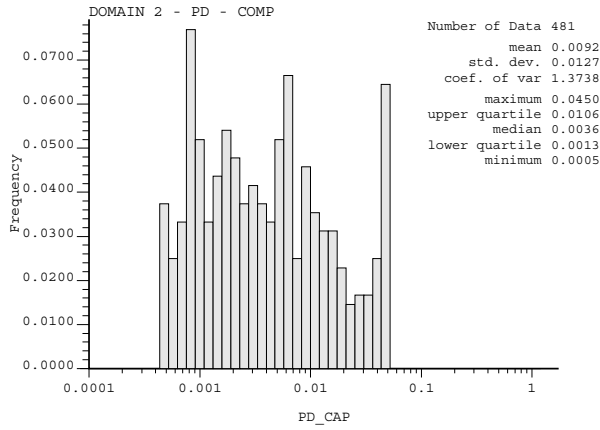


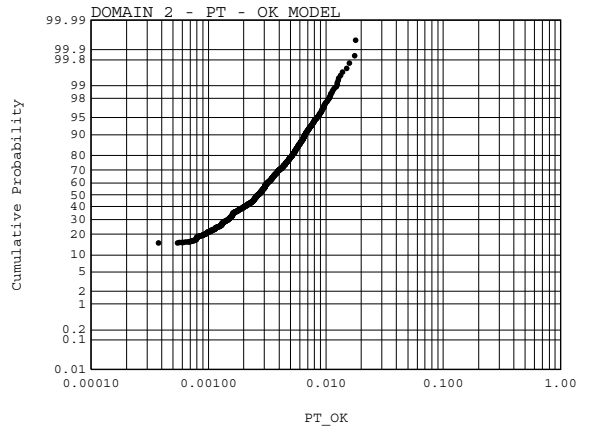
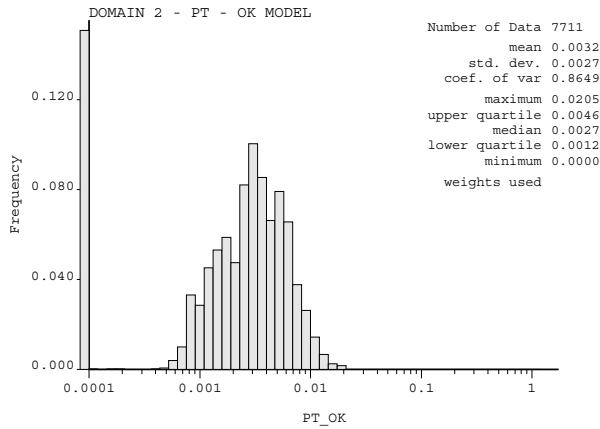
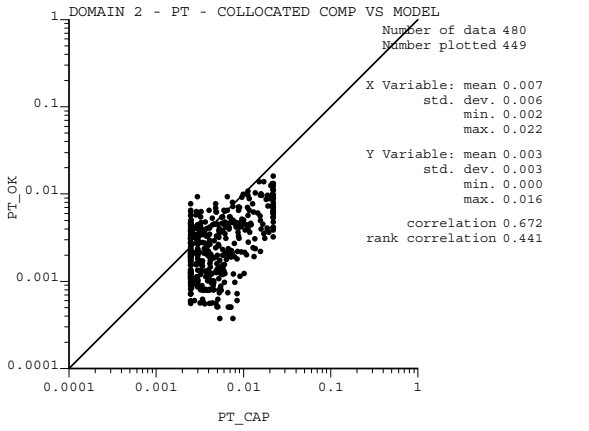
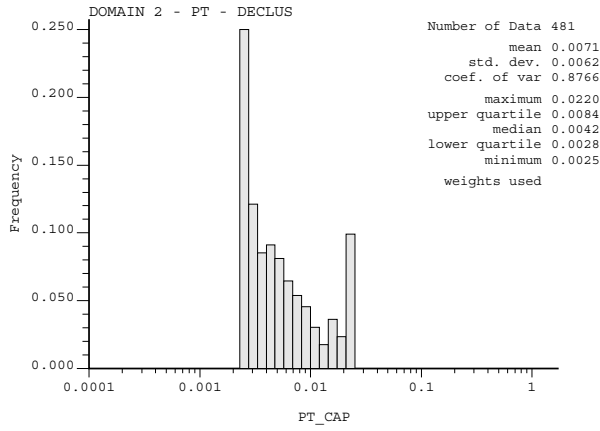
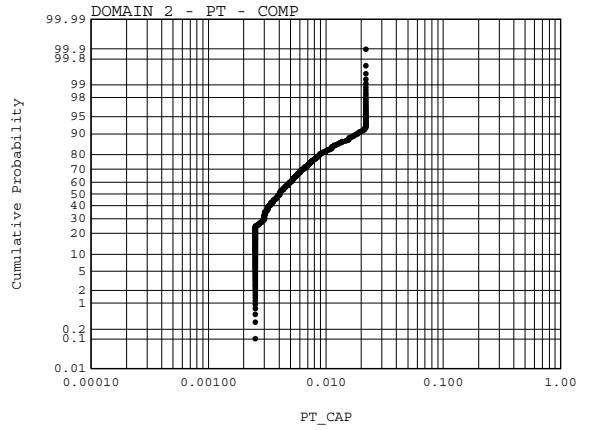
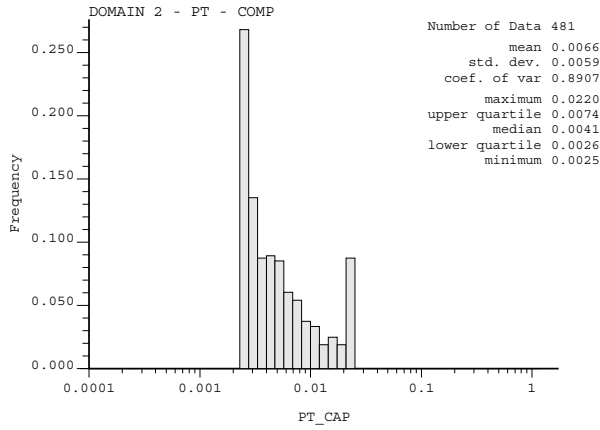


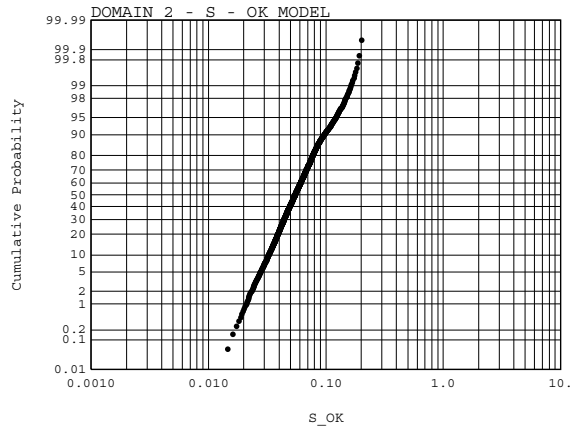
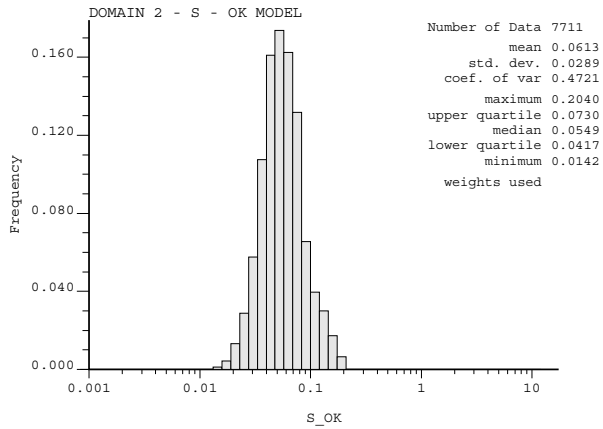
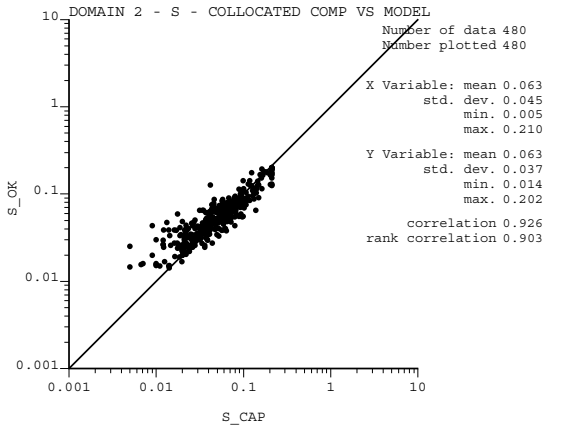
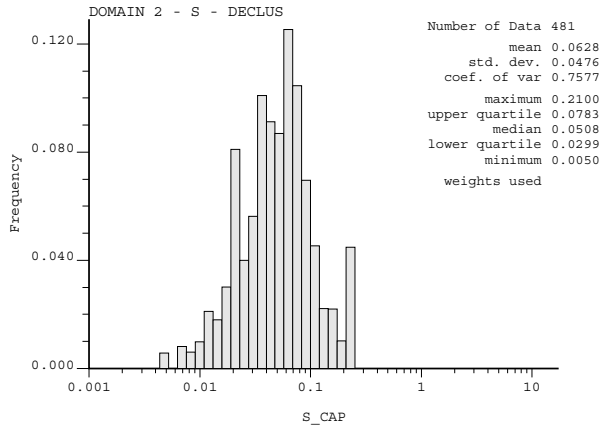
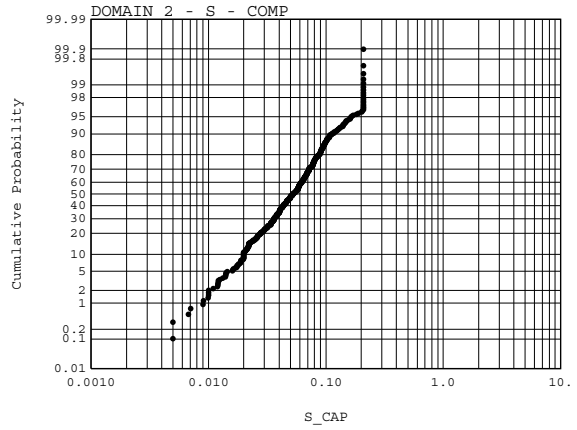
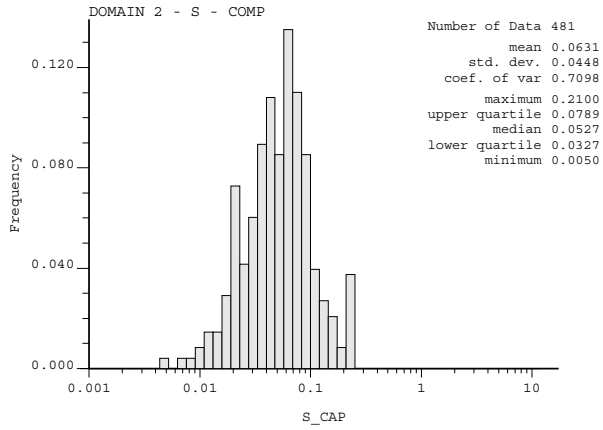


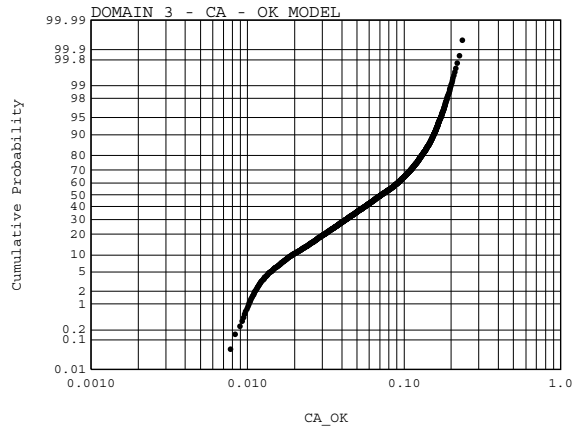
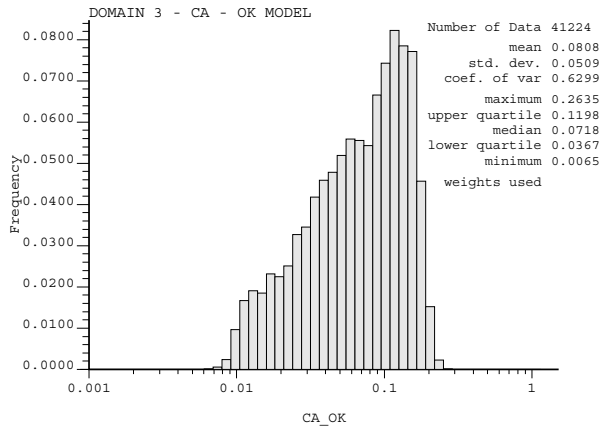
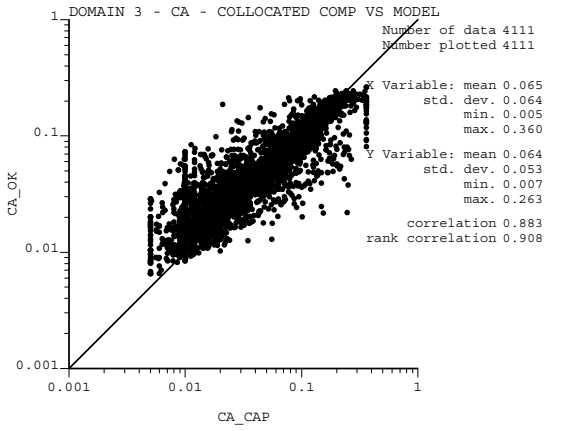
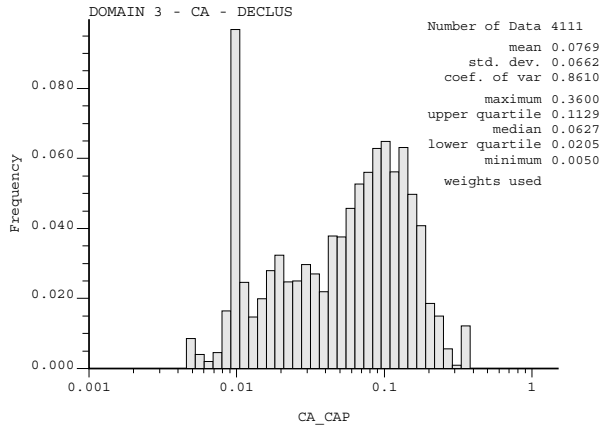
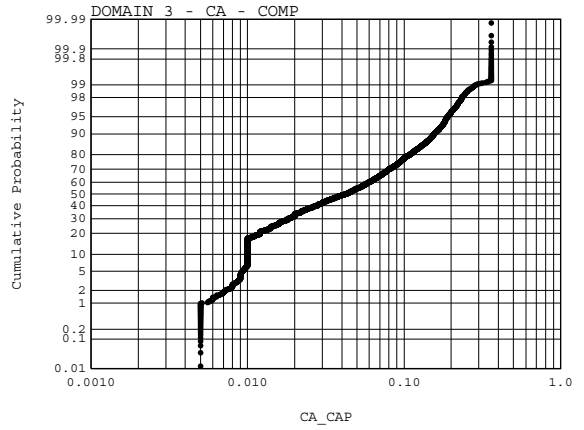
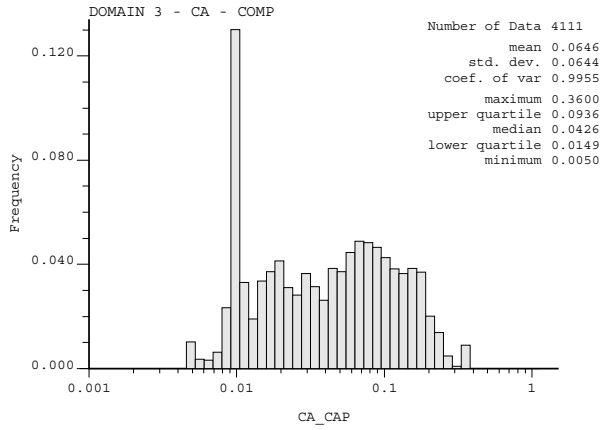


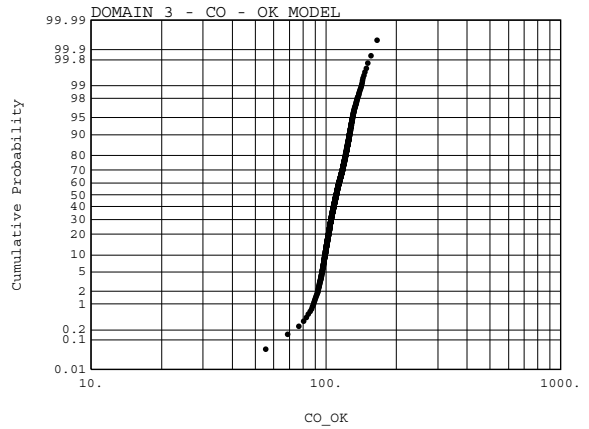
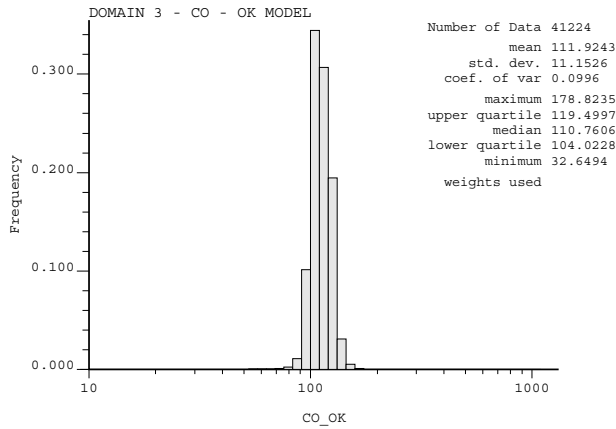
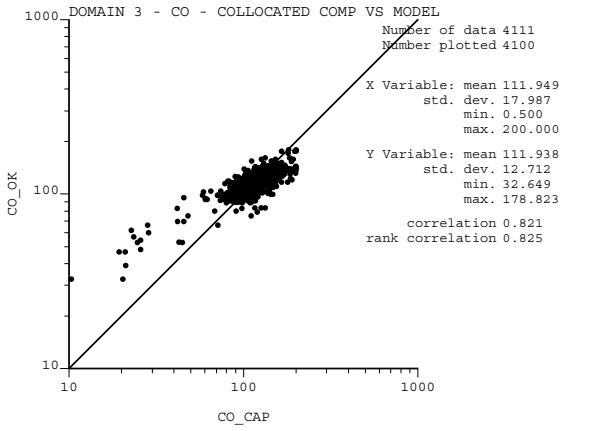
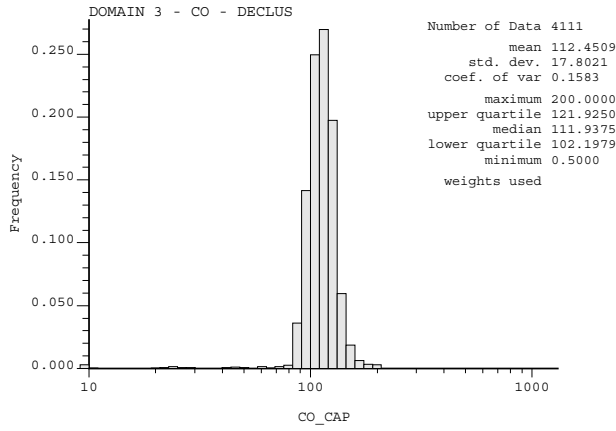
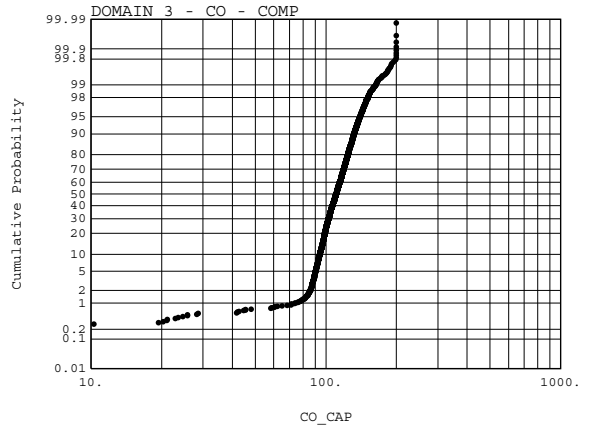
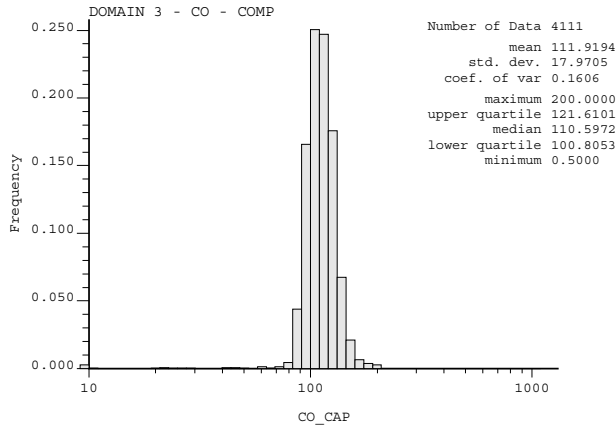


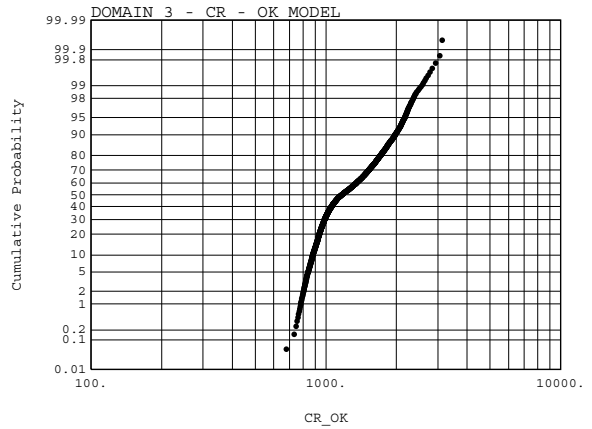
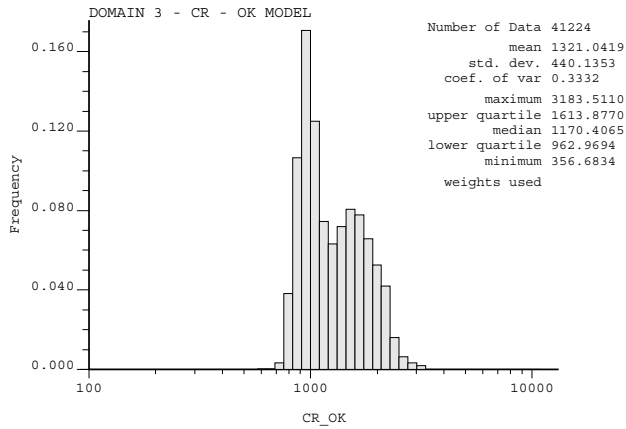
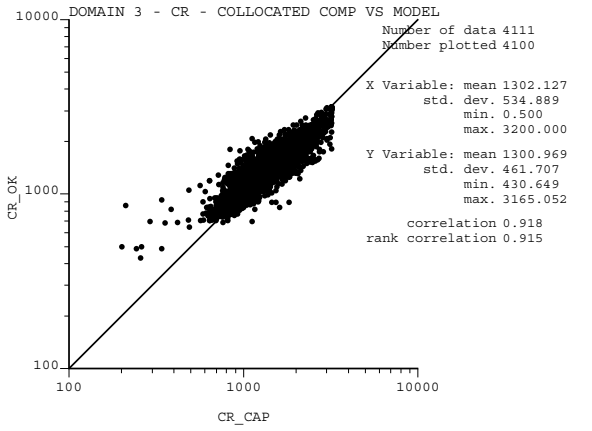
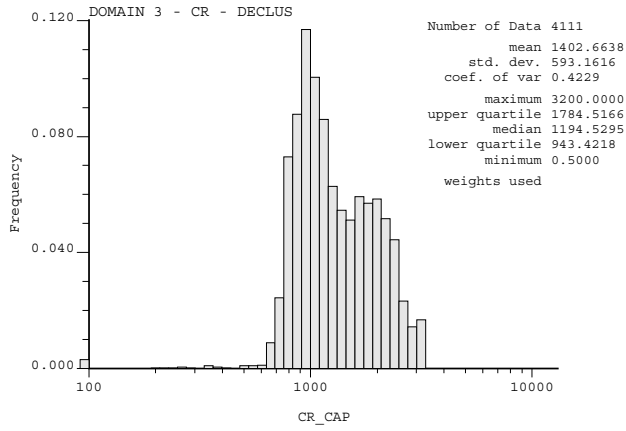
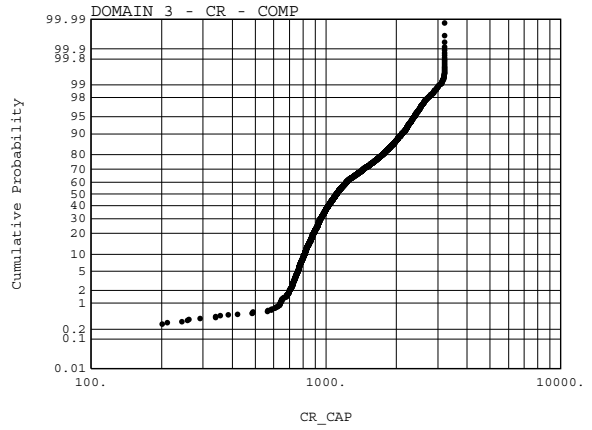
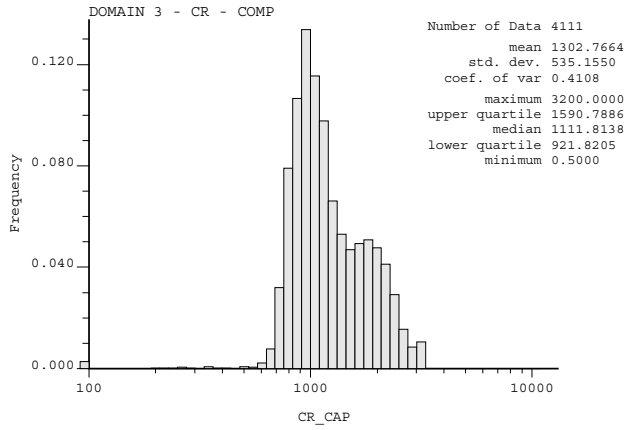


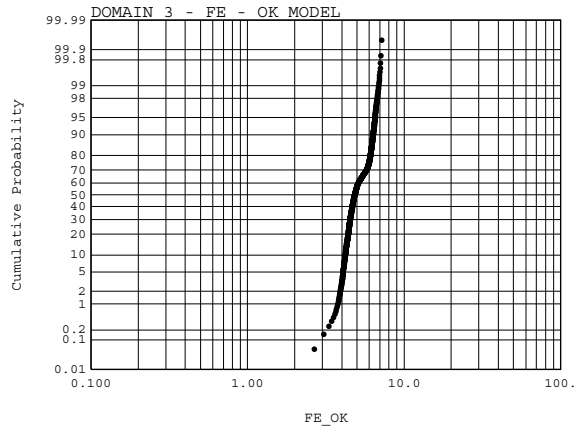
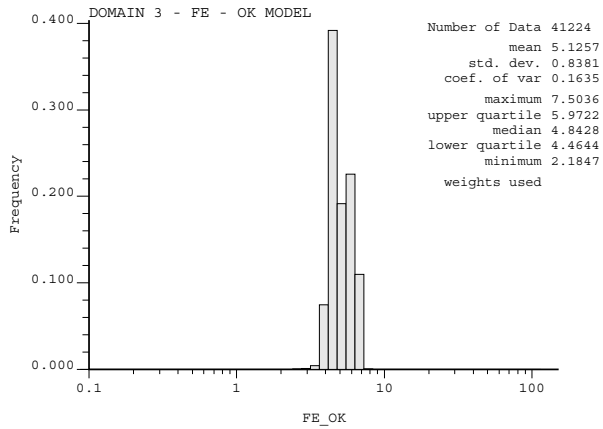
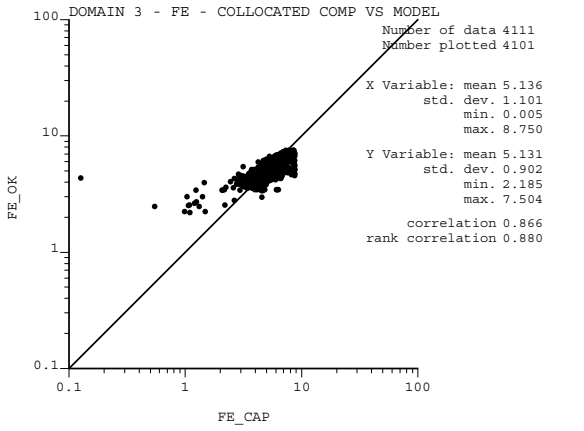
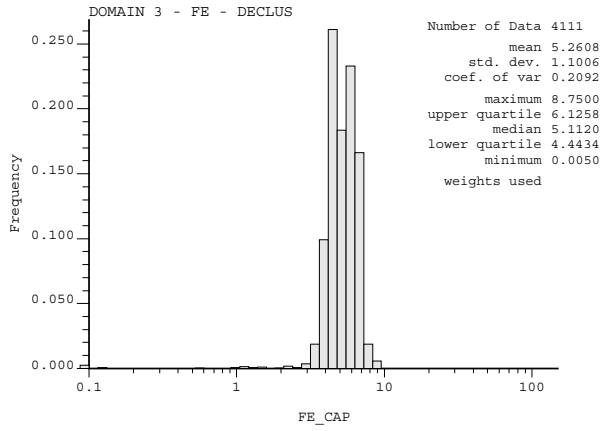
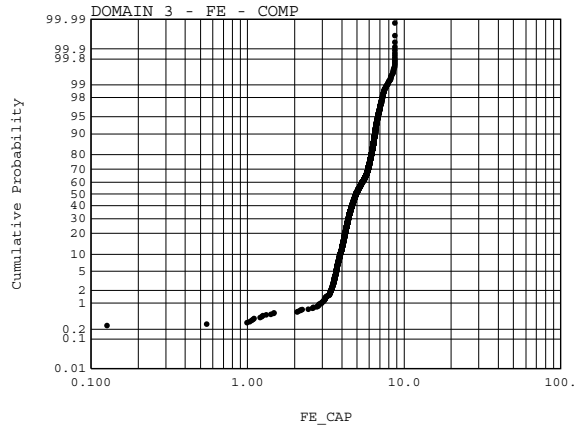
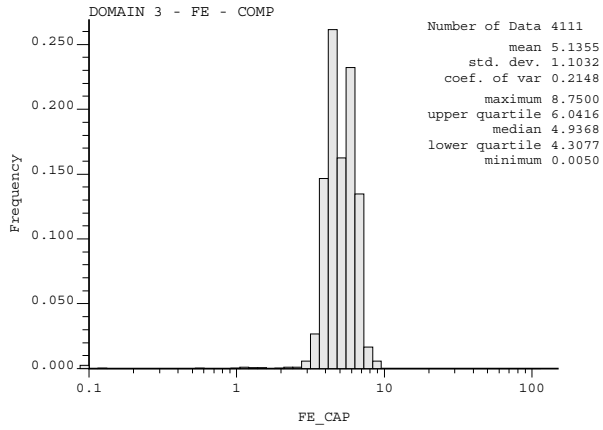


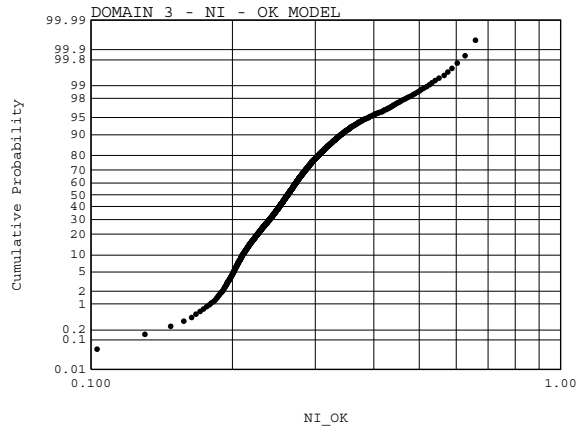
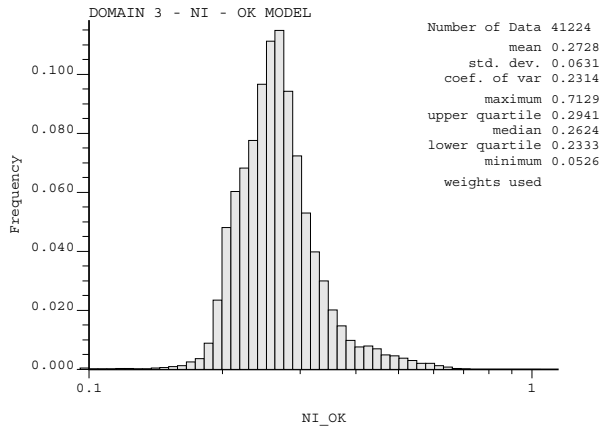
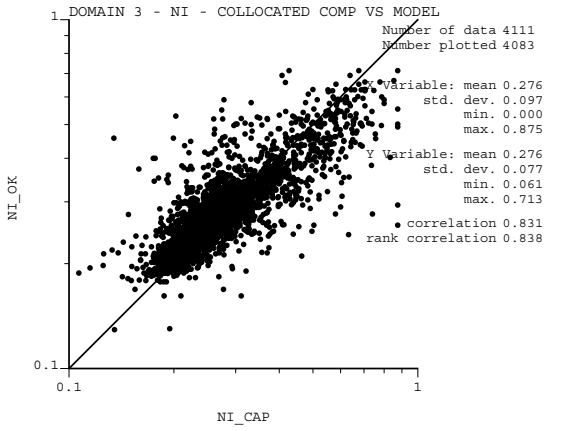
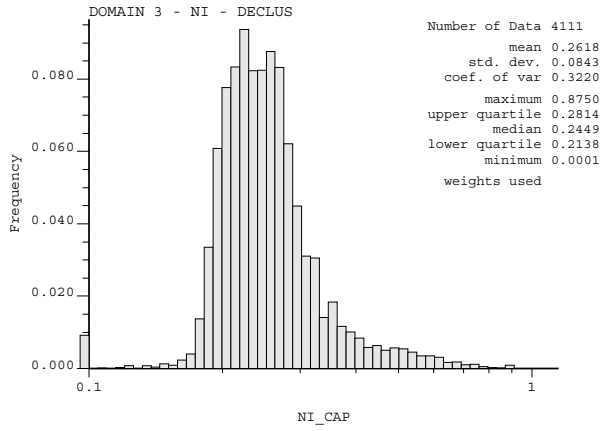
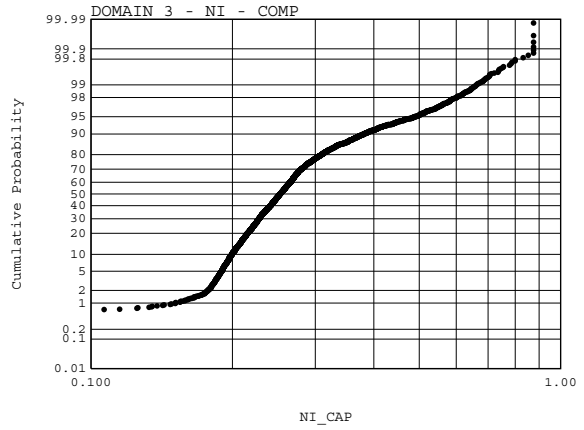
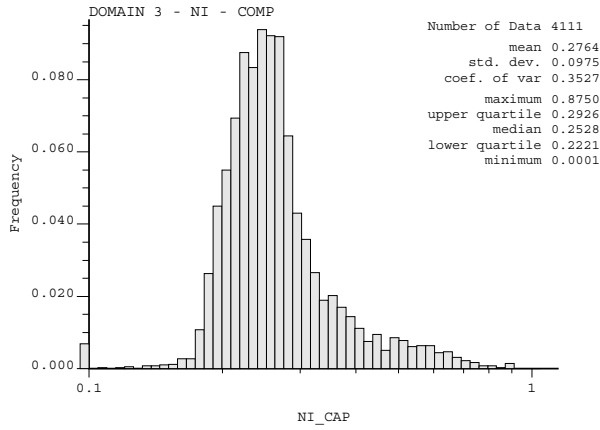


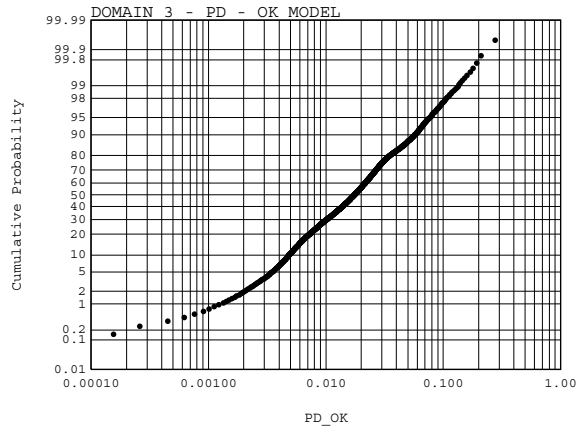
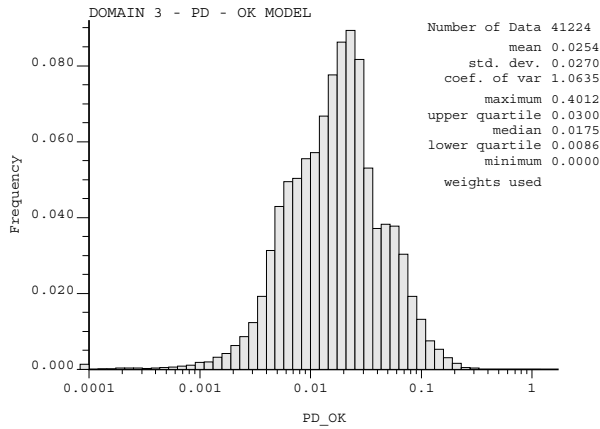
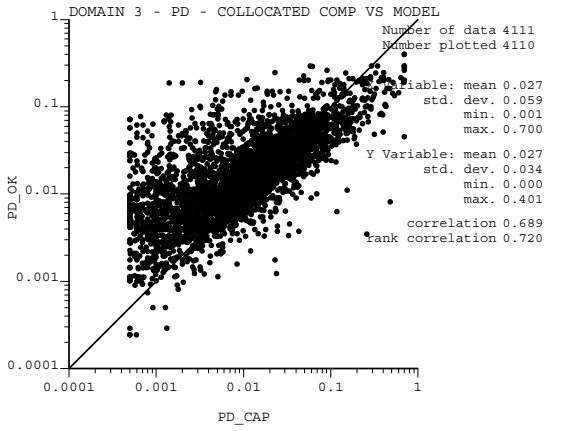
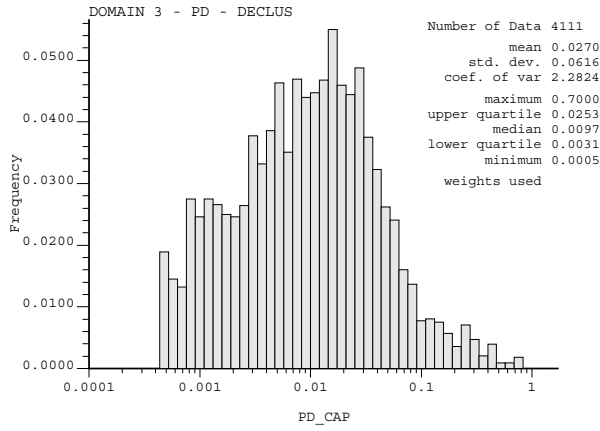
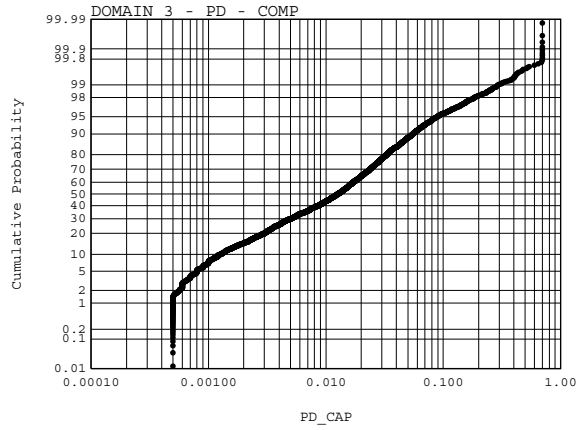
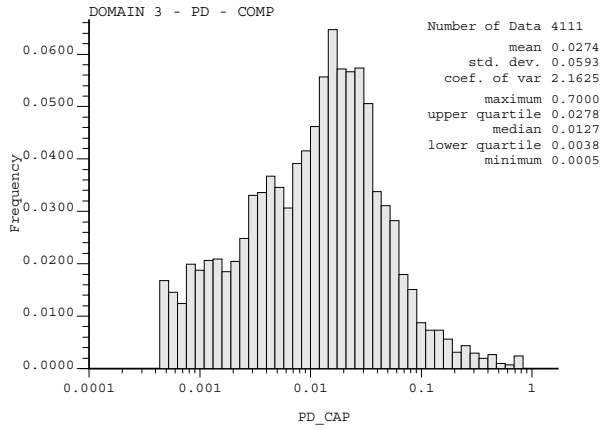


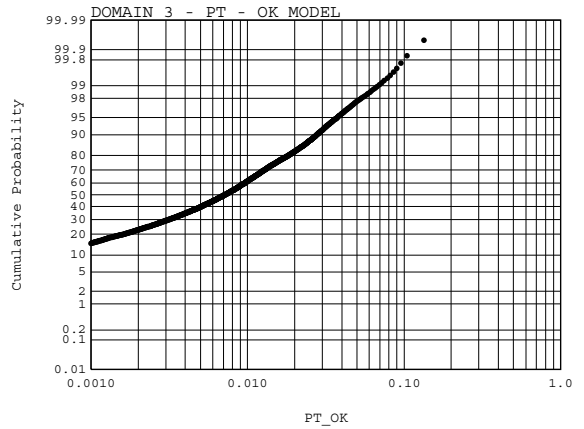
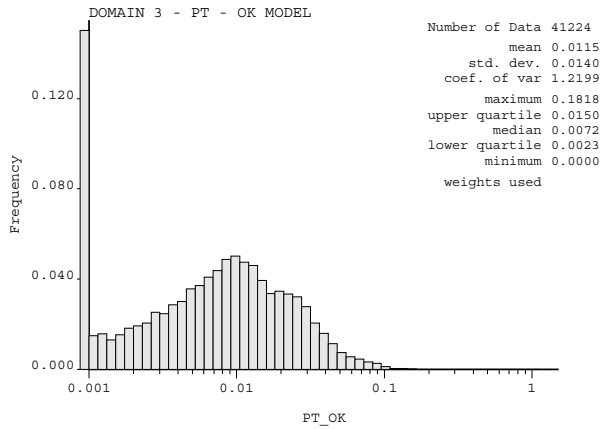
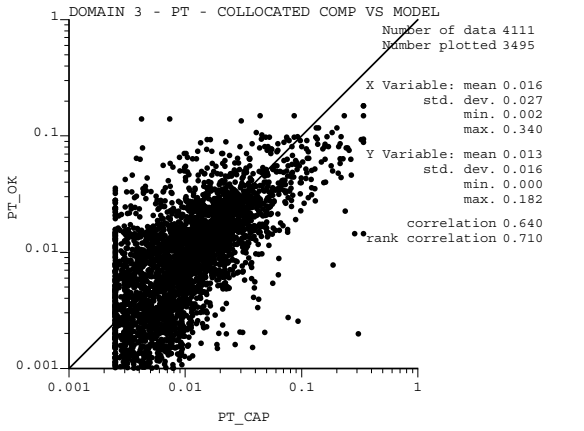
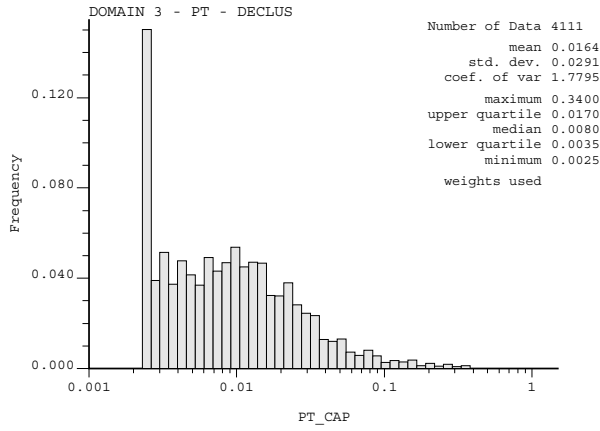
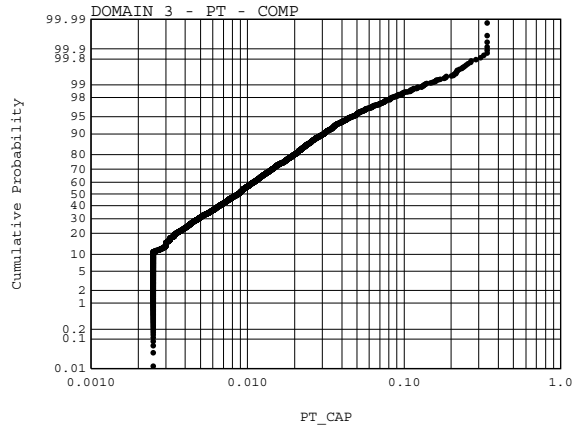
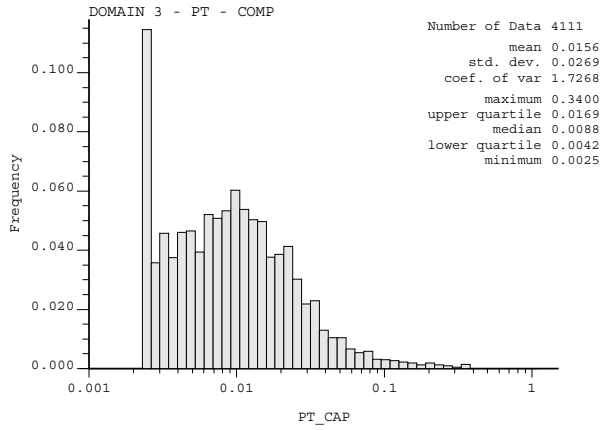


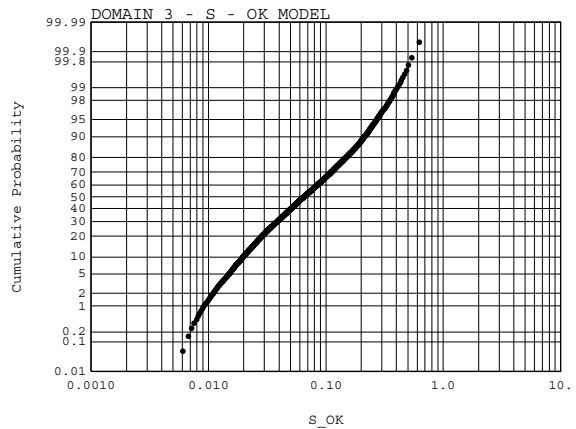
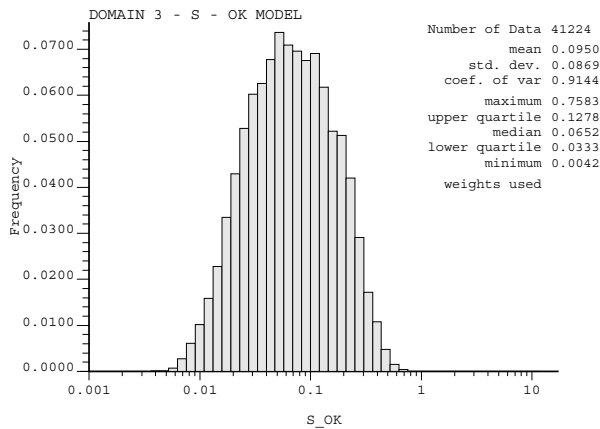
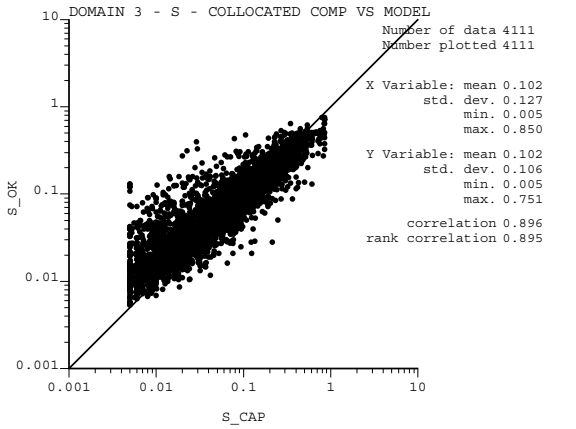
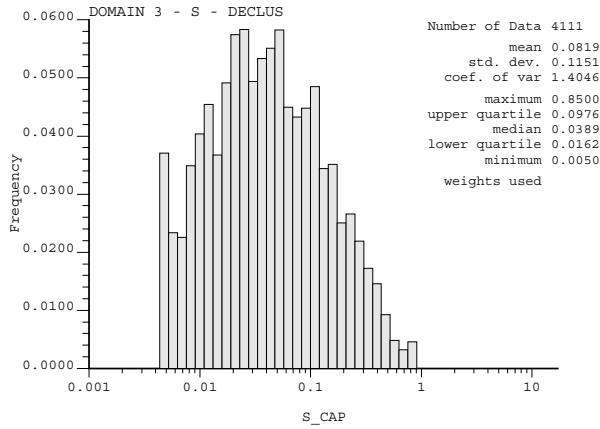
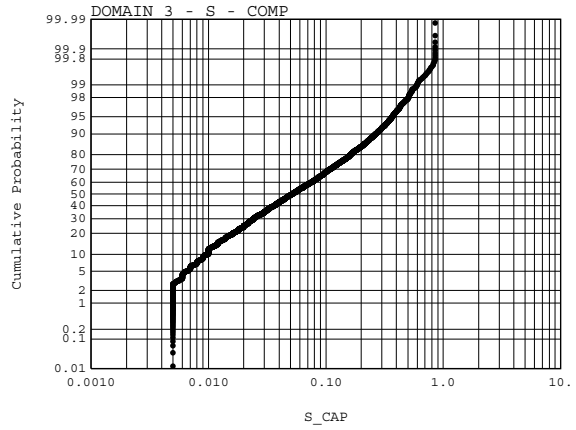
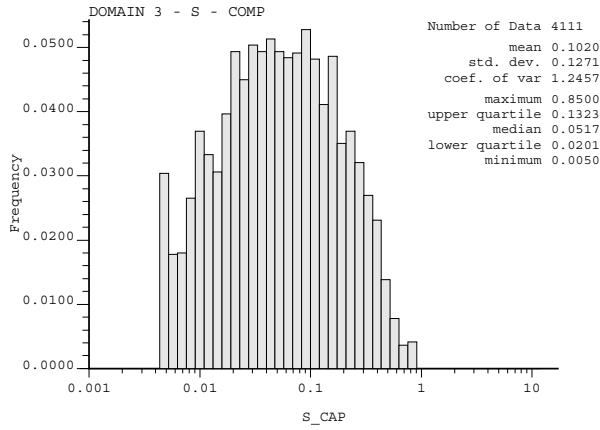


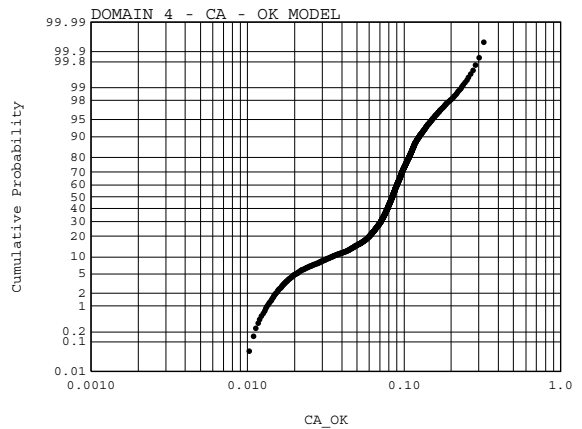
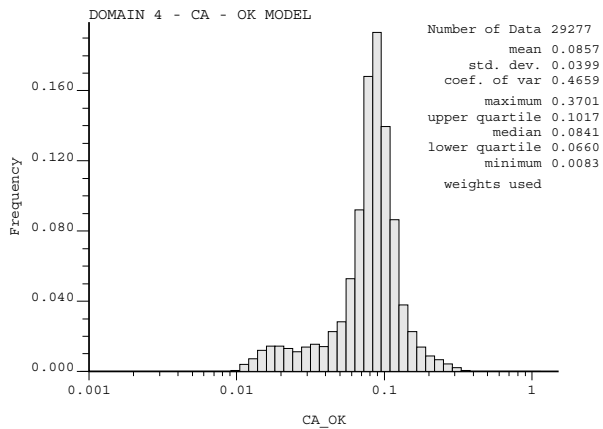
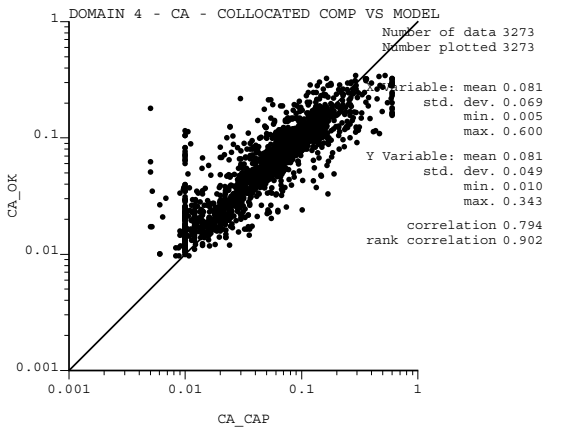
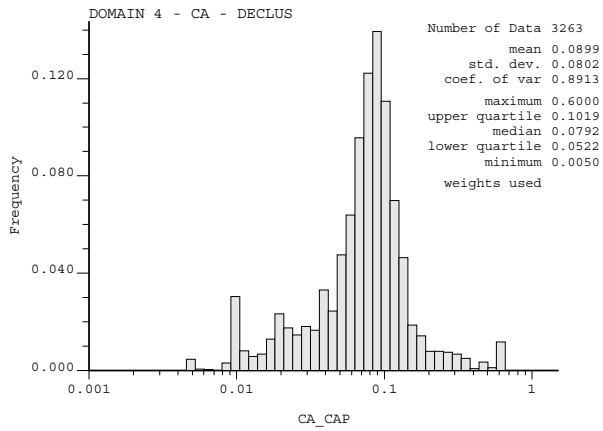
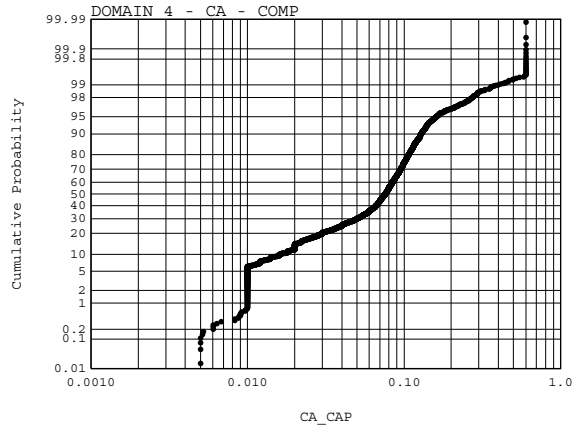
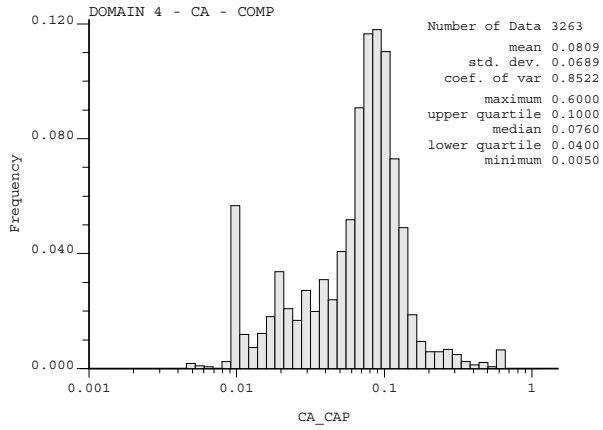


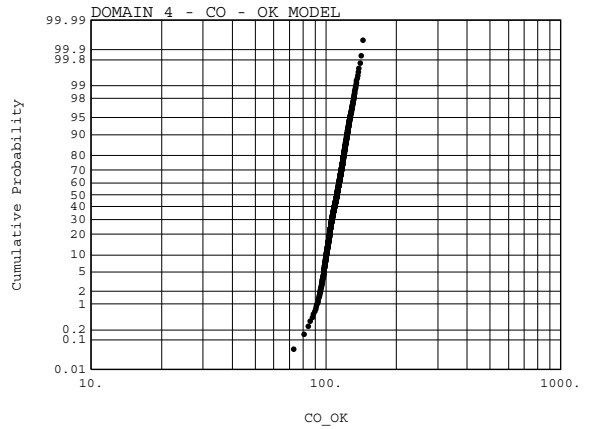
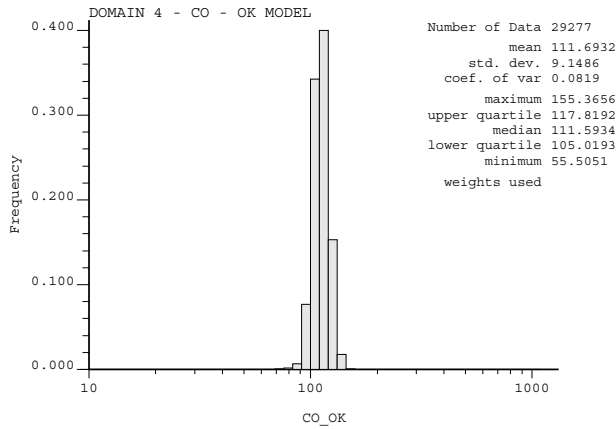
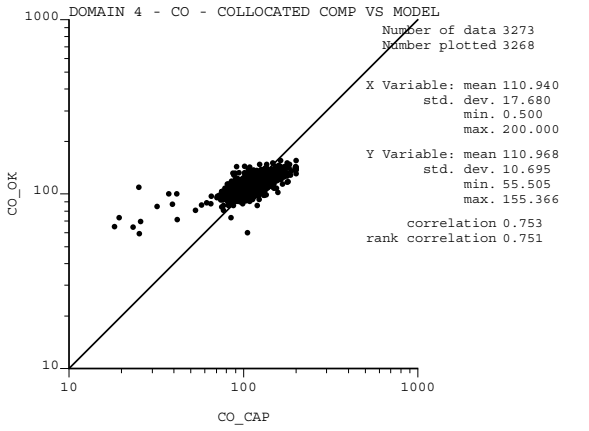
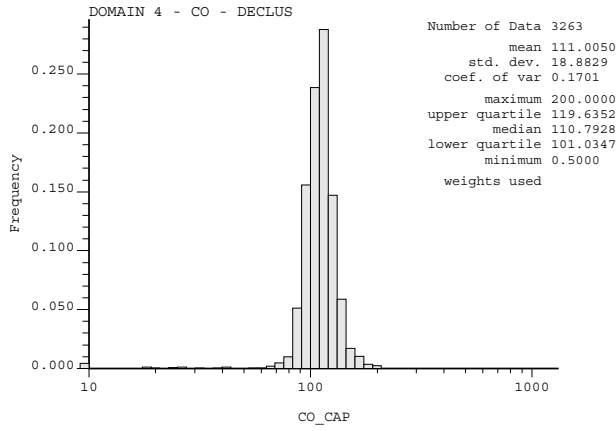
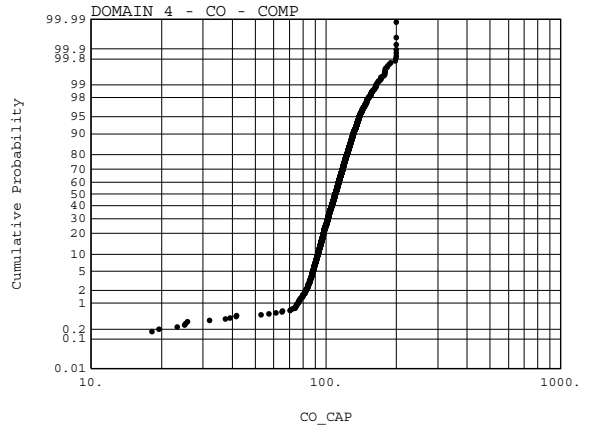
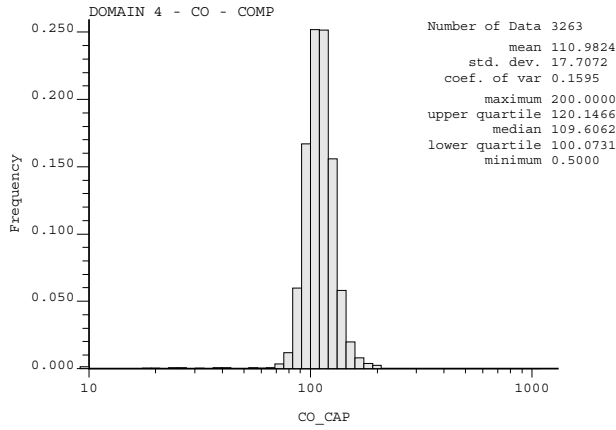


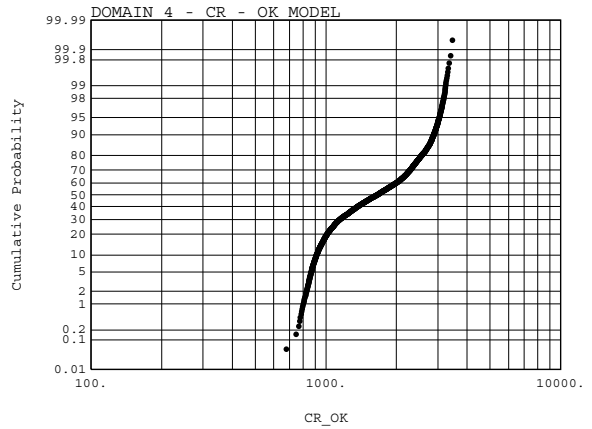
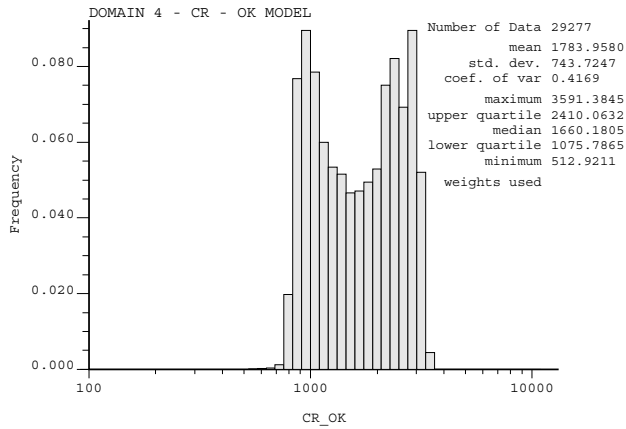
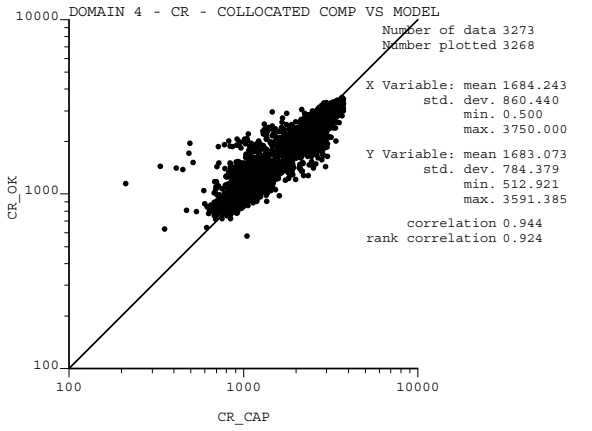
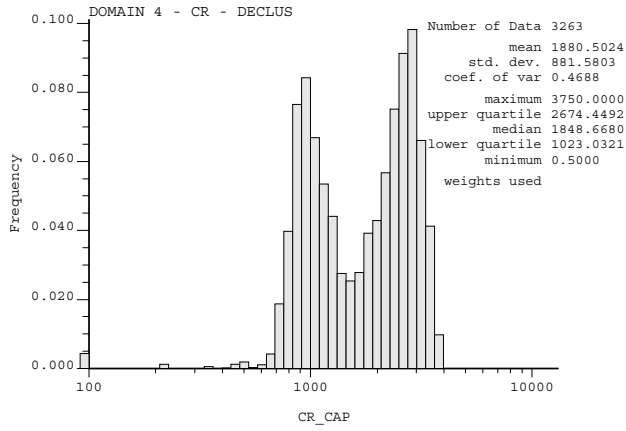
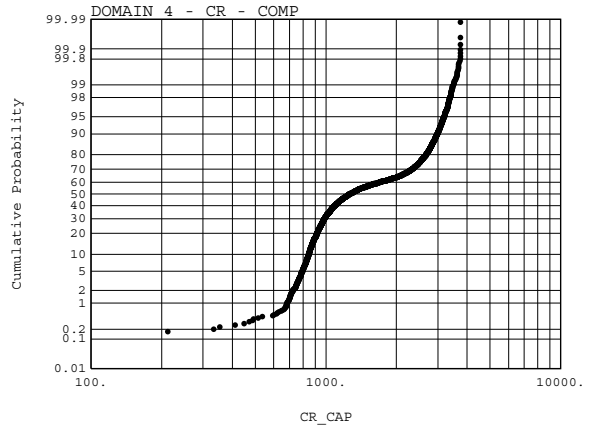
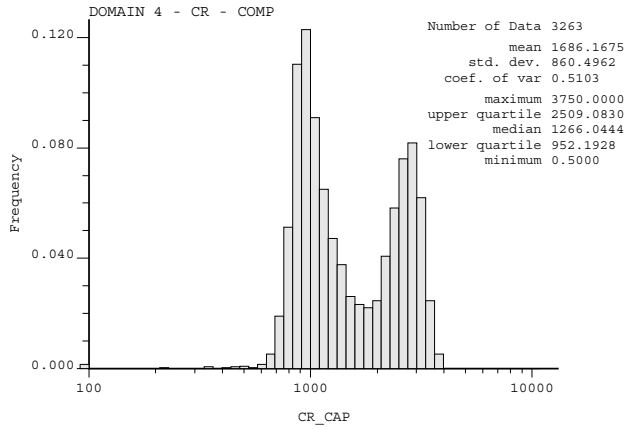


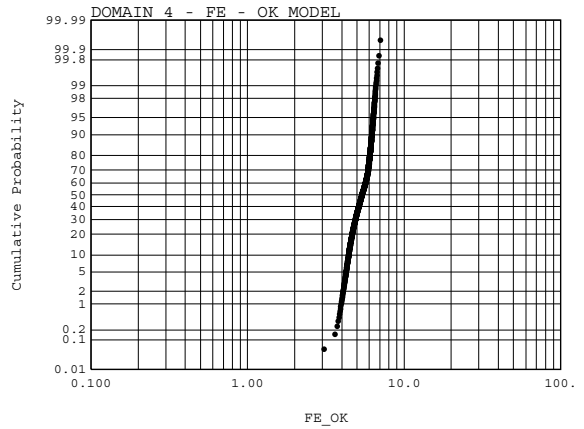
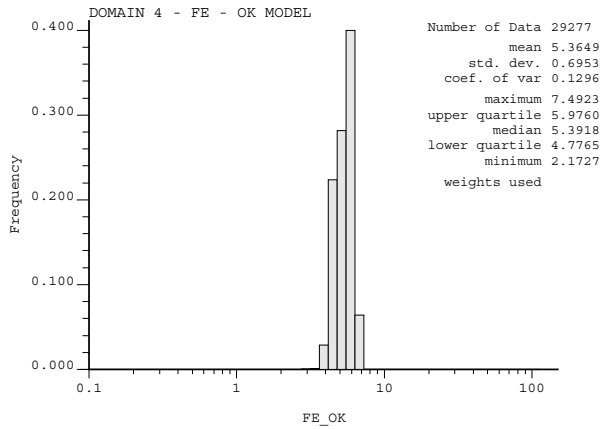
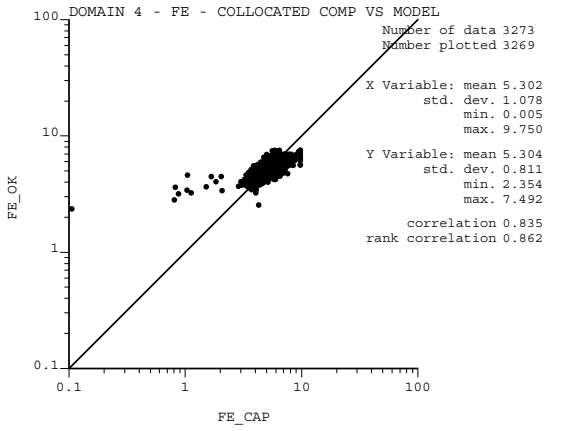
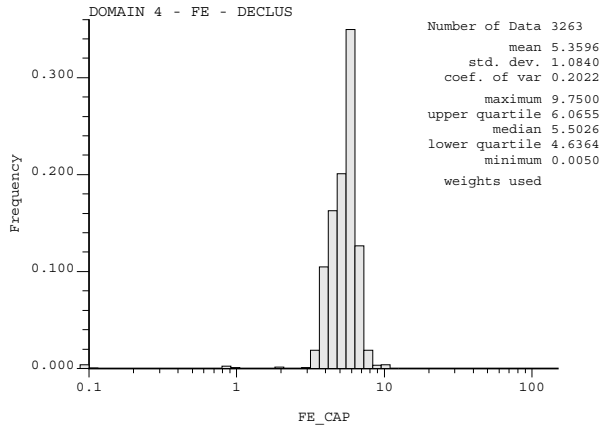
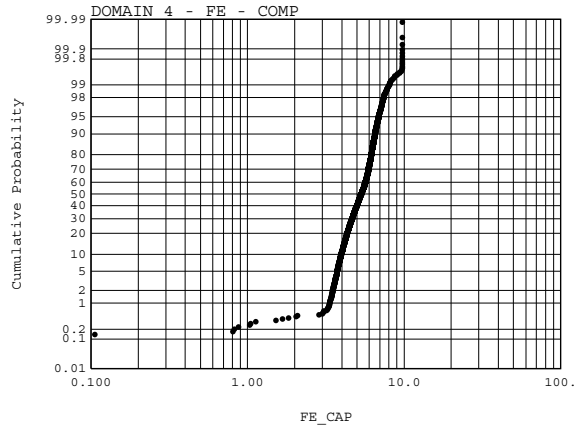
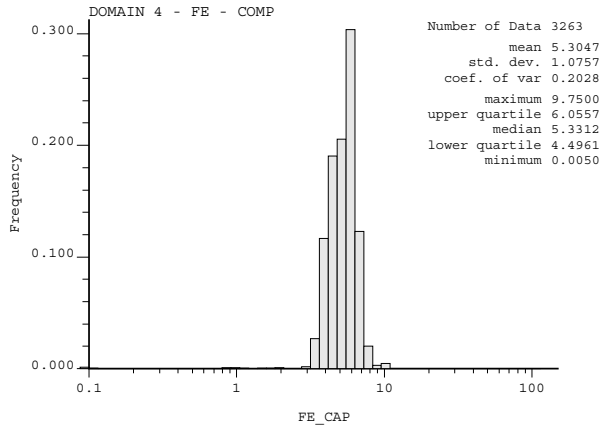


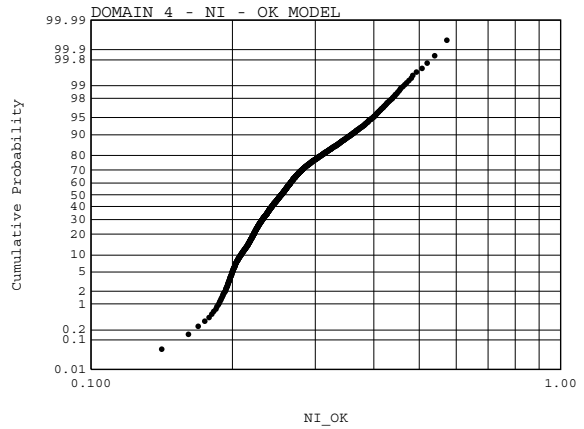
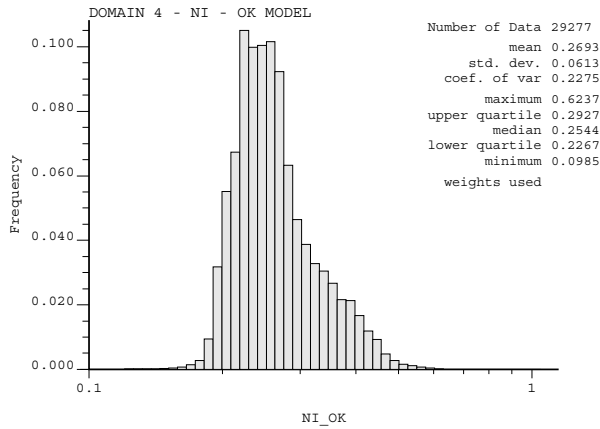
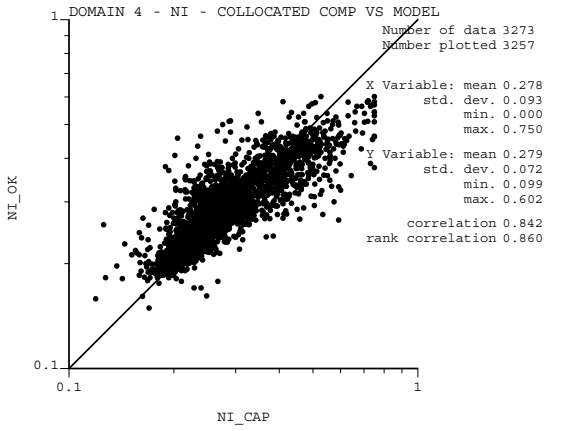
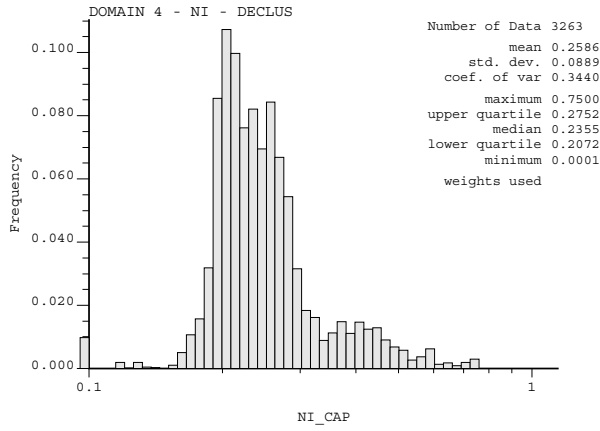
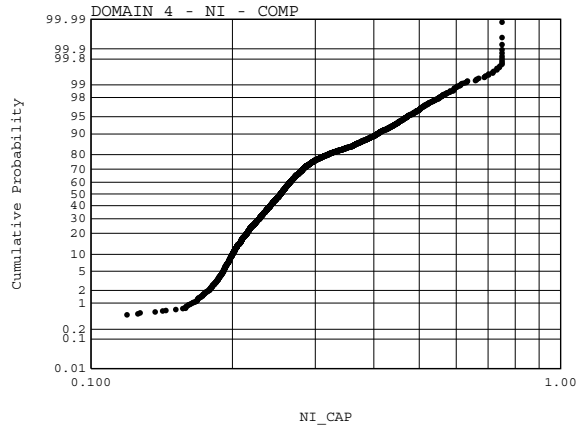
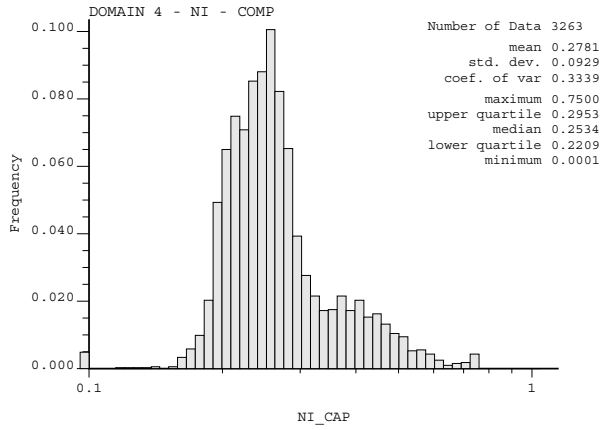


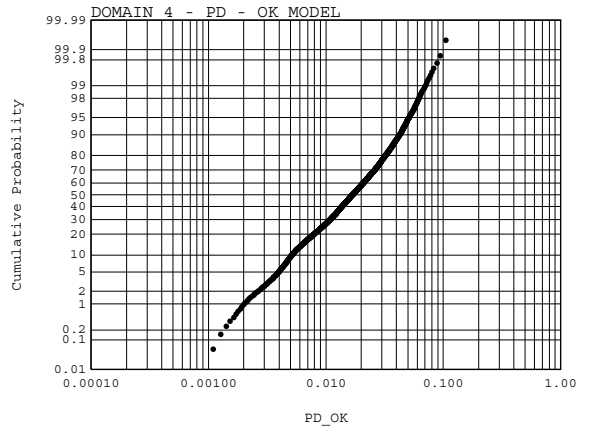
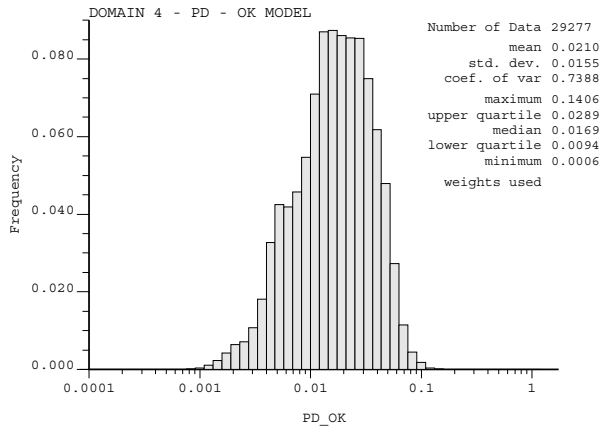
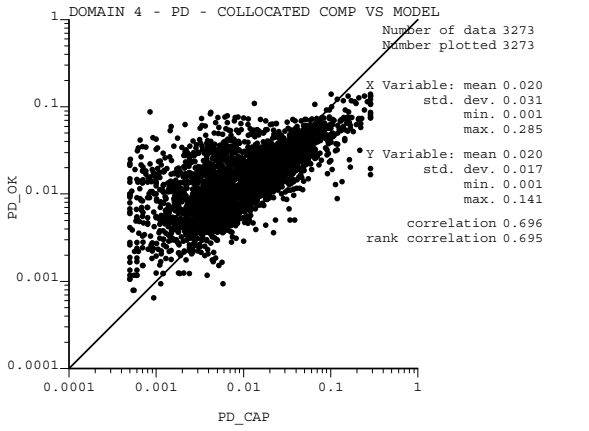
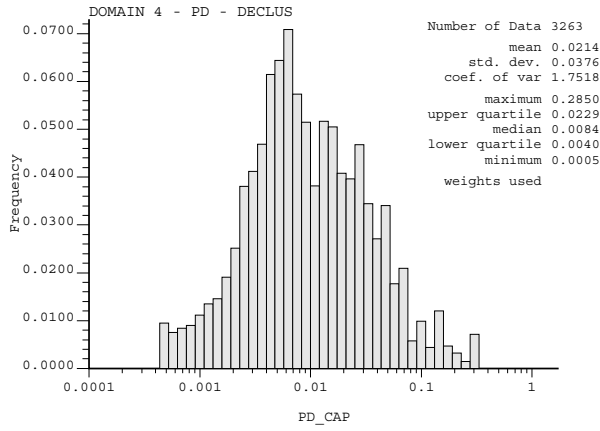
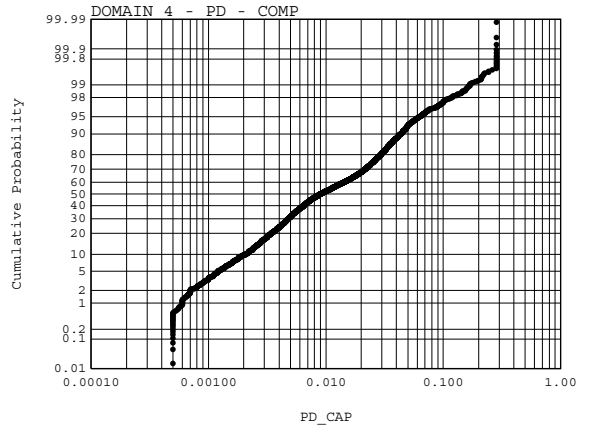
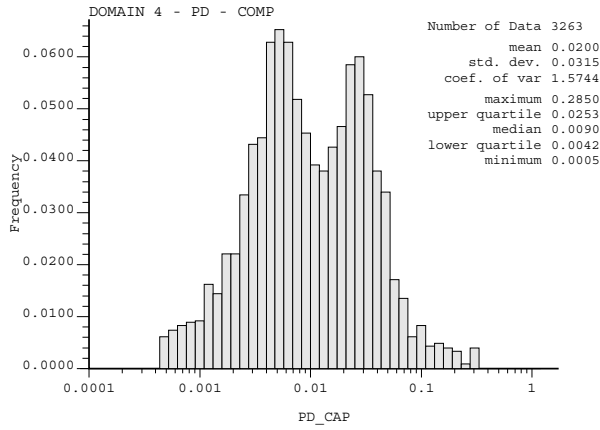


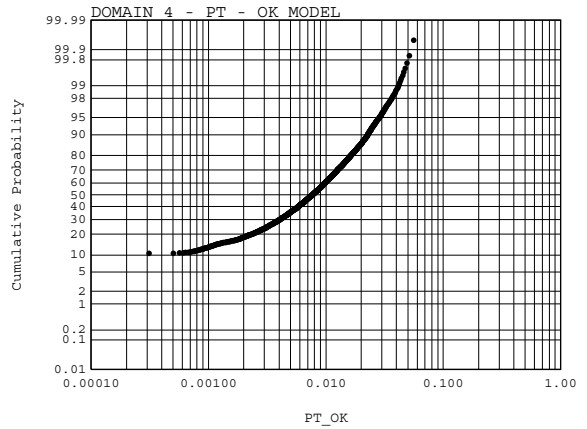
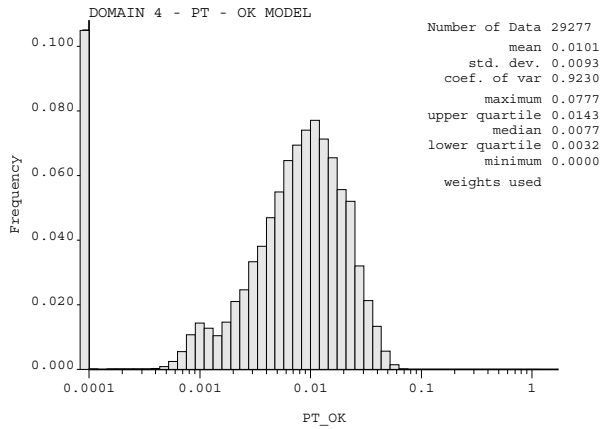
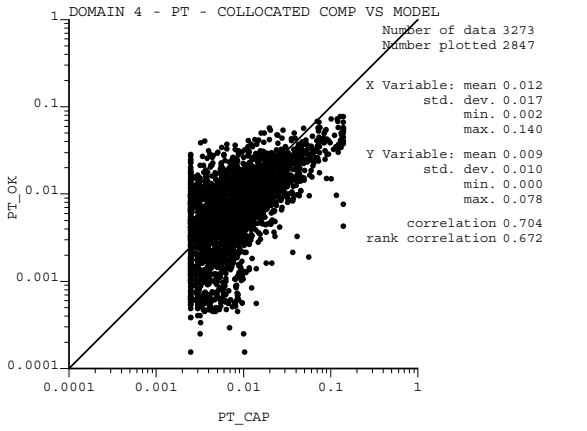
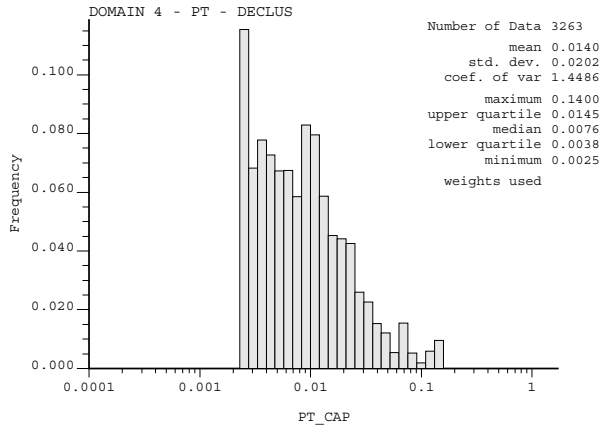
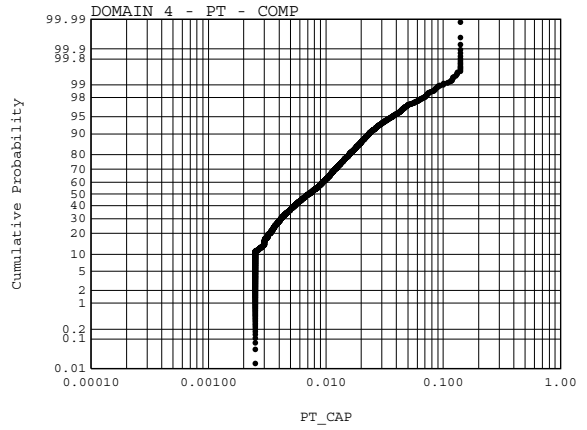
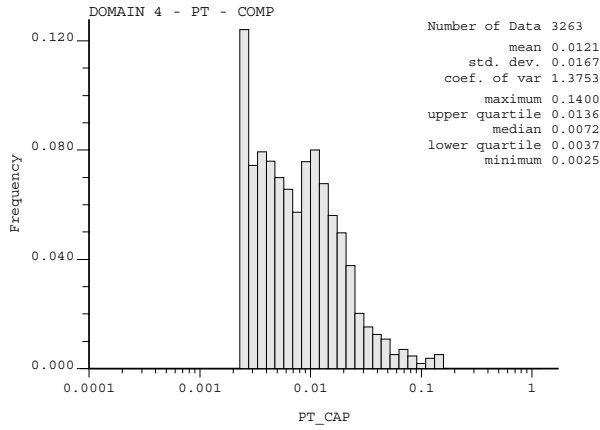


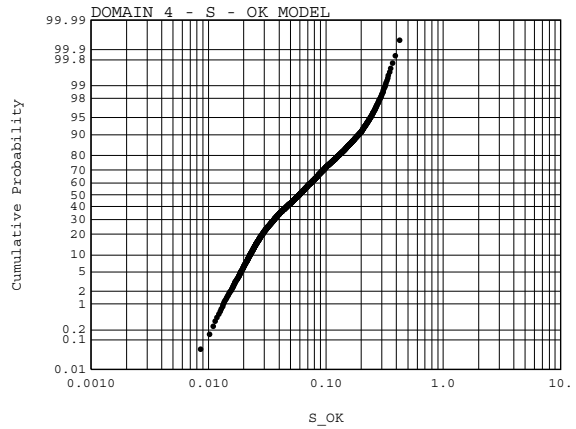
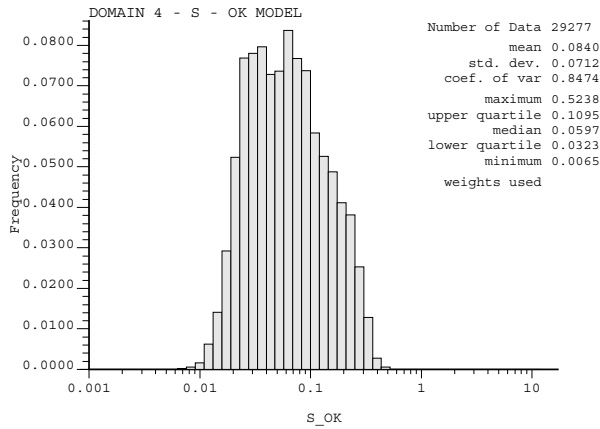
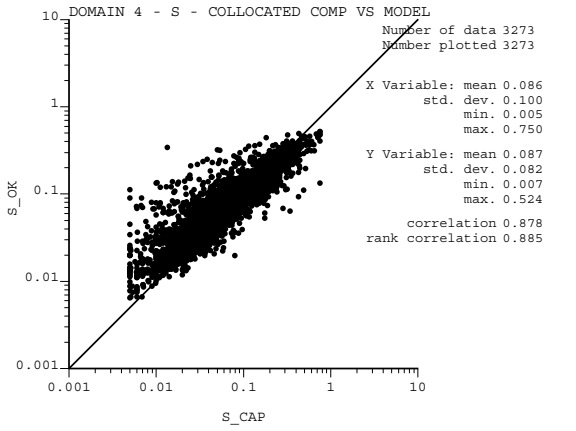
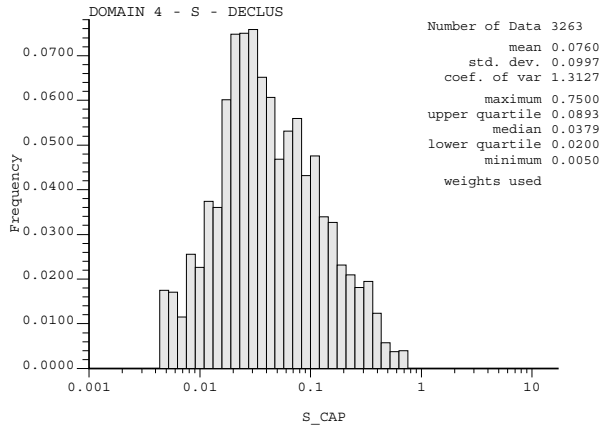
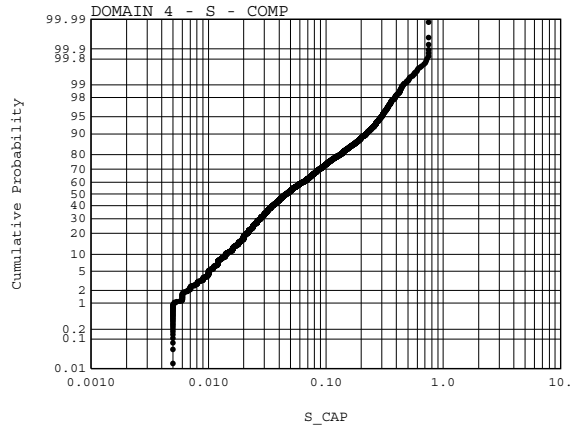
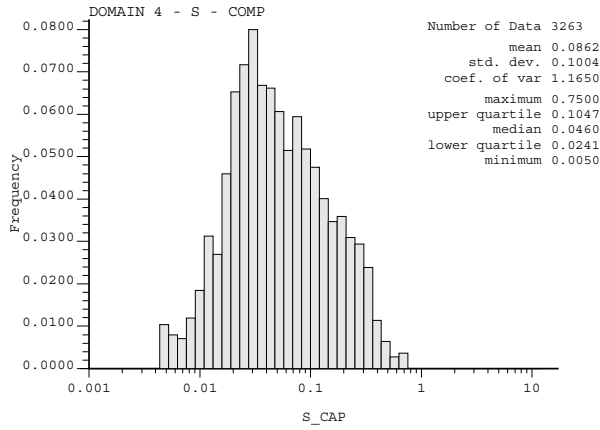


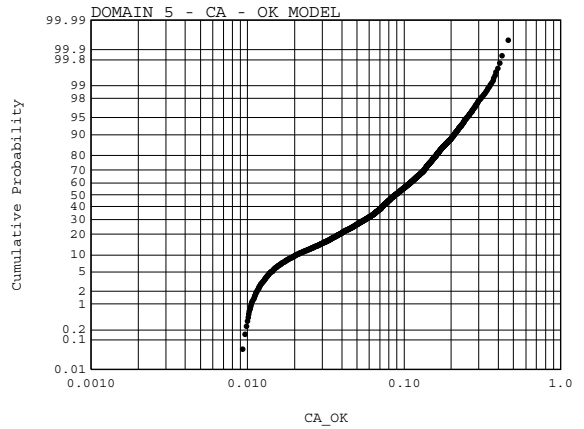
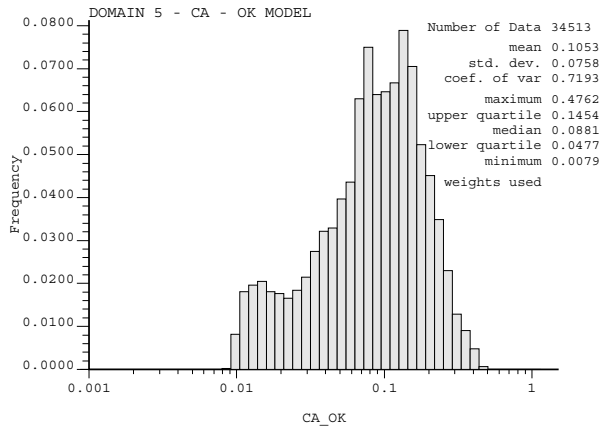
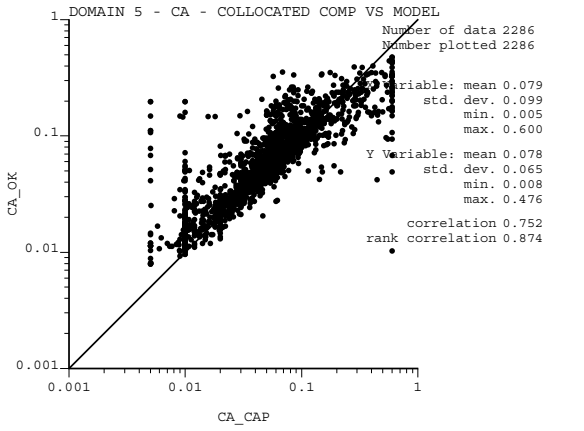
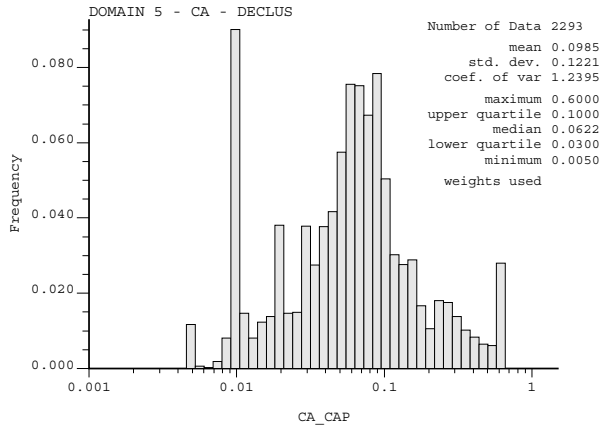
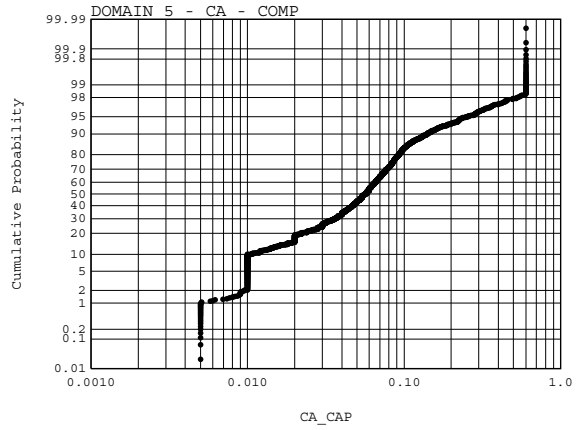
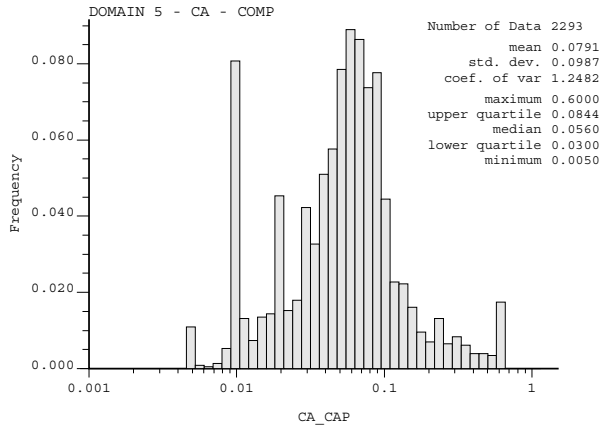


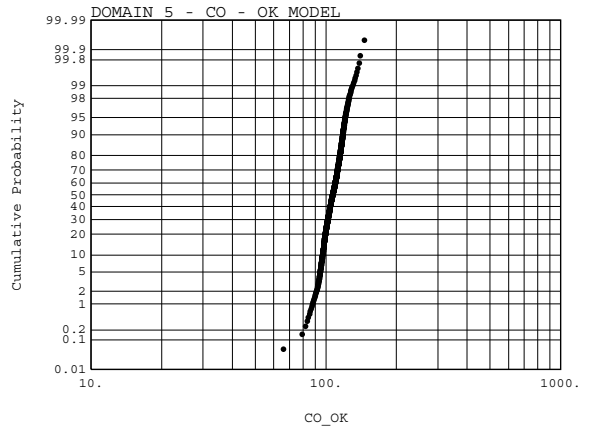
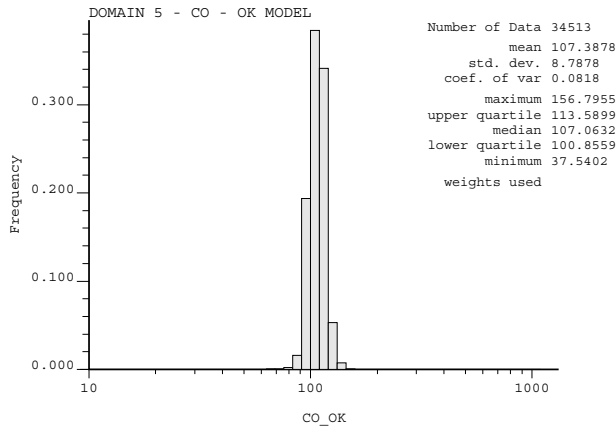
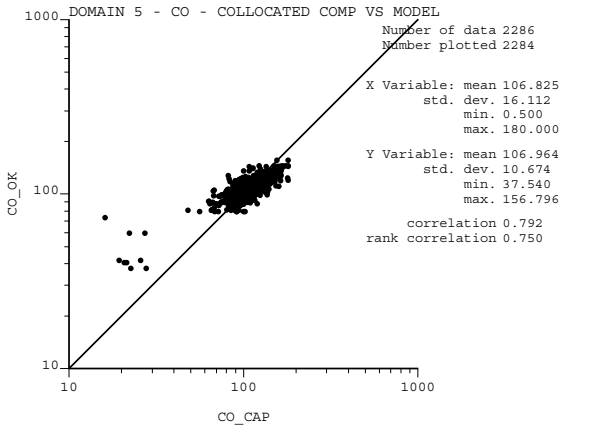
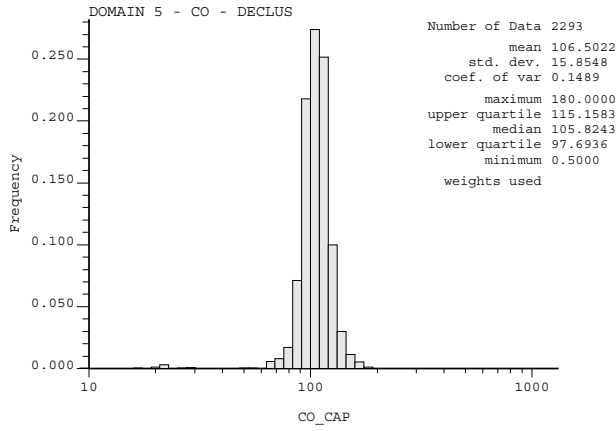
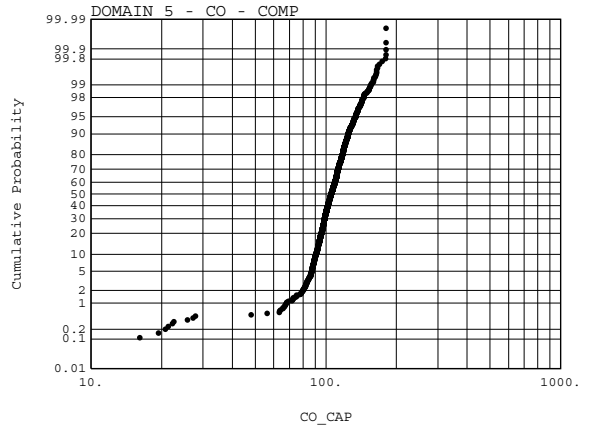
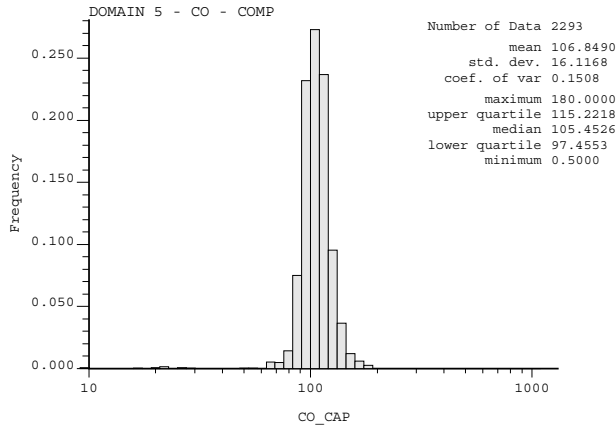


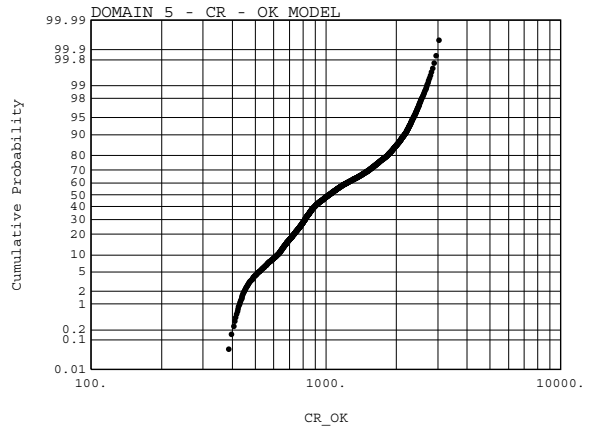
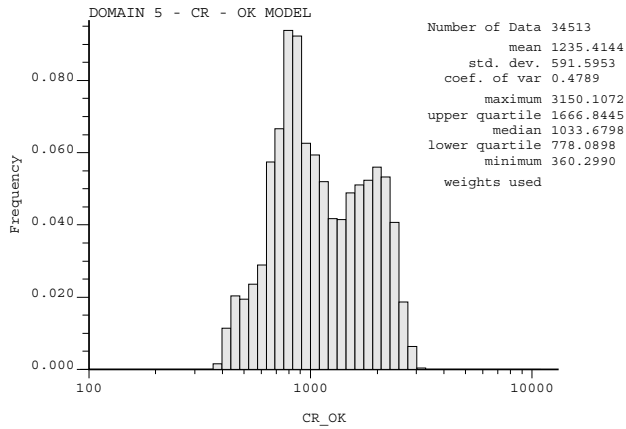
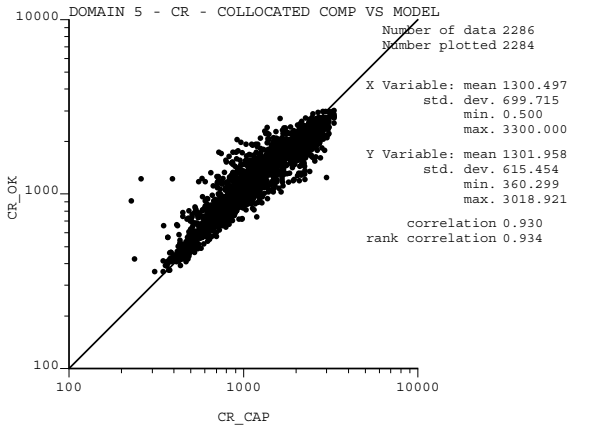
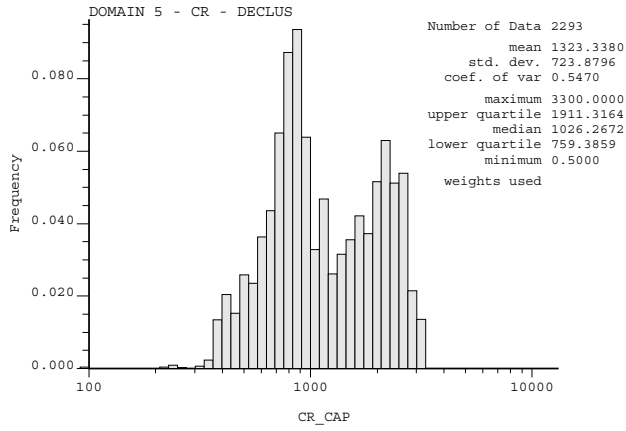
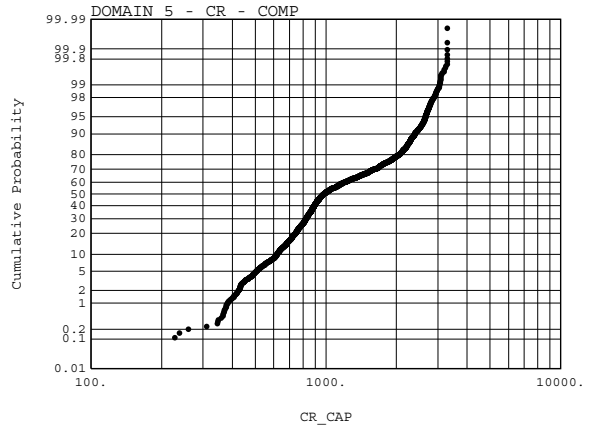
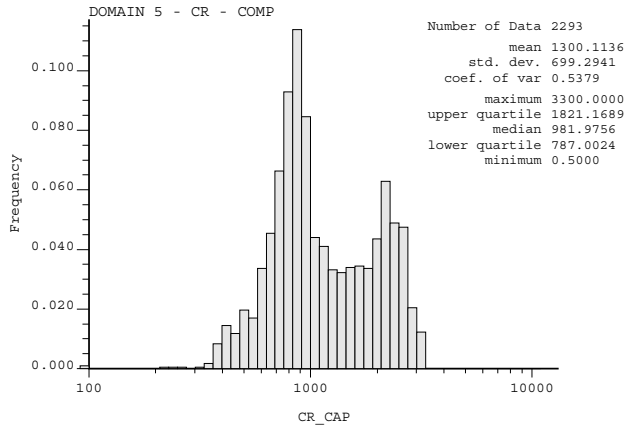


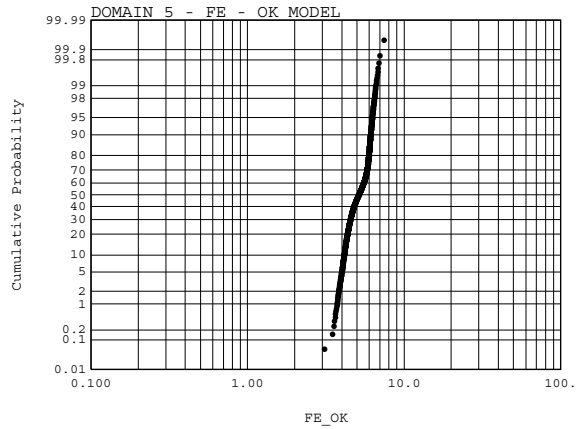
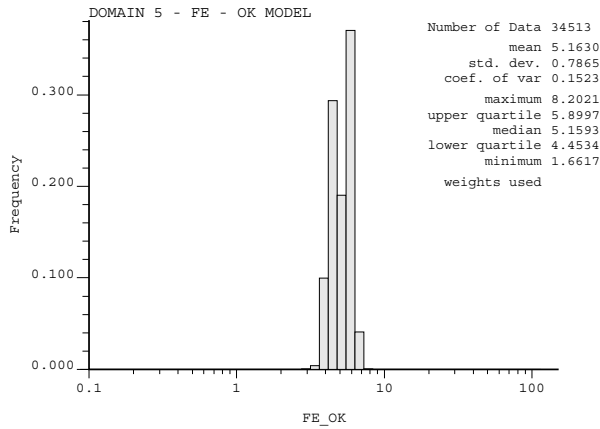
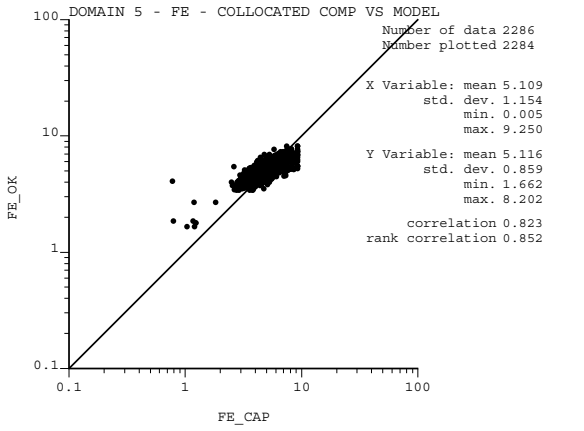
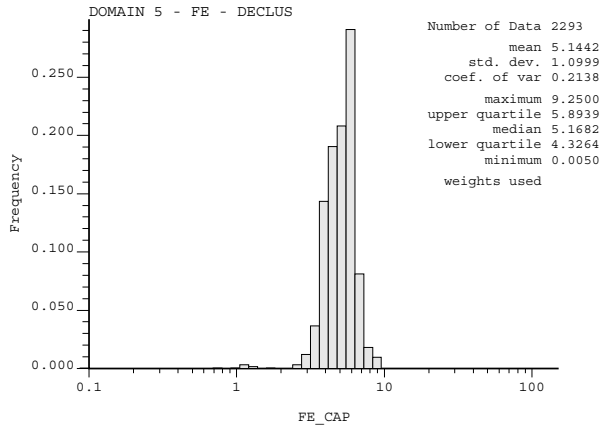
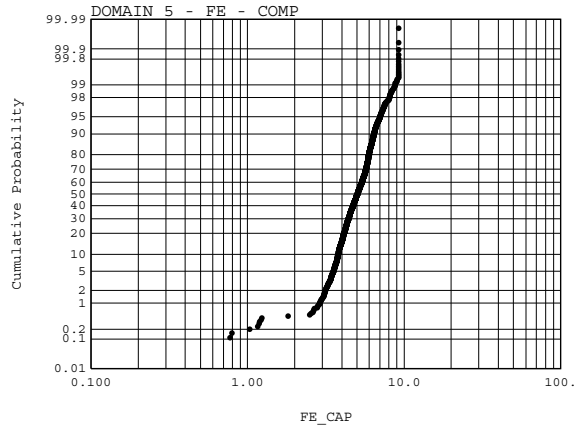
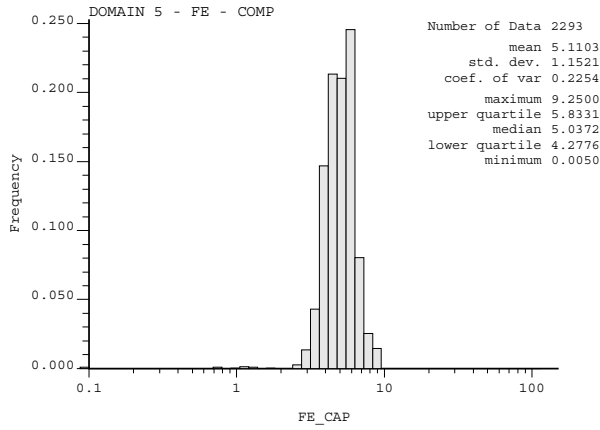


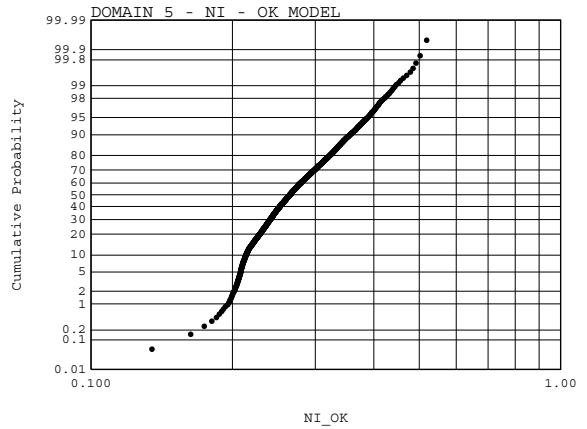
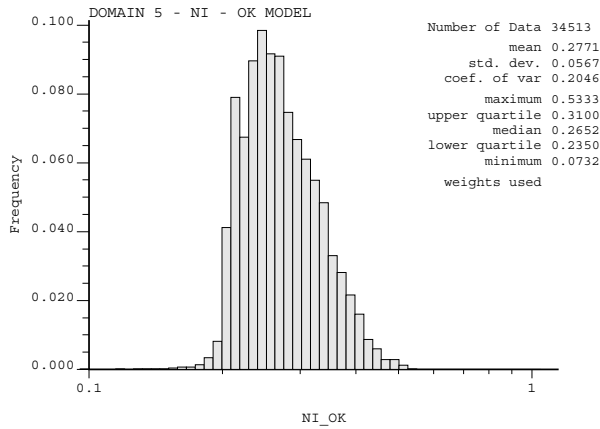
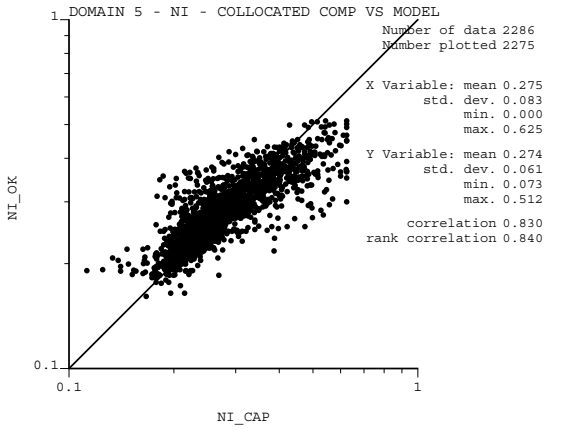
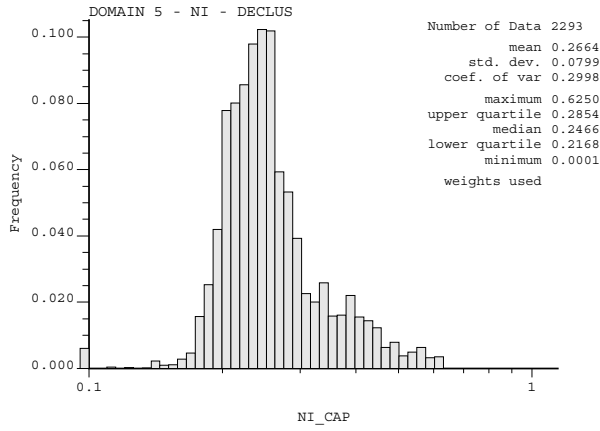
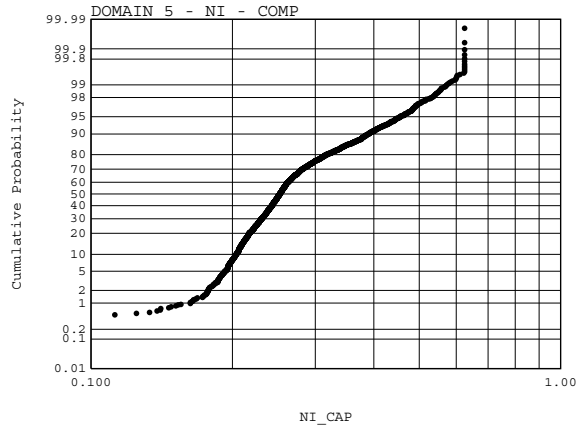
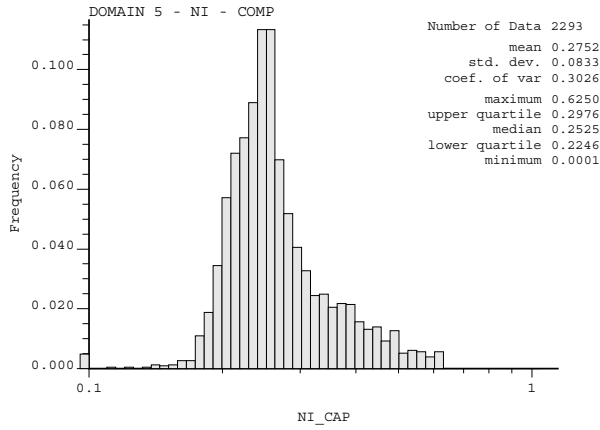


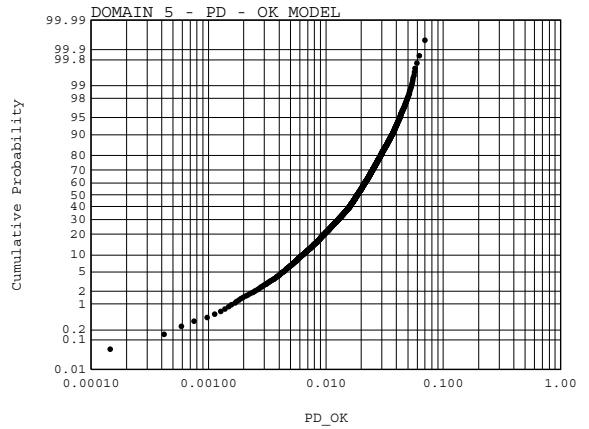
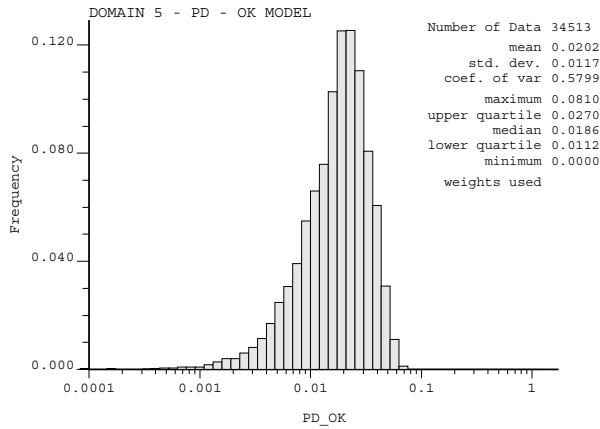
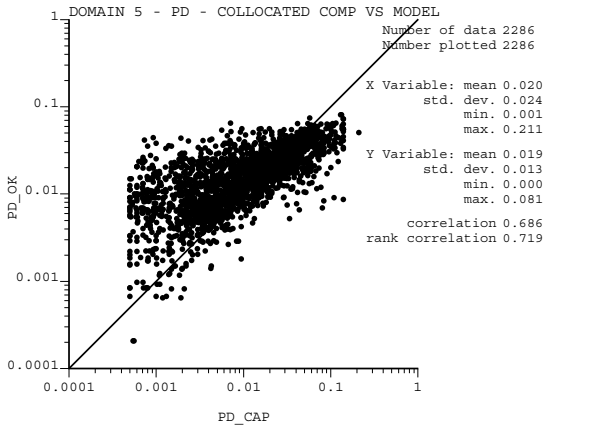
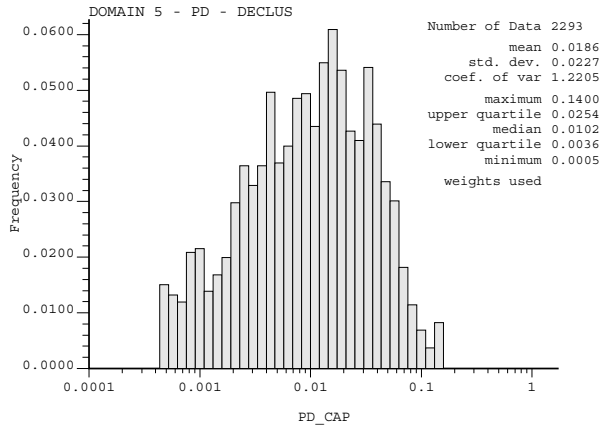
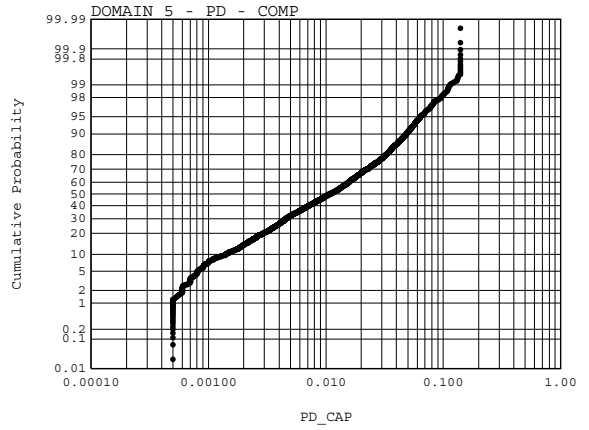
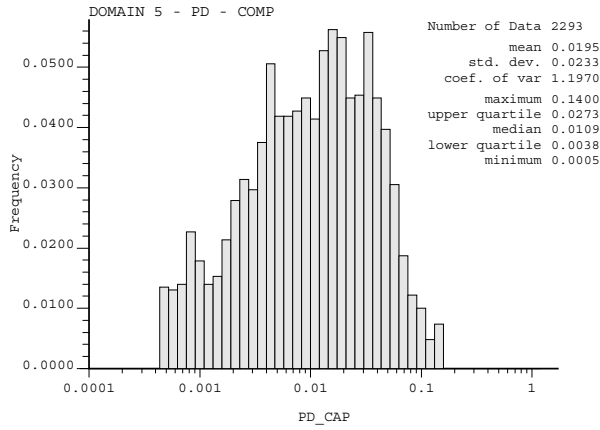


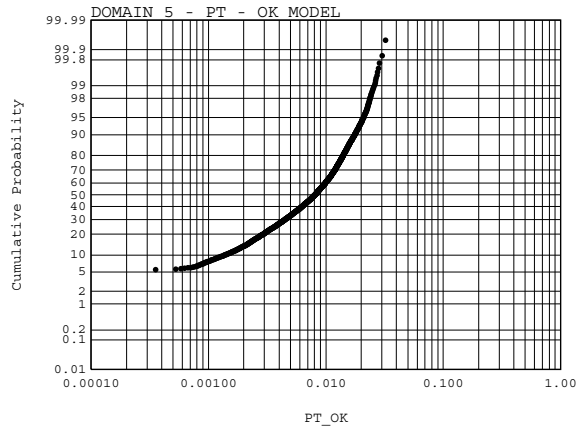
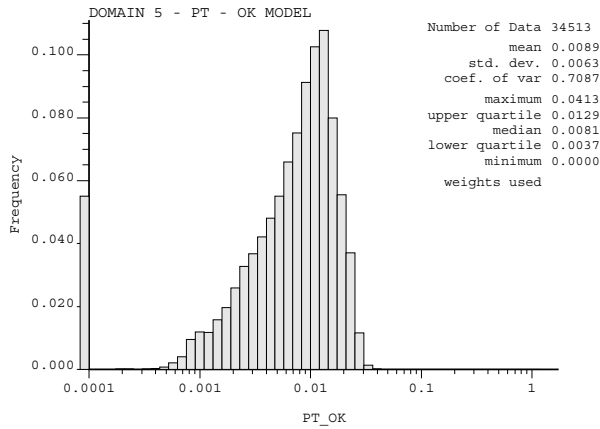
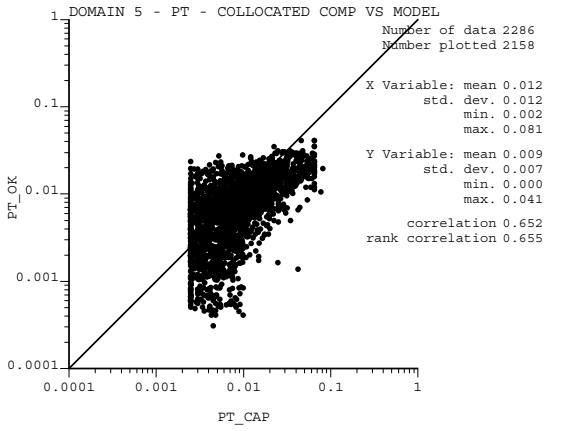
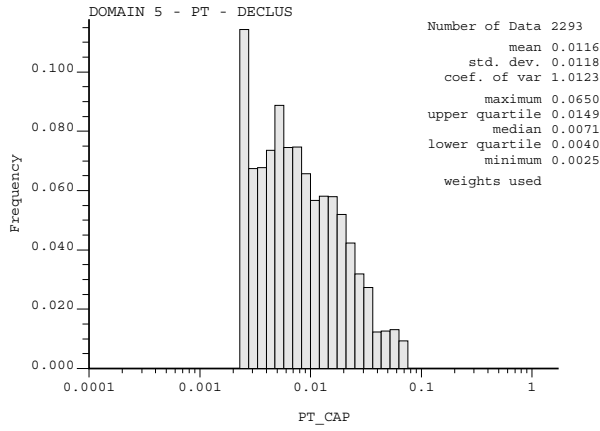
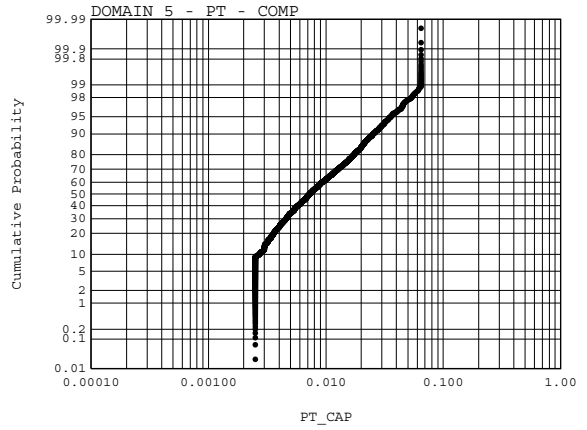
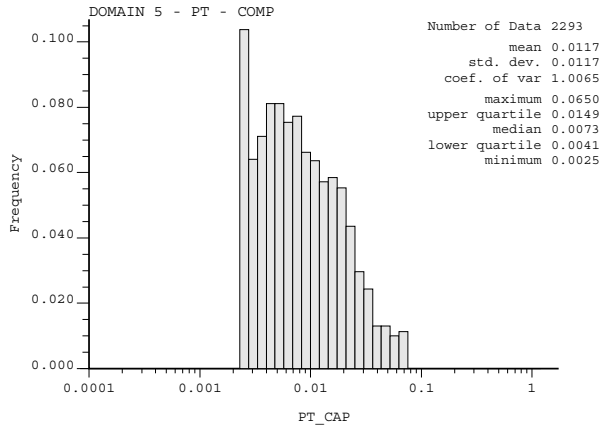


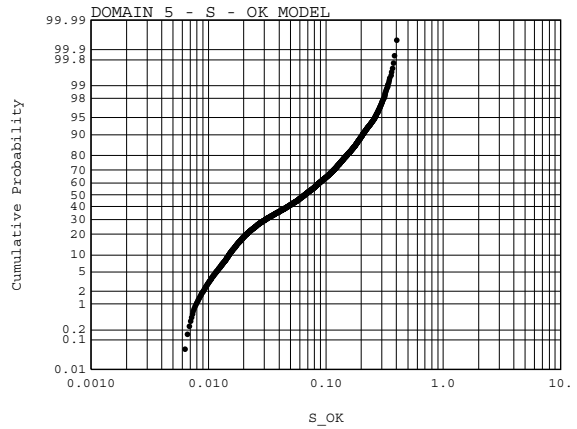
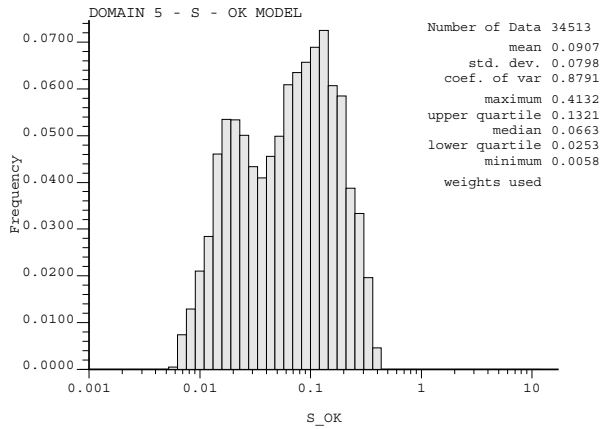
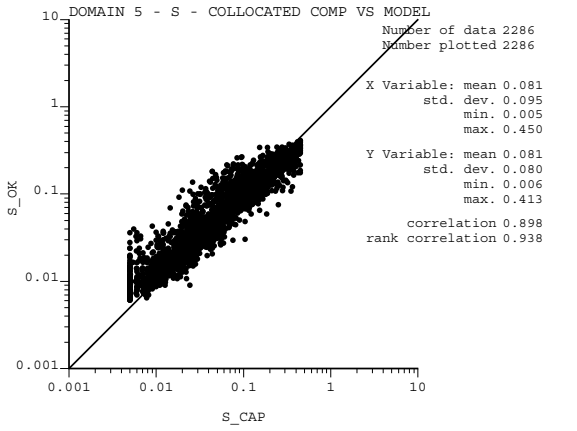
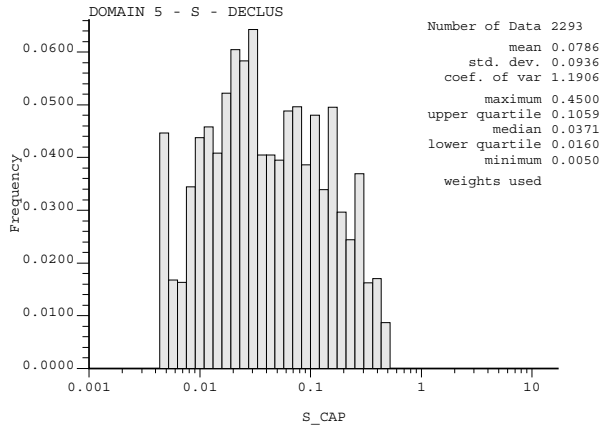
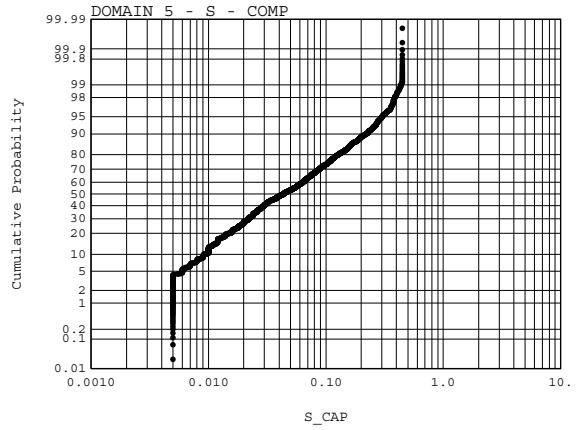
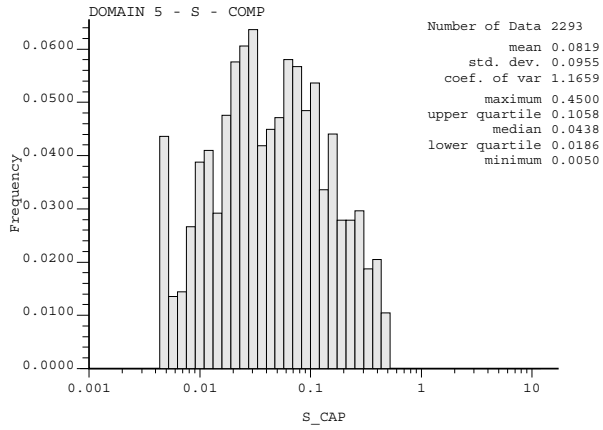


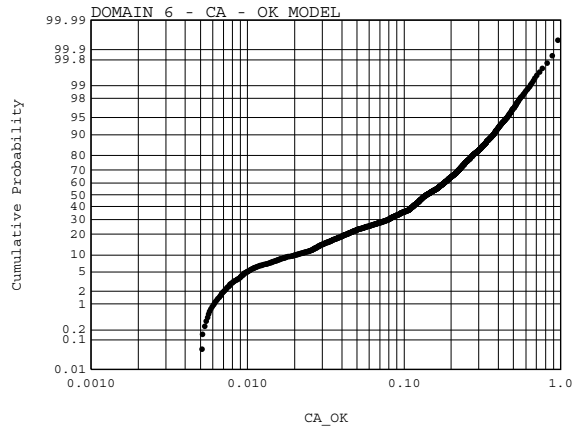
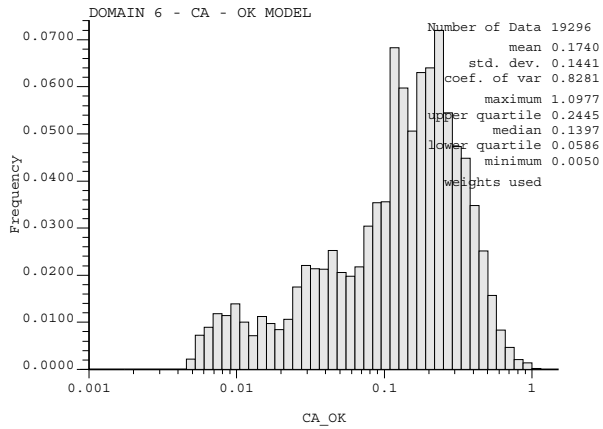
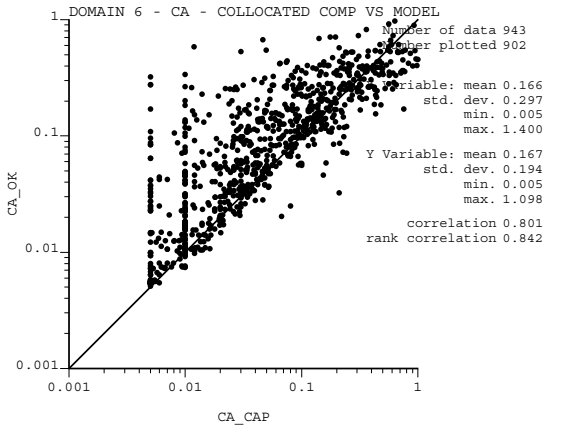
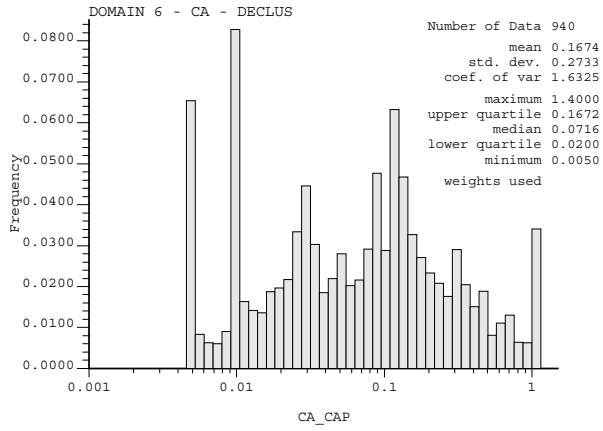
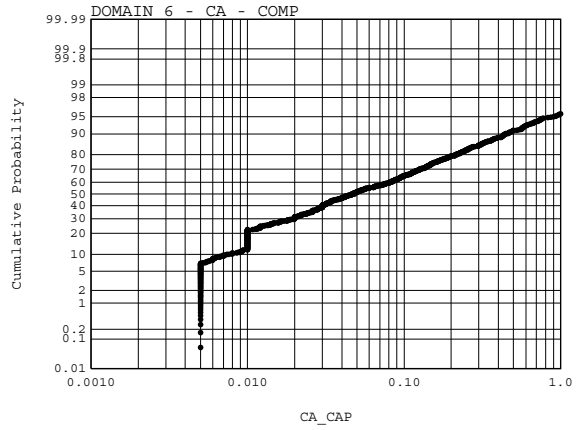
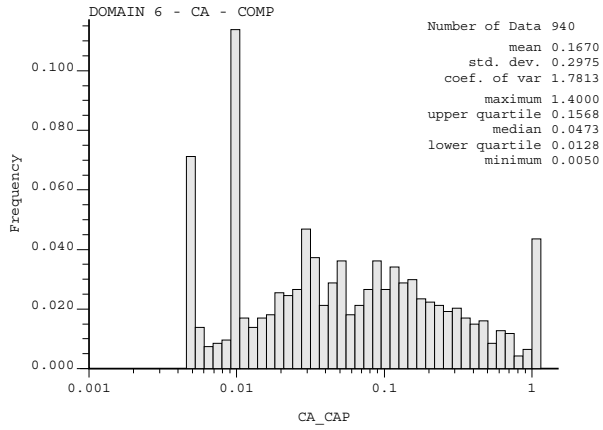


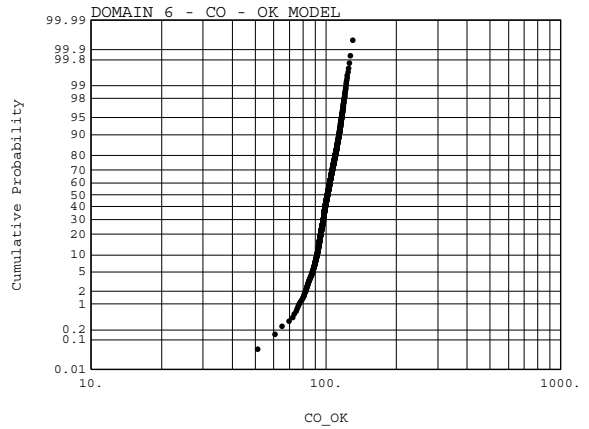
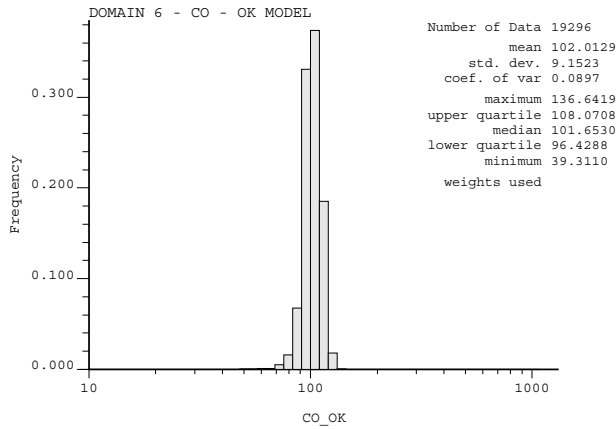
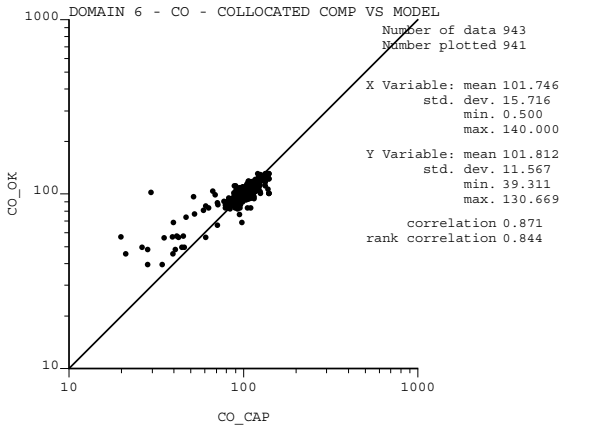
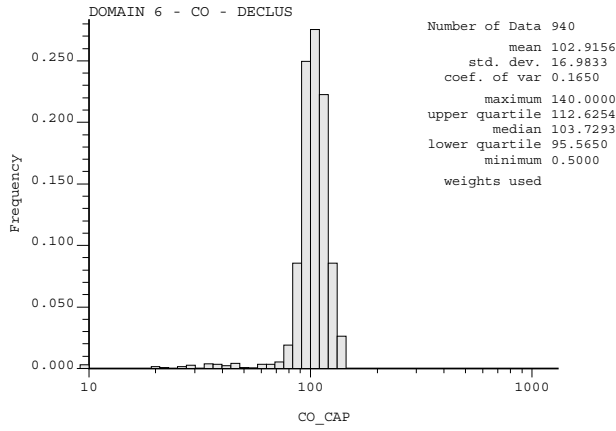
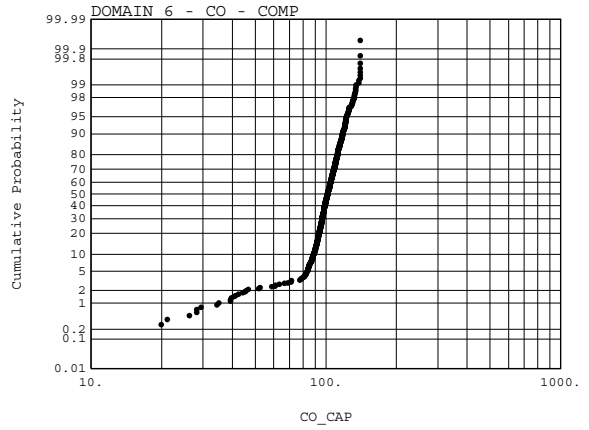
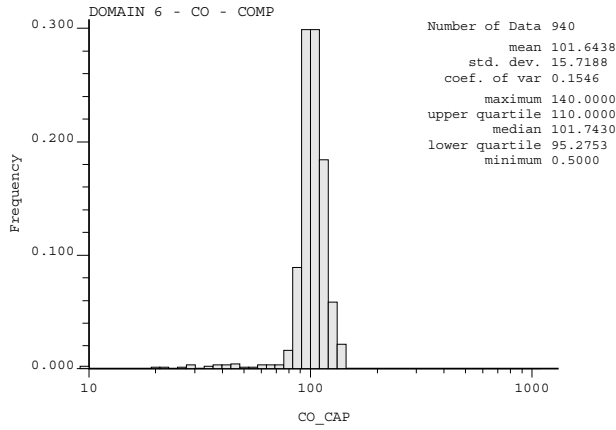


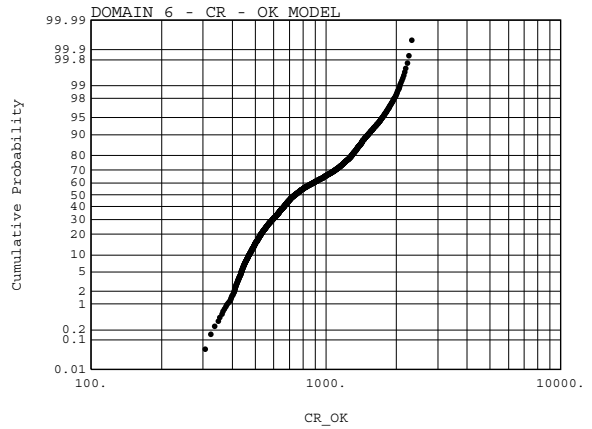
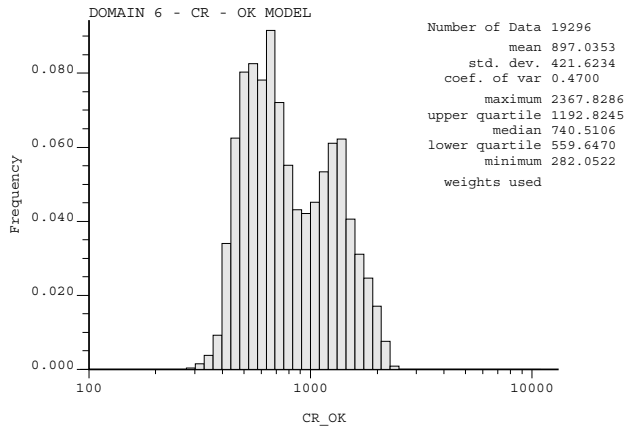
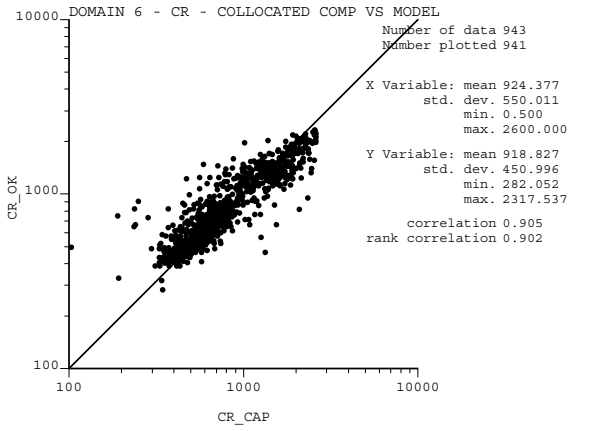
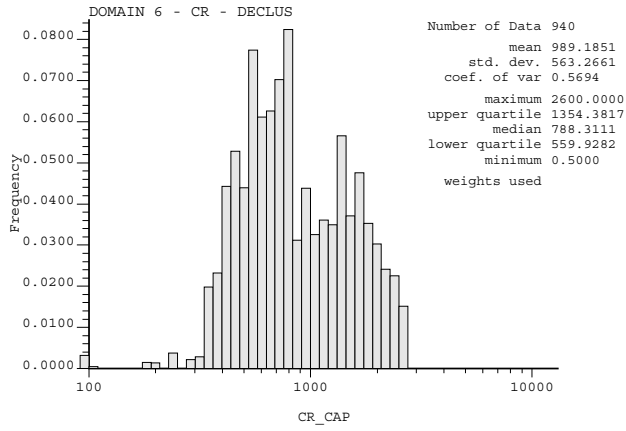
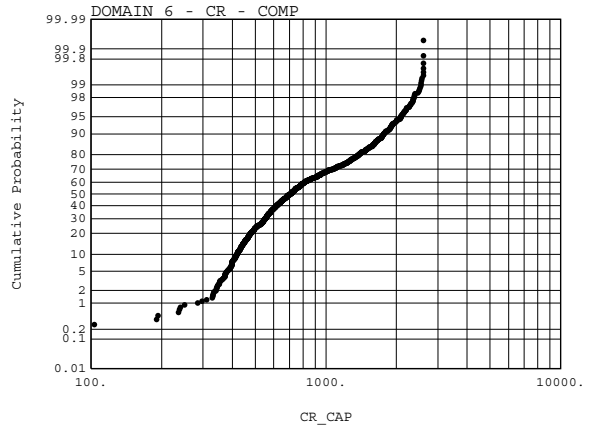
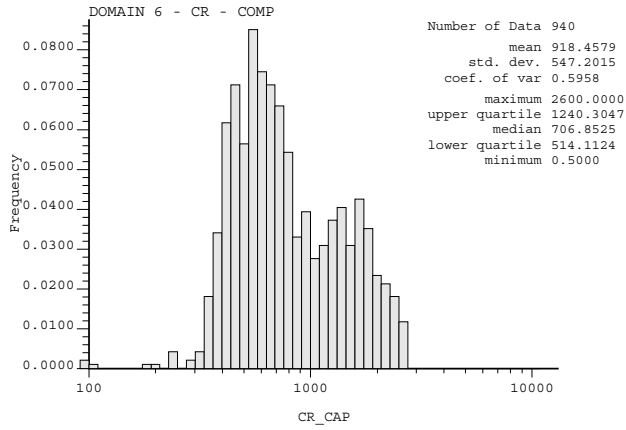


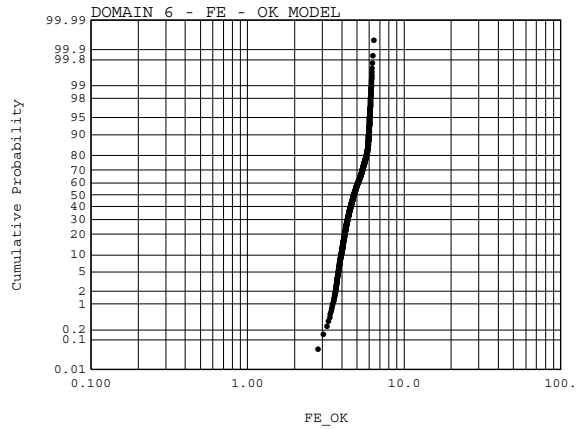
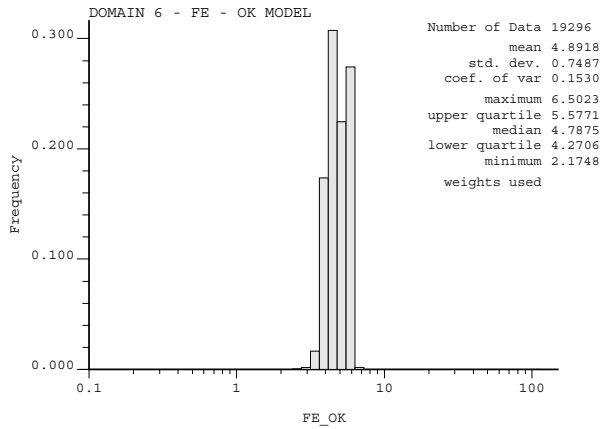
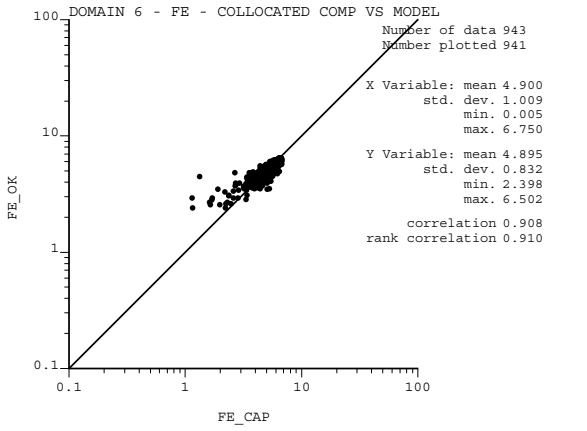
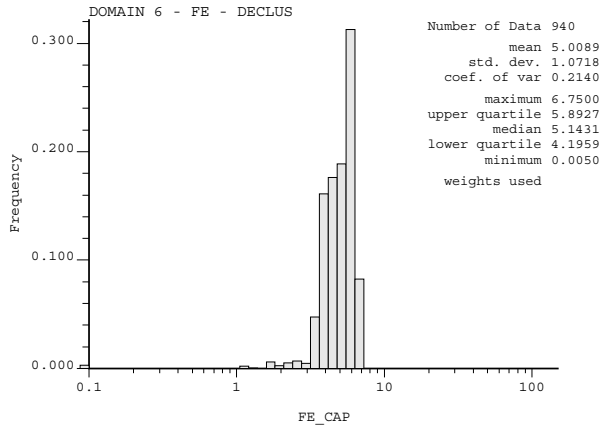
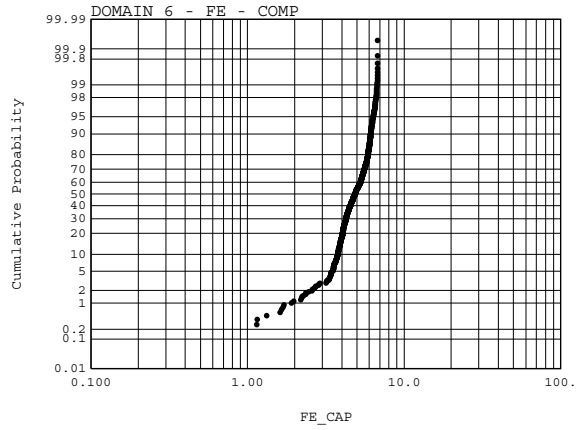
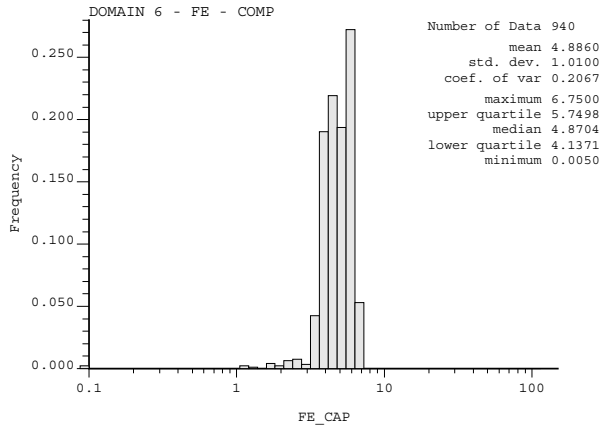


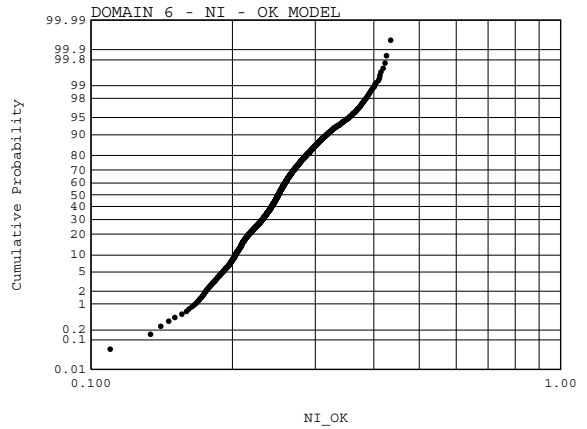
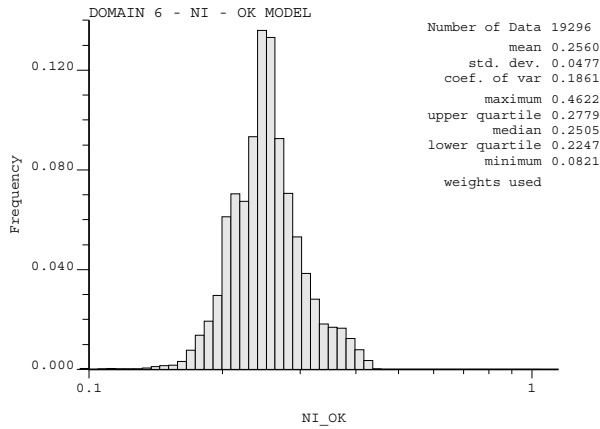
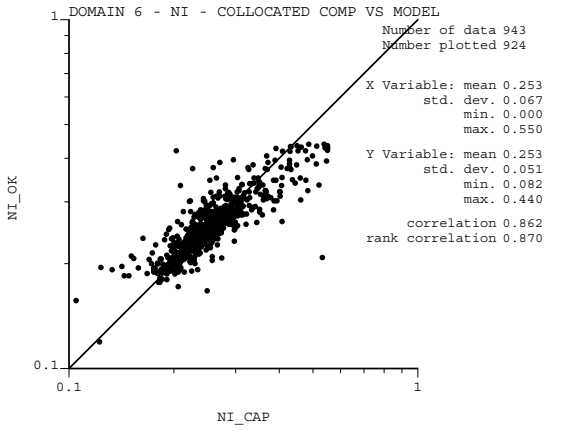
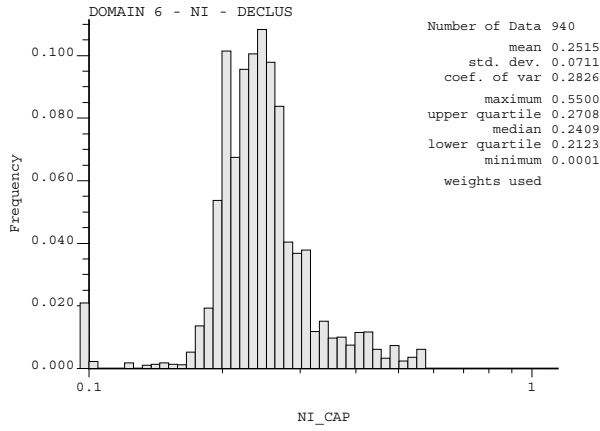
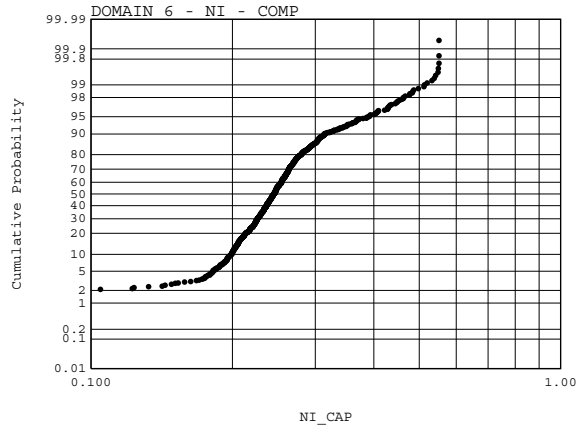
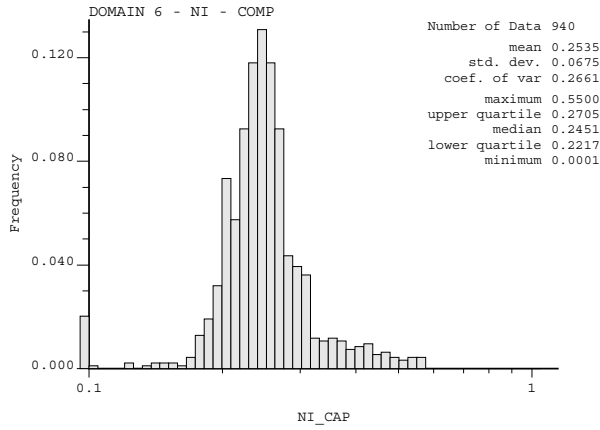


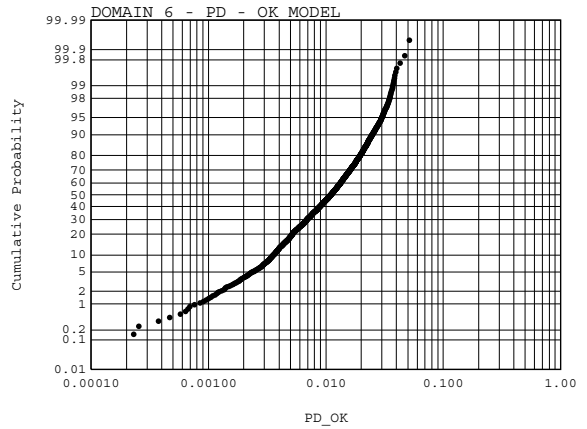
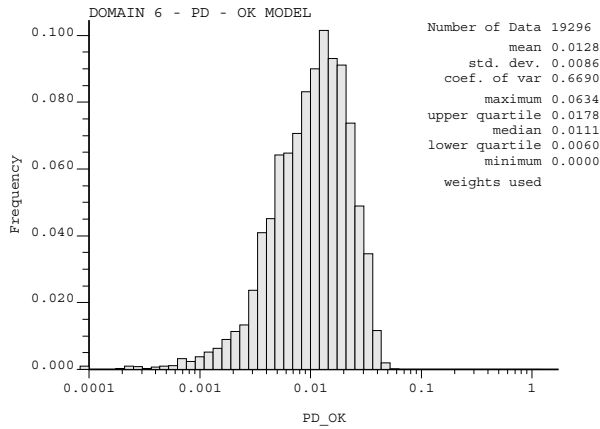
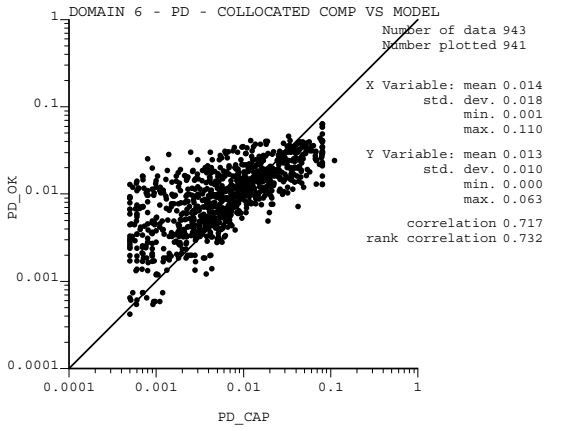
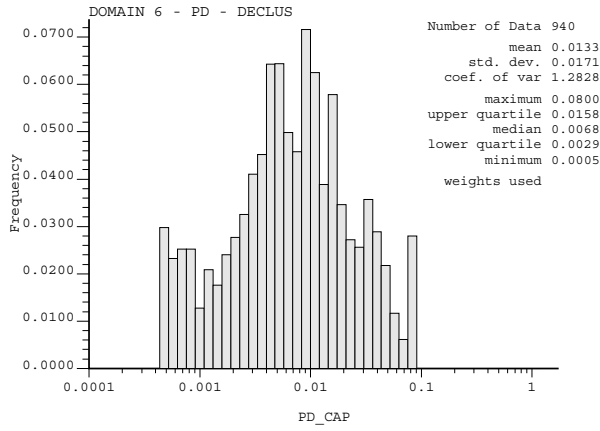
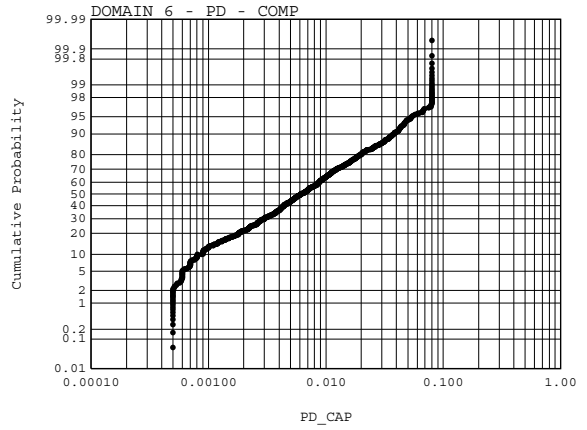
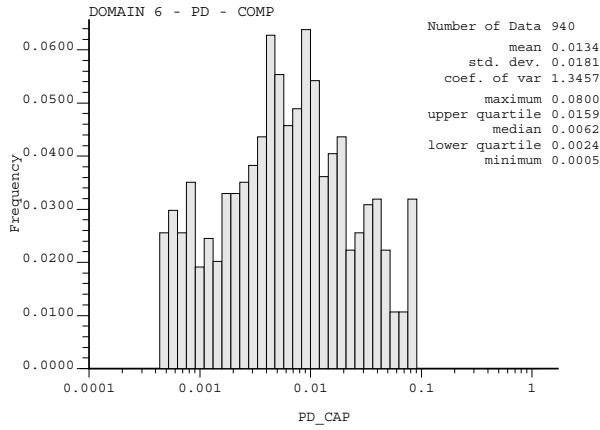


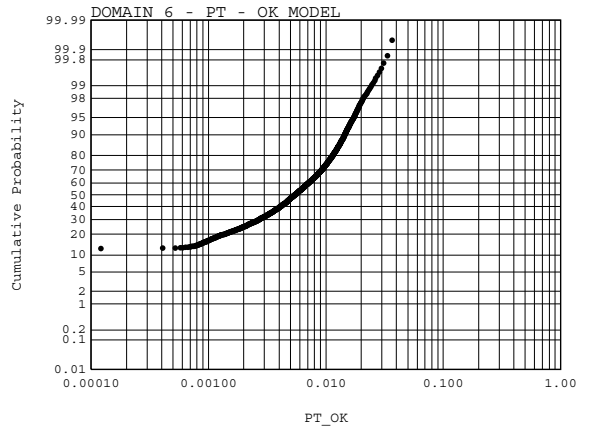
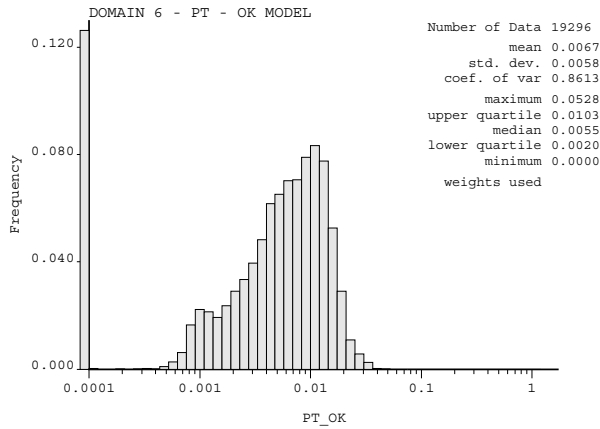
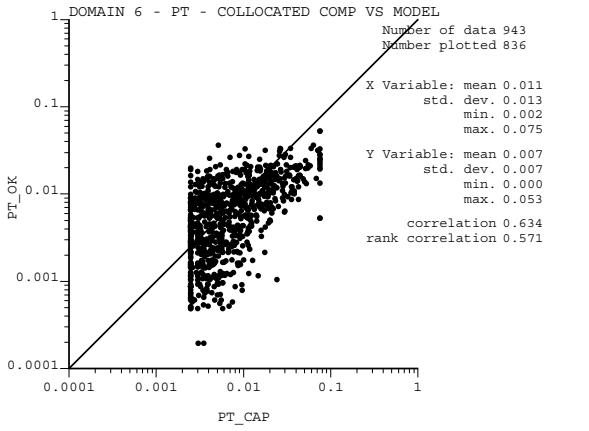
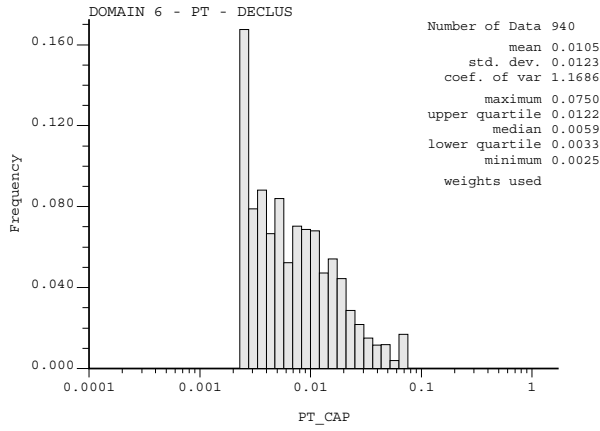
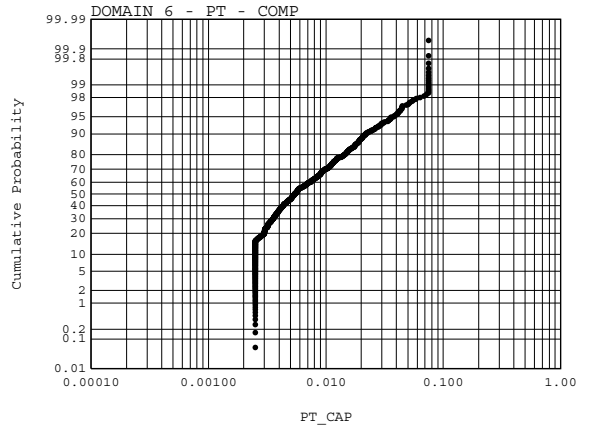
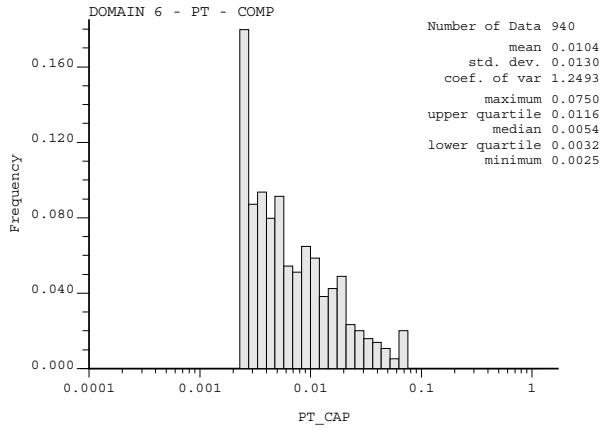


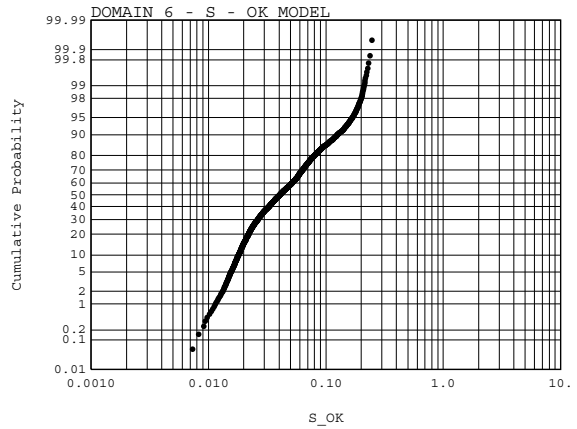
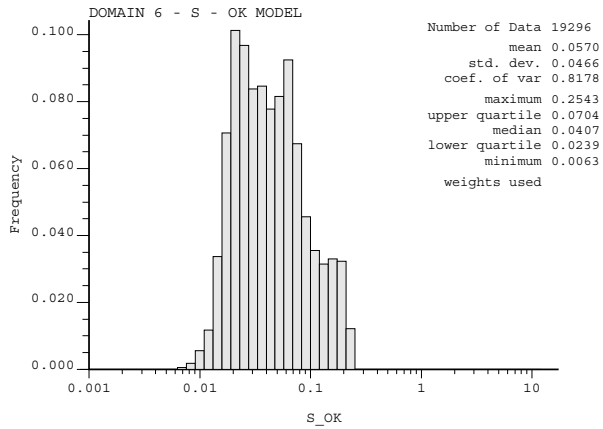
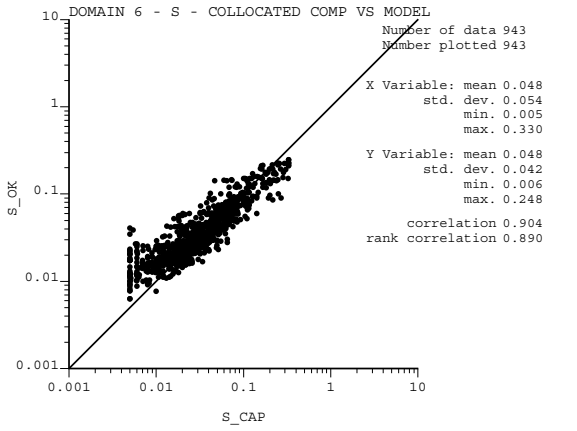
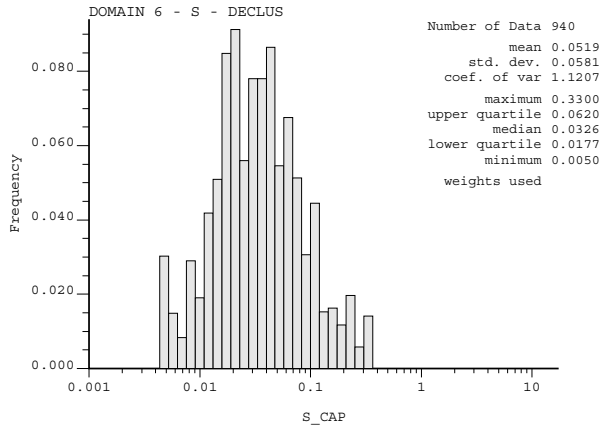
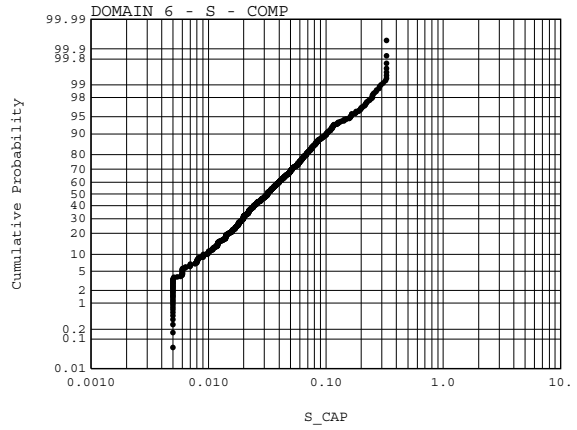
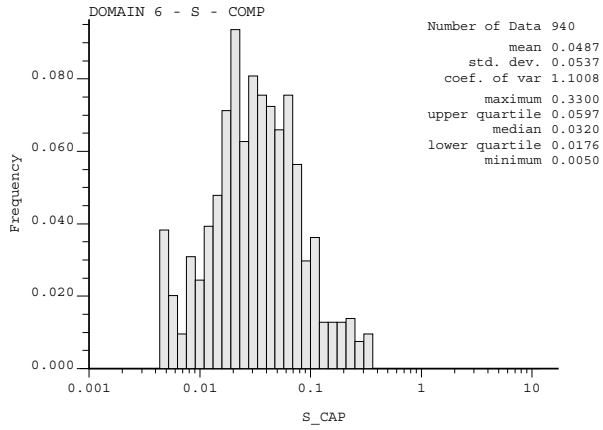


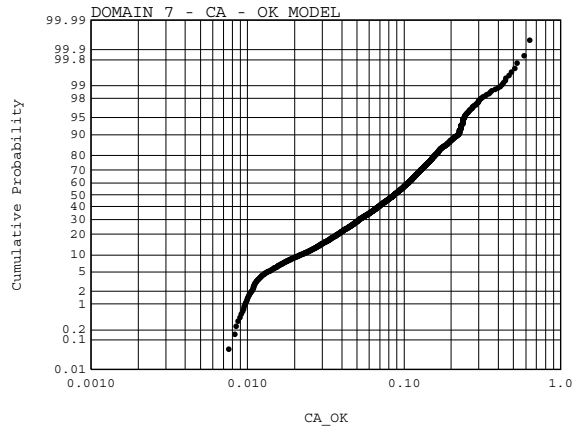
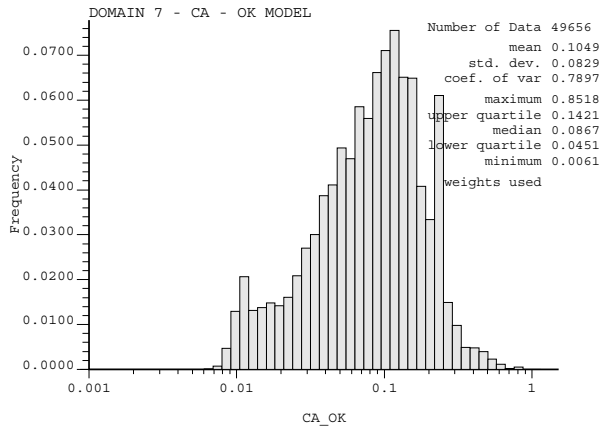
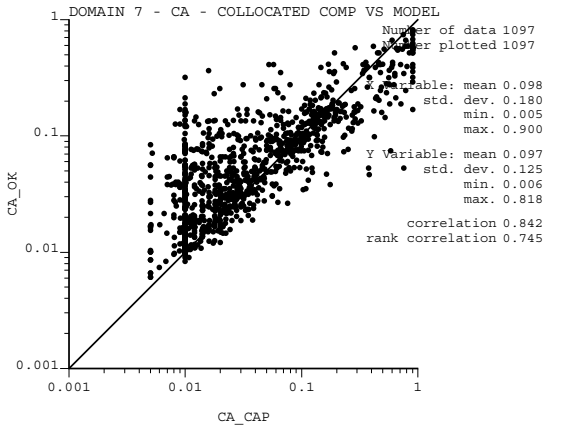
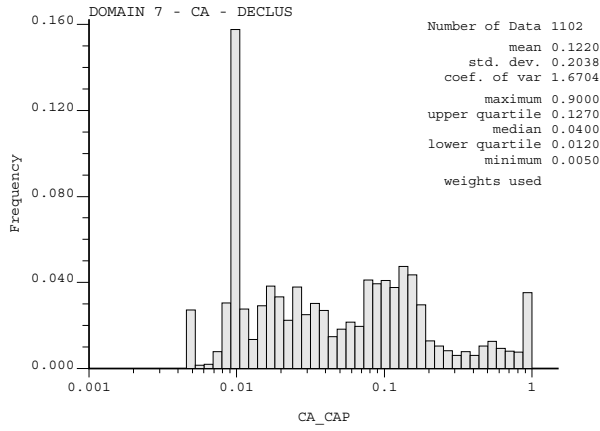
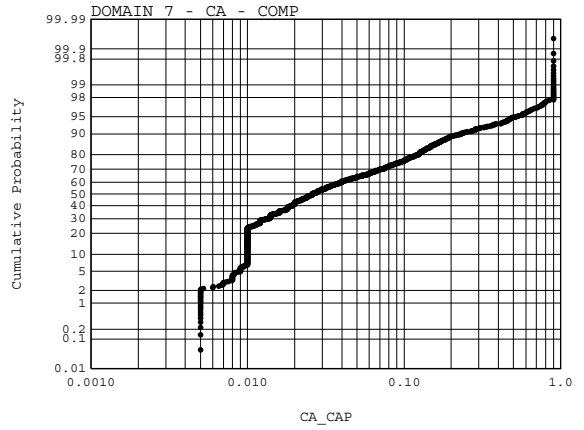
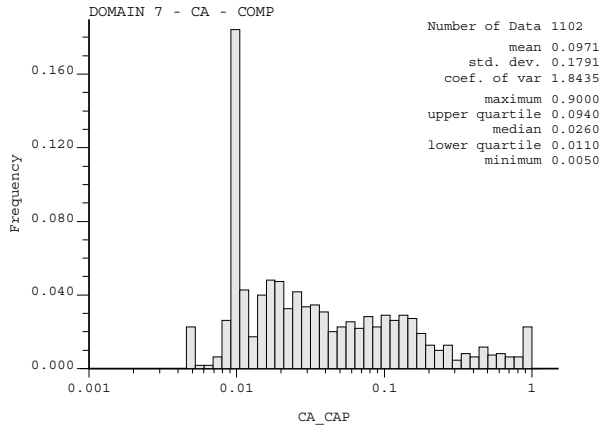


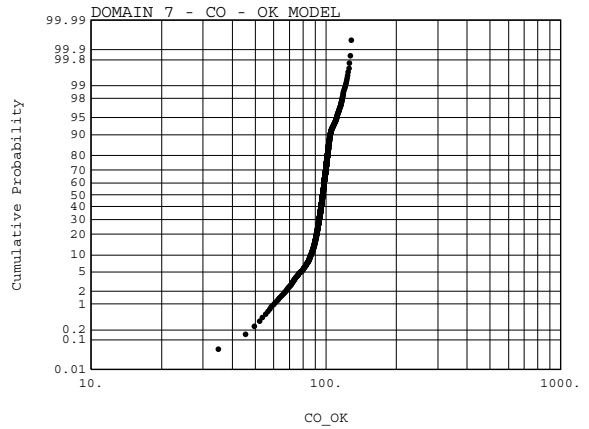
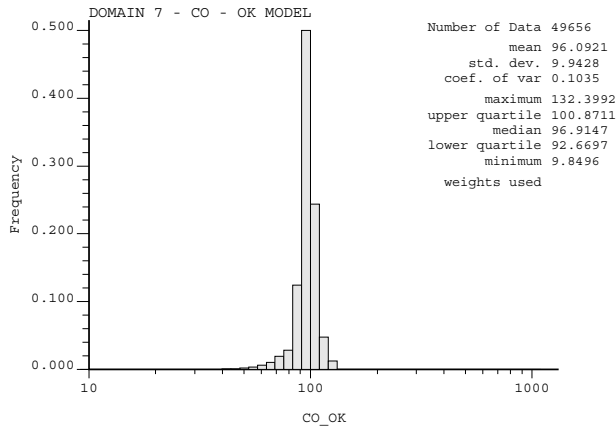
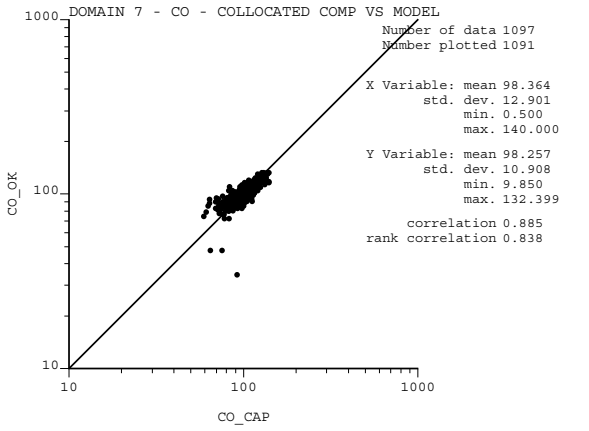
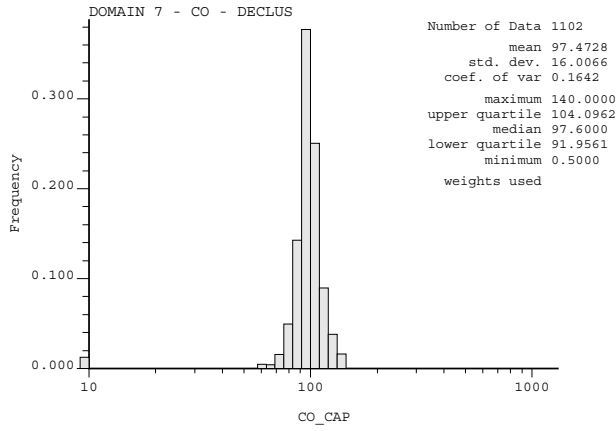
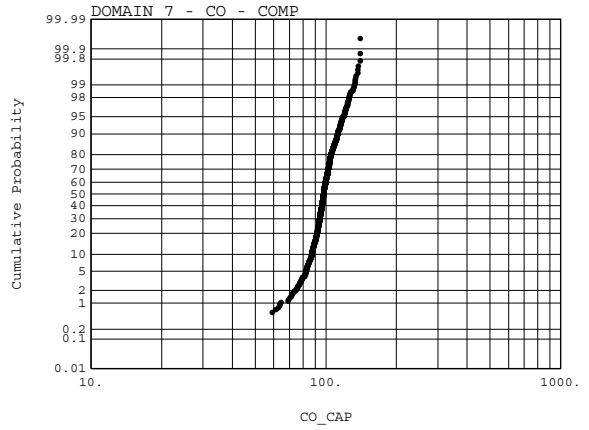
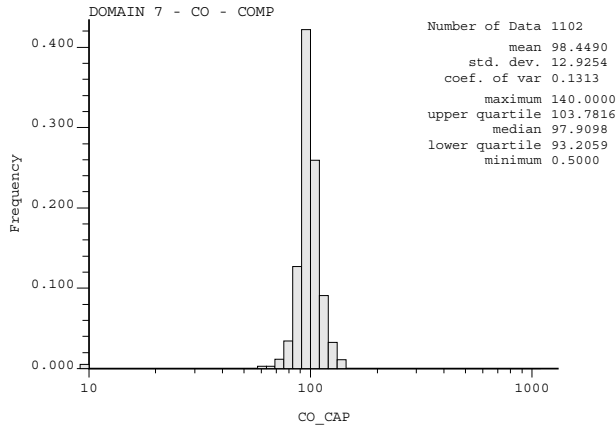


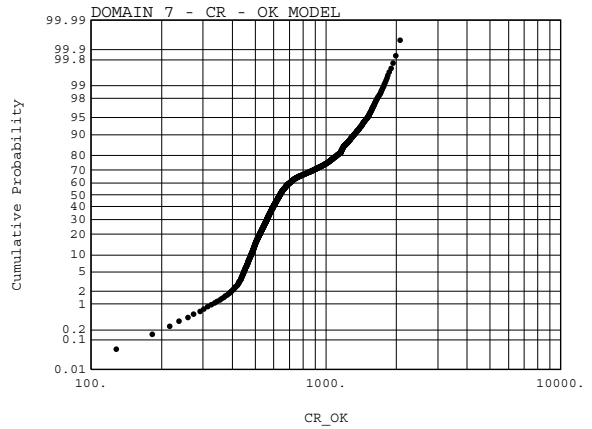
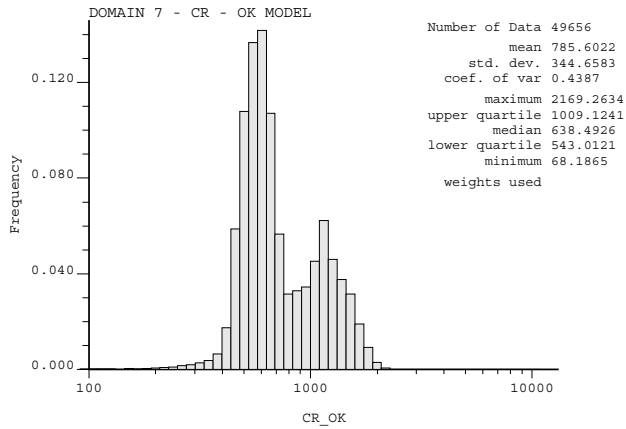
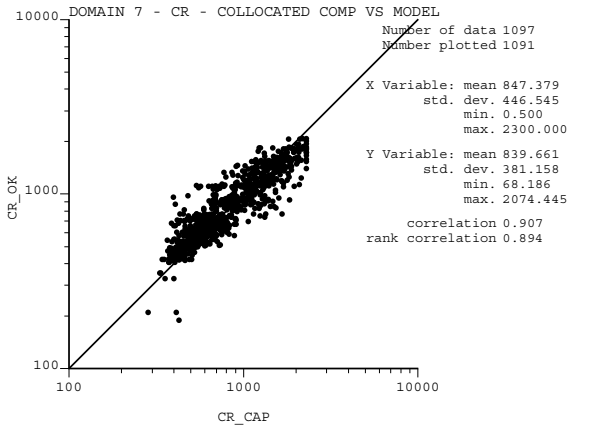
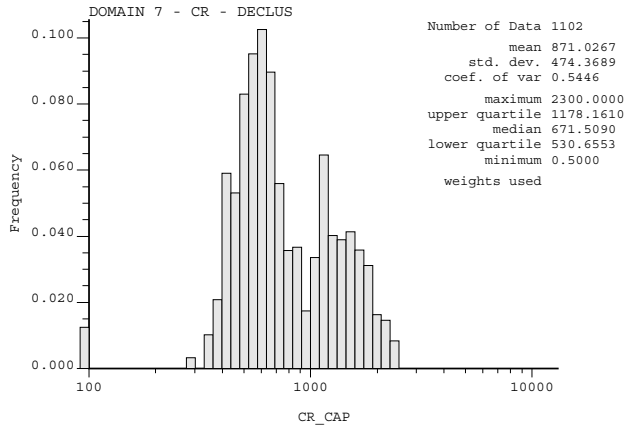
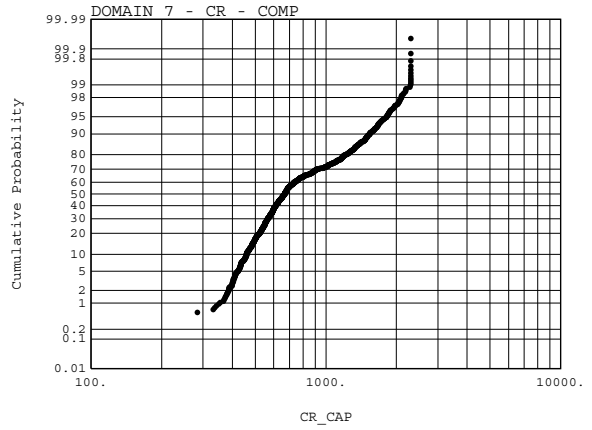
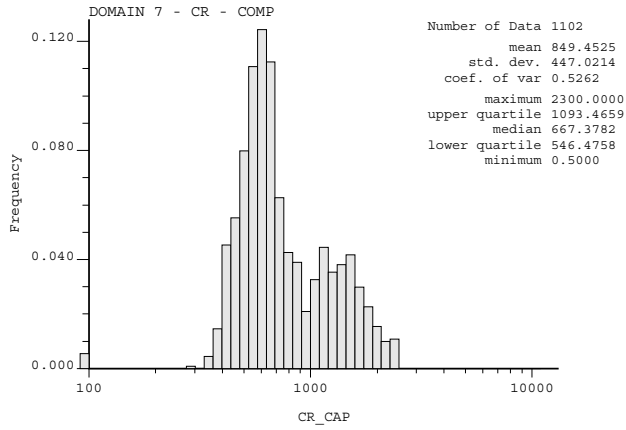


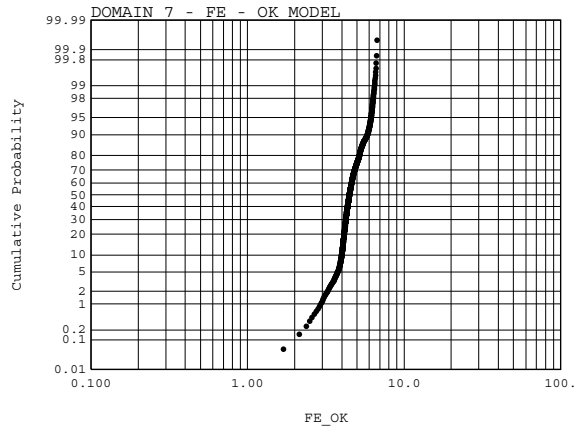
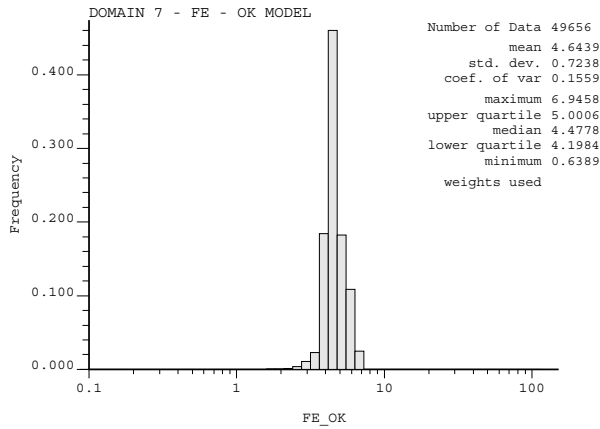
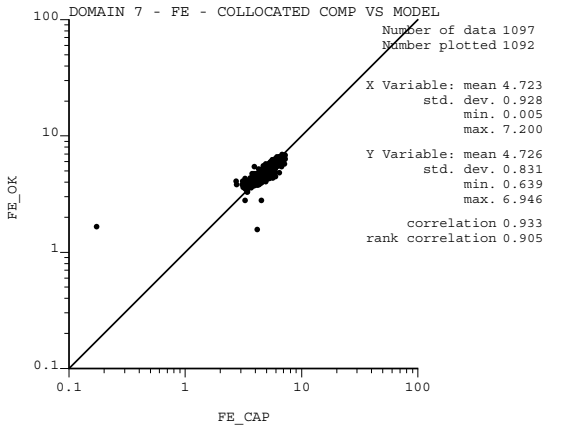
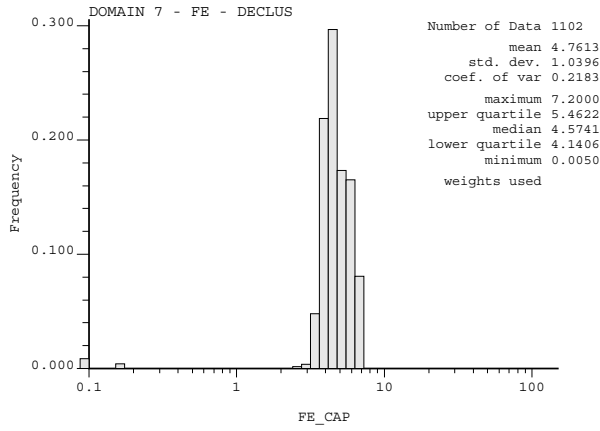
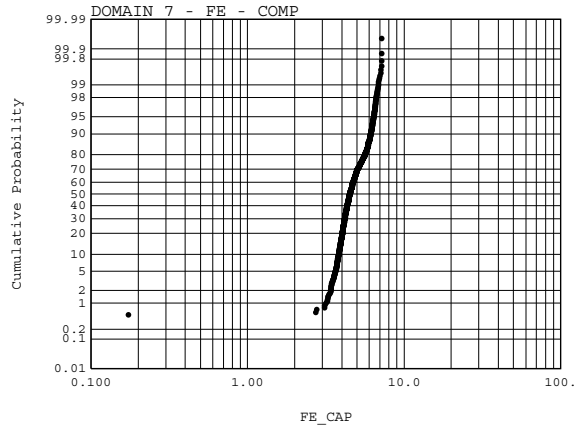
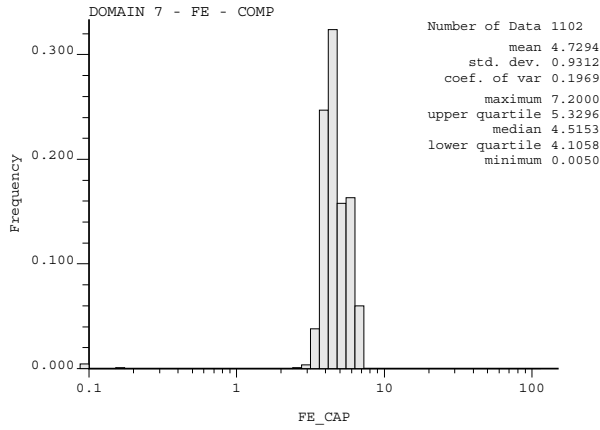


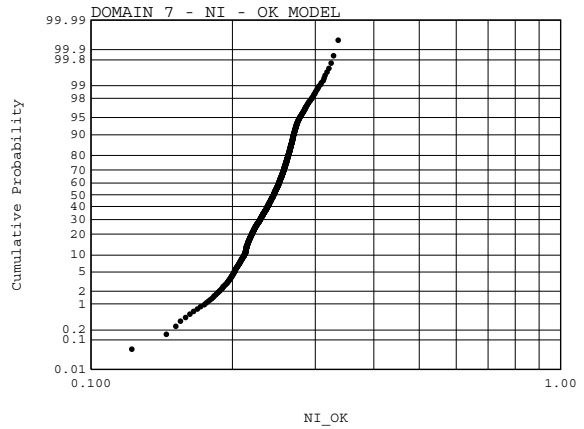
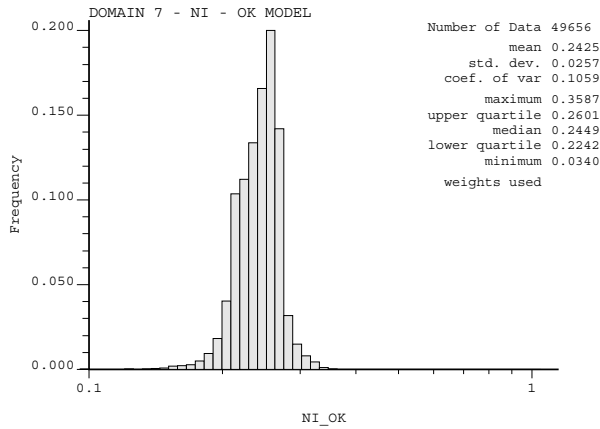
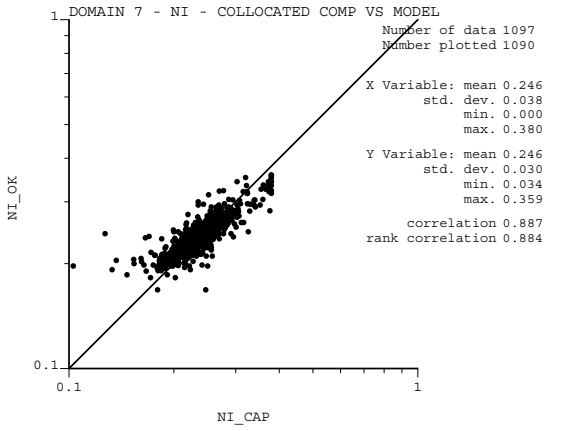
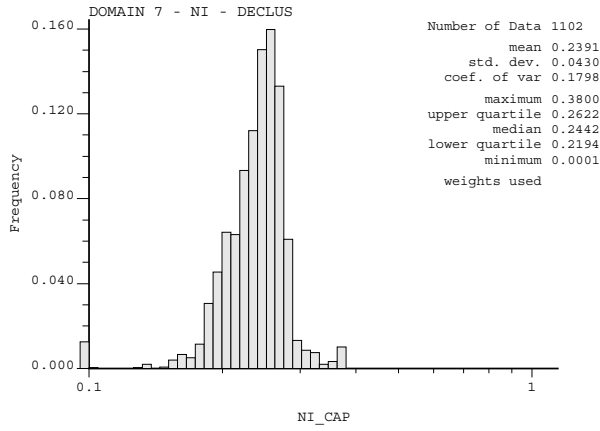
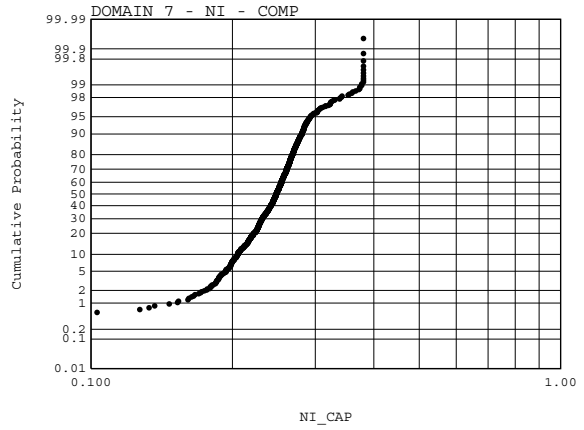
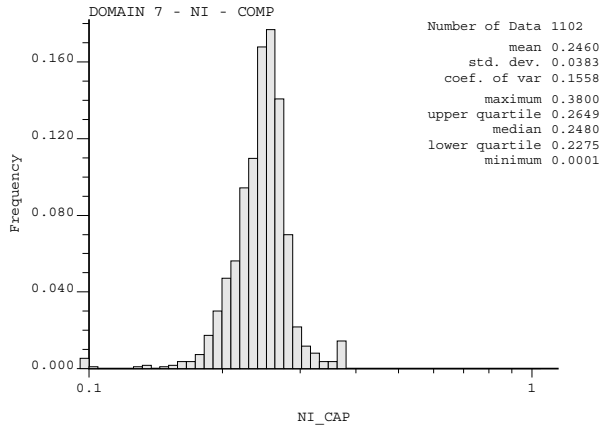


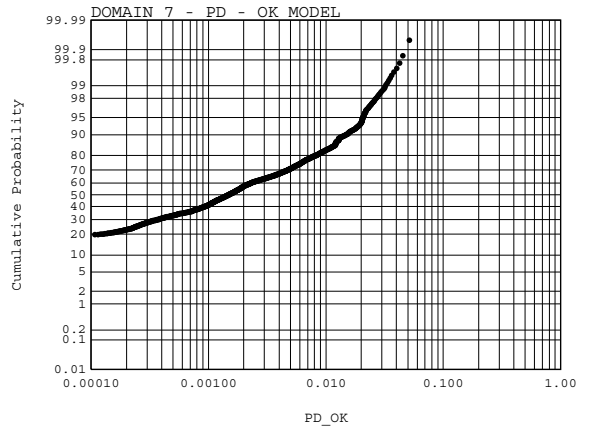
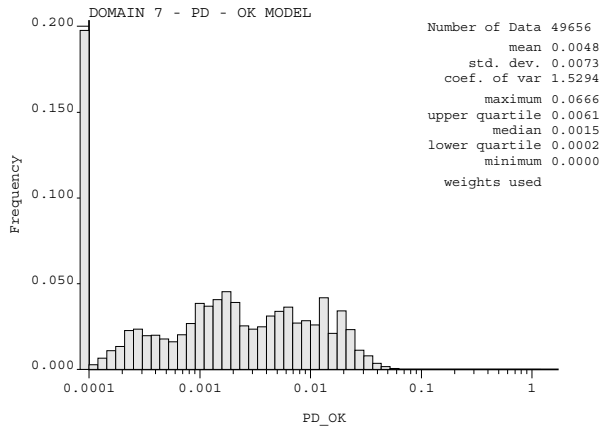
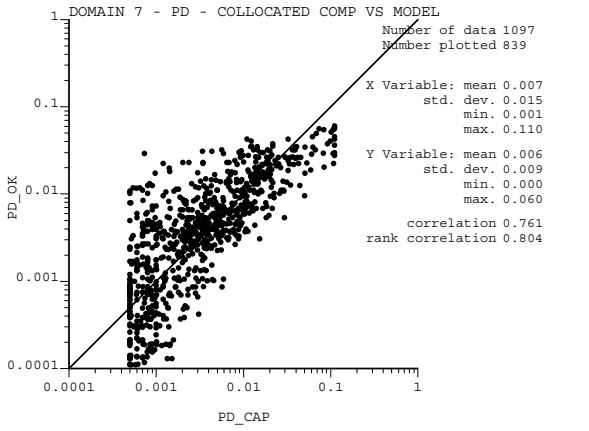
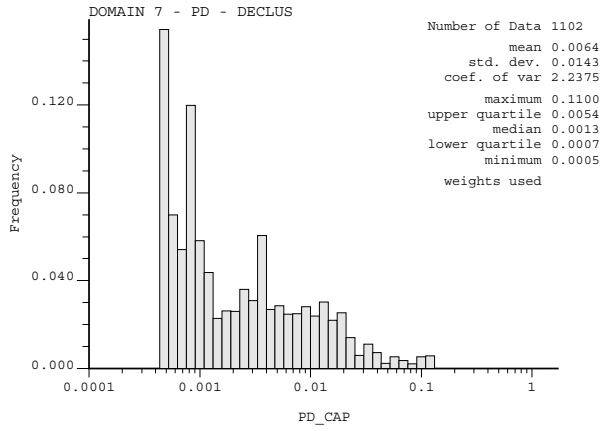
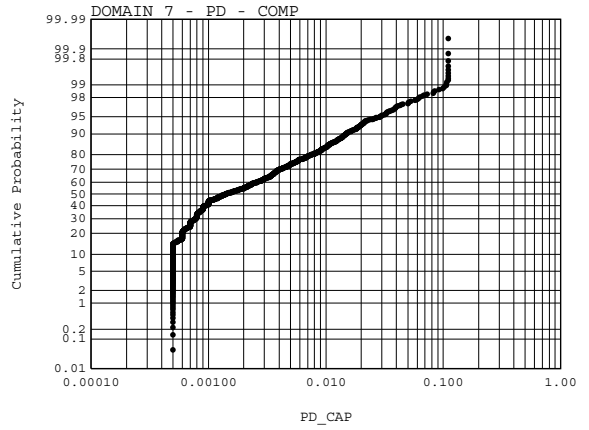
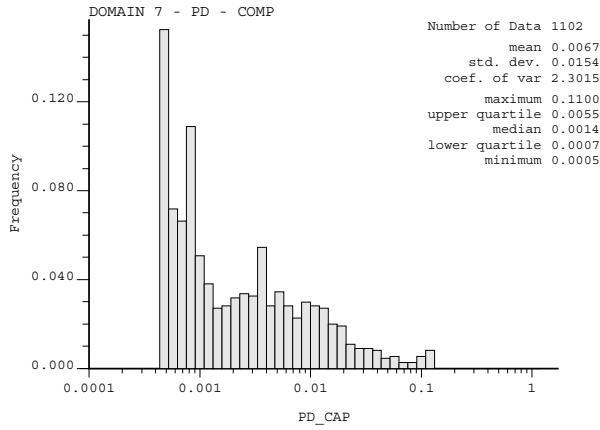


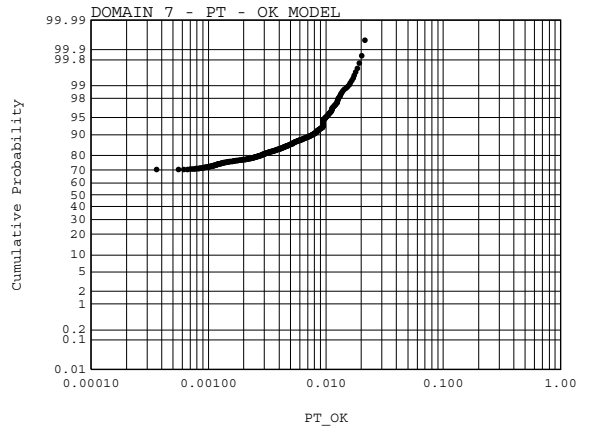
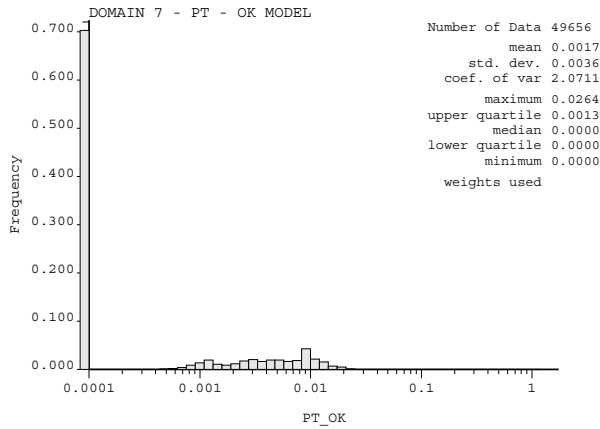
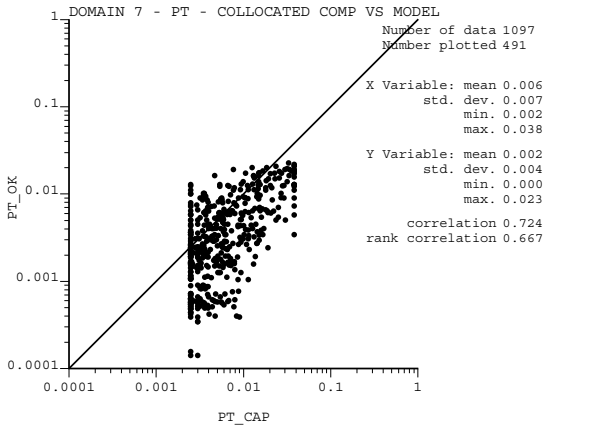
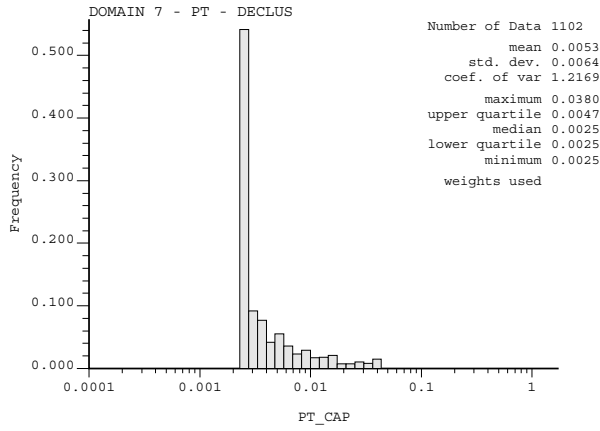
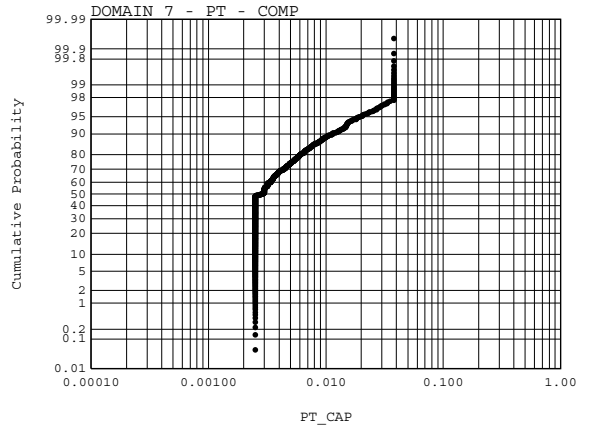
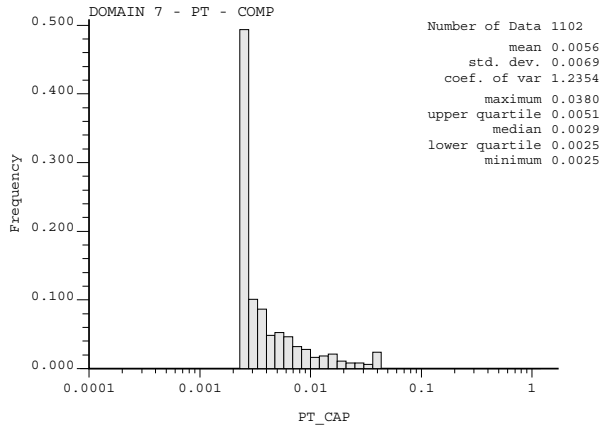


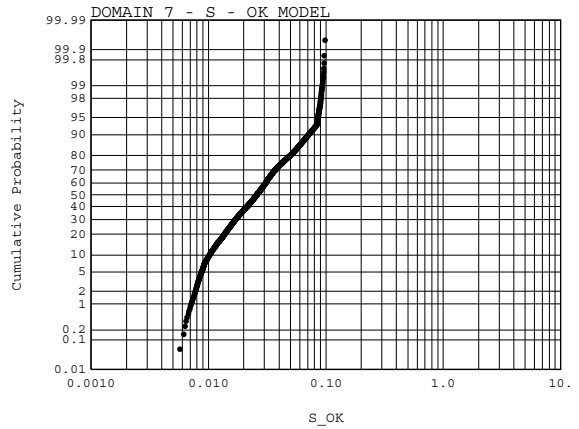
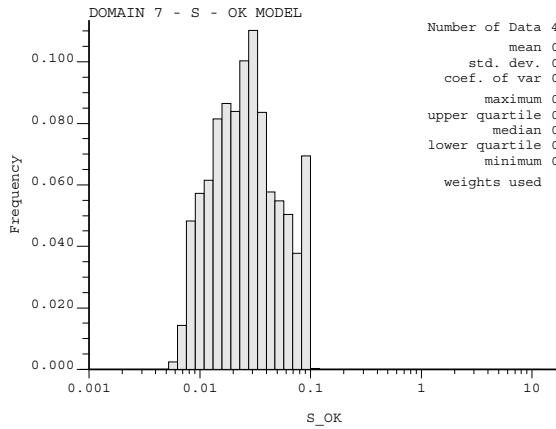
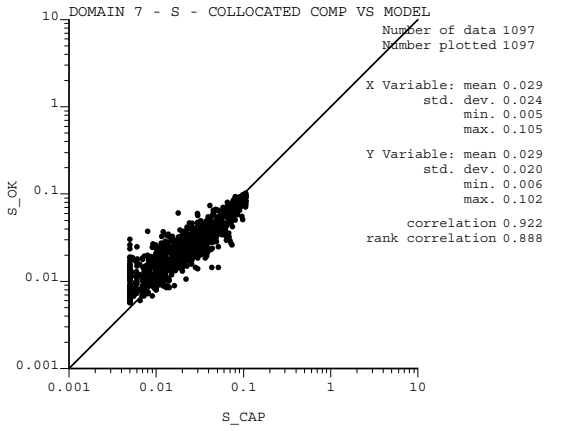
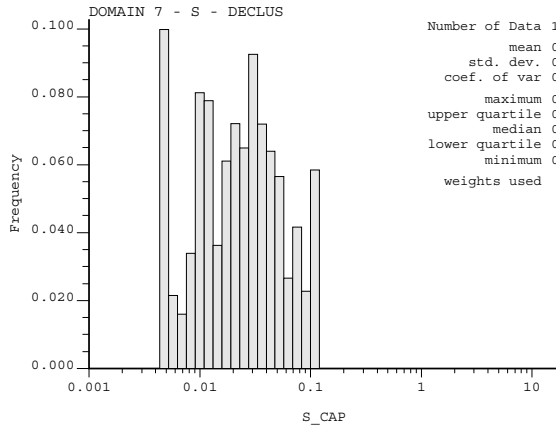
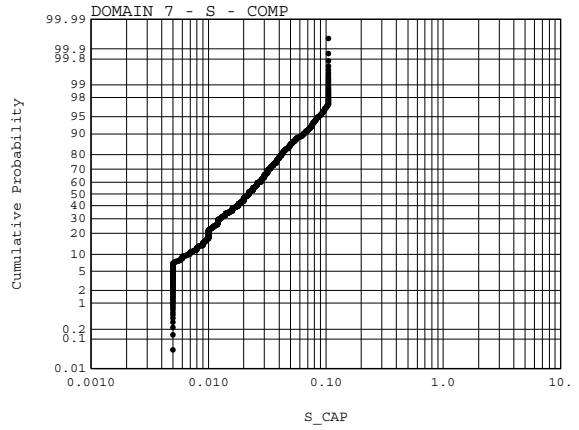
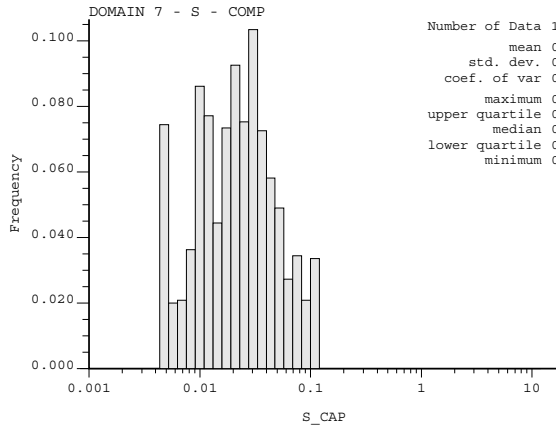












APPENDIX F

Block Model Validation – Mineral Abundances

Table 1: Explomin Data- Length Weighted

Zone	Variable	Explomin Data - Length Weighted				
		No. Data	Mean	Std Dev	Minimum	Maximum
all	PN	1420	0.191	0.4	0	3.531
	HZ	1420	0.106	0.153	0	1.086
	AW	1420	0.088	0.095	0	0.749
	OL	1420	2.7	7.247	0	64.322
	MT	1420	4.207	2.29	0.075	19.833
	SP	1420	88.31	7.716	1.486	97.214
	CG	1420	0.161	0.261	0	5.341
	SPLFE	1420	79.662	13.973	1.382	95.325
	SPFE	1420	8.647	10.281	0.104	50.721
	BRU	1420	2.671	1.548	0.005	10.299
1	PN	89	0.009	0.042	0	0.322
	HZ	89	0.183	0.153	0.001	0.697
	AW	89	0.032	0.051	0	0.261
	OL	89	0.115	0.187	0.001	1.089
	MT	89	5.271	1.255	3.072	9.532
	SP	89	89.08	2.863	80.691	95.065
	CG	89	0.084	0.134	0.005	1.258
	SPLFE	89	86.961	3.335	68.476	92.203
	SPFE	89	2.126	1.424	0.644	12.854
	BRU	89	3.665	1.335	0.555	7.019
2	PN	73	0.074	0.18	0	0.771
	HZ	73	0.116	0.124	0.001	0.647
	AW	73	0.094	0.072	0	0.28
	OL	73	0.574	2.72	0	17.491
	MT	73	4.865	1.876	0.35	9.413
	SP	73	86.821	11.704	8.663	94.52
	CG	73	0.088	0.095	0	0.645
	SPLFE	73	82.274	12.73	6.069	91.215
	SPFE	73	4.547	4.817	0.798	24.944
	BRU	73	2.771	1.785	0.016	9.496
3	PN	430	0.351	0.5	0	2.798
	HZ	430	0.018	0.05	0	0.593
	AW	430	0.087	0.092	0	0.684
	OL	430	6.063	10.231	0.002	49.817
	MT	430	2.589	1.948	0.234	15.049
	SP	430	86.401	9.608	43.154	97.214
	CG	430	0.3	0.3	0	1.953
	SPLFE	430	68.01	16.134	26.786	94.678
	SPFE	430	18.391	12.127	0.418	50.721
	BRU	430	2.631	1.491	0.041	9.996

Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
4	PN	312	0.189	0.466	0	3.531
	HZ	312	0.153	0.176	0	0.919
	AW	312	0.087	0.087	0	0.47
	OL	312	0.078	0.124	0	1.46
	MT	312	5.678	2.061	1.888	17.443
	SP	312	90.341	2.874	76.398	95.845
	CG	312	0.054	0.038	0.003	0.261
	SPLFE	312	88.221	3.41	75.003	95.325
	SPFE	312	2.12	1.508	0.333	10.546
BRU	312	2.474	1.365	0.207	9.194	
5	PN	303	0.17	0.304	0	1.502
	HZ	303	0.131	0.171	0	1.086
	AW	303	0.119	0.12	0	0.749
	OL	303	1.434	4.981	0.001	39.78
	MT	303	4.668	2.227	0.797	19.833
	SP	303	89.213	5.395	55.139	95.541
	CG	303	0.091	0.096	0.001	1.189
	SPLFE	303	84.893	8.286	40.655	94.548
	SPFE	303	4.319	5.127	0.202	26.954
BRU	303	3.092	1.746	0.365	10.299	
6	PN	128	0.026	0.071	0	0.425
	HZ	128	0.153	0.16	0	0.834
	AW	128	0.08	0.088	0.003	0.711
	OL	128	3.204	8.807	0.001	64.322
	MT	128	4.274	1.584	0.786	8.89
	SP	128	88.368	8.251	33.272	95.85
	CG	128	0.196	0.489	0.002	5.341
	SPLFE	128	81.209	10.64	26.271	92.111
	SPFE	128	7.159	6.269	1.051	31.146
BRU	128	2.104	1.235	0.169	8.513	
7	PN	85	0.019	0.113	0	1.036
	HZ	85	0.117	0.154	0	0.829
	AW	85	0.045	0.049	0	0.324
	OL	85	3.693	6.152	0.001	22.407
	MT	85	3.546	1.713	0.075	7.943
	SP	85	87.69	11.125	1.486	95.765
	CG	85	0.197	0.288	0	1.76
	SPLFE	85	76.026	14.578	1.382	91.63
	SPFE	85	11.664	8.413	0.104	32.582
BRU	85	1.805	1.033	0.005	5.748	
345	PN	1045	0.25	0.449	0	3.531
	HZ	1045	0.091	0.15	0	1.086
	AW	1045	0.096	0.101	0	0.749
	OL	1045	2.931	7.571	0	49.817
	MT	1045	4.115	2.457	0.234	19.833
	SP	1045	88.394	7.198	43.154	97.214
	CG	1045	0.166	0.23	0	1.953
	SPLFE	1045	78.953	14.673	26.786	95.325
	SPFE	1045	9.441	11.187	0.202	50.721
BRU	1045	2.72	1.556	0.041	10.299	
3456	PN	1173	0.225	0.43	0	3.531
	HZ	1173	0.098	0.153	0	1.086
	AW	1173	0.095	0.1	0	0.749
	OL	1173	2.962	7.718	0	64.322
	MT	1173	4.132	2.377	0.234	19.833
	SP	1173	88.391	7.322	33.272	97.214
	CG	1173	0.169	0.271	0	5.341
	SPLFE	1173	79.202	14.301	26.271	95.325
	SPFE	1173	9.188	10.779	0.202	50.721
BRU	1173	2.652	1.536	0.041	10.299	

Table 2: Explomin Data-Declustered +COS

Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
all	PN	1420	0.158	0.37	0	3.531
	HZ	1420	0.107	0.15	0	1.086
	AW	1420	0.083	0.091	0	0.749
	OL	1420	3.935	9.332	0	64.322
	MT	1420	4.313	2.264	0.075	19.833
	SP	1420	87.064	9.243	1.486	97.214
	CG	1420	0.147	0.247	0	5.341
	SPLFE	1420	78.74	14.589	1.382	95.325
	SPFE	1420	8.325	9.314	0.104	50.721
	BRU	1420	2.513	1.502	0.005	10.299
1	PN	89	0.013	0.053	0	0.322
	HZ	89	0.18	0.138	0.001	0.697
	AW	89	0.035	0.054	0	0.261
	OL	89	0.123	0.218	0.001	1.089
	MT	89	5.707	1.158	3.072	9.532
	SP	89	88.07	2.551	80.691	95.065
	CG	89	0.096	0.182	0.005	1.258
	SPLFE	89	85.853	3.551	68.476	92.203
	SPFE	89	2.226	1.719	0.644	12.854
	BRU	89	3.952	1.235	0.555	7.019
2	PN	73	0.049	0.137	0	0.771
	HZ	73	0.124	0.126	0.001	0.647
	AW	73	0.092	0.066	0	0.28
	OL	73	0.927	3.581	0	17.491
	MT	73	4.769	1.907	0.35	9.413
	SP	73	87.018	11.114	8.663	94.52
	CG	73	0.094	0.113	0	0.645
	SPLFE	73	82.075	12.708	6.069	91.215
	SPFE	73	4.944	5.714	0.798	24.944
	BRU	73	2.859	1.835	0.016	9.496
3	PN	430	0.306	0.479	0	2.798
	HZ	430	0.016	0.043	0	0.593
	AW	430	0.088	0.092	0	0.684
	OL	430	8.871	12.655	0.002	49.817
	MT	430	2.822	2.07	0.234	15.049
	SP	430	83.591	11.7	43.154	97.214
	CG	430	0.249	0.273	0	1.953
	SPLFE	430	66.62	17.009	26.786	94.678
	SPFE	430	16.972	11.429	0.418	50.721
	BRU	430	2.326	1.444	0.041	9.996
4	PN	312	0.185	0.475	0	3.531
	HZ	312	0.135	0.168	0	0.919
	AW	312	0.096	0.091	0	0.47
	OL	312	0.08	0.121	0	1.46
	MT	312	5.821	2.092	1.888	17.443
	SP	312	90.173	2.799	76.398	95.845
	CG	312	0.056	0.037	0.003	0.261
	SPLFE	312	87.834	3.501	75.003	95.325
	SPFE	312	2.338	1.621	0.333	10.546
	BRU	312	2.456	1.302	0.207	9.194

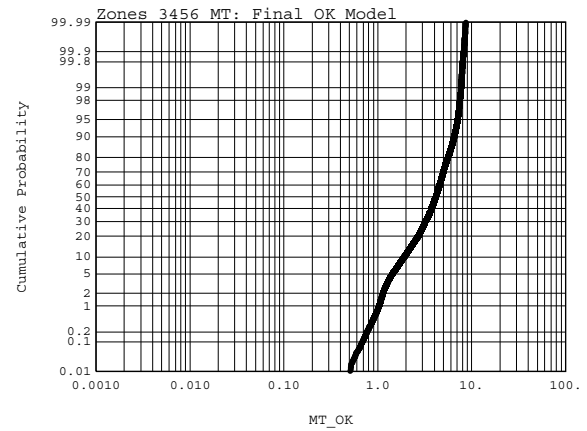
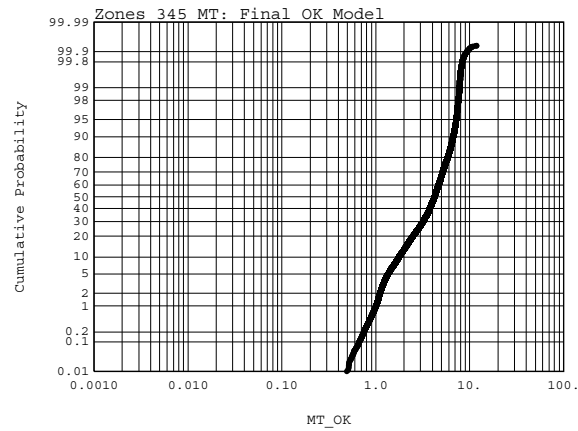
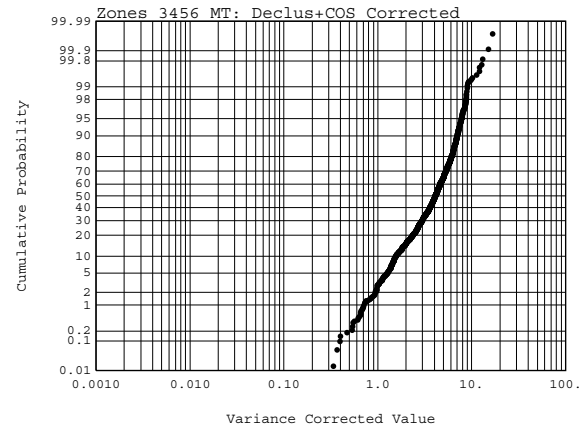
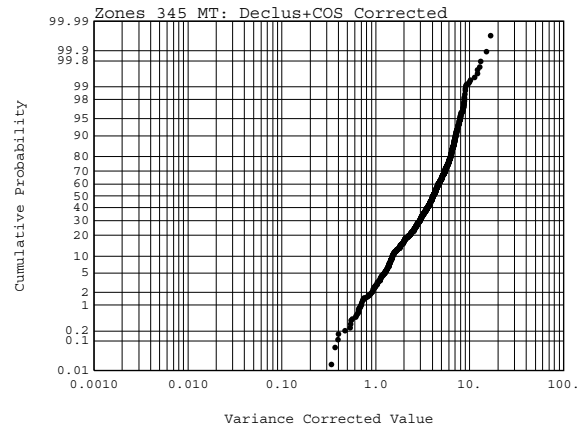
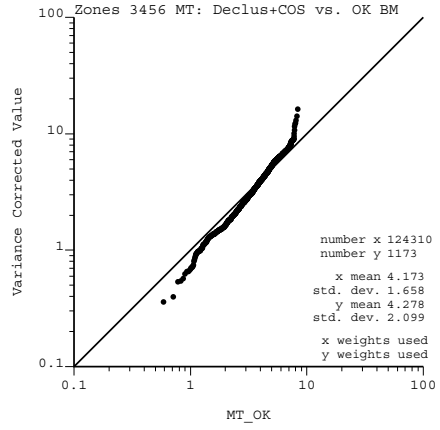
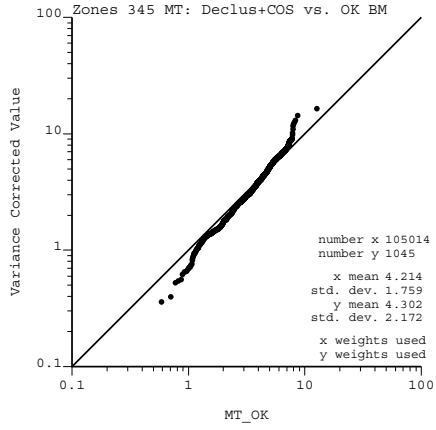
Zone	Variable	No. Data	Mean	Std. Dev	Minimum	Maximum
5	PN	303	0.173	0.311	0	1.502
	HZ	303	0.14	0.173	0	1.086
	AW	303	0.105	0.111	0	0.749
	OL	303	2.269	6.249	0.001	39.78
	MT	303	4.667	2.123	0.797	19.833
	SP	303	88.426	6.372	55.139	95.541
	CG	303	0.09	0.09	0.001	1.189
	SPLFE	303	83.487	9.469	40.655	94.548
	SPFE	303	4.939	5.278	0.202	26.954
BRU	303	2.875	1.675	0.365	10.299	
6	PN	128	0.039	0.095	0	0.425
	HZ	128	0.149	0.153	0	0.834
	AW	128	0.073	0.083	0.003	0.711
	OL	128	6.23	14.118	0.001	64.322
	MT	128	4.088	1.745	0.786	8.89
	SP	128	85.822	12.768	33.272	95.85
	CG	128	0.172	0.444	0.002	5.341
	SPLFE	128	78.555	14.375	26.271	92.111
	SPFE	128	7.267	5.939	1.051	31.146
BRU	128	1.925	1.158	0.169	8.513	
7	PN	85	0.018	0.102	0	1.036
	HZ	85	0.108	0.151	0	0.829
	AW	85	0.039	0.045	0	0.324
	OL	85	4.457	6.834	0.001	22.407
	MT	85	3.495	1.813	0.075	7.943
	SP	85	87.459	9.463	1.486	95.765
	CG	85	0.214	0.299	0	1.76
	SPLFE	85	75.407	14.413	1.382	91.63
	SPFE	85	12.052	8.802	0.104	32.582
BRU	85	1.93	1.042	0.005	5.748	
345	PN	1045	0.225	0.37	0	2.679
	HZ	1045	0.091	0.131	0	0.853
	AW	1045	0.094	0.08	0	0.537
	OL	1045	4.131	9.143	0	47.355
	MT	1045	4.302	2.172	0.336	16.779
	SP	1045	87.109	7.848	46.769	96.071
	CG	1045	0.142	0.179	0	1.68
	SPLFE	1045	78.354	14.103	29.527	93.873
	SPFE	1045	8.718	9.483	0.271	46.318
BRU	1045	4.04	0.634	3.327	4.856	
3456	PN	1173	0.2	0.351	0	2.679
	HZ	1173	0.099	0.132	0	0.853
	AW	1173	0.091	0.078	0	0.537
	OL	1173	4.414	9.875	0	60.352
	MT	1173	4.278	2.099	0.336	16.779
	SP	1173	86.939	8.508	37.141	96.071
	CG	1173	0.145	0.214	0	4.257
	SPLFE	1173	78.384	14.008	29.01	93.873
	SPFE	1173	8.541	9.048	0.271	46.318
BRU	1173	4.254	0.79	3.327	5.557	

Table 3: Final Model

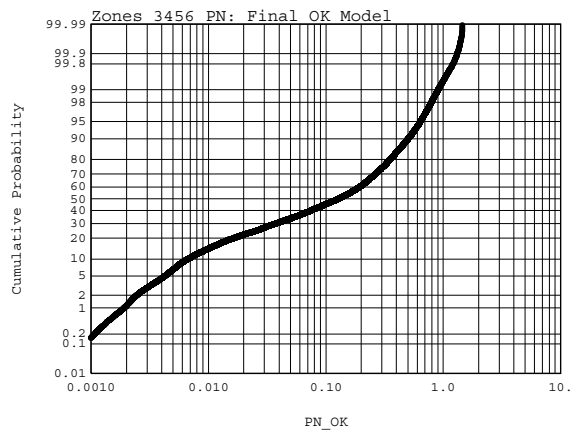
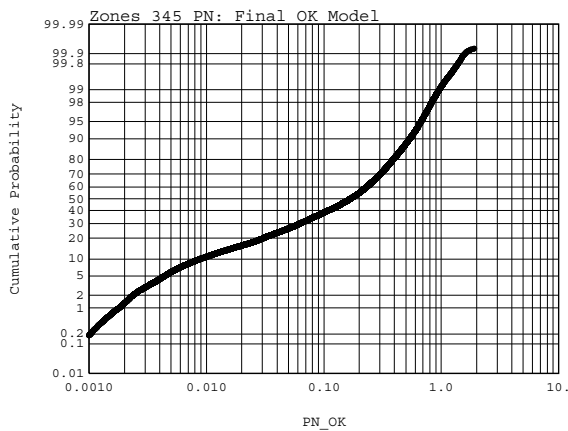
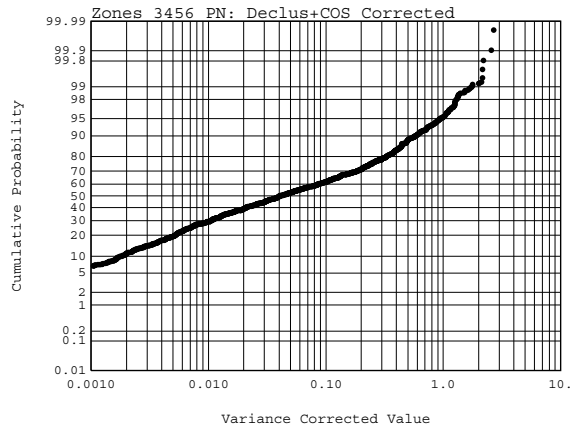
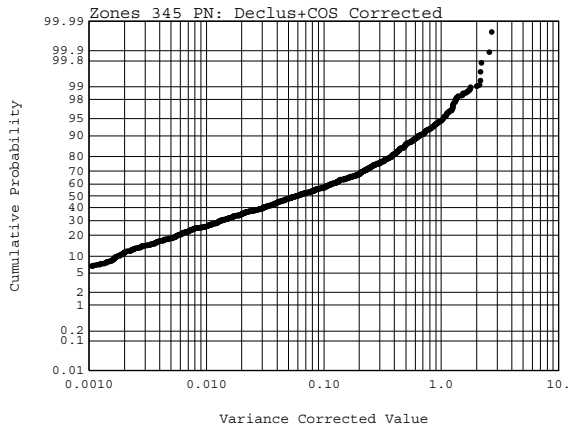
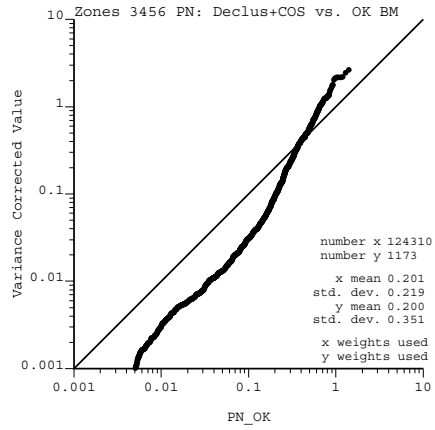
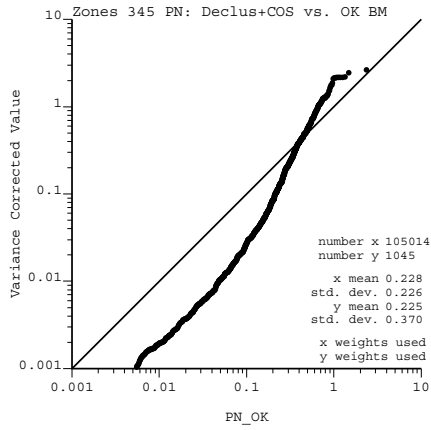
Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
all	PN	192320	0.138	0.198	0	1.915
	HZ	192320	0.117	0.105	0	0.659
	AW	192320	0.071	0.054	0	0.447
	OL	192320	4.223	6.612	0	52.207
	MT	192320	4.052	1.609	0.365	11.877
	SP	192320	87.453	5.187	30.037	96.856
	CG	192320	0.162	0.138	0.014	3.162
	SPLFE	192320	78.185	11.269	31.859	94.134
	SPFE	192320	9.22	7.854	0.062	46.424
BRU	192320	2.469	0.877	0.613	6.869	
1	PN	10643	0.01	0.015	0	0.172
	HZ	10643	0.184	0.058	0.026	0.401
	AW	10643	0.041	0.028	0.002	0.166
	OL	10643	0.106	0.102	0	0.799
	MT	10643	5.668	0.382	3.81	8.121
	SP	10643	87.781	1.266	81.413	92.55
	CG	10643	0.101	0.062	0.027	0.764
	SPLFE	10643	85.478	1.798	73.709	90.669
	SPFE	10643	2.35	1.123	0.98	10.265
BRU	10643	3.878	0.481	1.883	5.109	
2	PN	7711	0.039	0.055	0	0.462
	HZ	7711	0.119	0.057	0.016	0.384
	AW	7711	0.103	0.031	0.02	0.205
	OL	7711	0.535	1.811	0	14.464
	MT	7711	4.772	0.783	2.027	7.98
	SP	7711	87.685	5.14	32.67	94.47
	CG	7711	0.115	0.065	0.015	0.455
	SPLFE	7711	83.164	5.26	39.31	91.097
	SPFE	7711	4.881	3.857	0.926	23.971
BRU	7711	2.93	0.783	0.757	5.33	
3	PN	41224	0.312	0.219	0.01	1.727
	HZ	41224	0.016	0.026	0	0.348
	AW	41224	0.091	0.049	0.004	0.405
	OL	41224	7.842	9.469	0	44.322
	MT	41224	2.745	1.269	0.365	9.957
	SP	41224	85.2	7.836	49.442	95.341
	CG	41224	0.237	0.173	0.02	1.357
	SPLFE	41224	68.257	13.746	31.859	91.234
	SPFE	41224	16.538	9.411	0.309	46.424
BRU	41224	2.504	1.008	0.613	5.867	
4	PN	29277	0.16	0.236	0	1.915
	HZ	29277	0.149	0.108	0.001	0.642
	AW	29277	0.087	0.047	0.005	0.313
	OL	29277	0.081	0.072	0	3.257
	MT	29277	5.757	1.191	2.707	11.487
	SP	29277	90.27	1.444	81.518	95.081
	CG	29277	0.063	0.021	0.014	0.246
	SPLFE	29277	87.834	2.185	75.889	94.134
	SPFE	29277	2.517	1.568	0.2	20.795
BRU	29277	2.431	0.783	0.861	5.631	

Zone	Variable	No. Data	Mean	Std Dev	Minimum	Maximum
5	PN	34513	0.185	0.19	0	1.029
	HZ	34513	0.14	0.094	0	0.659
	AW	34513	0.098	0.065	0.006	0.447
	OL	34513	2.482	4.051	0	29.426
	MT	34513	4.682	1.221	1.735	11.877
	SP	34513	88.407	3.225	64.611	94.439
	CG	34513	0.097	0.055	0.018	0.768
	SPLFE	34513	83.017	6.921	49.282	93.246
	SPFE	34513	5.186	3.971	0.062	22.222
BRU	34513	2.828	0.891	0.89	6.869	
6	PN	19296	0.049	0.072	0.002	0.453
	HZ	19296	0.157	0.087	0.018	0.551
	AW	19296	0.074	0.044	0.013	0.376
	OL	19296	4.332	7.291	0	52.207
	MT	19296	3.95	0.883	1.706	7.93
	SP	19296	88.492	4.654	45.021	95.016
	CG	19296	0.214	0.2	0.017	3.162
	SPLFE	19296	79.865	7.819	35.842	91.688
	SPFE	19296	7.79	4.363	1.079	23.429
BRU	19296	1.982	0.524	0.71	4.749	
7	PN	49656	0.018	0.028	0	0.51
	HZ	49656	0.138	0.115	0	0.574
	AW	49656	0.025	0.023	0	0.222
	OL	49656	6.221	5.307	0	33.033
	MT	49656	3.295	1.324	0.828	7.011
	SP	49656	86.495	4.492	30.037	96.856
	CG	49656	0.204	0.11	0.017	1.13
	SPLFE	49656	74.517	9.149	33.456	89.919
	SPFE	49656	12.509	5.881	1.693	29.061
BRU	49656	2.034	0.377	0.69	3.829	
345	PN	105014	0.228	0.226	0	1.915
	HZ	105014	0.094	0.102	0	0.659
	AW	105014	0.092	0.055	0.004	0.447
	OL	105014	3.935	7.182	0	44.322
	MT	105014	4.214	1.759	0.365	11.877
	SP	105014	87.654	5.715	49.442	95.341
	CG	105014	0.143	0.137	0.014	1.357
	SPLFE	105014	78.522	12.794	31.859	94.134
	SPFE	105014	8.928	8.92	0.062	46.424
BRU	105014	2.591	0.927	0.613	6.869	
3456	PN	124310	0.201	0.219	0	1.915
	HZ	124310	0.103	0.102	0	0.659
	AW	124310	0.089	0.054	0.004	0.447
	OL	124310	3.996	7.2	0	52.207
	MT	124310	4.173	1.658	0.365	11.877
	SP	124310	87.783	5.574	45.021	95.341
	CG	124310	0.154	0.151	0.014	3.162
	SPLFE	124310	78.728	12.174	31.859	94.134
	SPFE	124310	8.753	8.393	0.062	46.424
BRU	124310	2.498	0.905	0.613	6.869	

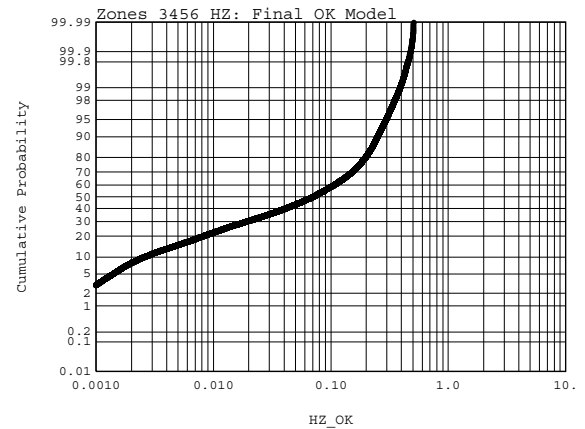
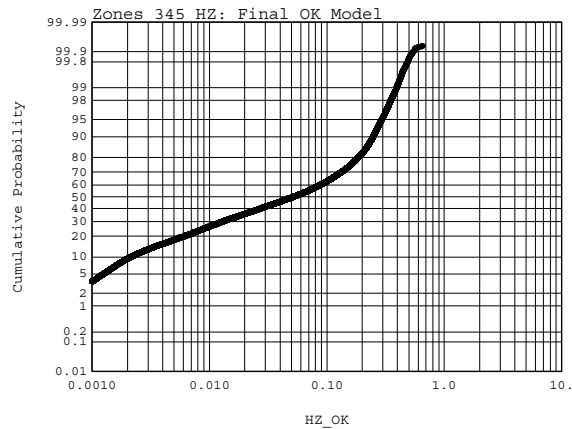
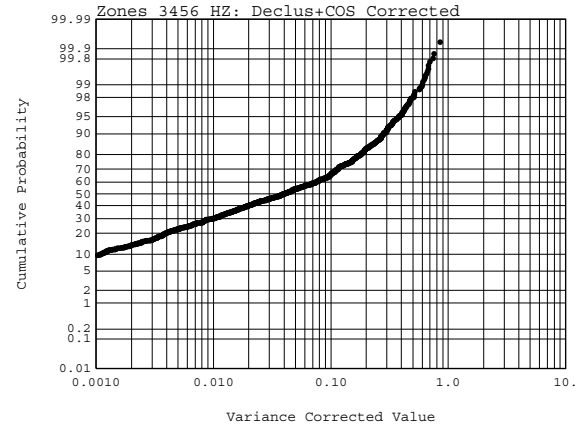
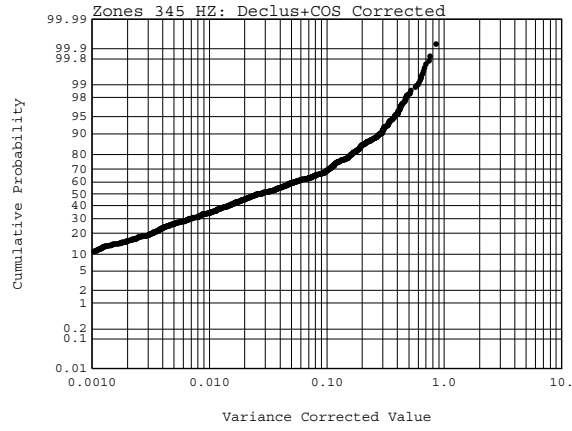
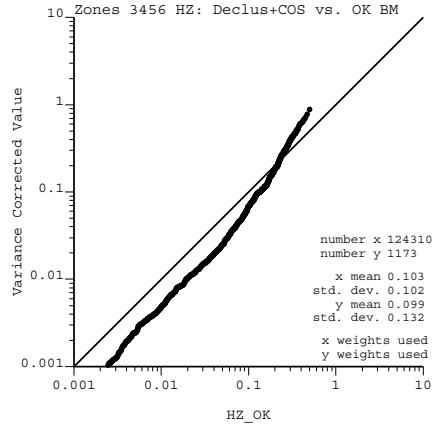
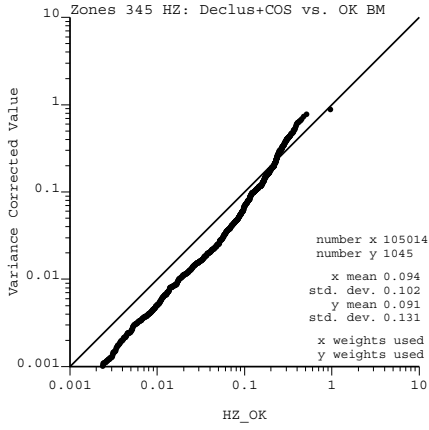
RNC MT: Compare BM and Declus+COS



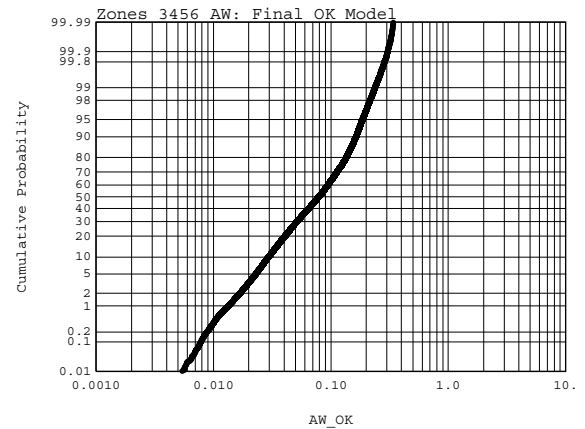
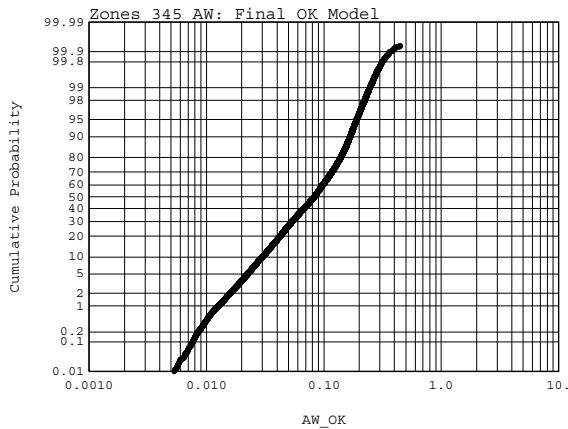
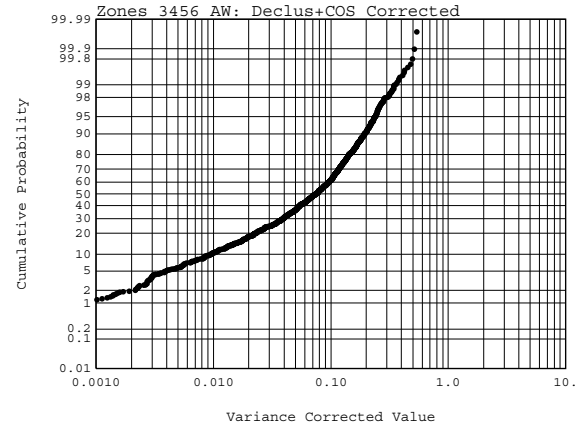
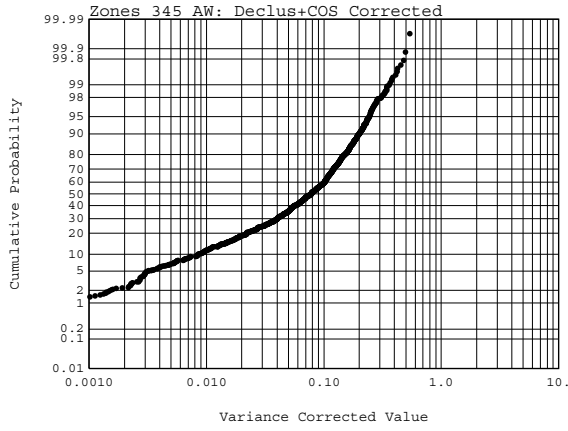
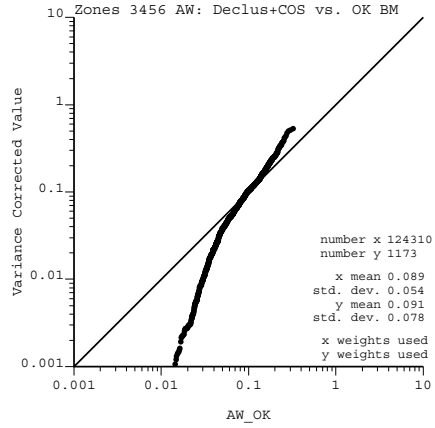
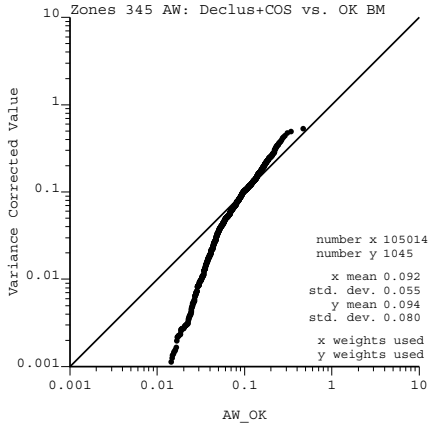
RNC PN: Compare BM and Declus+COS



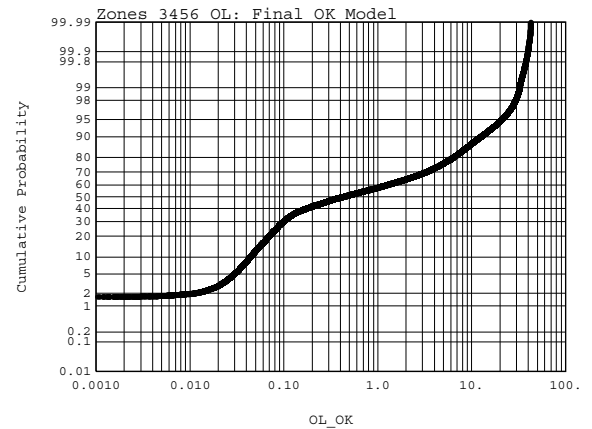
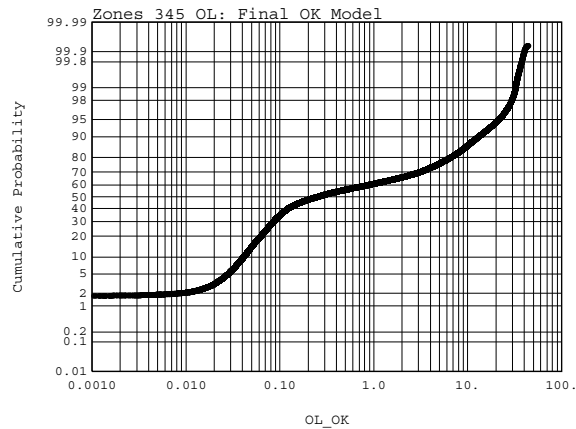
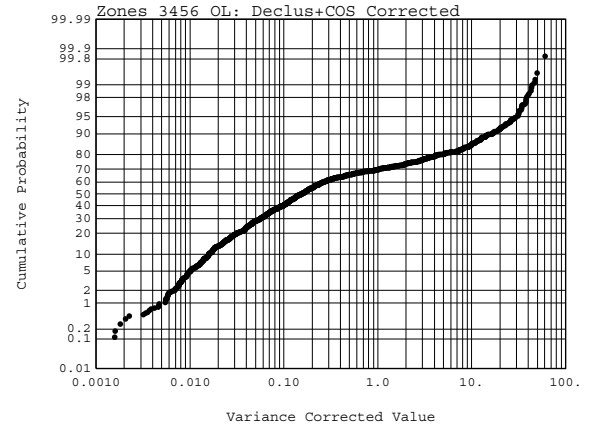
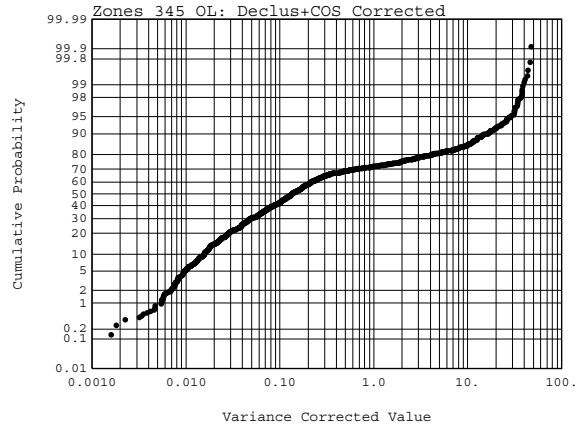
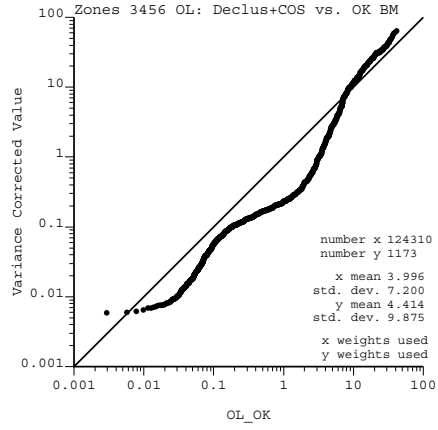
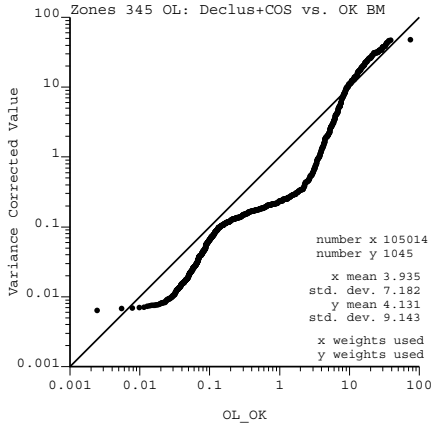
RNC HZ: Compare BM and Declus+COS



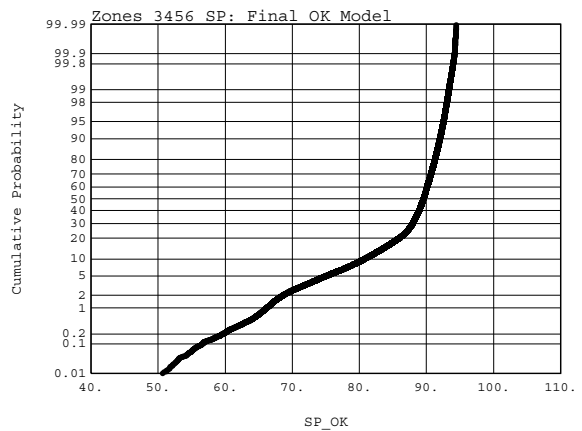
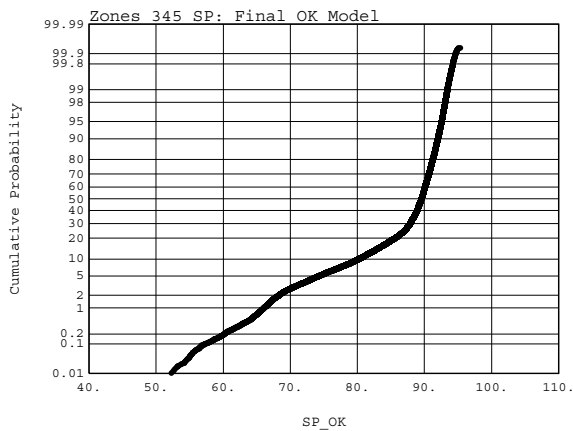
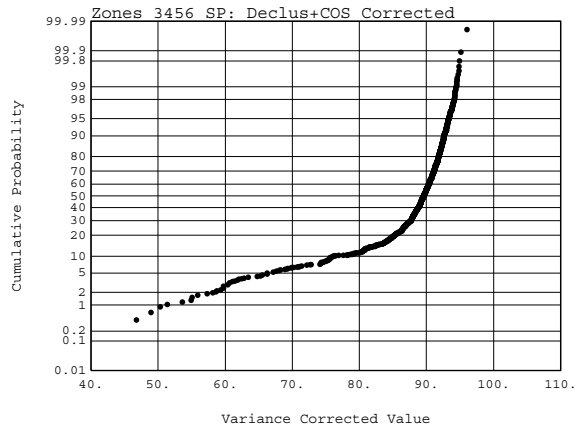
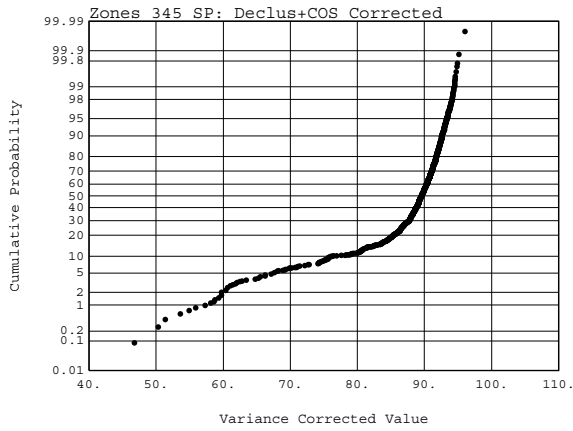
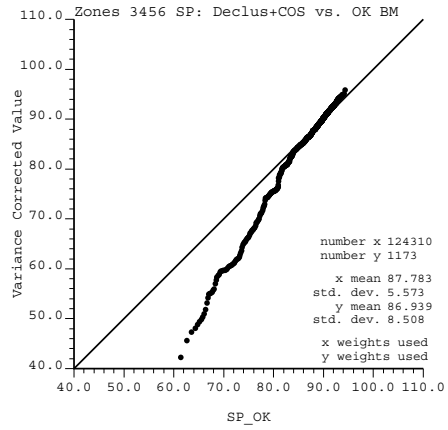
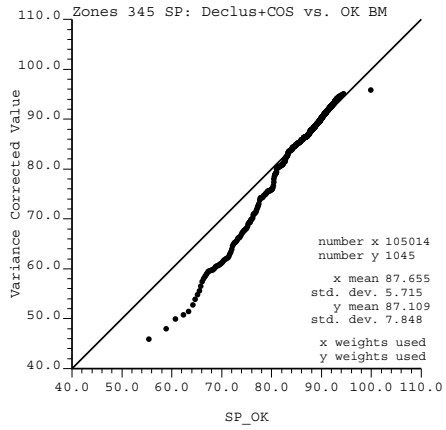
RNC AW: Compare BM and Declus+COS



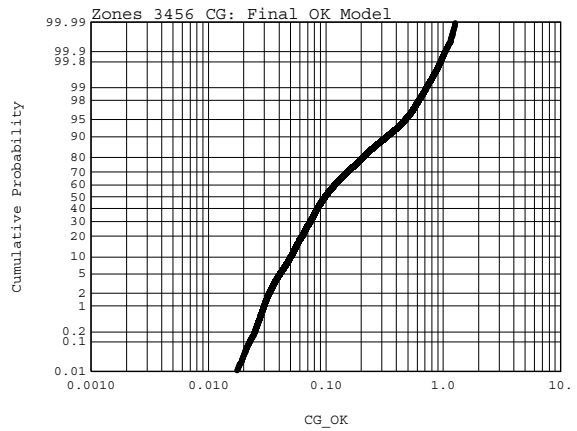
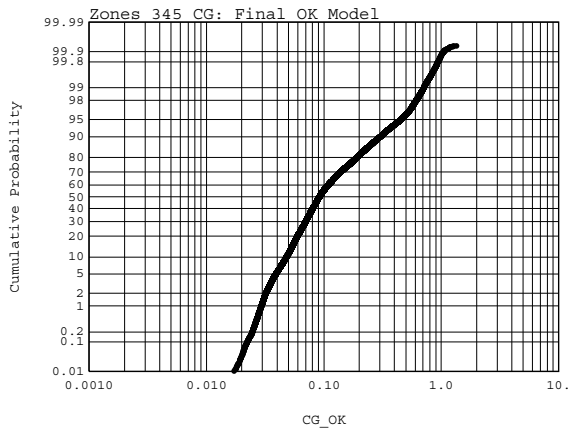
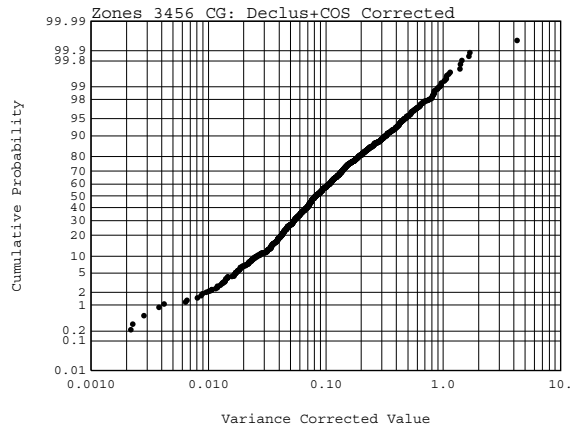
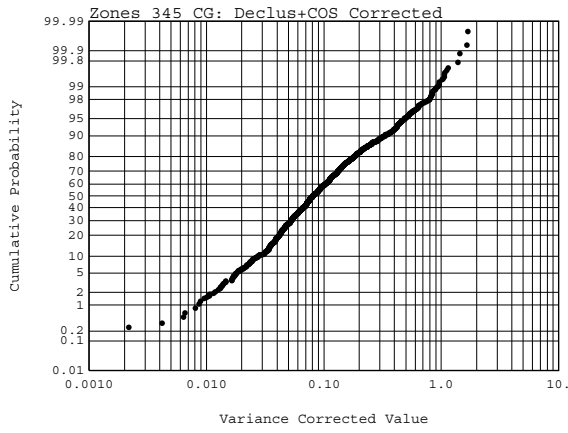
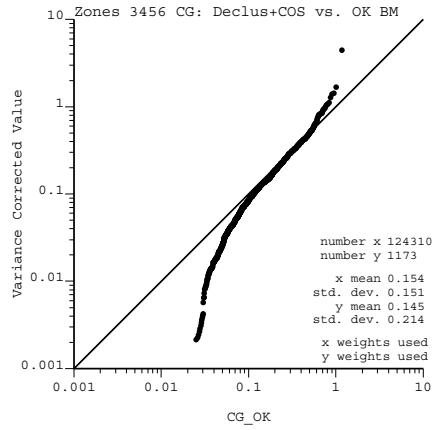
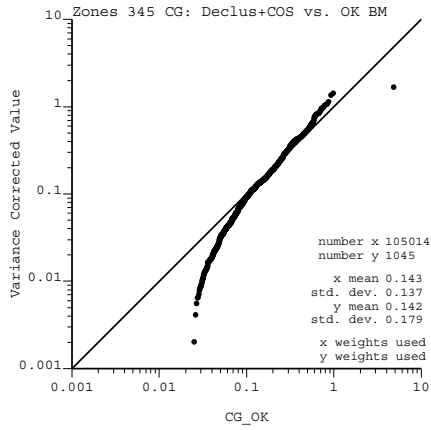
RNC OL: Compare BM and Declus+COS



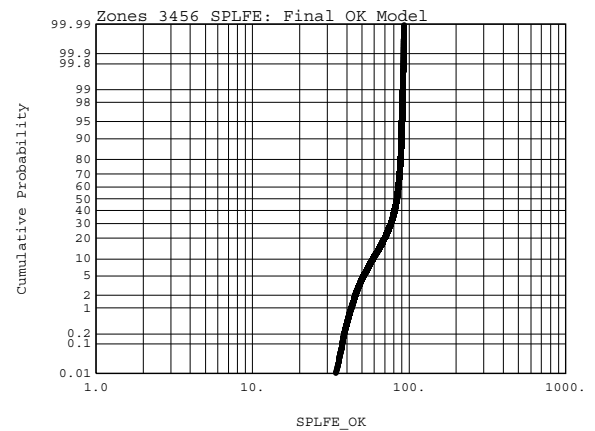
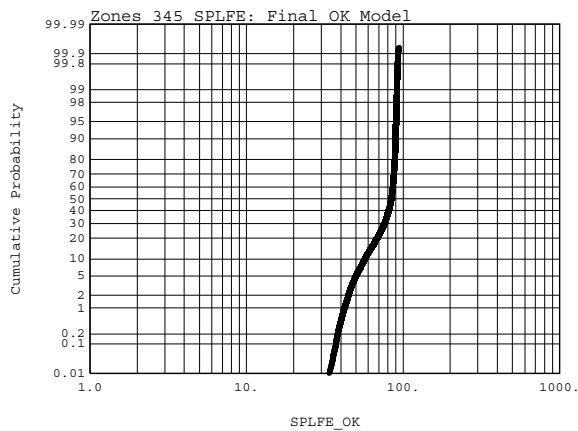
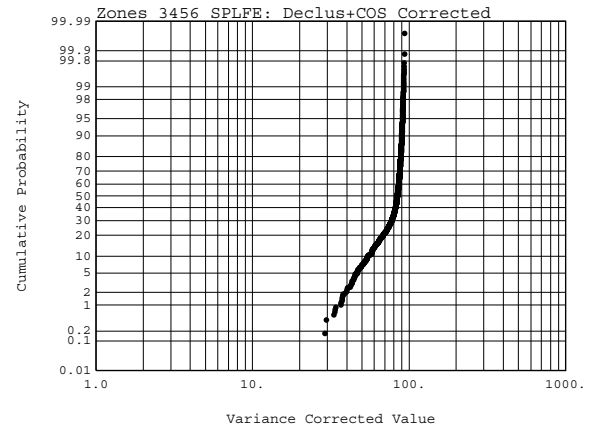
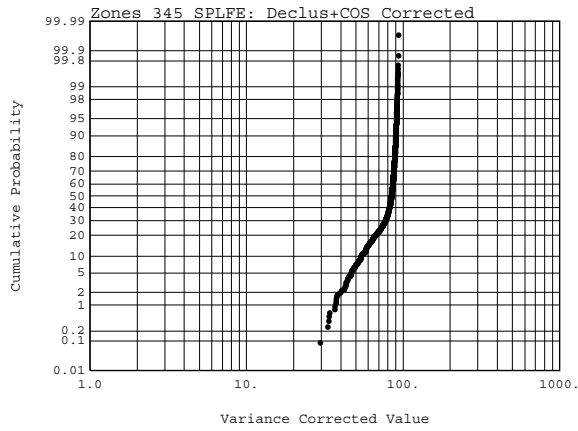
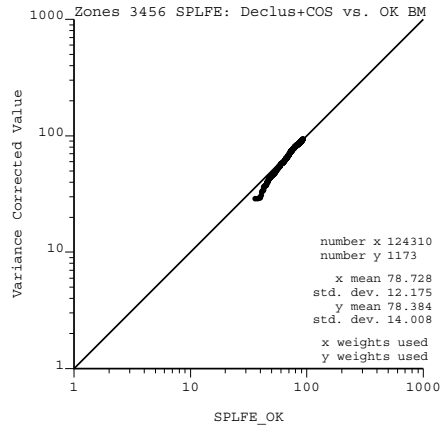
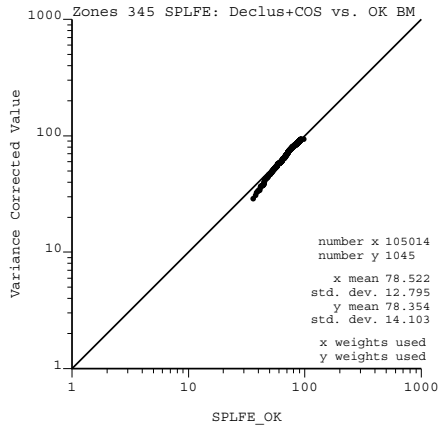
RNC SP: Compare BM and Declus+COS



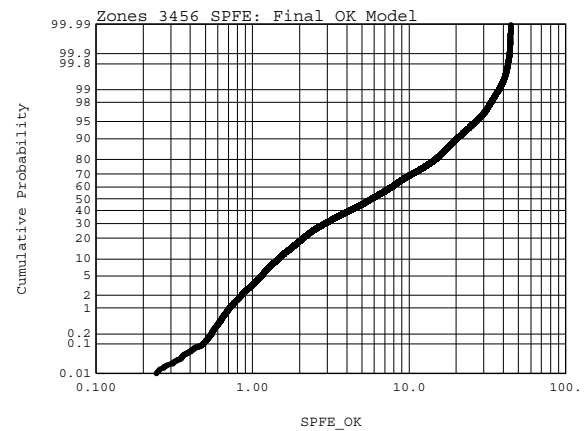
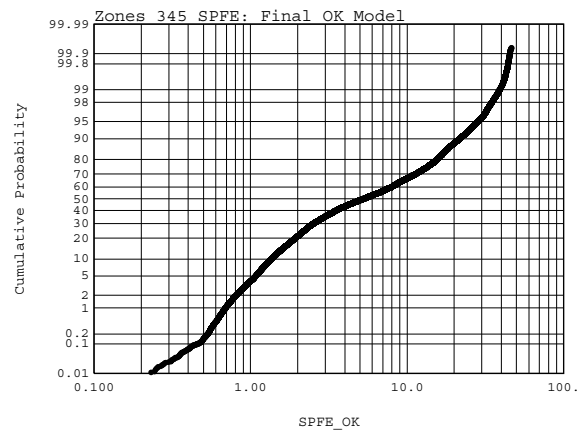
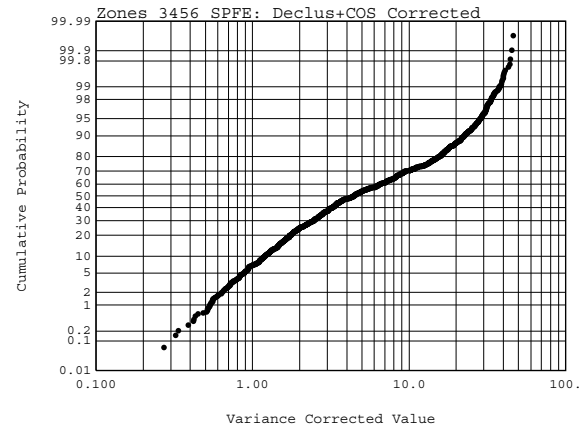
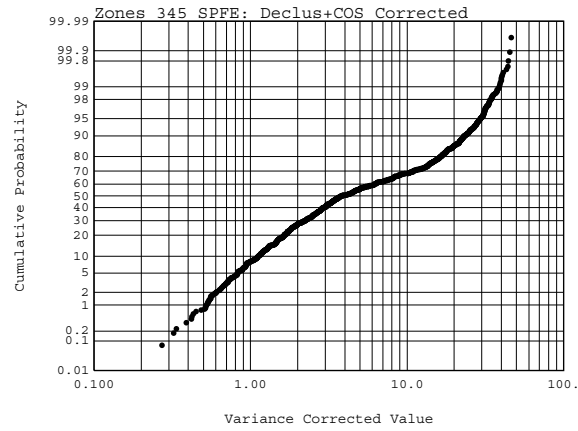
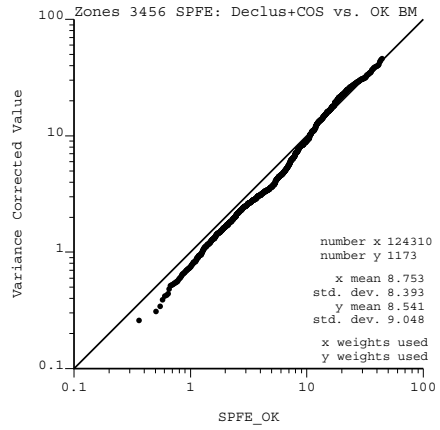
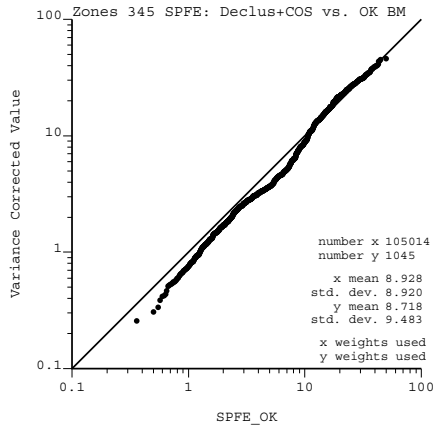
RNC CG: Compare BM and Declus+COS



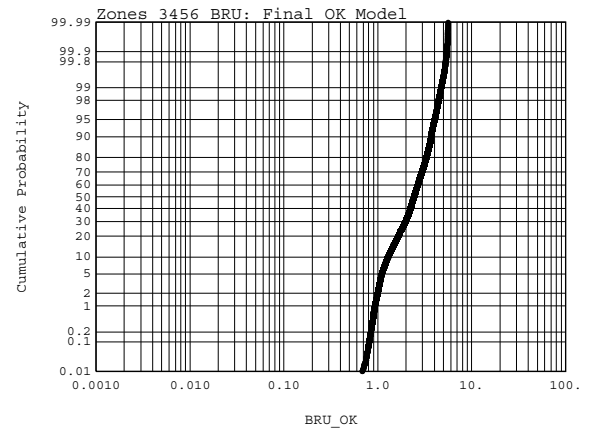
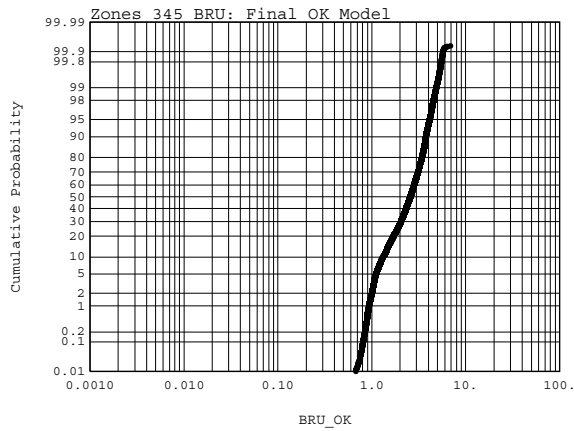
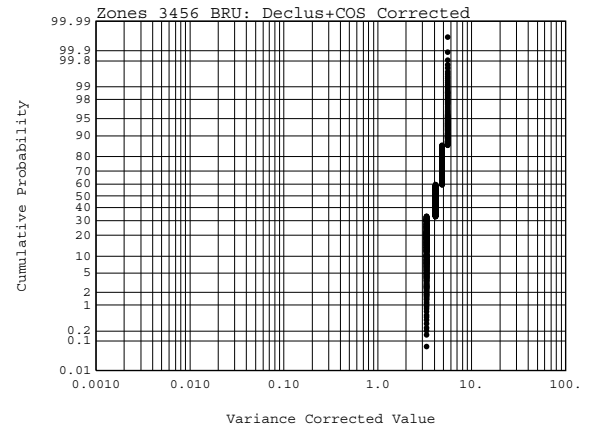
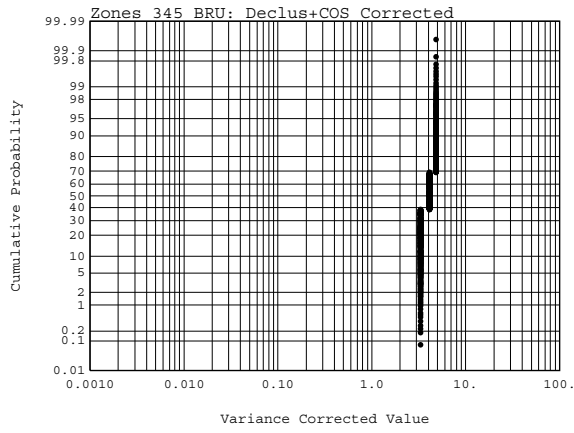
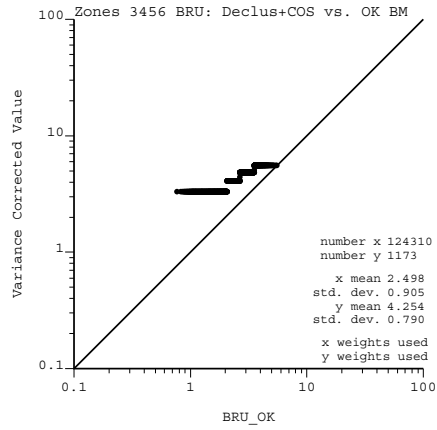
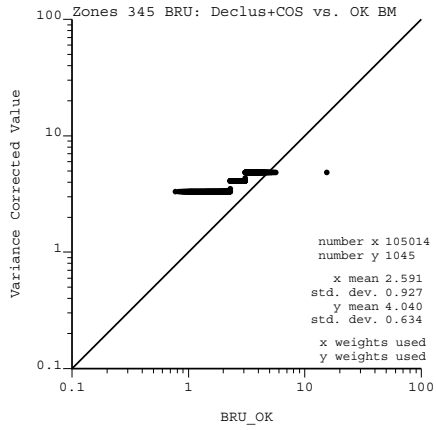
RNC SPLFE: Compare BM and Declus+COS



RNC SPFE: Compare BM and Declus+COS



RNC BRU: Compare BM and Declus+COS



APPENDIX G

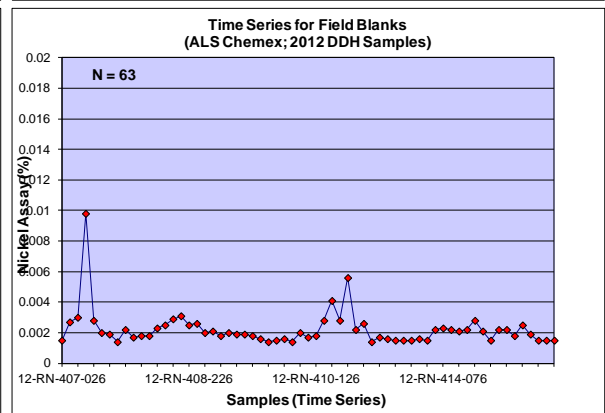
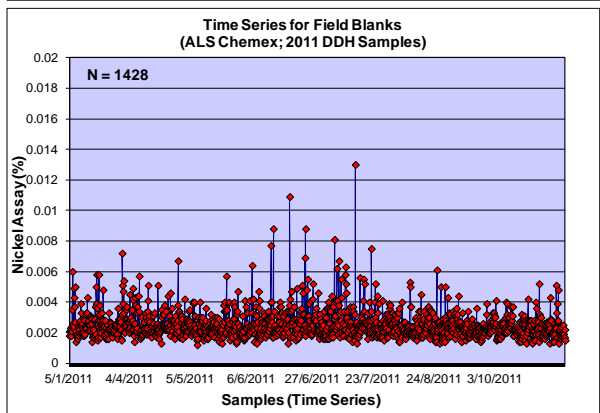
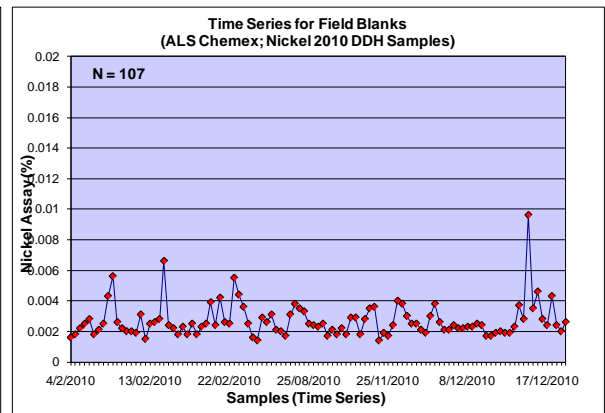
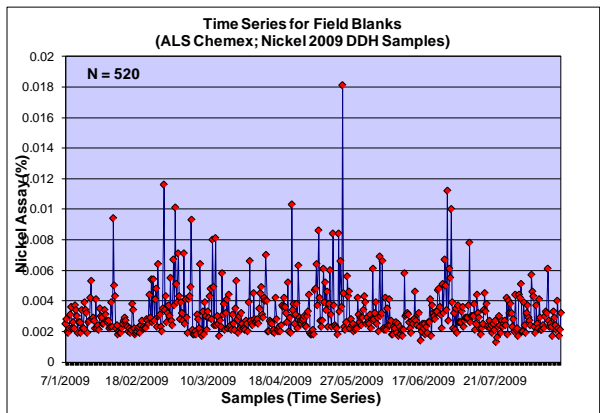
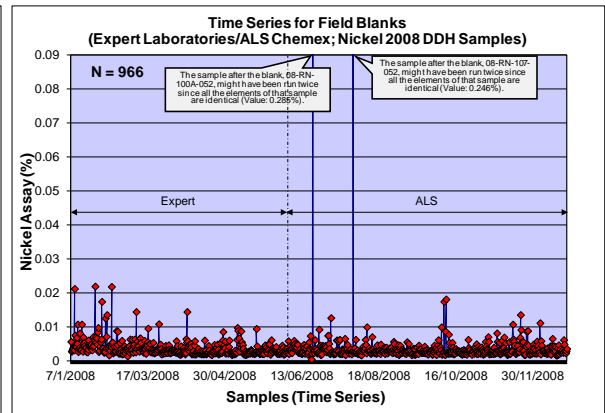
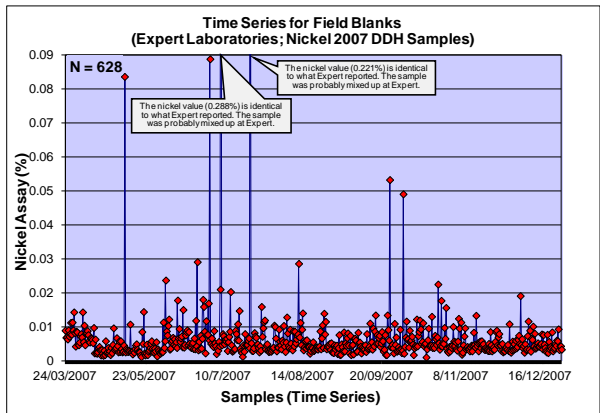
**Analytical Results
For Quality Control Data**

Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Nickel

srk consulting

Project Dumont
Data Series 2007-2012 Blanks - Nickel
Data Type DDH Samples
Commodity Ni in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert), 0.0001% Ni (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	0.007	0.004	0.003	0.003	0.003	0.002
Minimum	0.001	0.000	0.001	0.001	0.001	0.001
Maximum	0.288	0.285	0.018	0.010	0.013	0.010
Mode	0.003	0.003	0.002	0.003	0.002	0.002

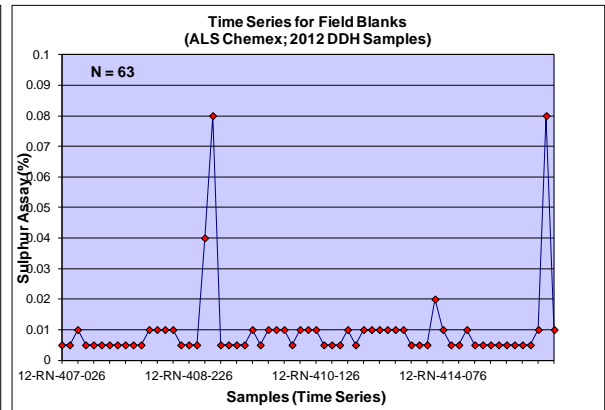
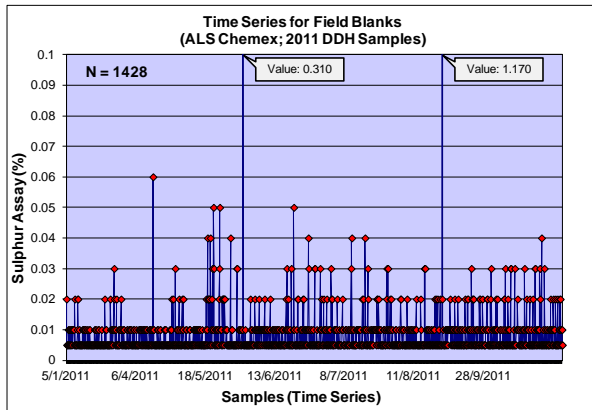
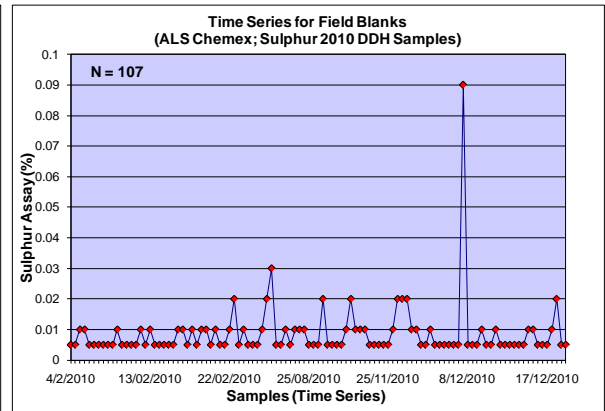
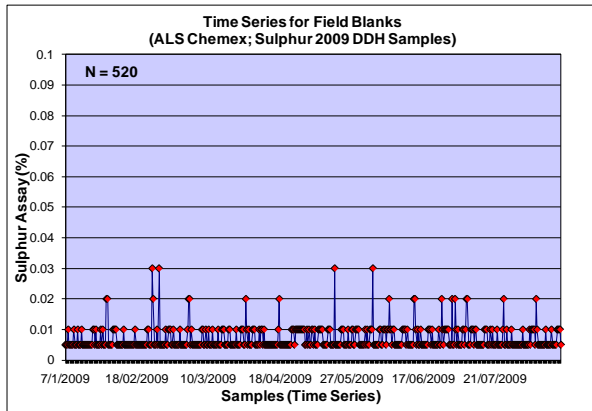
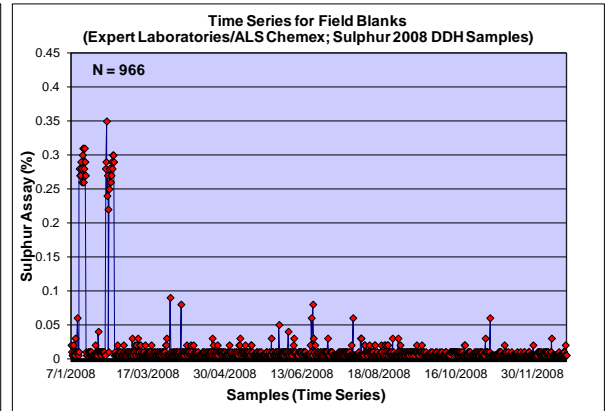
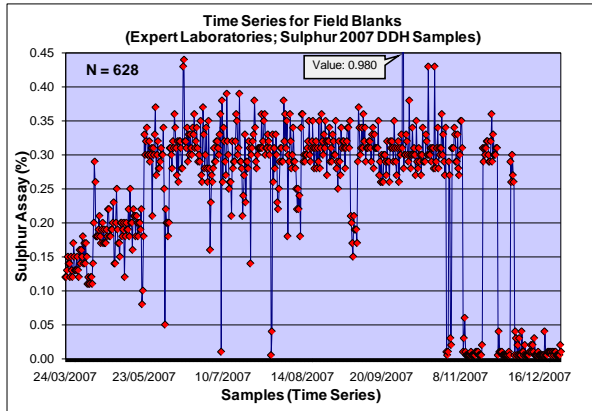


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Sulphur

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Project Dumont
Data Series 2007-2012 Blanks - Sulphur
Data Type DDH Samples
Commodity S in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert) and 0.01% (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	0.23	0.02	0.01	0.01	0.01	0.01
Minimum	0.01	0.01	0.01	0.01	0.01	0.01
Maximum	0.98	0.35	0.03	0.09	1.17	0.08
Mode	0.31	0.01	0.01	0.01	0.01	0.01

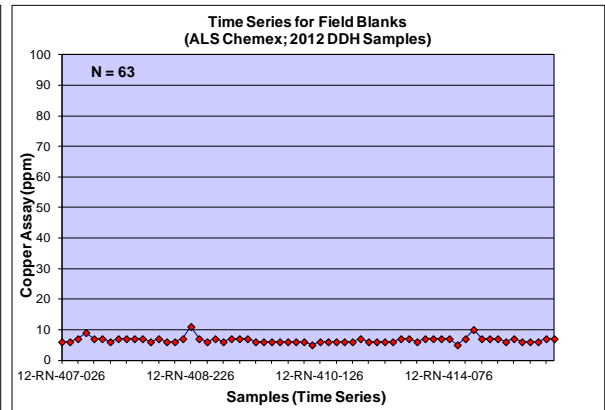
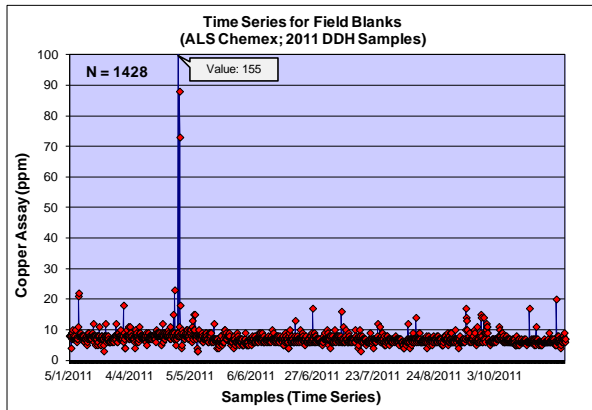
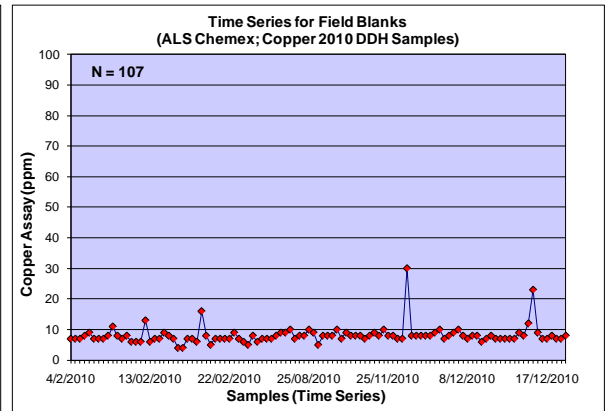
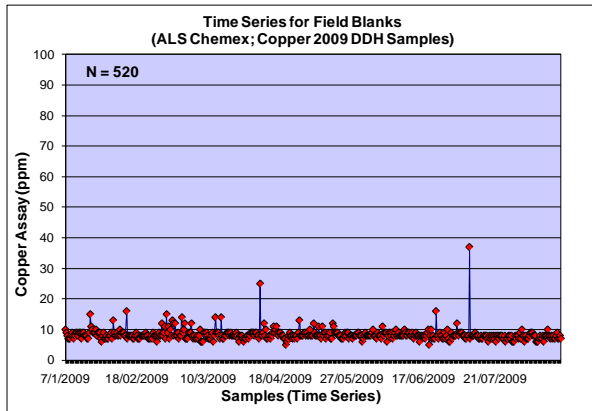
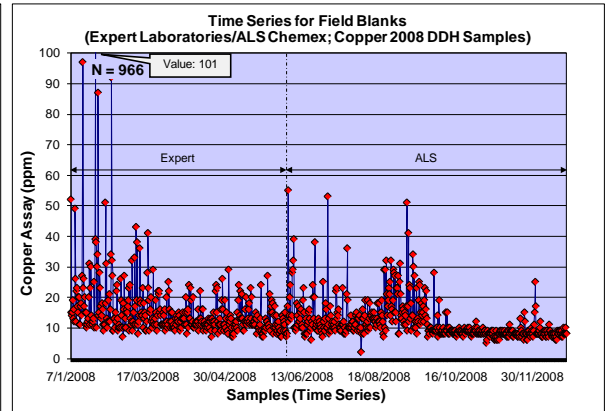
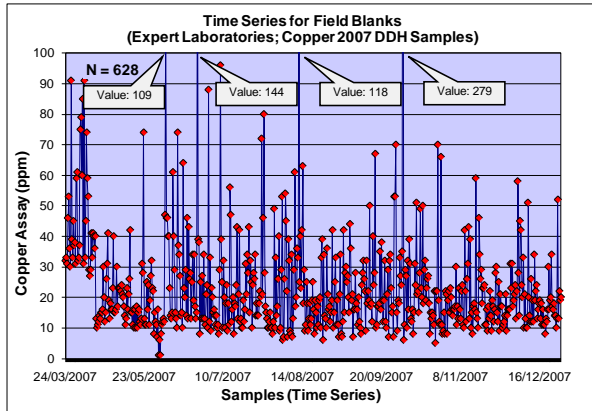


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Copper

srk consulting

Project Dumont
Data Series 2007-2012 Blanks - Copper
Data Type DDH Samples
Commodity Cu in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	24	13	8	8	7	7
Minimum	1	2	5	4	3	5
Maximum	279	101	37	30	155	11
Mode	13	8	8	7	7	6

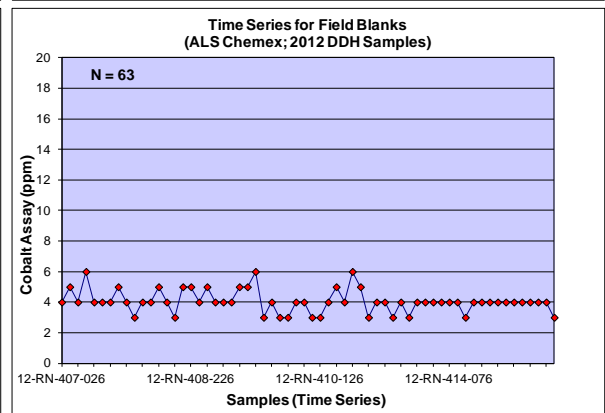
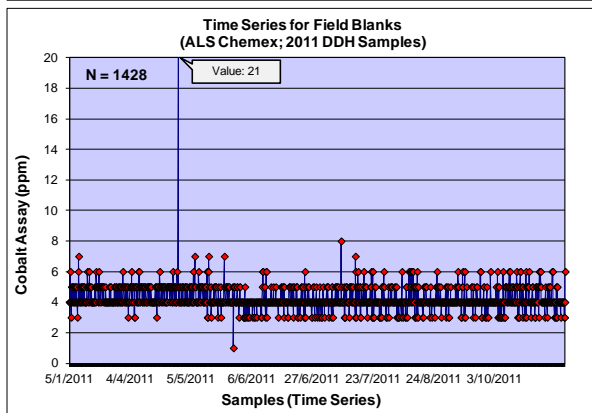
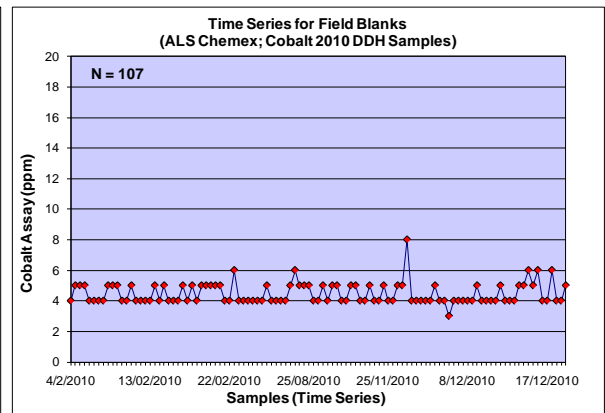
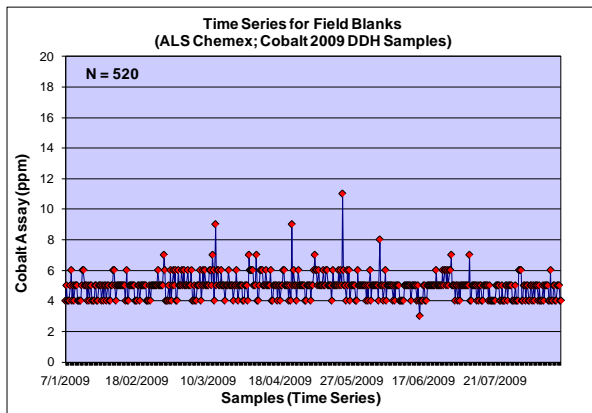
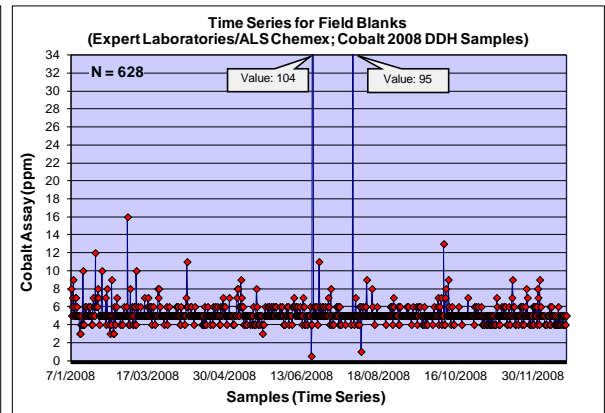
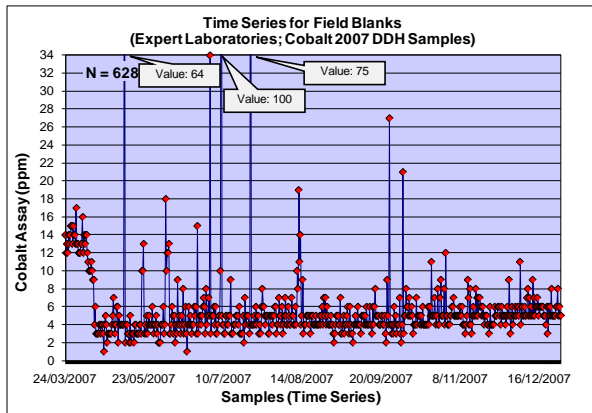


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Cobalt

srk consulting

Project Dumont
Data Series 2007-2012 Blanks - Cobalt
Data Type DDH Samples
Commodity Co in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	6	5	5	4	4	4
Minimum	1	1	3	3	1	3
Maximum	100	104	11	8	21	6
Mode	4	5	5	4	4	4

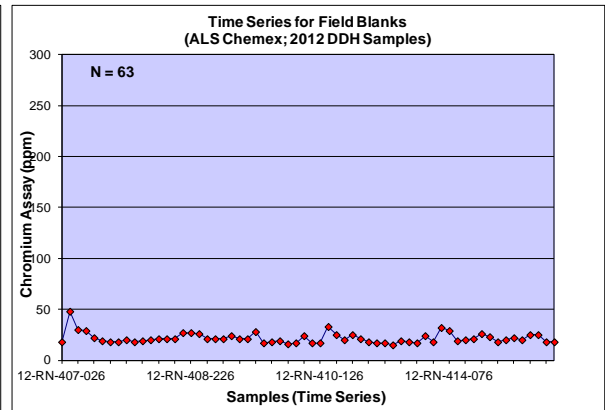
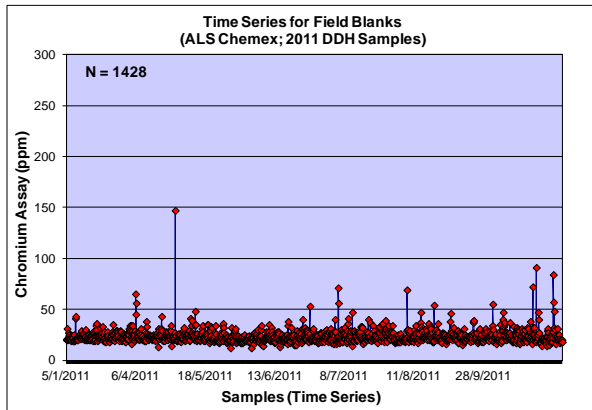
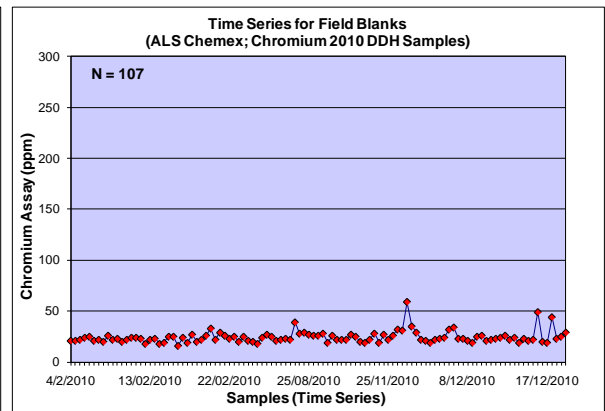
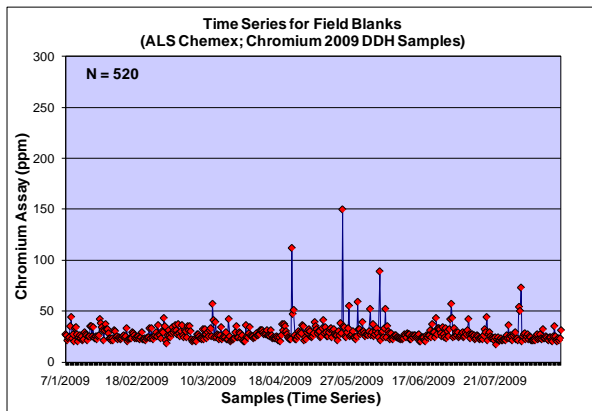
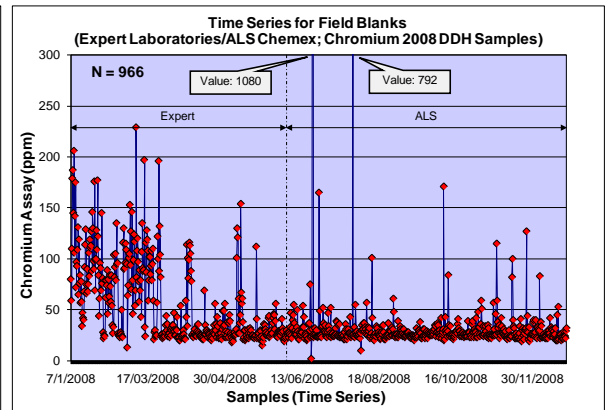
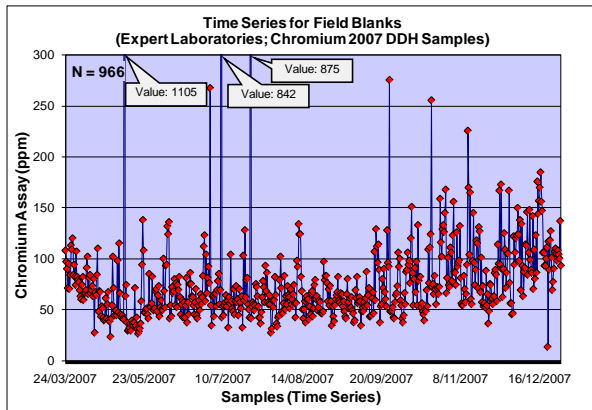


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Chromium

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Project Dumont
Data Series 2007-2012 Blanks - Chromium
Data Type DDH Samples
Commodity Cr in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	78	43	28	24	24	22
Minimum	13	2	17	16	12	15
Maximum	1,105	1,080	150	59	147	48
Mode	54	25	24	22	20	18

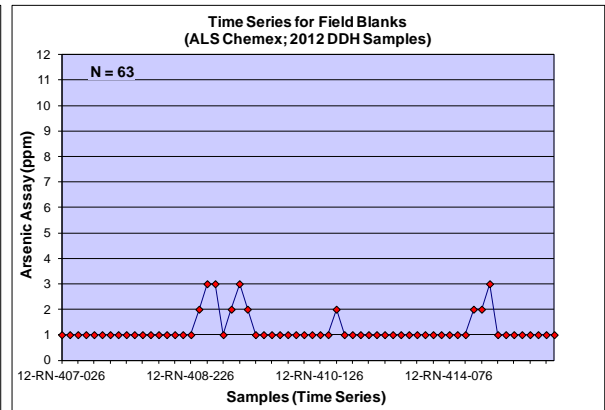
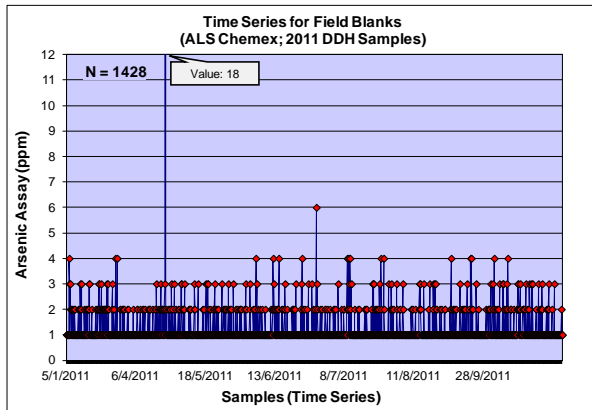
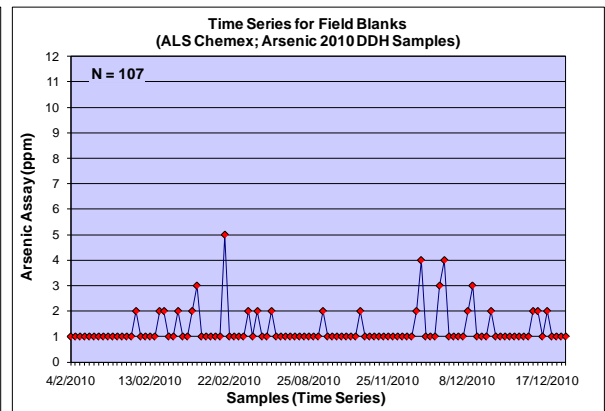
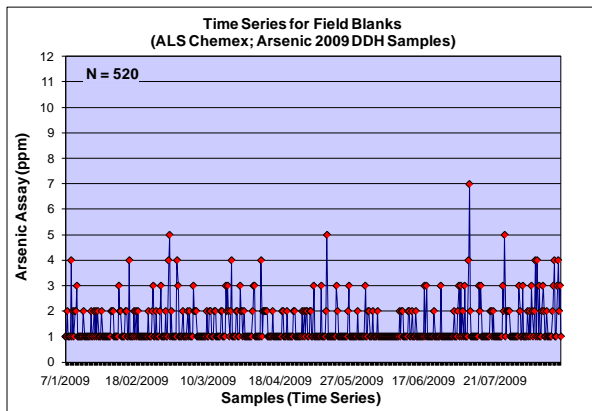
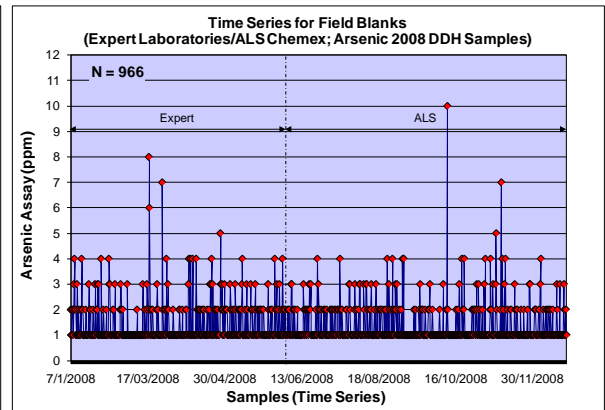
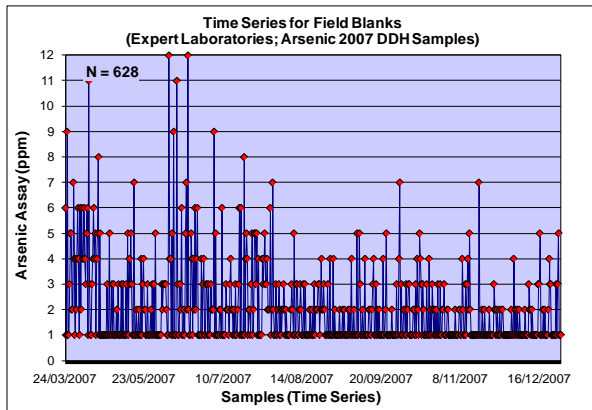


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Arsenic

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Project Dumont
Data Series 2007-2012 Blanks - Arsenic
Data Type DDH Samples
Commodity As in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 2ppm (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	2	1	1	1	1	1
Minimum	1	1	1	1	1	1
Maximum	12	10	7	5	18	3
Mode	1	1	1	1	1	1

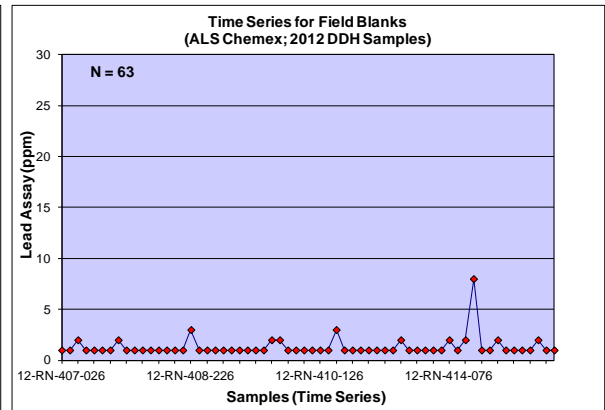
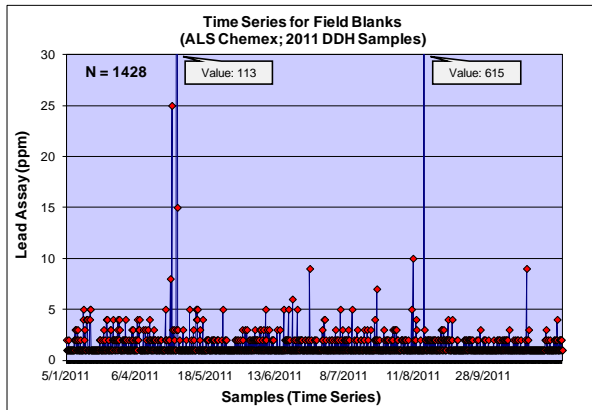
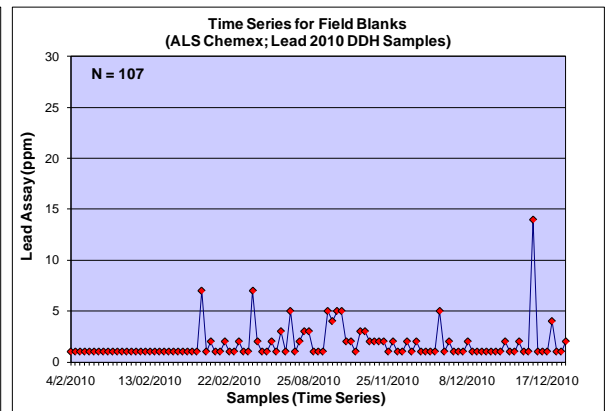
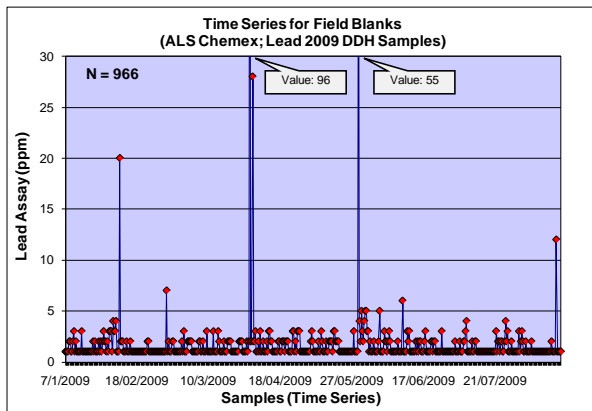
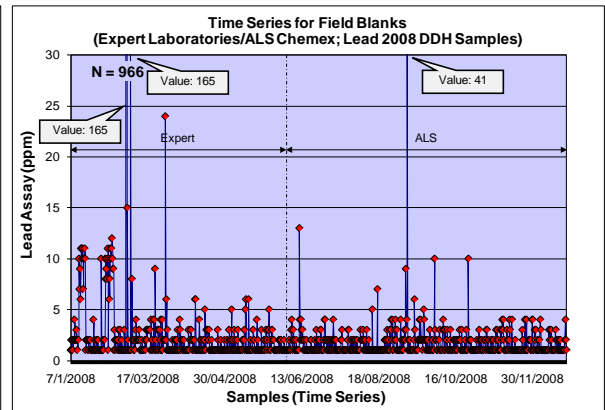
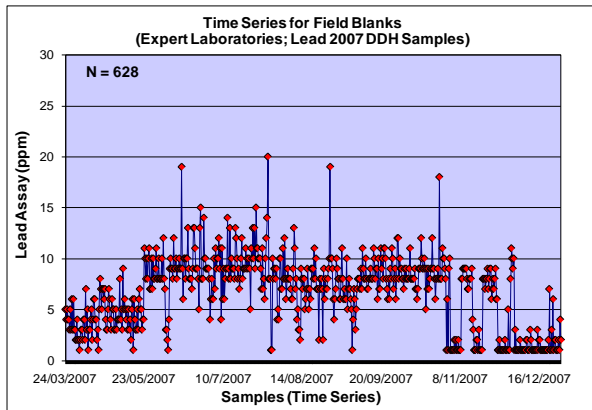


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Lead

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Project Dumont
Data Series 2007-2012 Blanks - Lead
Data Type DDH Samples
Commodity Pb in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 2ppm (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	7	2	2	2	2	1
Minimum	1	1	1	1	1	1
Maximum	20	165	96	14	615	8
Mode	8	1	1	1	1	1

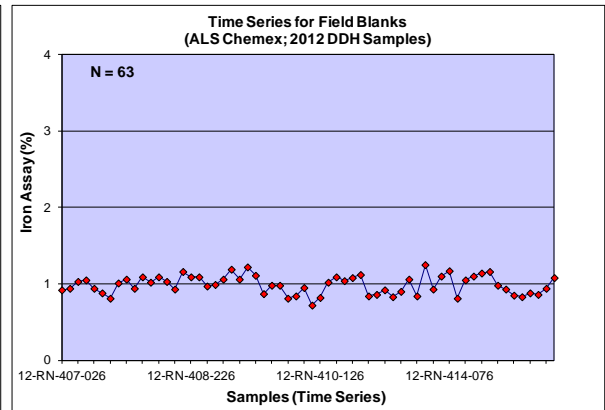
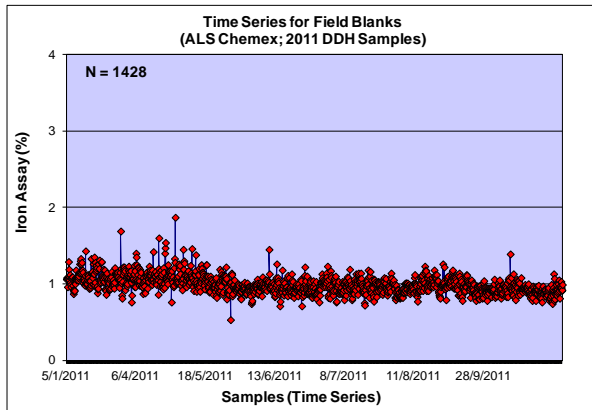
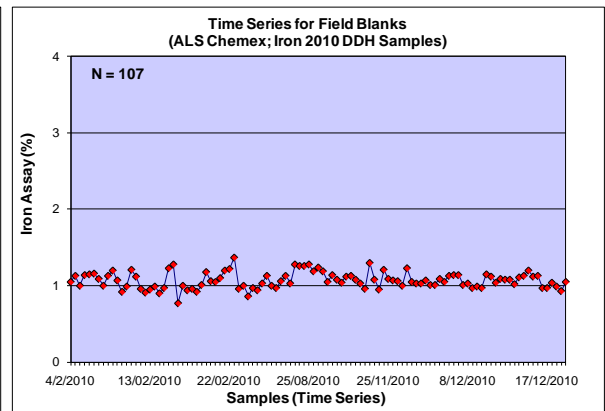
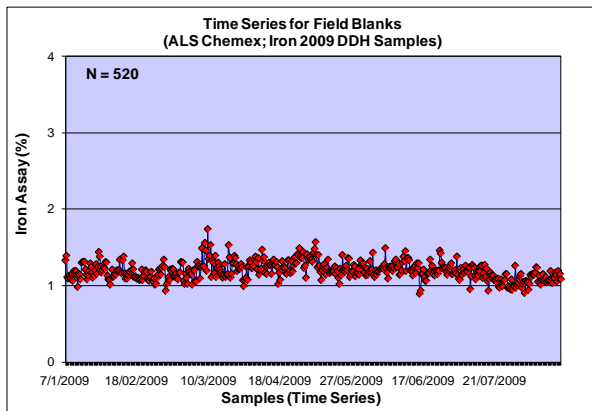
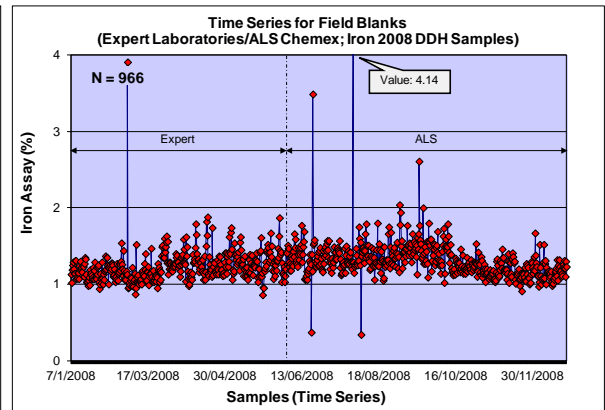
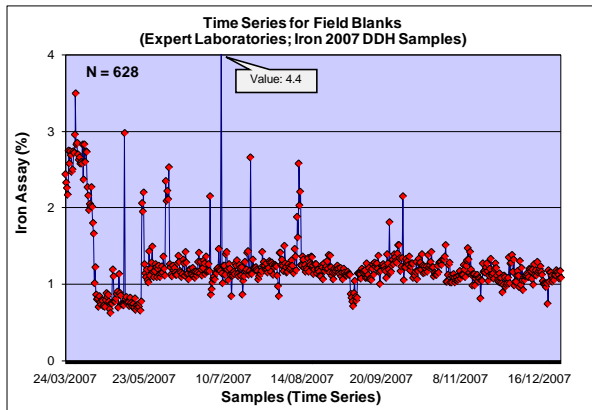


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Iron

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Project Dumont
Data Series 2007-2012 Blanks - Iron
Data Type DDH Samples
Commodity Fe in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert), 0.01% (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	1.25	1.28	1.19	1.07	0.99	0.99
Minimum	0.62	0.34	0.89	0.77	0.53	0.72
Maximum	4.44	4.14	1.74	1.37	1.87	1.25
Mode	1.12	1.29	1.15	1.13	0.96	1.09

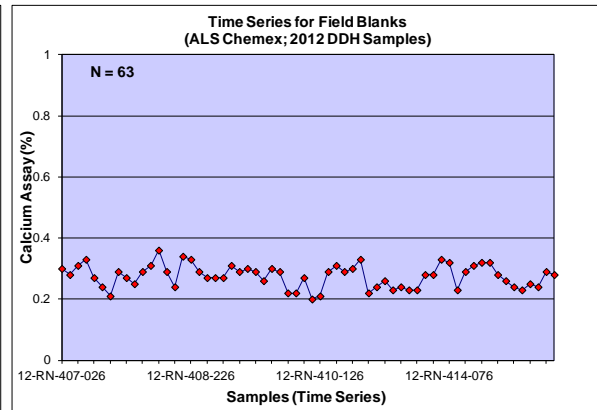
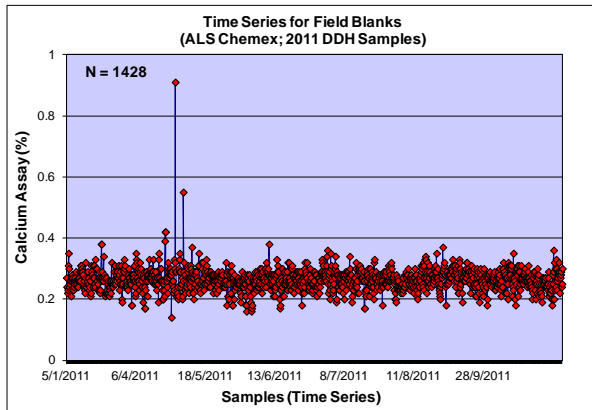
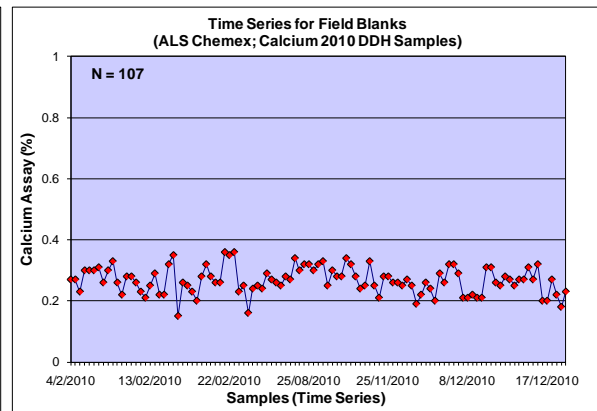
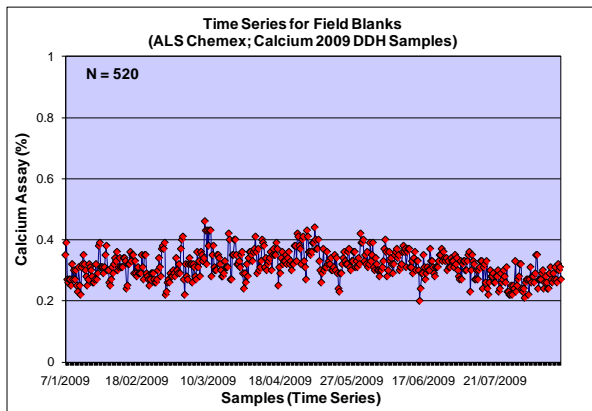
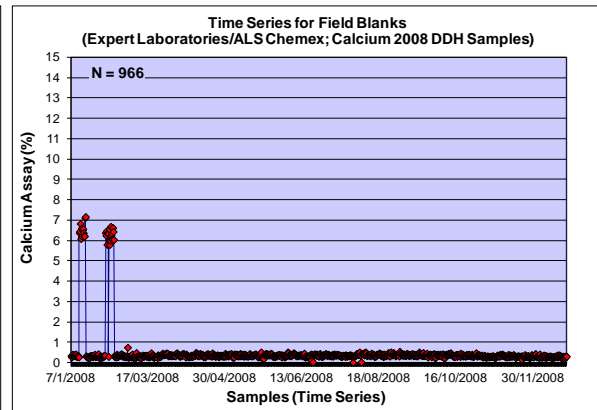
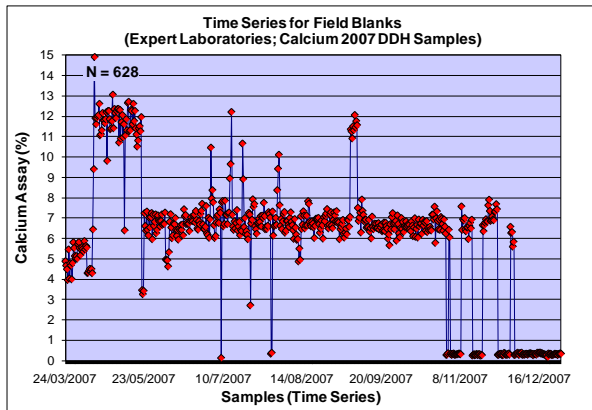


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Calcium

srk consulting

Project Dumont
Data Series 2007-2012 Blanks - Calcium
Data Type DDH Samples
Commodity Ca in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert), 0.01% (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,428	63
Mean	6.07	0.53	0.31	0.27	0.26	0.28
Minimum	0.12	0.02	0.20	0.15	0.14	0.20
Maximum	14.90	7.17	0.46	0.36	0.91	0.36
Mode	0.32	0.33	0.31	0.26	0.26	0.29

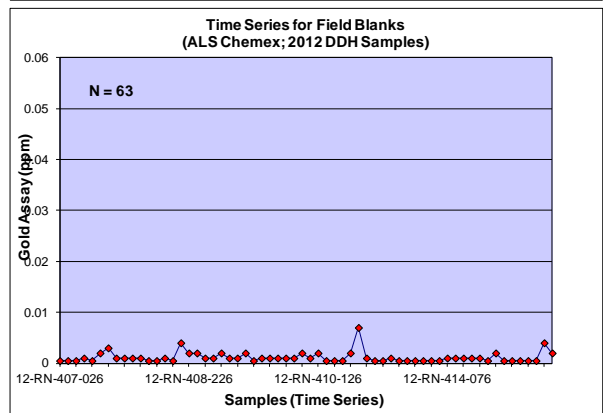
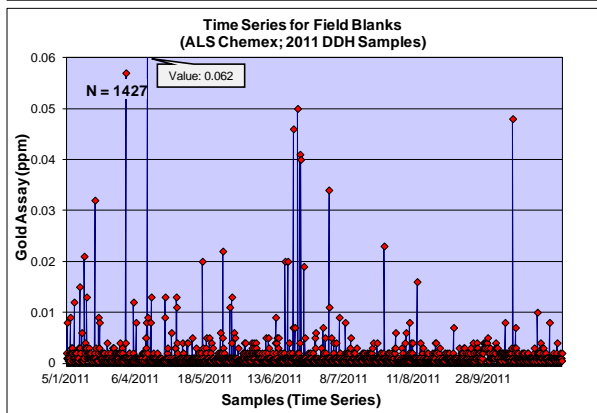
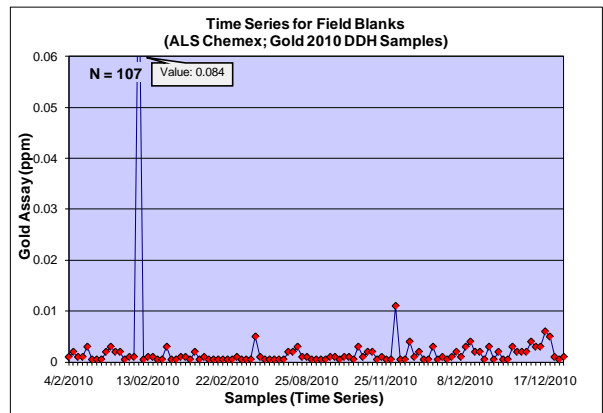
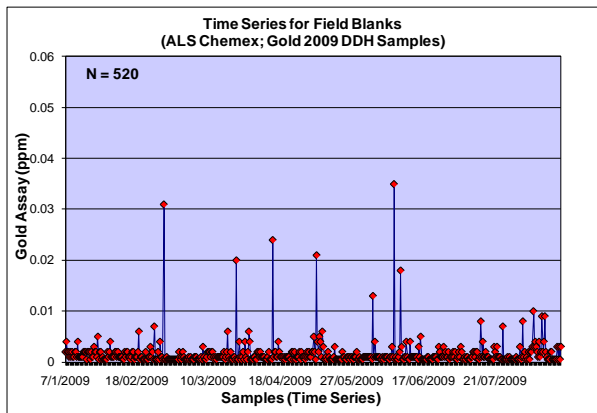
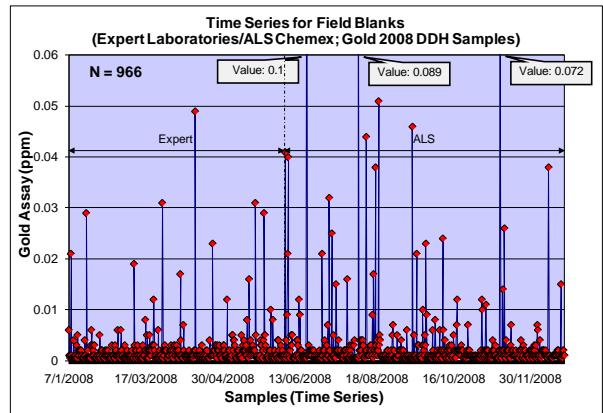
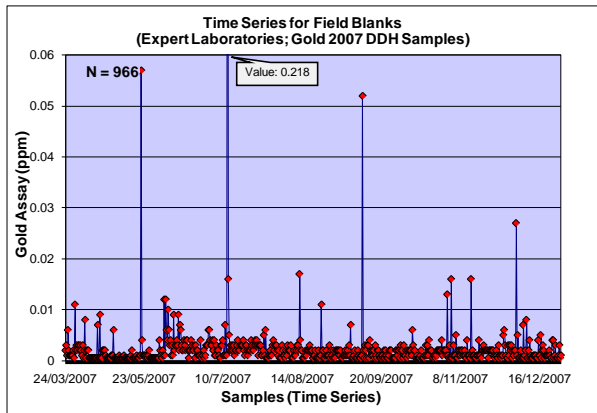


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Gold

srk consulting

Project Dumont
Data Series 2007-2012 Blanks - Gold
Data Type DDH Samples
Commodity Au in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 0.001ppm (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,427	63
Mean	0.002	0.003	0.002	0.002	0.002	0.001
Minimum	0.001	0.001	0.001	0.001	0.001	0.001
Maximum	0.218	0.100	0.035	0.084	0.062	0.007
Mode	0.001	0.001	0.001	0.001	0.001	0.001

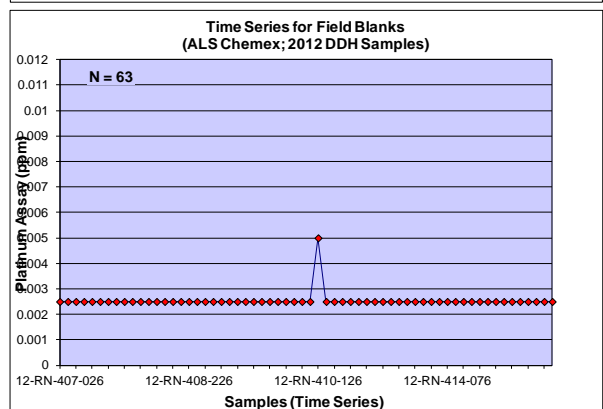
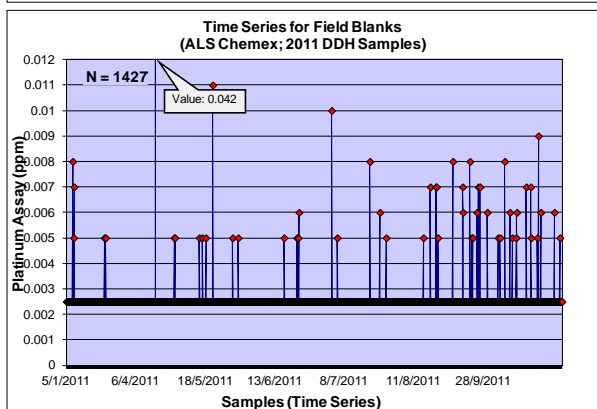
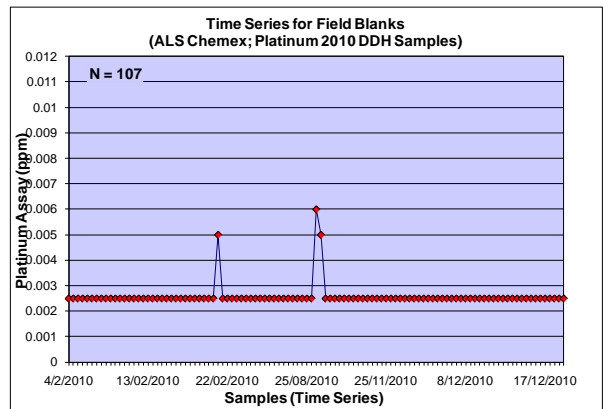
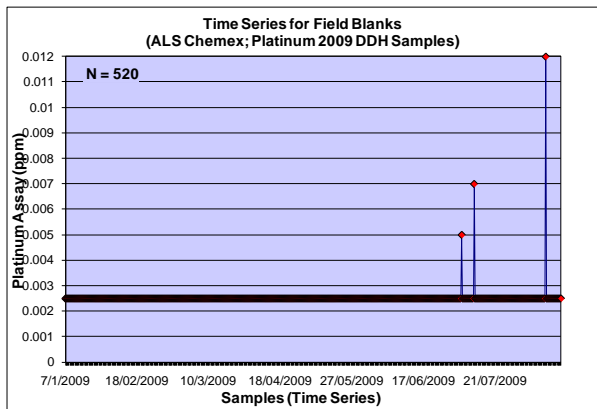
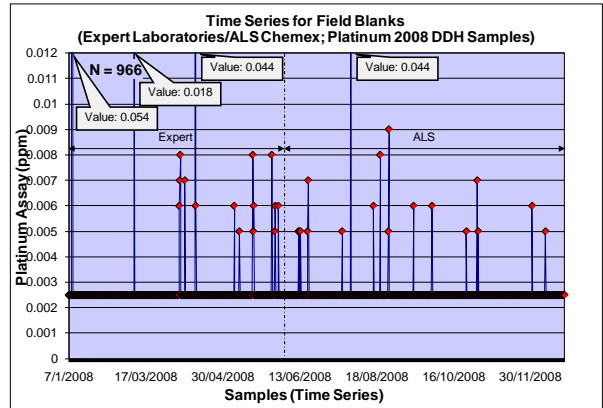
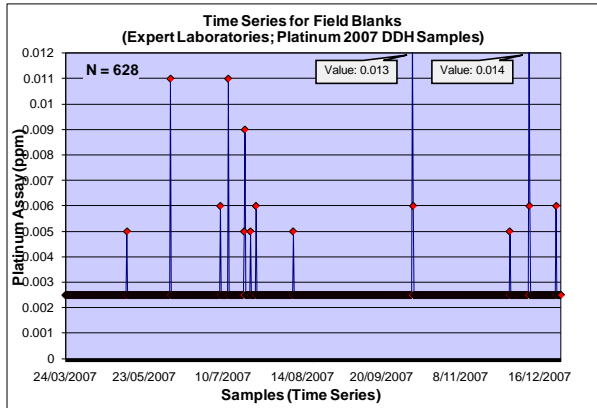


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Platinum

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Project Dumont
Data Series 2007-2012 Blanks - Platinum
Data Type DDH Samples
Commodity Pt in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 0.005ppm (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,427	63
Mean	0.003	0.003	0.003	0.003	0.003	0.003
Minimum	0.003	0.003	0.003	0.003	0.003	0.003
Maximum	0.014	0.054	0.012	0.006	0.042	0.005
Mode	0.003	0.003	0.003	0.003	0.003	0.003

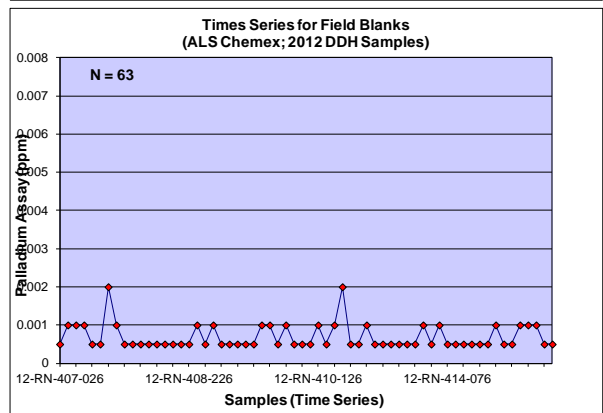
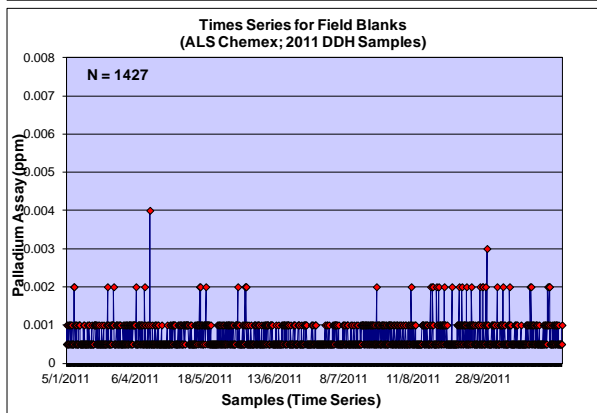
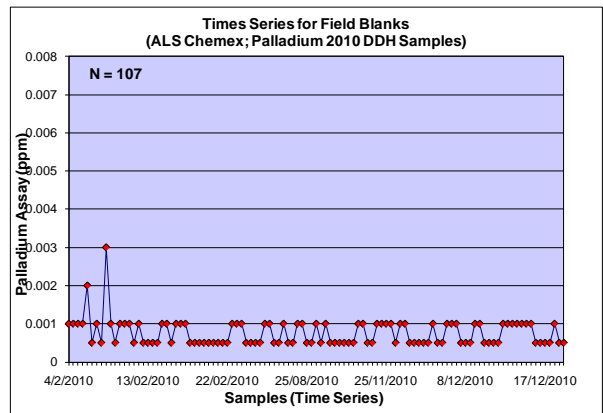
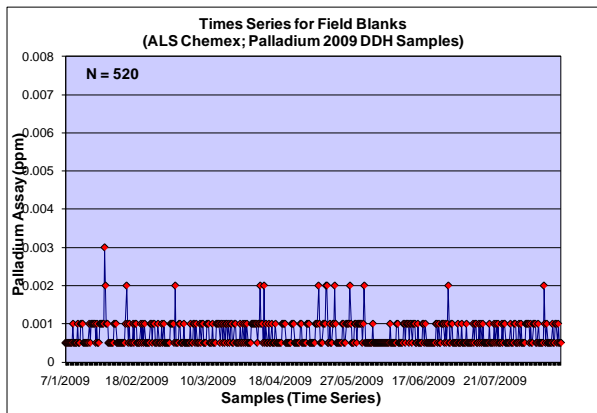
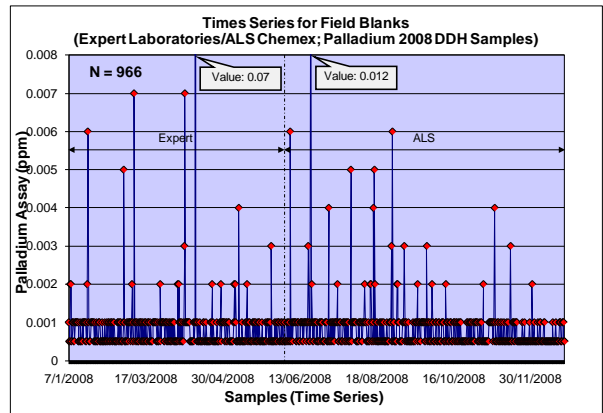
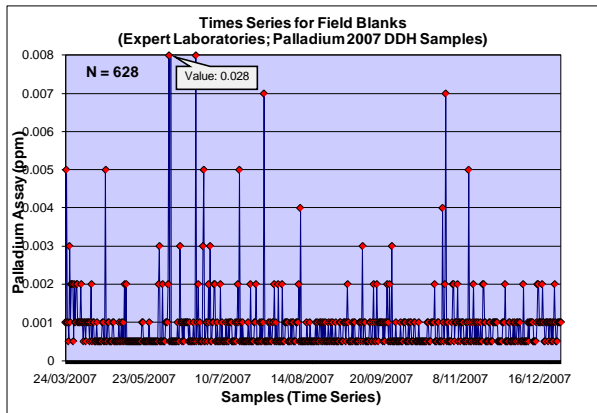


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Palladium

srk consulting

Project Dumont
Data Series 2007-2012 Blanks - Palladium
Data Type DDH Samples
Commodity Pd in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 0.001ppm (ALS)

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	628	966	520	107	1,427	63
Mean	0.001	0.001	0.001	0.001	0.001	0.001
Minimum	0.001	0.001	0.001	0.001	0.001	0.001
Maximum	0.028	0.07	0.003	0.003	0.004	0.002
Mode	0.001	0.001	0.001	0.001	0.001	0.001

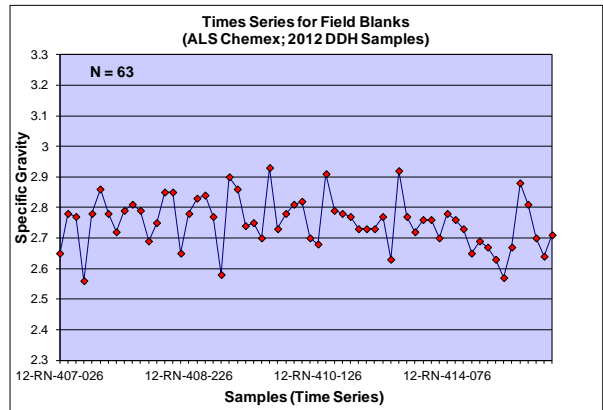
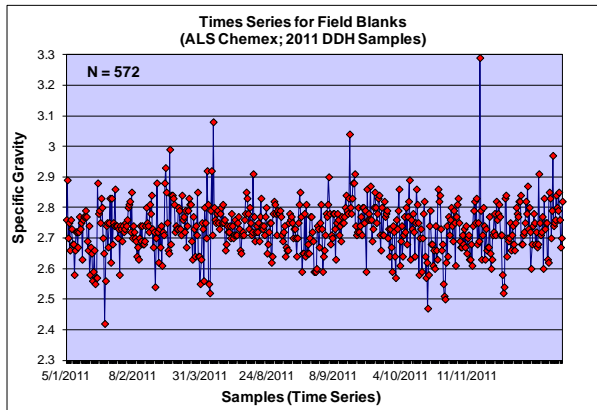
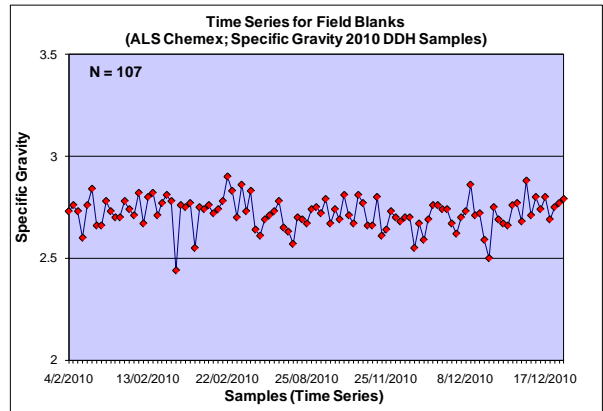
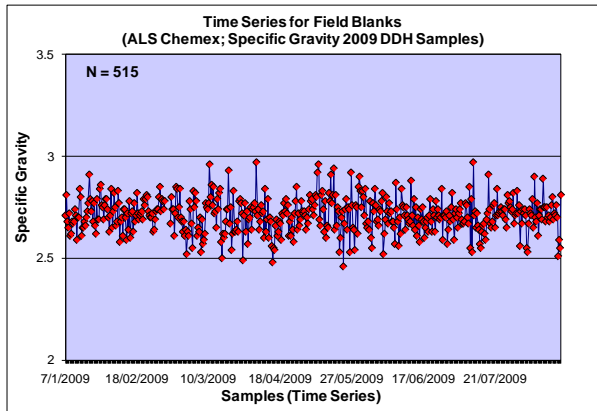
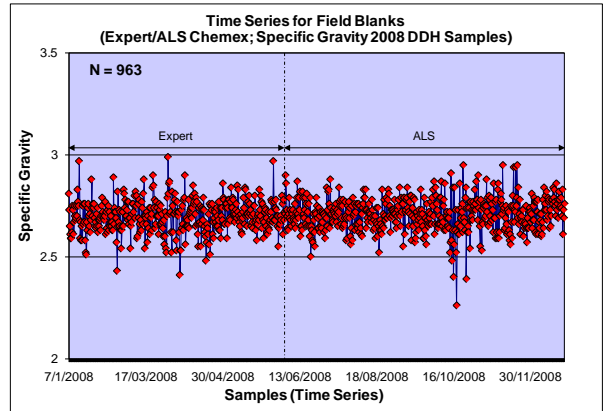
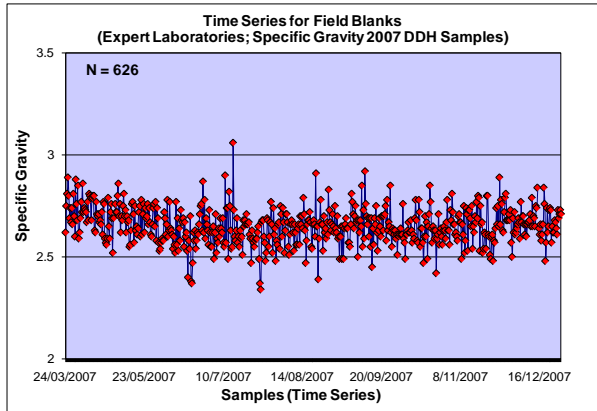


Time Series Plots for Field Blanks assayed by Laboratoire Expert and ALS Chemex between 2007 and 2011 – Specific Gravity

srk consulting

Project Dumont
Data Series 2007-2012 Blanks - Specific Gravity
Data Type DDH Samples
Commodity SG
Laboratory Expert Laboratories/ALS Chemex
Analytical Method Gravimetric
Detection Limit 0.01

Statistics	2007	2008	2009	2010	2011	2012
Sample Count	626	963	515	107	572	63
Mean	2.65	2.70	2.71	2.72	2.73	2.75
Minimum	2.34	2.26	2.46	2.44	2.42	2.56
Maximum	3.06	2.99	2.97	2.90	3.29	2.93
Mode	2.66	2.70	2.74	2.70	2.75	2.78

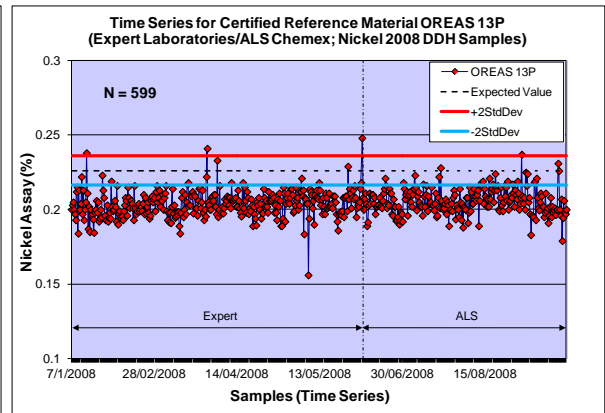
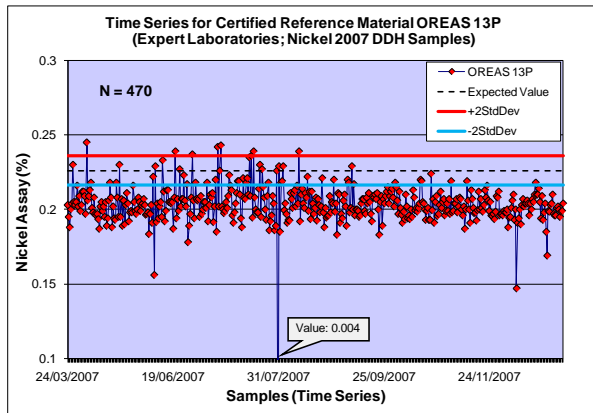


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2007 and 2008 – OREAS 13P (Nickel and Copper)

srk consulting

Project Dumont
Data Series CRM OREAS 13P - Nickel
Data Type DDH Samples
Commodity Ni in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert), 0.0001% (ALS)

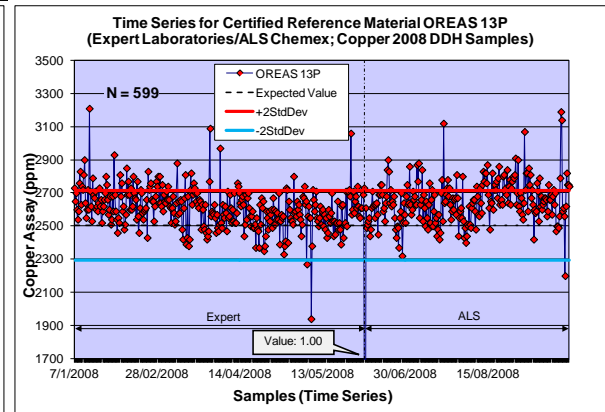
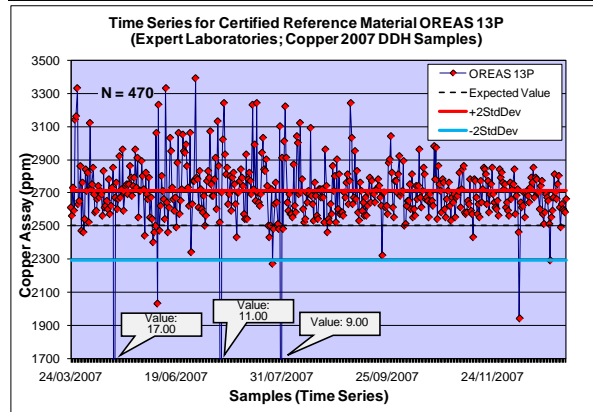
Statistics	2007	2008
Sample Count	470	599
Expected Value	0.226	0.226
Standard Deviation	0.005	0.005
Mean	0.203	0.204
Outside 2StdDev	90.6%	94.3%
Below 2StdDev	418	561
Above 2StdDev	8	4



srk consulting

Project Dumont
Data Series CRM OREAS 13P - Copper
Data Type DDH Samples
Commodity Cu in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2007	2008
Sample Count	470	599
Expected Value	2,504	2,504
Standard Deviation	106	106
Mean	2,691	2,620
Outside 2StdDev	42.8%	20.9%
Below 2StdDev	7	4
Above 2StdDev	194	121

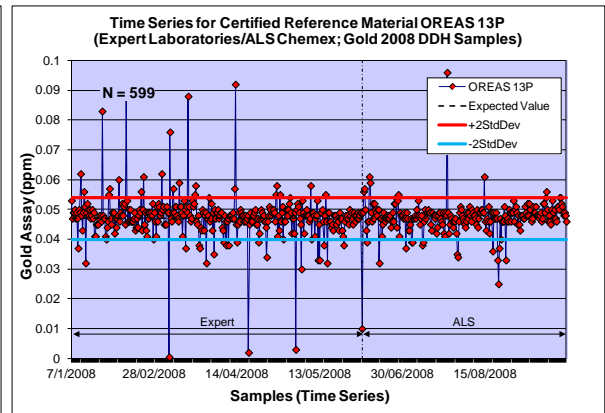
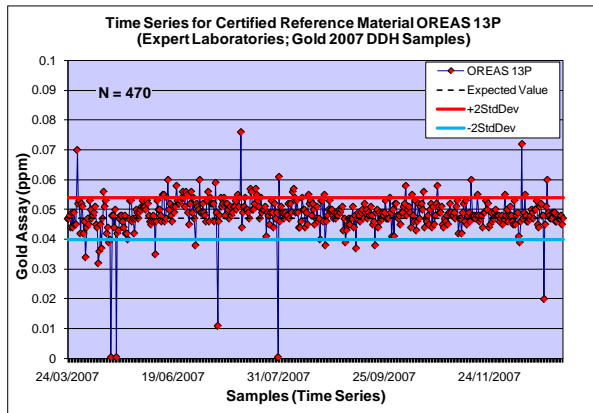


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2007 and 2008 – OREAS 13P (Gold and Platinum)

srk consulting

Project Dumont
Data Series CRM OREAS 13P - Gold
Data Type DDH Samples
Commodity Au in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 0.001ppm (ALS)

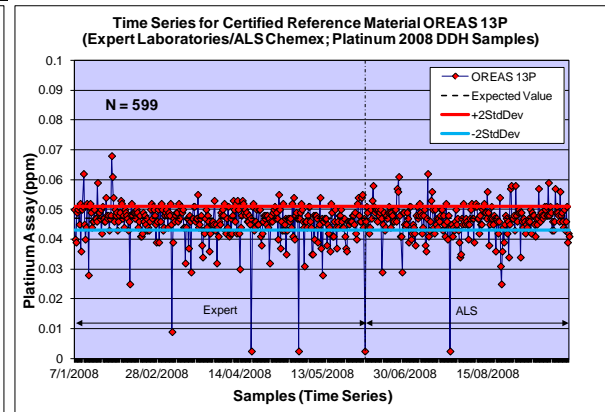
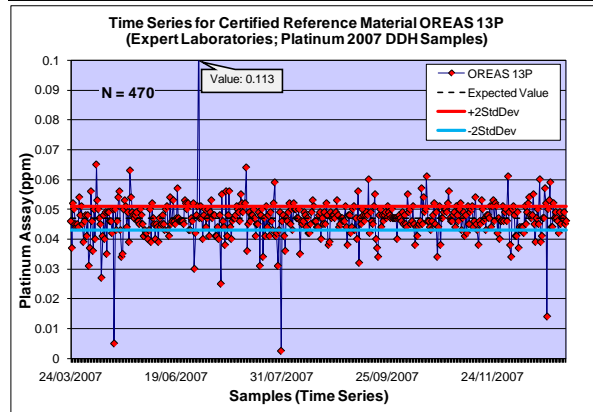
Statistics	2007	2008
Sample Count	470	599
Expected Value	0.047	0.047
Standard Deviation	0.004	0.004
Mean	0.048	0.047
Outside 2StdDev	10.9%	11.4%
Below 2StdDev	17	37
Above 2StdDev	34	31




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Project Dumont
Data Series CRM OREAS 13P - Platinum
Data Type DDH Samples
Commodity Pt in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 0.005ppm (ALS)

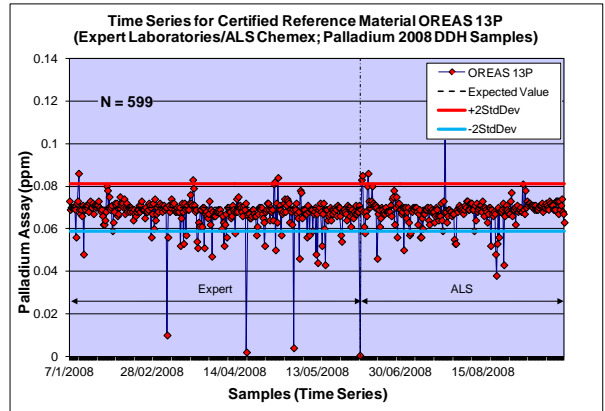
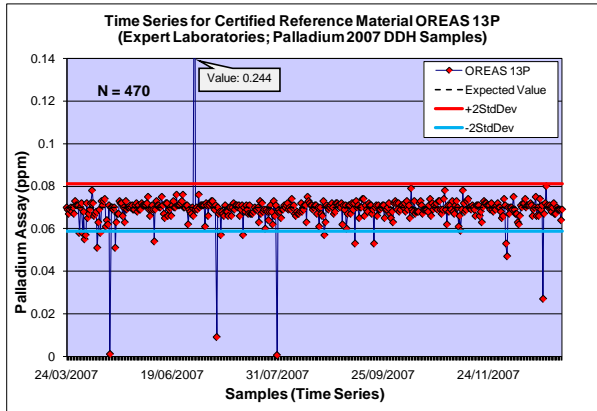
Statistics	2007	2008
Sample Count	470	599
Expected Value	0.047	0.047
Standard Deviation	0.002	0.002
Mean	0.046	0.046
Outside 2StdDev	30.0%	26.9%
Below 2StdDev	82	102
Above 2StdDev	59	59



Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2007 and 2008 – OREAS 13P (Palladium)

	
Project	Dumont
Data Series	CRM OREAS 13P - Palladium
Data Type	DDH Samples
Commodity	Pd in ppm
Laboratory	Expert Laboratories/ALS Chemex
Analytical Method	AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit	2ppm (Expert), 0.001ppm (ALS)

Statistics	2007	2008
Sample Count	470	599
Expected Value	0.070	0.070
Standard Deviation	0.006	0.006
Mean	0.069	0.068
Outside 2StdDev	4.3%	9.3%
Below 2StdDev	19	48
Above 2StdDev	1	8

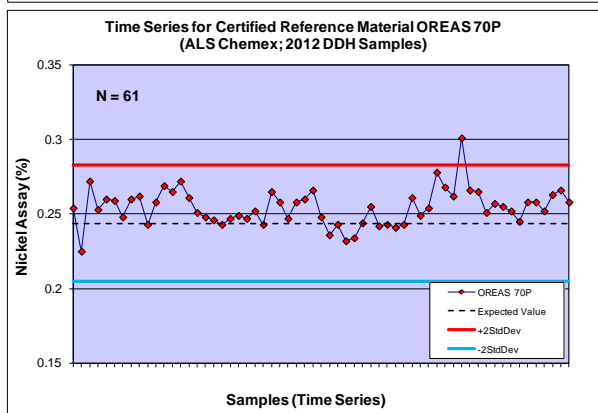
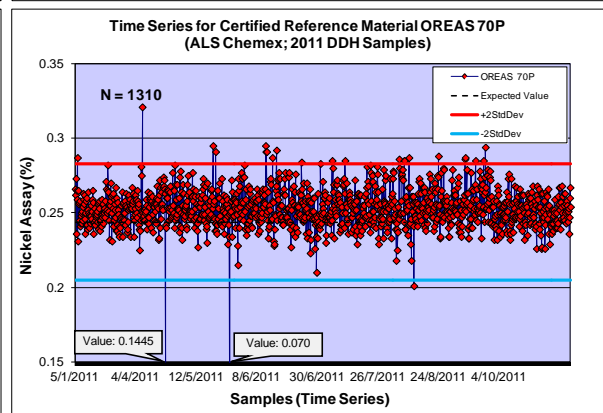
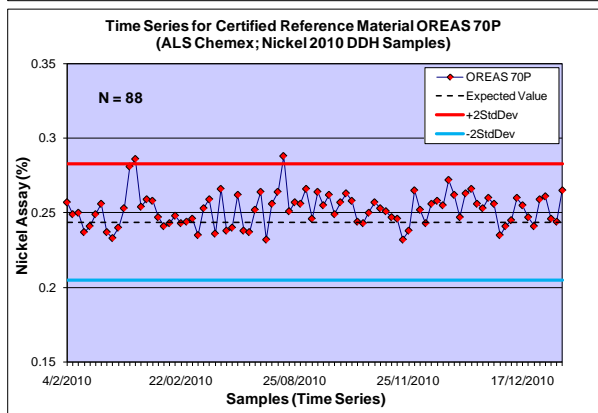
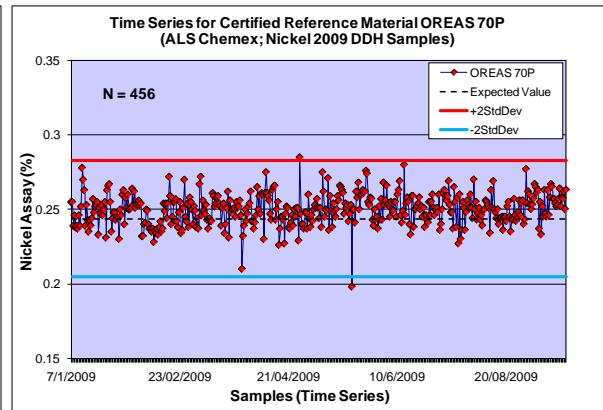
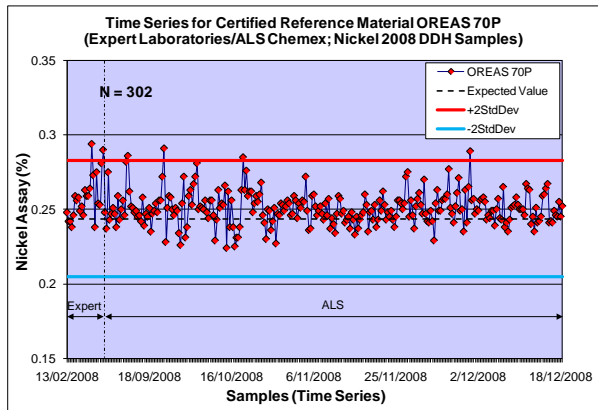


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Nickel)

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Project Dumont
Data Series CRM OREAS 70P - Nickel
Data Type DDH Samples
Commodity Ni in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert), 0.0001% (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	0.244	0.244	0.244	0.244	0.244
Standard Deviation	0.019	0.019	0.019	0.019	0.019
Mean	0.251	0.250	0.252	0.253	0.254
Outside 2StdDev	2.0%	0.4%	2.3%	2.0%	1.6%
Below 2StdDev	0	1	0	3	0
Above 2StdDev	6	1	2	23	1

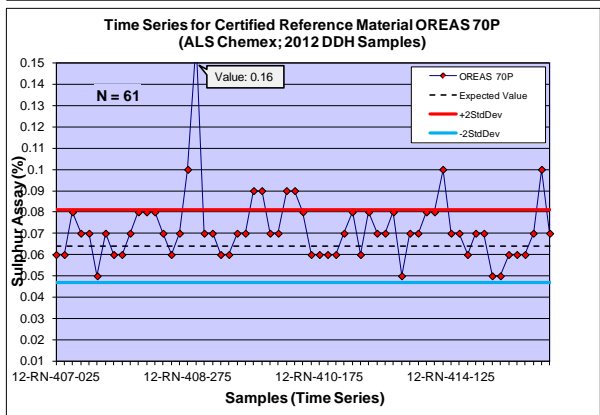
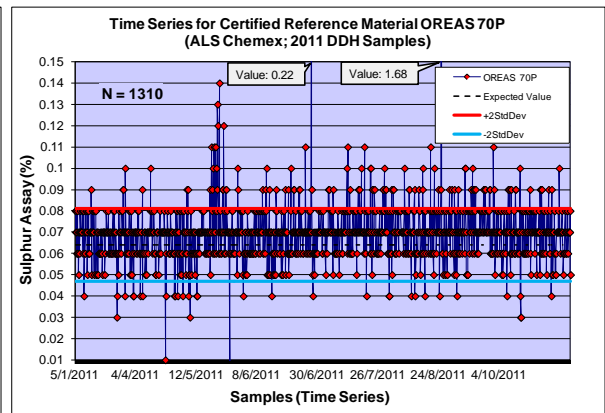
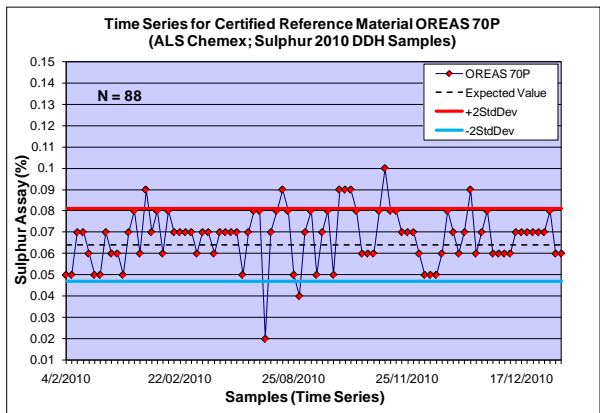
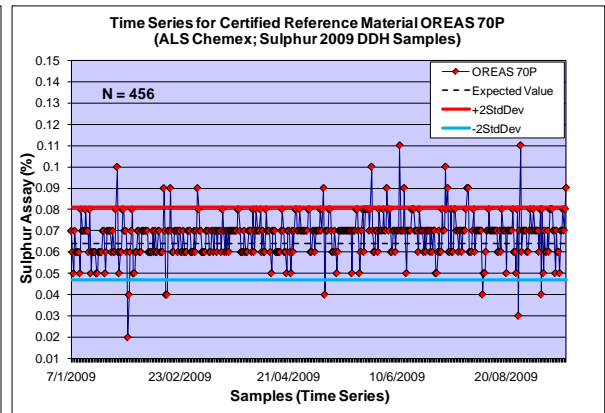
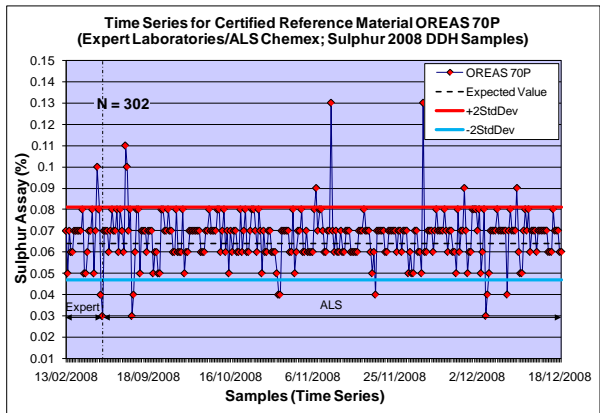


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Sulphur)


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Project Dumont
Data Series CRM OREAS 70P - Sulphur
Data Type DDH Samples
Commodity S in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert), 0.01% (ALS)

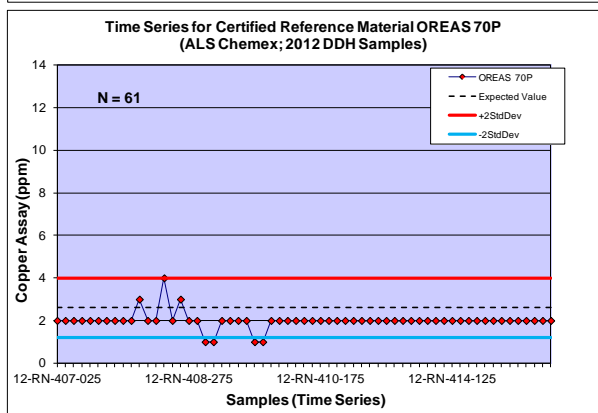
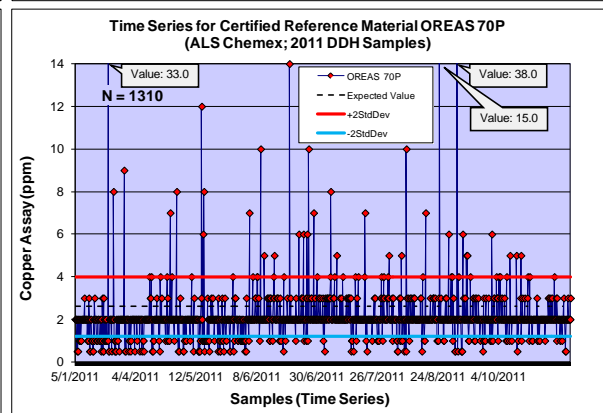
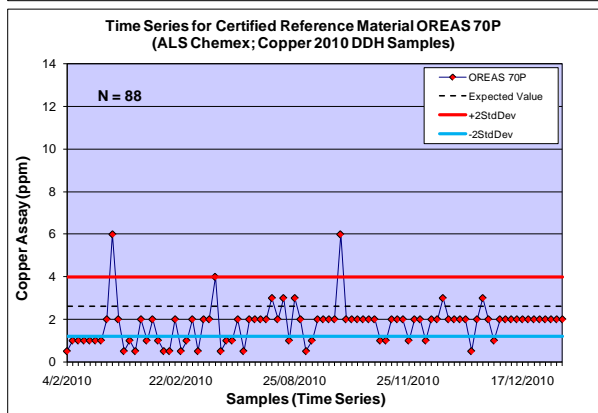
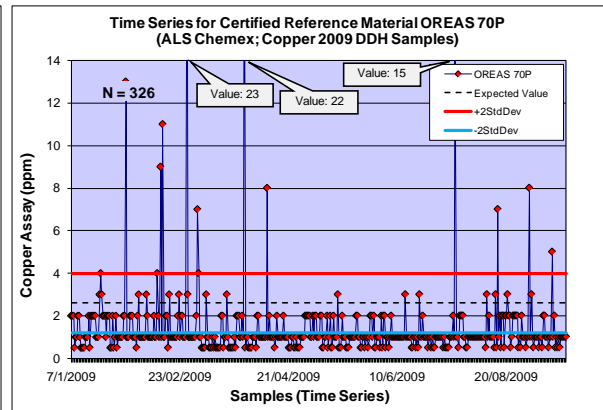
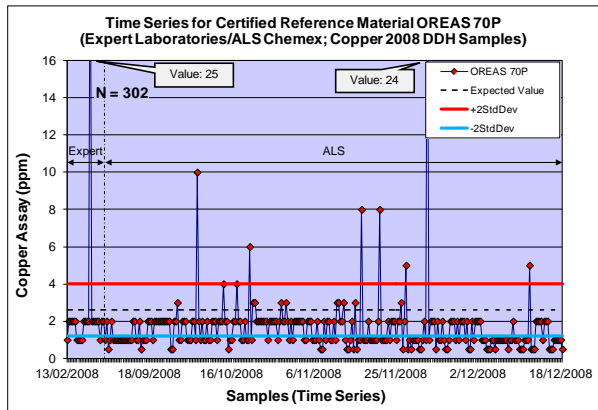
Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	0.064	0.064	0.064	0.064	0.064
Standard Deviation	0.009	0.009	0.009	0.009	0.009
Mean	0.067	0.068	0.068	0.071	0.072
Outside 2StdDev	6.0%	5.0%	10.2%	11.0%	13.1%
Below 2StdDev	10	8	2	35	0
Above 2StdDev	8	15	7	109	8



Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Copper)

	
Project	Dumont
Data Series	CRM OREAS 70P - Copper
Data Type	DDH Samples
Commodity	Cu in ppm
Laboratory	Expert Laboratories/ALS Chemex
Analytical Method	AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit	2ppm (Expert), 1ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	2.6	2.6	2.6	2.6	2.6
Standard Deviation	0.7	0.7	0.7	0.7	0.7
Mean	1.72	1.44	1.77	2.15	2.00
Outside 2StdDev	54.0%	75.9%	36.4%	19.2%	6.6%
Below 2StdDev	155	335	30	216	4
Above 2StdDev	8	11	2	35	0

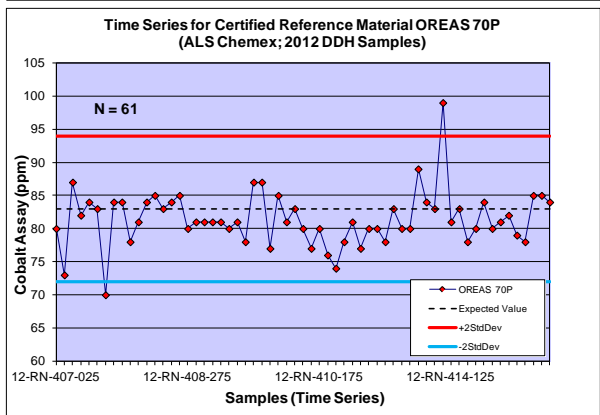
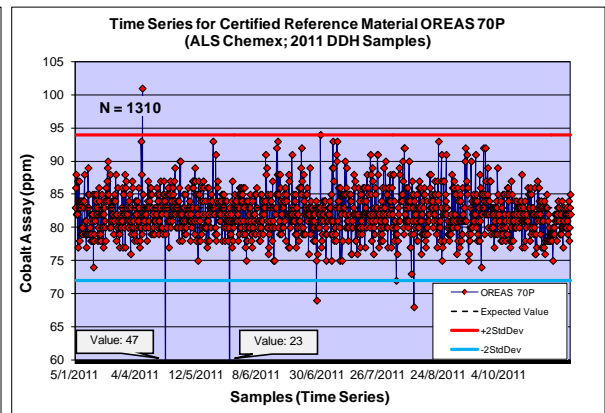
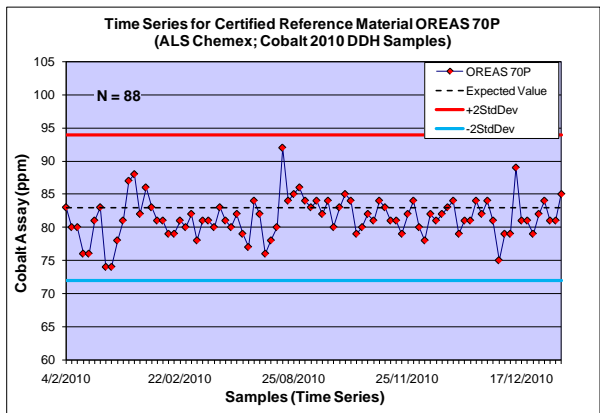
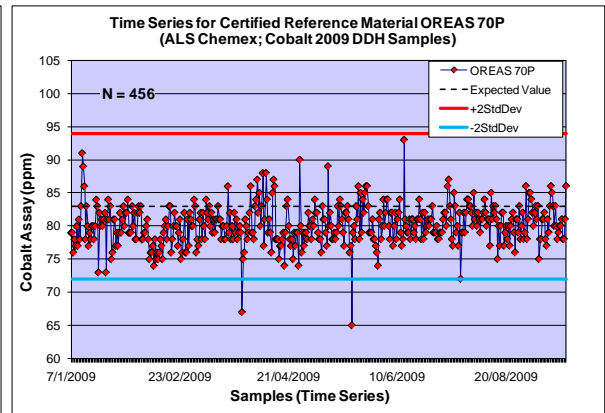
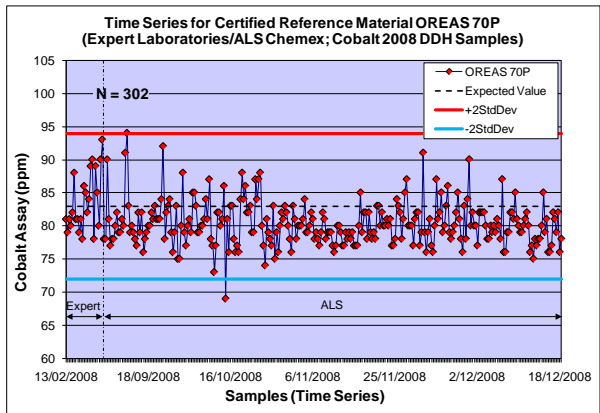


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Cobalt)

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Project Dumont
Data Series CRM OREAS 70P - Cobalt
Data Type DDH Samples
Commodity Co in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	83	83	83	83	83
Standard Deviation	5.5	5.5	5.5	5.5	5.5
Mean	80.52	80.17	81.44	82.10	81.46
Outside 2StdDev	0.3%	0.4%	0.0%	0.4%	3.3%
Below 2StdDev	1	2	0	4	1
Above 2StdDev	0	0	0	1	1

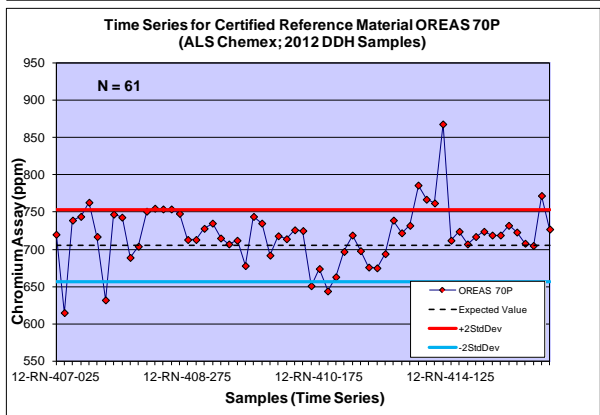
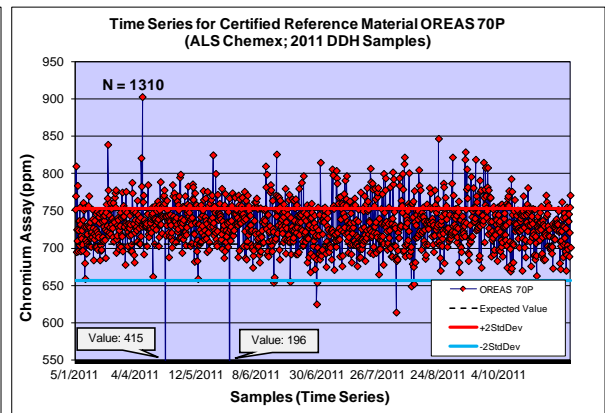
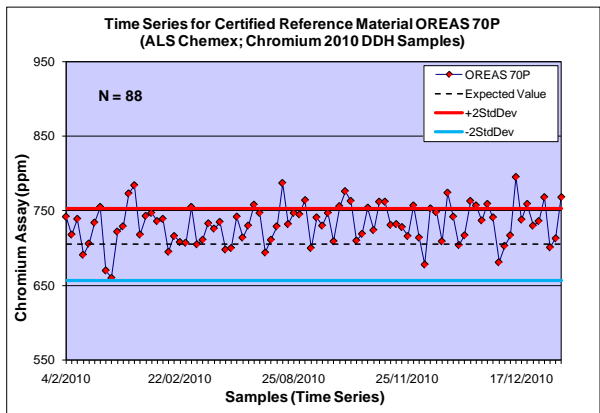
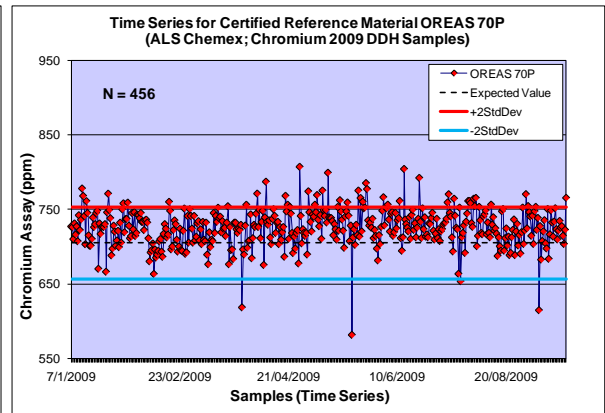
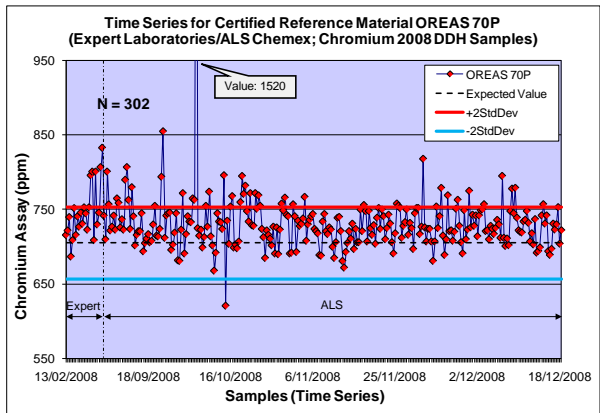


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Chromium)

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Project Dumont
Data Series CRM OREAS 70P - Chromium
Data Type DDH Samples
Commodity Cr in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	705	705	705	705	705
Standard Deviation	24	24	24	24	24
Mean	732.9	725.2	732.0	730.8	719.4
Outside 2StdDev	17.2%	10.5%	25.0%	21.6%	21.3%
Below 2StdDev	1	4	0	9	4
Above 2StdDev	51	44	22	274	9

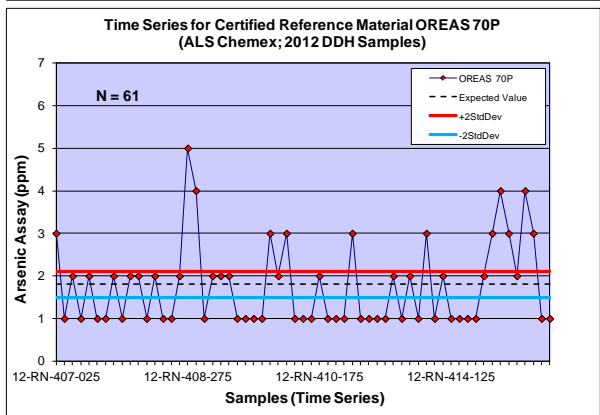
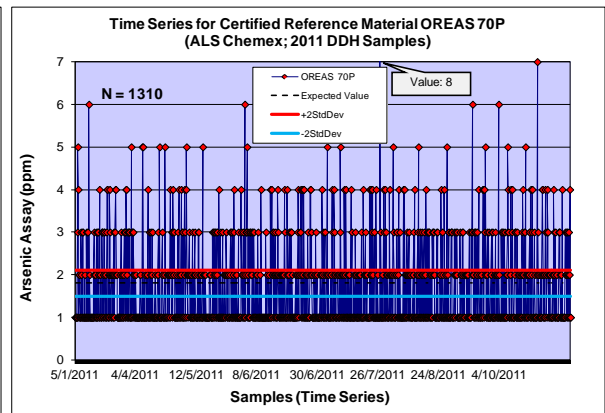
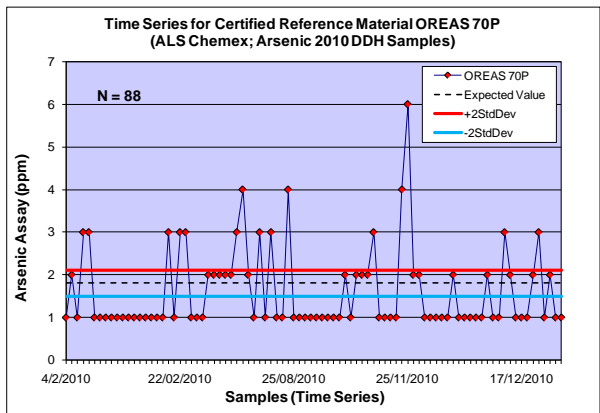
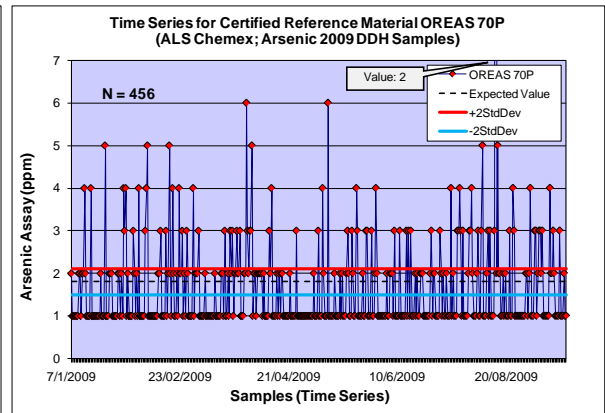
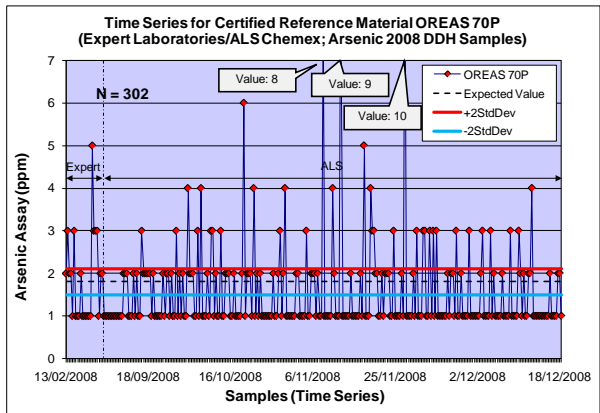


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Arsenic)

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Project Dumont
Data Series CRM OREAS 70P - Arsenic
Data Type DDH Samples
Commodity As in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 2ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	1.8	1.8	1.8	1.8	1.8
Standard Deviation	0.15	0.15	0.15	0.15	0.15
Mean	1.62	1.76	1.61	1.75	1.75
Outside 2StdDev	76.2%	77.9%	79.5%	76.8%	72.1%
Below 2StdDev	189	275	55	733	32
Above 2StdDev	41	80	15	273	12

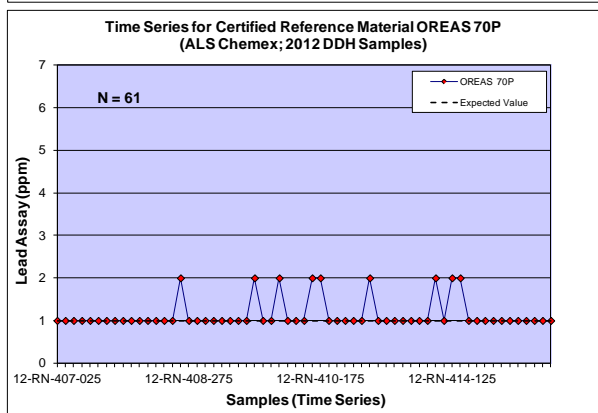
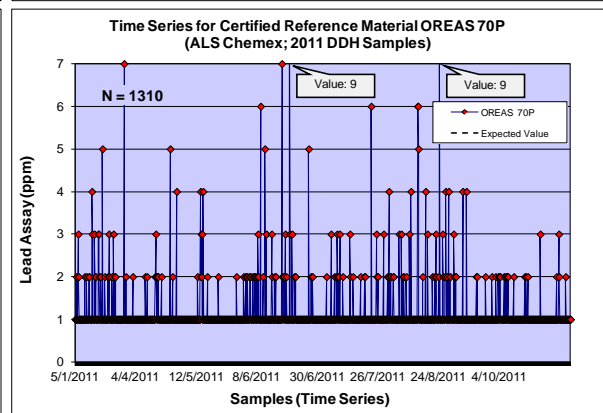
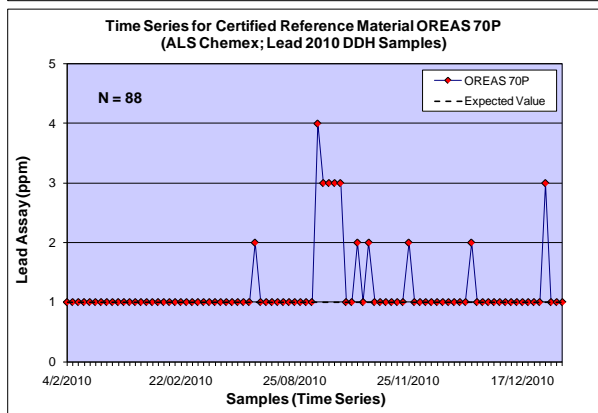
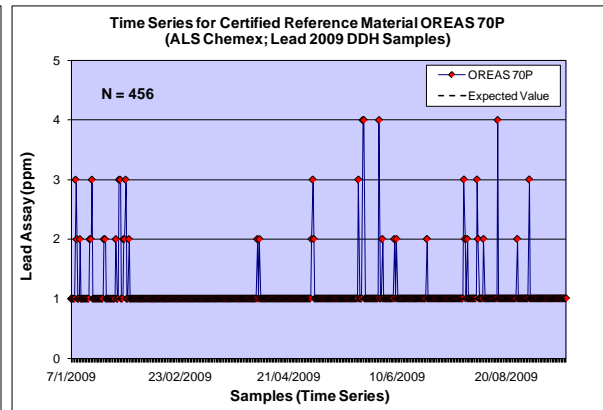
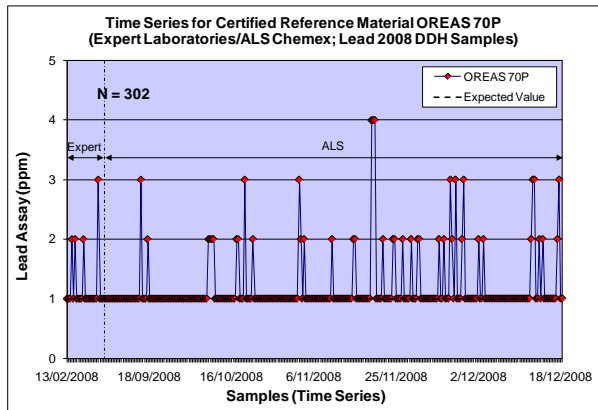


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Lead)

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Project Dumont
Data Series CRM OREAS 70P - Lead
Data Type DDH Samples
Commodity Pb in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 2ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	<1	<1	<1	<1	<1
Standard Deviation	IND	IND	IND	IND	IND
Mean	1.21	1.12	1.20	1.22	1.15
Outside 2StdDev	-	-	-	-	-
Below 2StdDev	-	-	-	-	-
Above 2StdDev	-	-	-	-	-

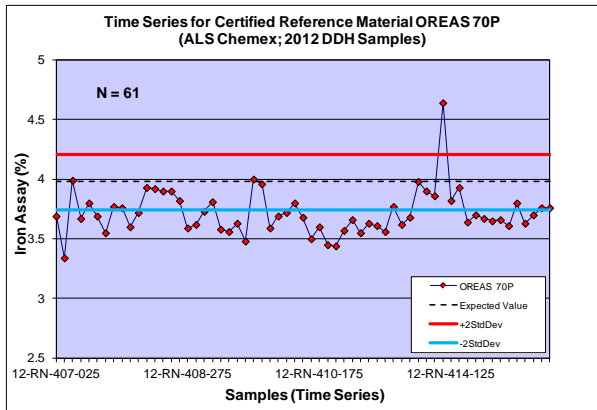
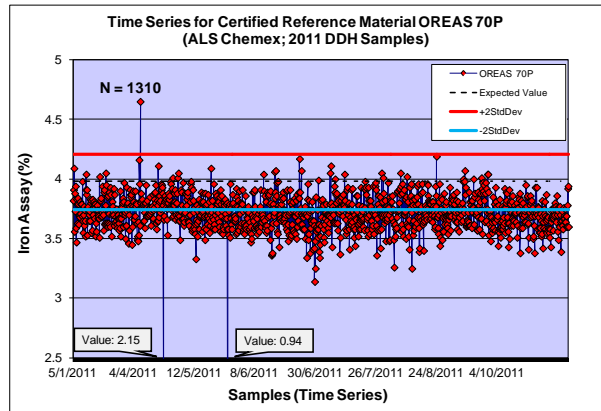
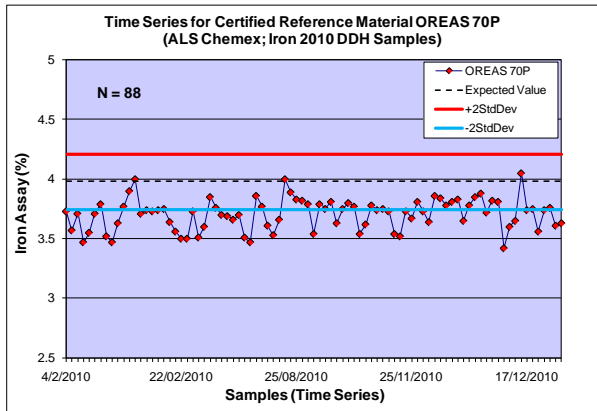
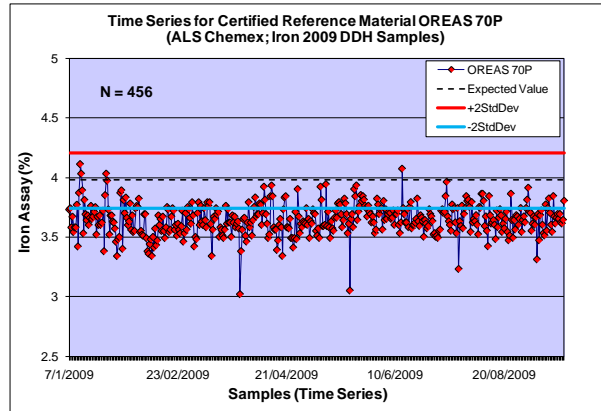
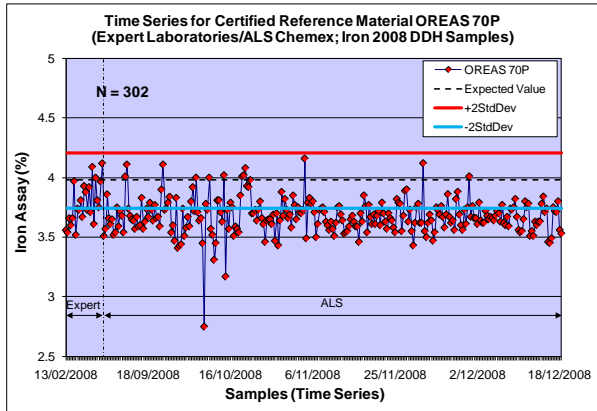


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Iron)

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Project Dumont
Data Series CRM OREAS 70P - Iron
Data Type DDH Samples
Commodity Fe in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert) and 0.01% (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	3.98	3.98	3.98	3.98	3.98
Standard Deviation	0.12	0.12	0.12	0.12	0.12
Mean	3.68	3.65	3.71	3.71	3.72
Outside 2StdDev	69.2%	77.4%	52.3%	57.0%	63.9%
Below 2StdDev	209	353	46	746	38
Above 2StdDev	0	0	0	1	1

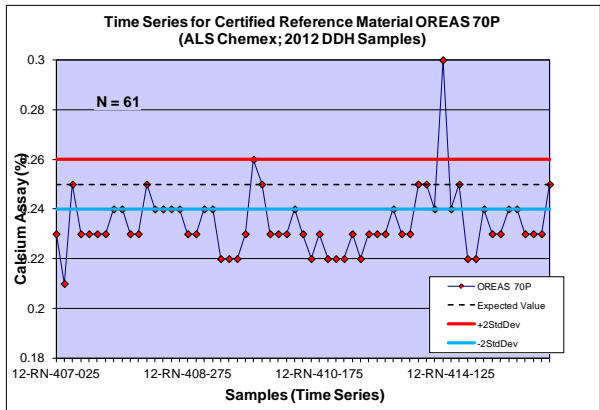
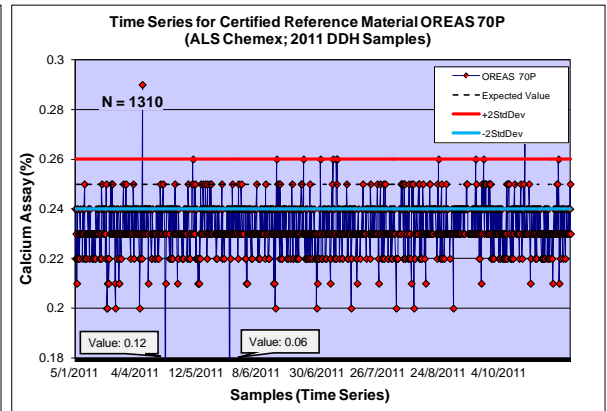
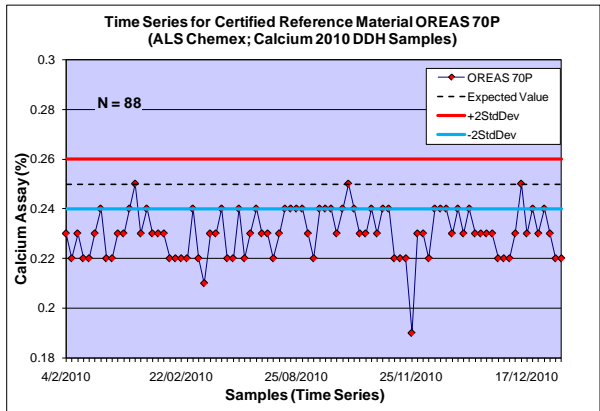
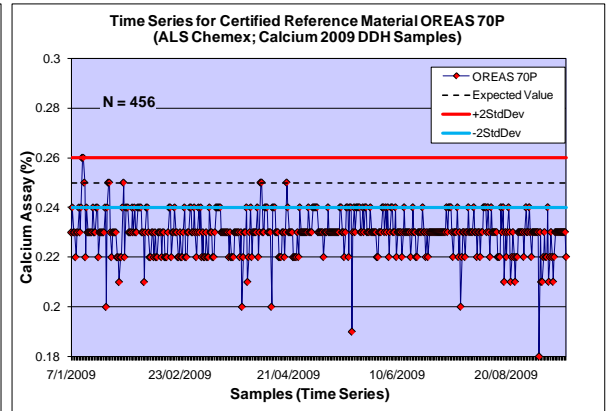
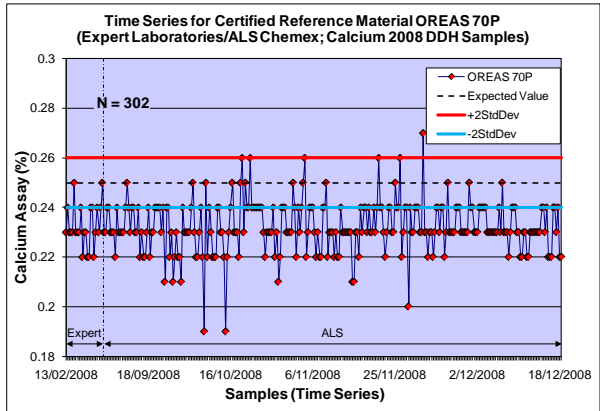


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Calcium)

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Project Dumont
Data Series CRM OREAS 70P - Calcium
Data Type DDH Samples
Commodity Ca in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert) and 0.01% (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,310	61
Expected Value	0.25	0.25	0.25	0.25	0.25
Standard Deviation	0.005	0.005	0.005	0.005	0.005
Mean	0.23	0.23	0.23	0.23	0.23
Outside 2StdDev	62.6%	76.8%	65.9%	60.9%	62.3%
Below 2StdDev	188	350	58	796	37
Above 2StdDev	1	0	0	2	1

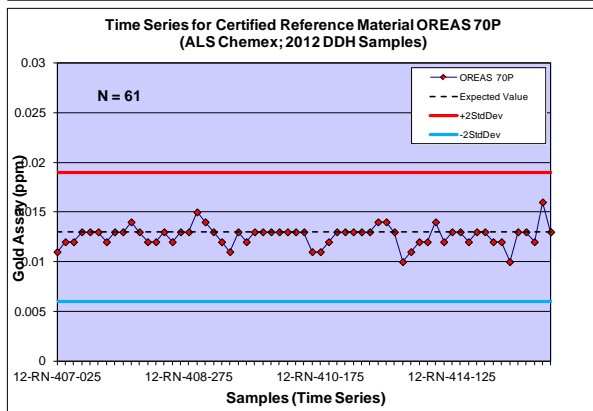
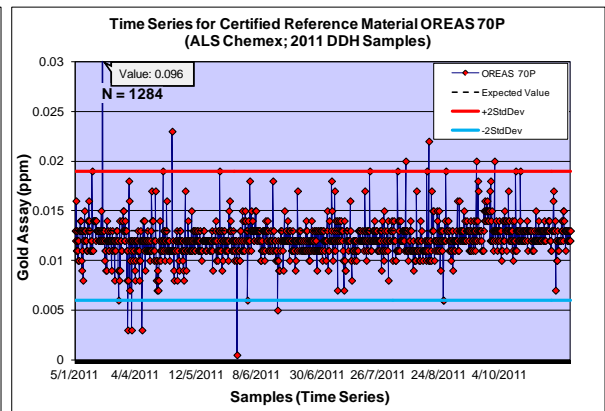
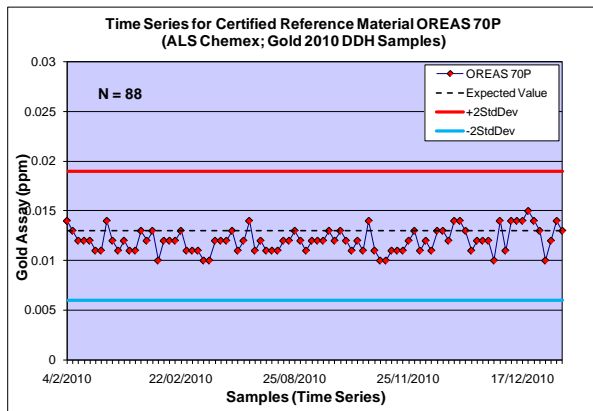
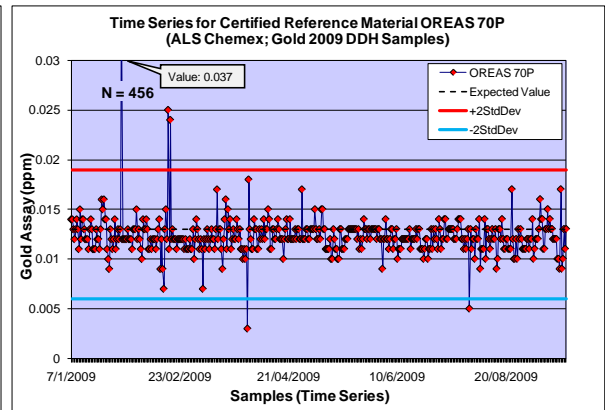
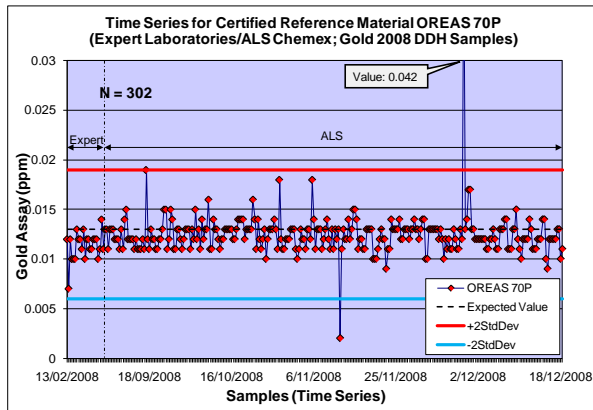


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Gold)


srk consulting

Project Dumont
Data Series CRM OREAS 70P - Gold
Data Type DDH Samples
Commodity Au in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 0.001ppm (ALS)

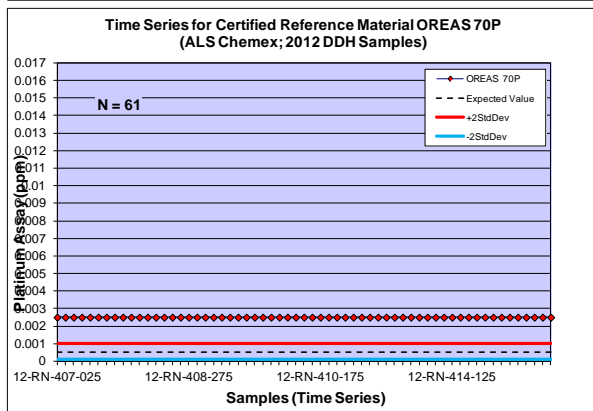
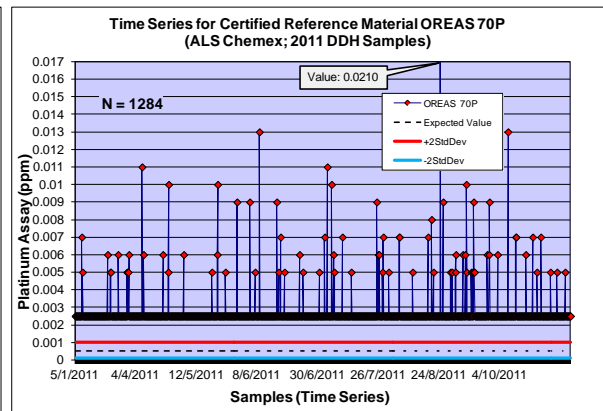
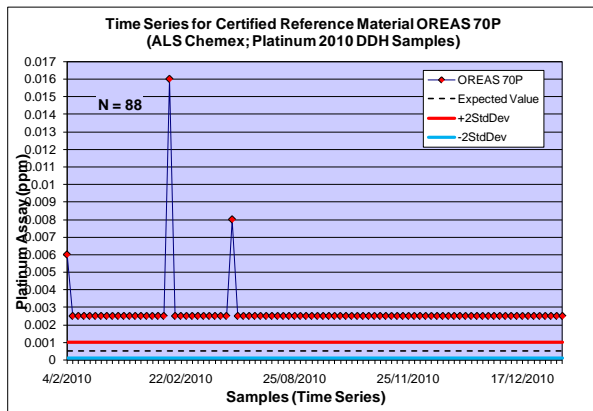
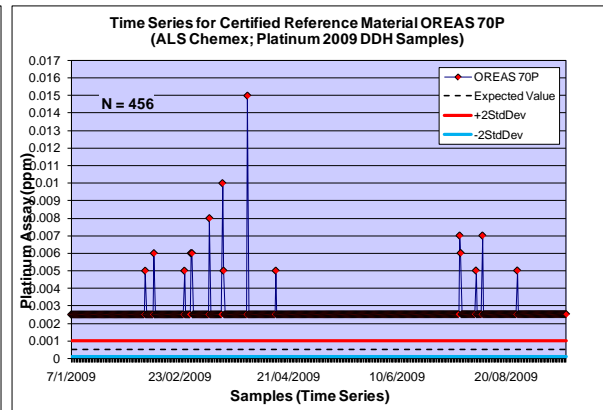
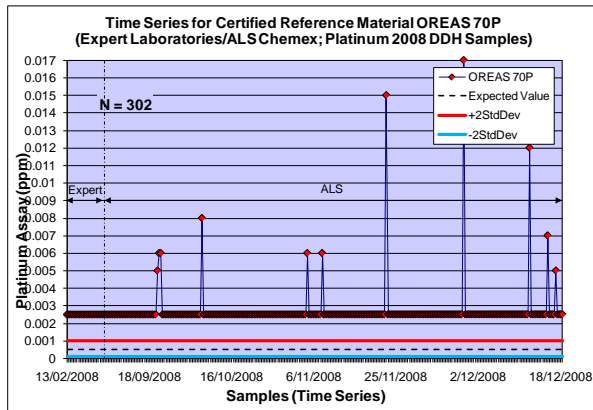
Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,284	61
Expected Value	0.013	0.013	0.013	0.013	0.013
Standard Deviation	0.004	0.004	0.004	0.004	0.004
Mean	0.012	0.012	0.012	0.012	0.013
Outside 2StdDev	0.7%	1.1%	0.0%	0.9%	0.0%
Below 2StdDev	1	2	0	5	0
Above 2StdDev	1	3	0	6	0




Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Platinum)

	
Project	Dumont
Data Series	CRM OREAS 70P - Platinum
Data Type	DDH Samples
Commodity	Pt in ppm
Laboratory	Expert Laboratories/ALS Chemex
Analytical Method	AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit	2ppm (Expert), 0.005ppm (ALS)

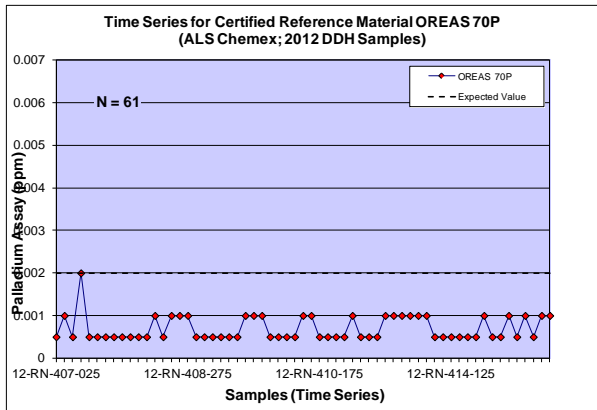
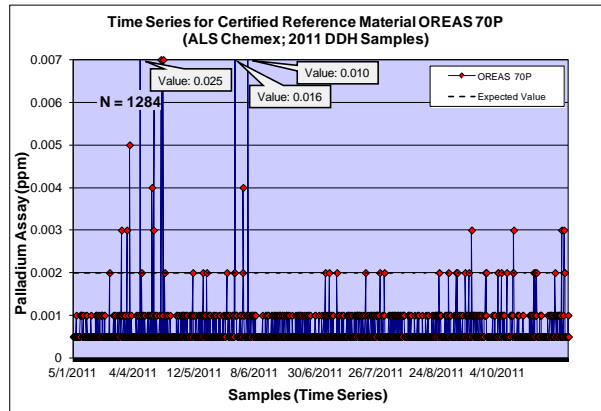
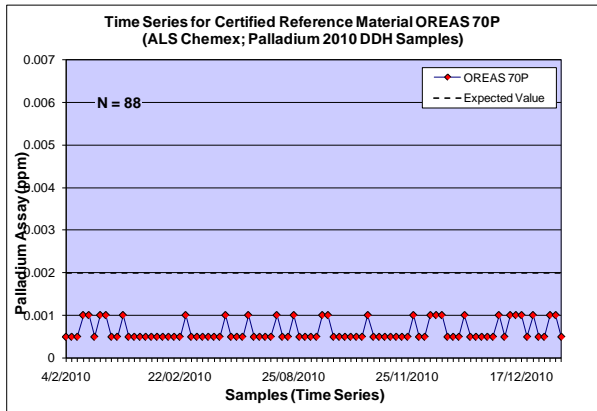
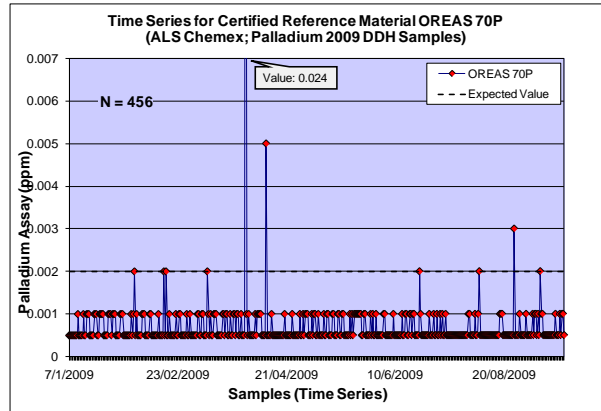
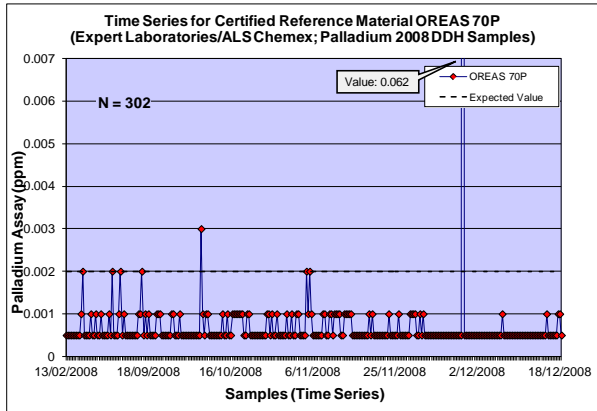
Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,284	61
Expected Value	0.001	0.001	0.001	0.001	0.001
Standard Deviation	0.000	0.000	0.000	0.000	0.000
Mean	0.003	0.003	0.003	0.003	0.003
Outside 2StdDev	100%	100%	100%	100%	100%
Below 2StdDev	0	0	0	0	0
Above 2StdDev	302	456	88	1,284	61




Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 70P (Palladium)

	
Project	Dumont
Data Series	CRM OREAS 70P - Palladium
Data Type	DDH Samples
Commodity	Pd in ppm
Laboratory	Expert Laboratories/ALS Chemex
Analytical Method	AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit	2ppm (Expert), 0.001ppm (ALS)

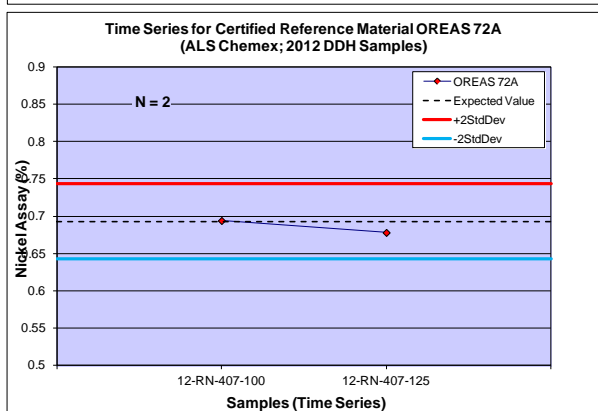
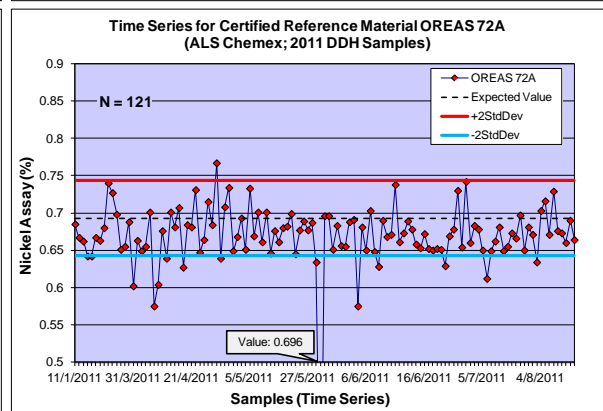
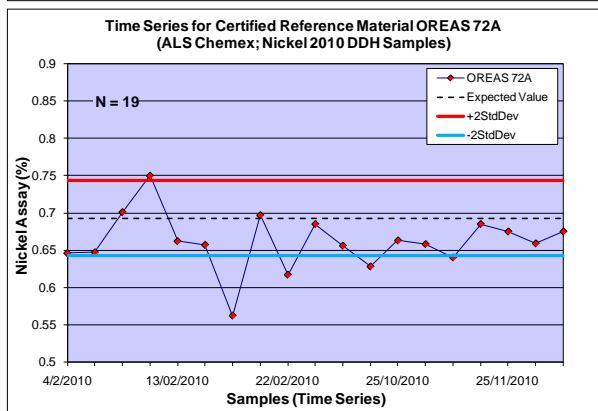
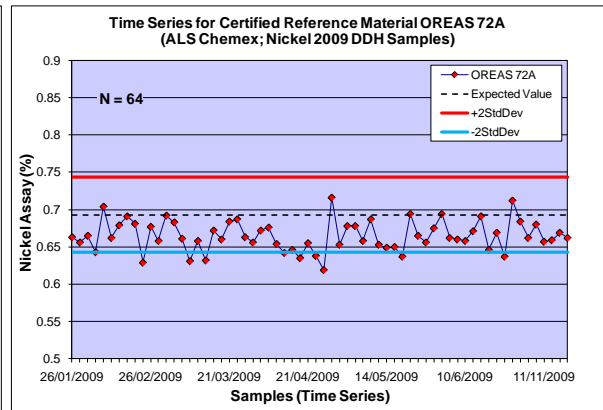
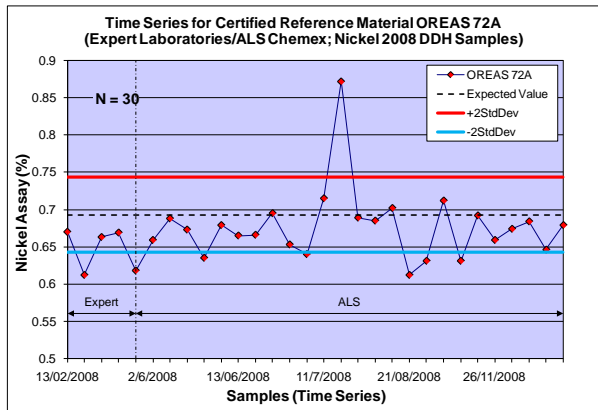
Statistics	2008	2009	2010	2011	2012
Sample Count	302	456	88	1,284	61
Expected Value	<0.002	<0.002	<0.002	<0.002	<0.002
Standard Deviation	IND	IND	IND	IND	IND
Mean	0.001	0.001	0.001	0.001	0.001
Outside 2StdDev	-	-	-	-	-
Below 2StdDev	-	-	-	-	-
Above 2StdDev	-	-	-	-	-



Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Nickel)

	
Project	Dumont
Data Series	CRM OREAS 72A - Nickel
Data Type	DDH Samples
Commodity	Ni in %
Laboratory	Expert Laboratories/ALS Chemex
Analytical Method	AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit	0.0002% (Expert), 0.0001% (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	0.693	0.693	0.693	0.693	0.693
Standard Deviation	0.025	0.025	0.025	0.025	0.025
Mean	0.672	0.665	0.661	0.669	0.686
Outside 2StdDev	26.7%	14.1%	26.3%	13.2%	0.0%
Below 2StdDev	7	9	4	15	0
Above 2StdDev	1	0	1	1	0

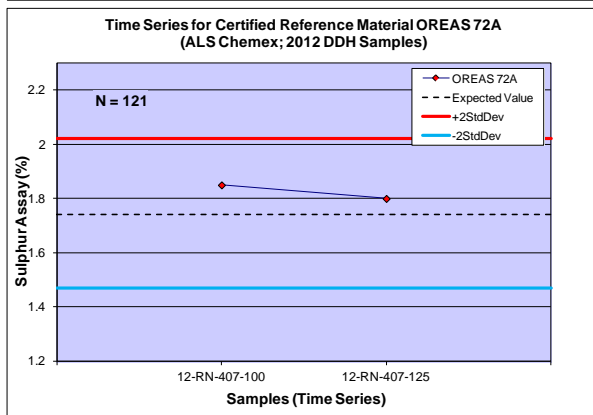
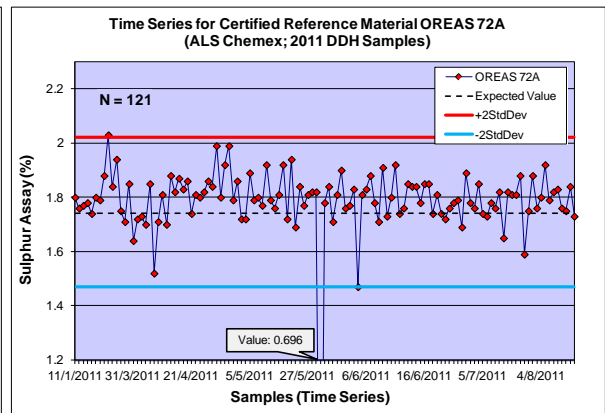
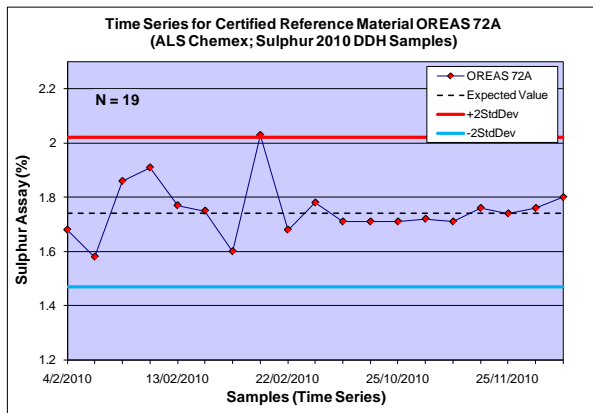
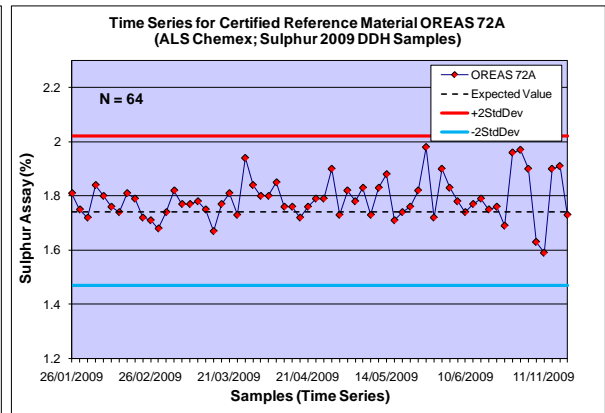
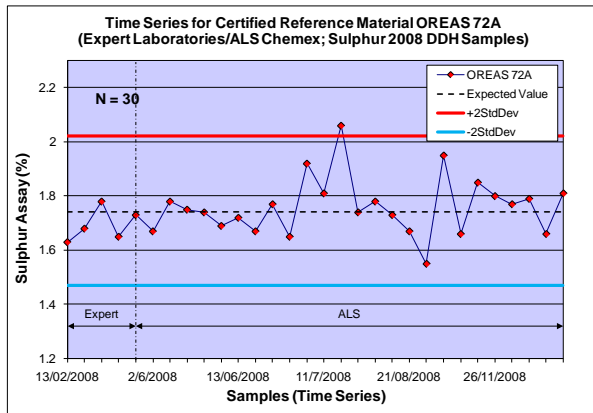


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Sulphur)

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Project Dumont
Data Series CRM OREAS 72A - Sulphur
Data Type DDH Samples
Commodity S in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert), 0.01% (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	1.74	1.74	1.74	1.74	1.74
Standard Deviation	0.135	0.135	0.135	0.135	0.135
Mean	1.75	1.79	1.75	1.78	1.83
Outside 2StdDev	3.3%	0.0%	5.3%	1.7%	0.0%
Below 2StdDev	0	0	0	1	0
Above 2StdDev	1	0	1	1	0

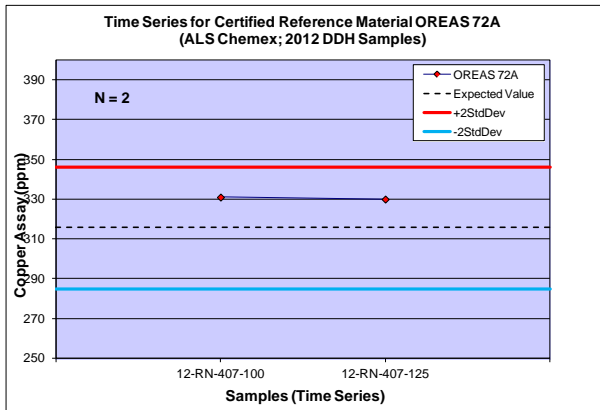
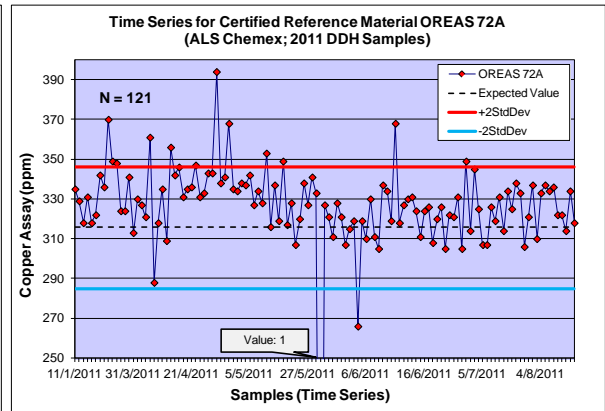
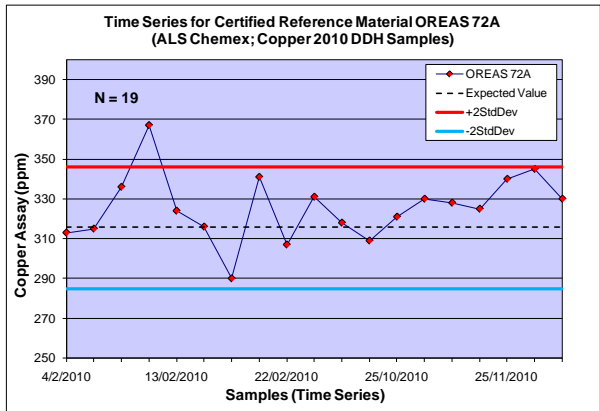
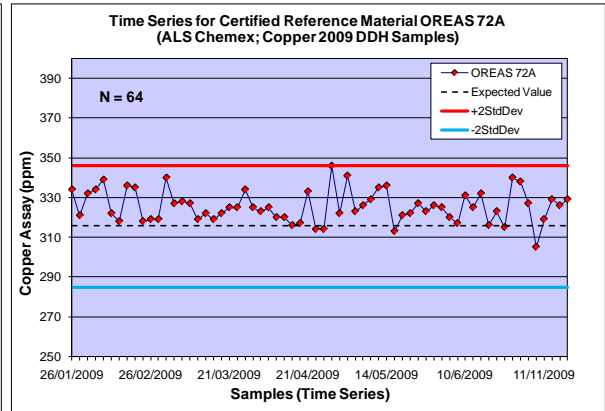
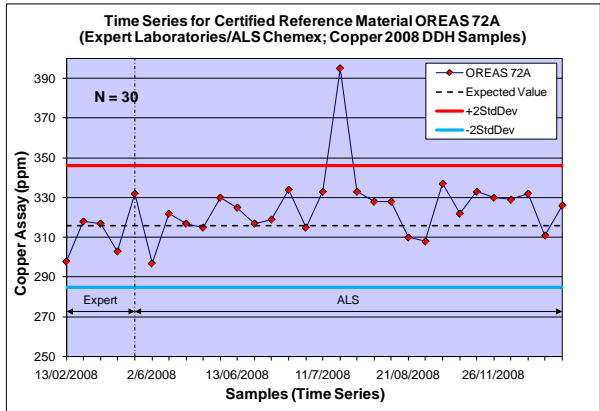


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Copper)

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Project Dumont
Data Series CRM OREAS 72A - Copper
Data Type DDH Samples
Commodity Cu in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	316	316	316	316	316
Standard Deviation	15.50	15.50	15.50	15.50	15.50
Mean	323.8	325.5	325.6	325.6	330.5
Outside 2StdDev	3.3%	0.0%	5.3%	11.6%	0.0%
Below 2StdDev	0	0	0	2	0
Above 2StdDev	1	0	1	12	0

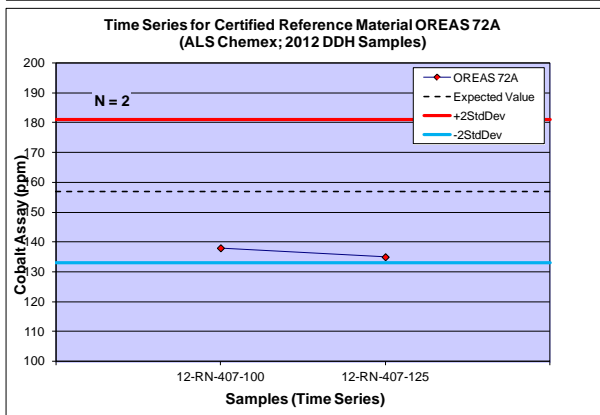
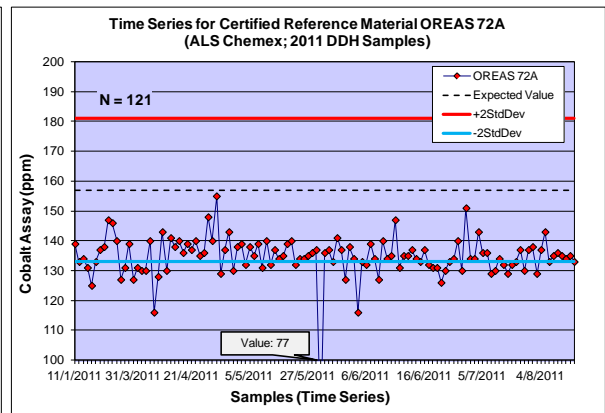
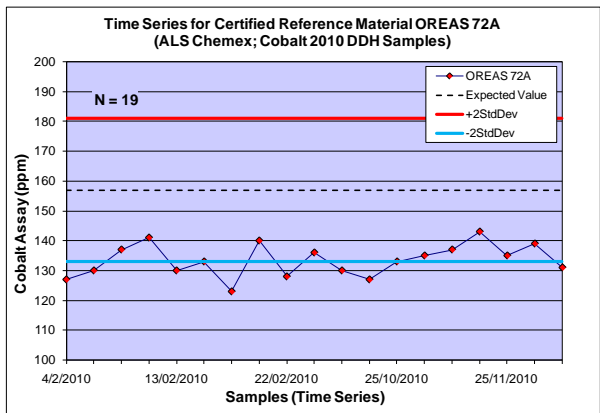
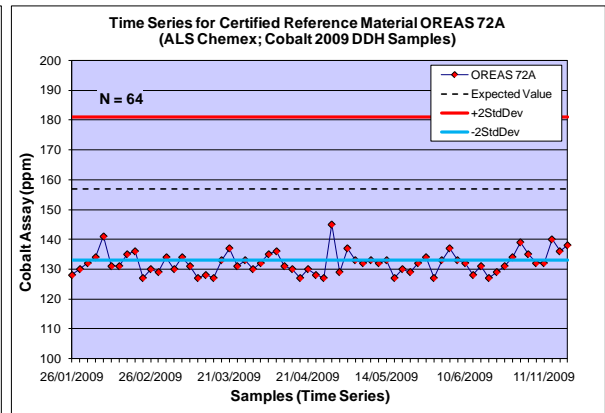
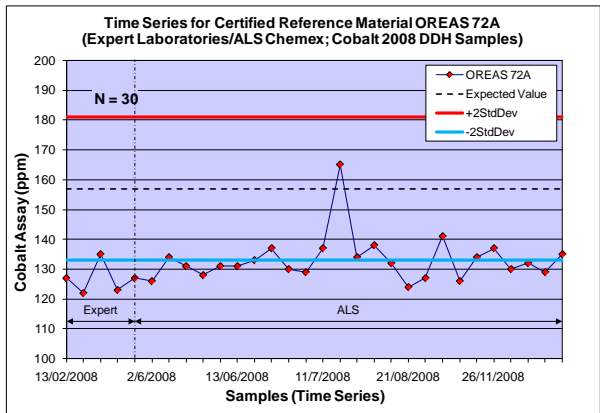


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Cobalt)

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Project Dumont
Data Series CRM OREAS 72A - Cobalt
Data Type DDH Samples
Commodity Co in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	157	157	157	157	157
Standard Deviation	12	12	12	12	12
Mean	132.2	132.1	133.4	134.6	136.5
Outside 2StdDev	60.0%	59.4%	42.1%	29.8%	0.0%
Below 2StdDev	18	38	8	36	0
Above 2StdDev	0	0	0	0	0

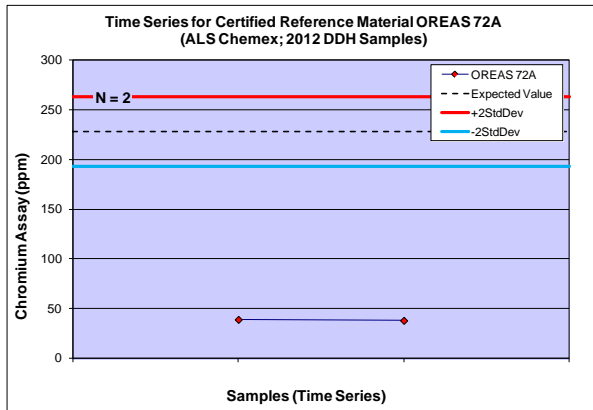
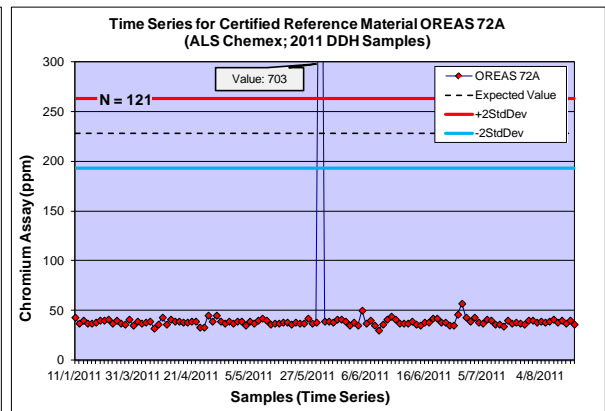
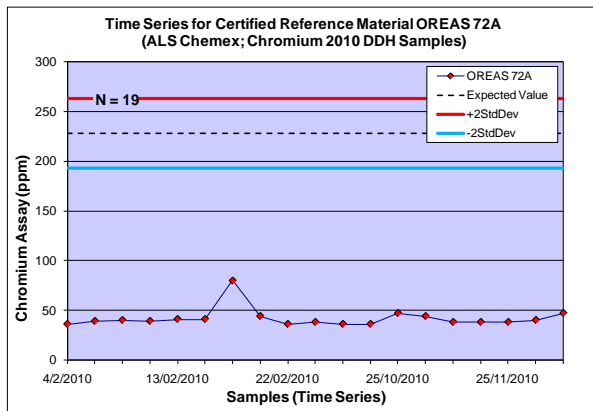
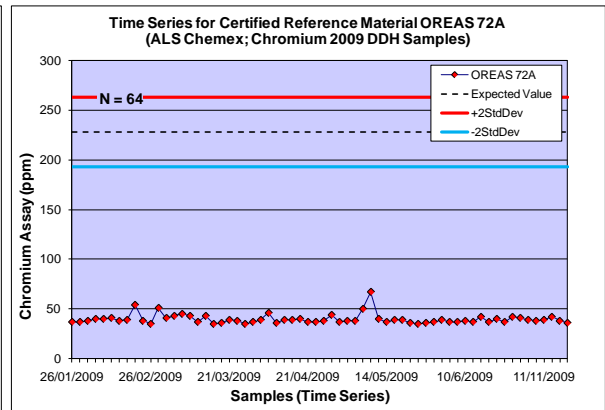
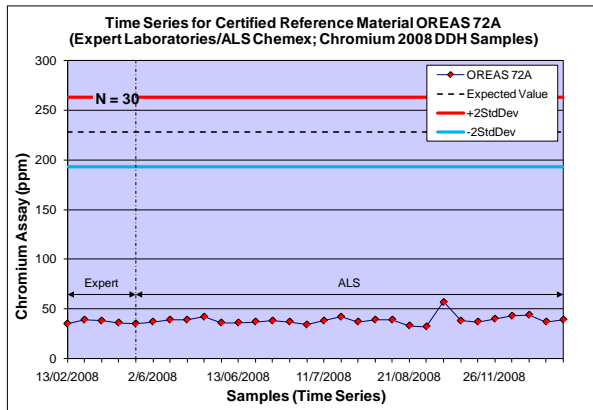


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Chromium)

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Project Dumont
Data Series CRM OREAS 72A - Chromium
Data Type DDH Samples
Commodity Cr in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 1ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	228	228	228	228	228
Standard Deviation	17.5	17.5	17.5	17.5	17.5
Mean	38.43	39.73	42.00	44.08	38.50
Outside 2StdDev	100%	100%	100%	100%	100%
Below 2StdDev	30	64	19	120	2
Above 2StdDev	0	0	0	1	0

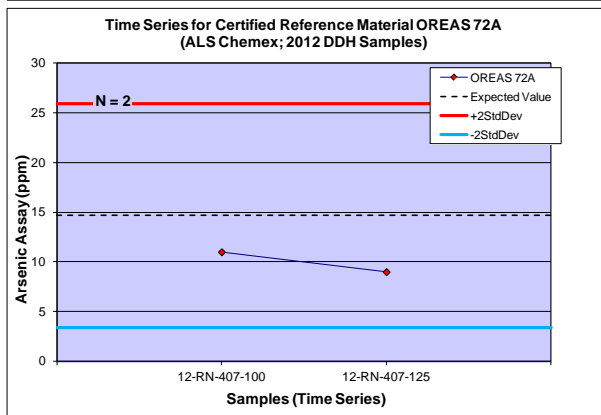
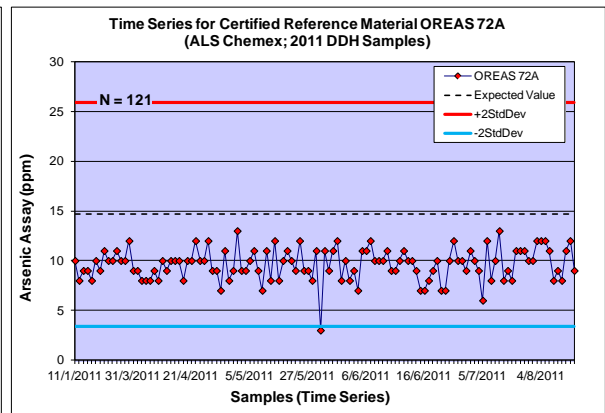
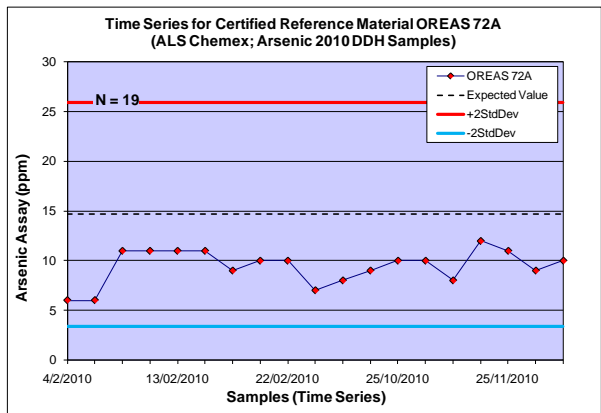
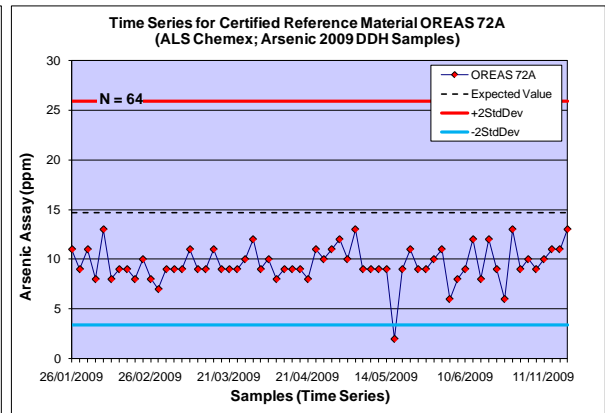
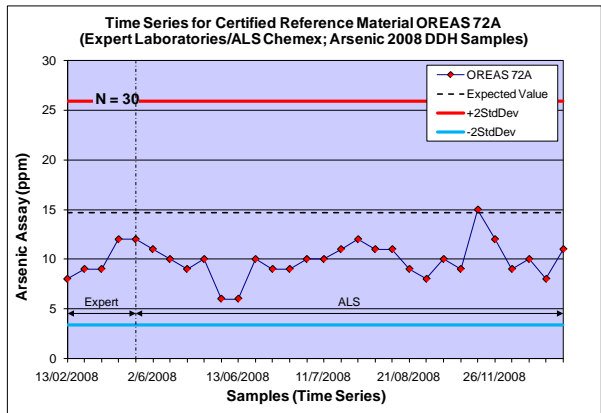


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Arsenic)

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Project Dumont
Data Series CRM OREAS 72A - Arsenic
Data Type DDH Samples
Commodity As in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 2ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	14.7	14.7	14.7	14.7	14.7
Standard Deviation	5.65	5.65	5.65	5.65	5.65
Mean	9.87	9.52	9.42	9.62	10.00
Outside 2StdDev	0.0%	1.6%	0.0%	0.8%	0.0%
Below 2StdDev	0	1	0	1	0
Above 2StdDev	0	0	0	0	0

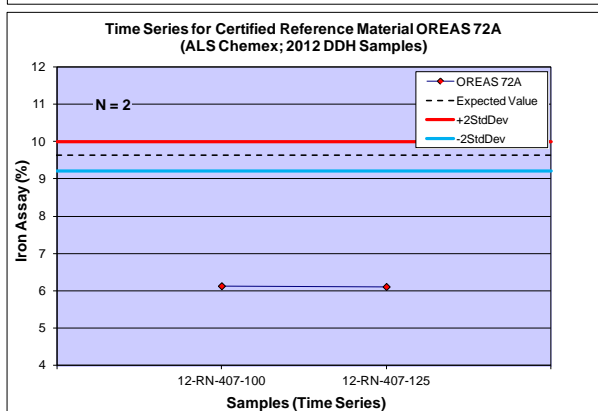
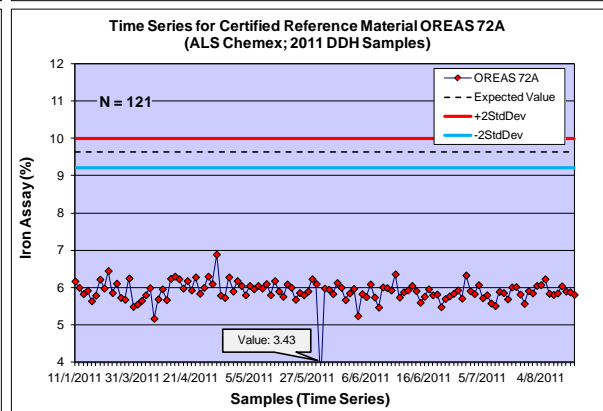
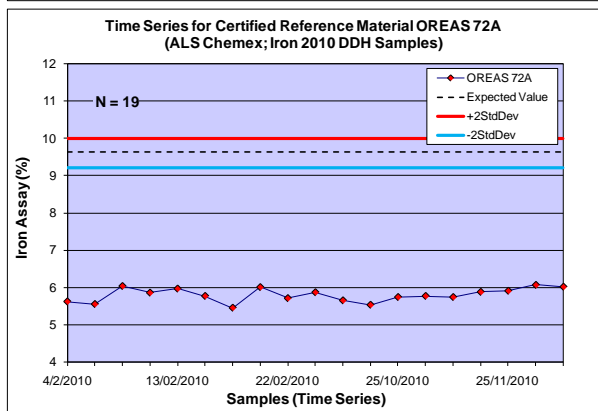
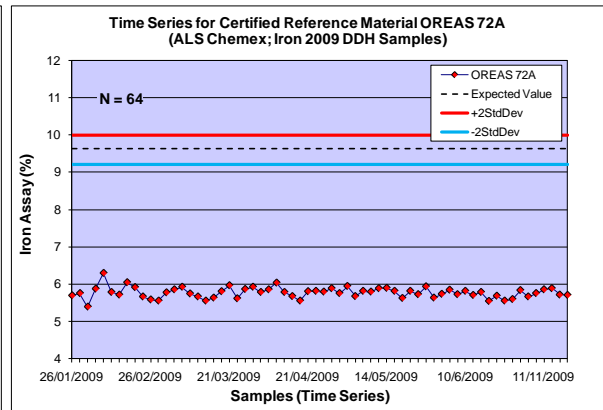
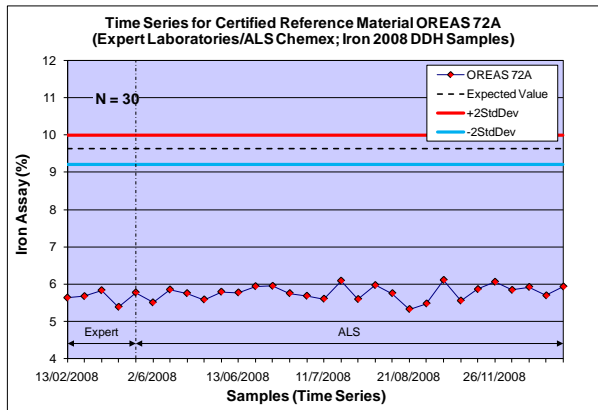


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Iron)


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Project Dumont
Data Series CRM OREAS 72A - Iron
Data Type DDH Samples
Commodity Fe in %
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), AqR-ICP-AES (ALS)
Detection Limit 0.0002% (Expert) and 0.01% (ALS)

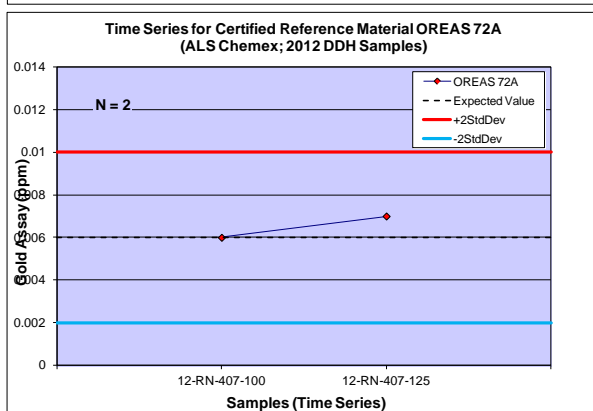
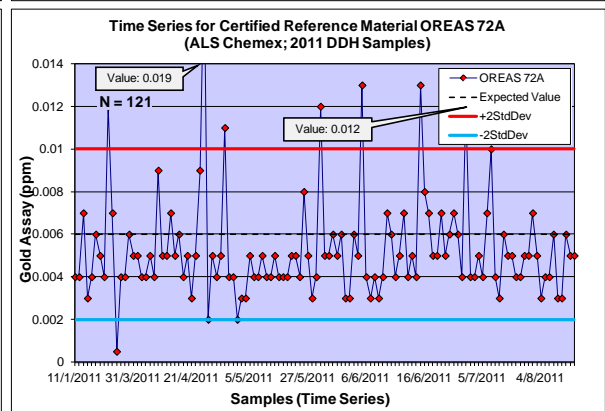
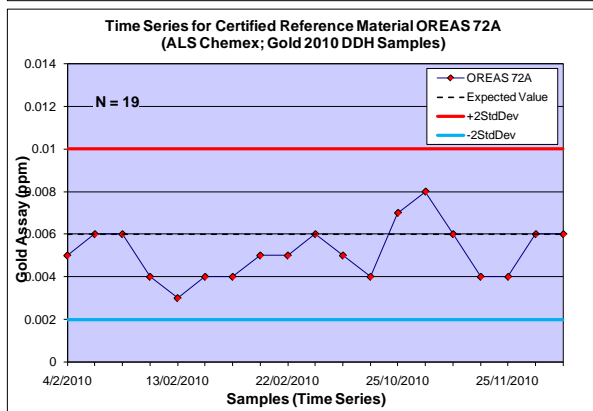
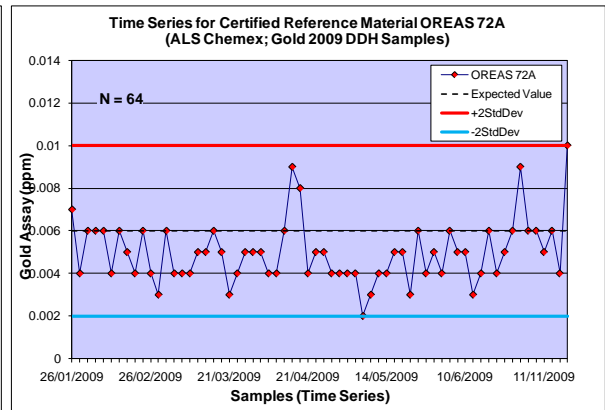
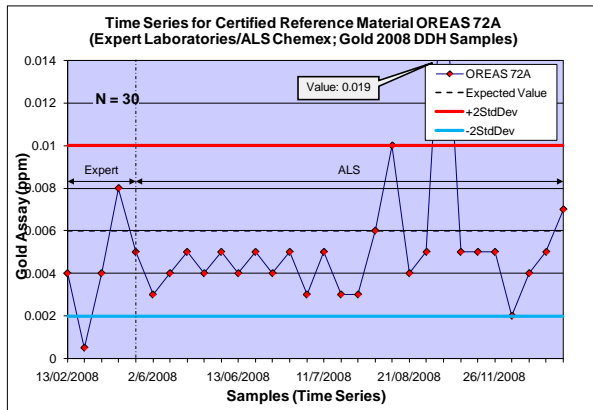
Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	9.63	9.63	9.63	9.63	9.63
Standard Deviation	0.215	0.215	0.215	0.215	0.215
Mean	5.75	5.77	5.80	5.89	6.12
Outside 2StdDev	100%	100%	100%	100%	100%
Below 2StdDev	30	64	19	121	2
Above 2StdDev	0	0	0	0	0



Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Gold)

	
Project	Dumont
Data Series	CRM OREAS 72A - Gold
Data Type	DDH Samples
Commodity	Au in ppm
Laboratory	Expert Laboratories/ALS Chemex
Analytical Method	AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit	2ppm (Expert), 0.001ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	0.006	0.006	0.006	0.006	0.006
Standard Deviation	0.002	0.002	0.002	0.002	0.002
Mean	0.005	0.005	0.005	0.005	0.007
Outside 2StdDev	6.7%	0.0%	0.0%	6.6%	0.0%
Below 2StdDev	1	0	0	1	0
Above 2StdDev	1	0	0	7	0

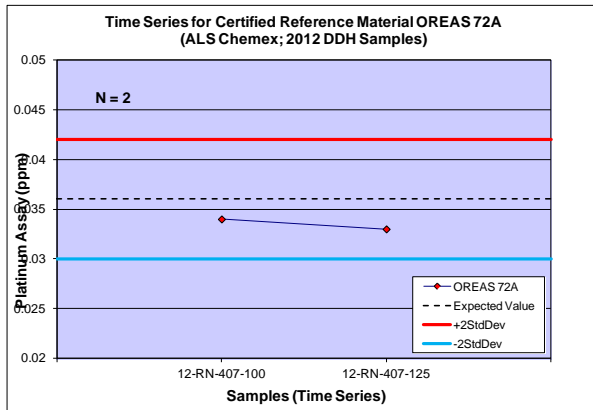
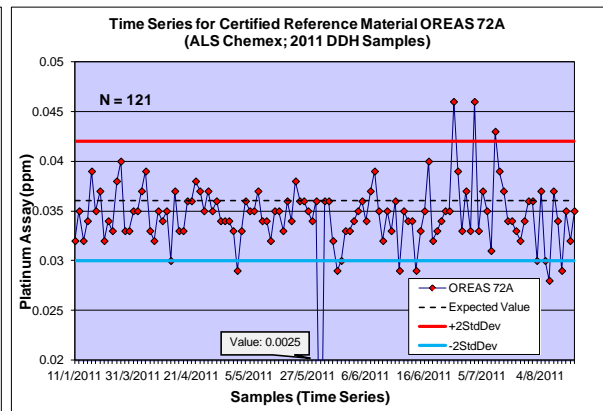
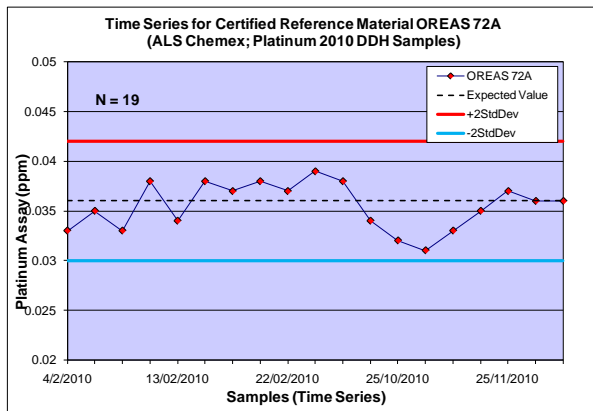
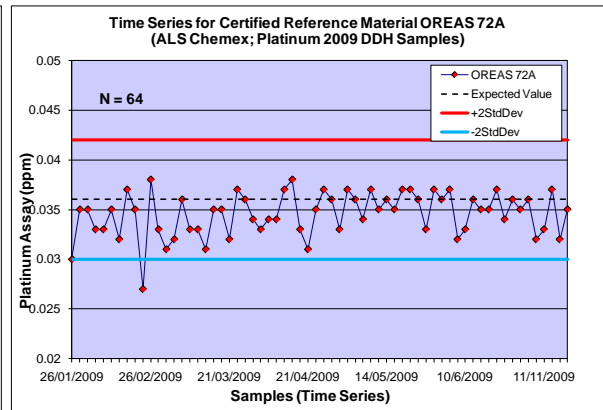
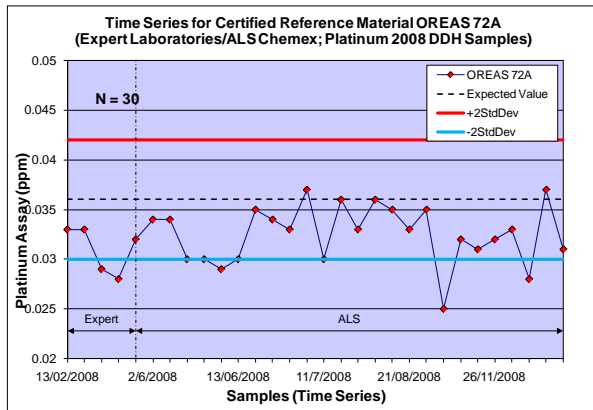


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Platinum)


srk consulting

Project Dumont
Data Series CRM OREAS 72A - Platinum
Data Type DDH Samples
Commodity Pt in ppm
Laboratory Expert Laboratories/ALS Chemex
Analytical Method AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit 2ppm (Expert), 0.005ppm (ALS)

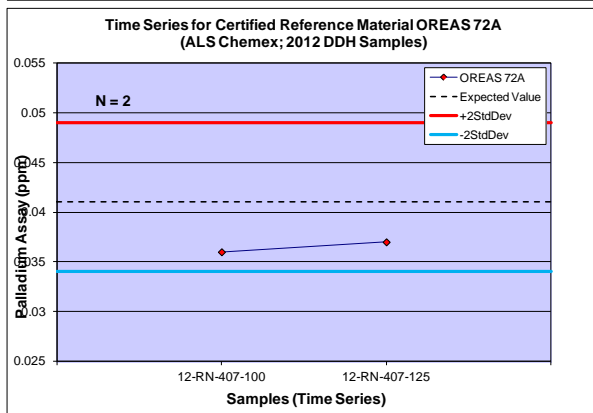
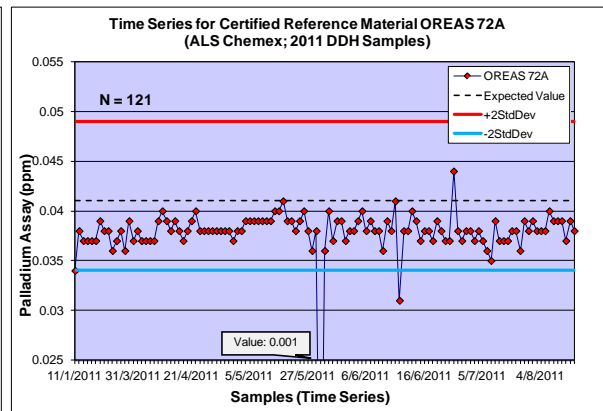
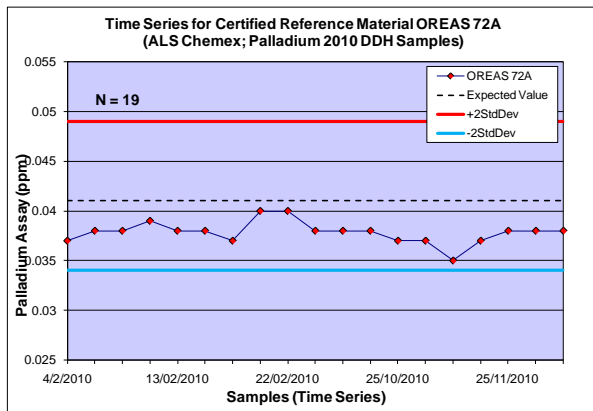
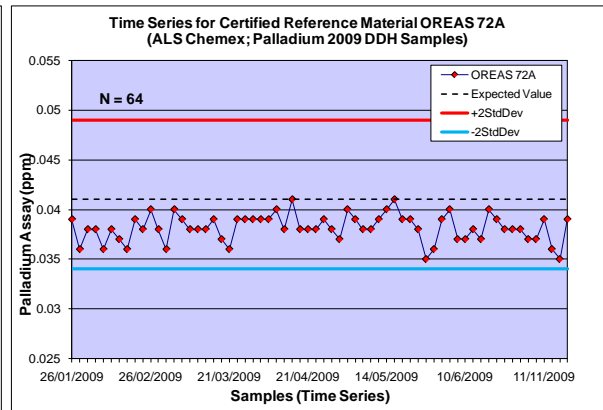
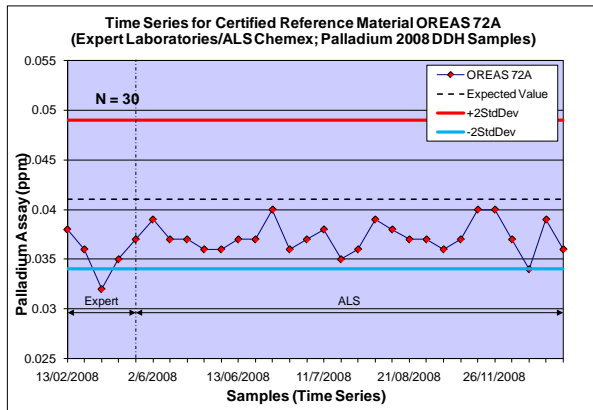
Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	0.036	0.036	0.036	0.036	0.036
Standard Deviation	0.003	0.003	0.003	0.003	0.003
Mean	0.032	0.035	0.035	0.034	0.034
Outside 2StdDev	16.7%	1.6%	0.0%	8.3%	0.0%
Below 2StdDev	5	1	0	7	0
Above 2StdDev	0	0	0	3	0



Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2008 and 2011 – OREAS 72A (Palladium)

	
Project	Dumont
Data Series	CRM OREAS 72A - Palladium
Data Type	DDH Samples
Commodity	Pd in ppm
Laboratory	Expert Laboratories/ALS Chemex
Analytical Method	AqR-AAS (Expert), FA-ICP-AES (ALS)
Detection Limit	2ppm (Expert), 0.001ppm (ALS)

Statistics	2008	2009	2010	2011	2012
Sample Count	30	64	19	121	2
Expected Value	0.041	0.041	0.041	0.041	0.041
Standard Deviation	0.004	0.004	0.004	0.004	0.004
Mean	0.037	0.038	0.038	0.038	0.037
Outside 2StdDev	3.3%	0.0%	0.0%	1.7%	0.0%
Below 2StdDev	1	0	0	2	0
Above 2StdDev	0	0	0	0	0

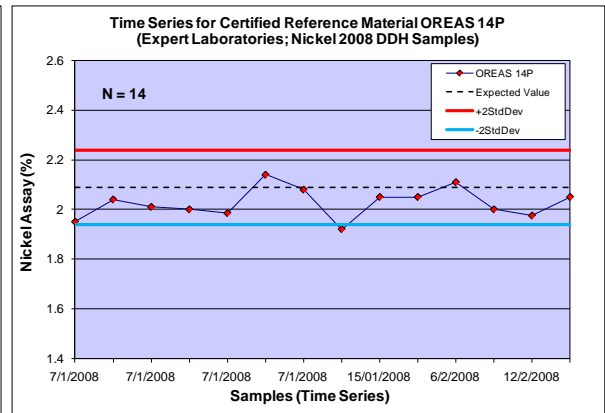
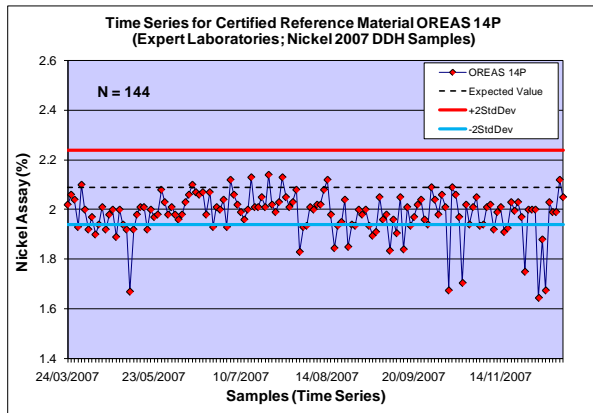


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2007 and 2008 – OREAS 14P (Nickel and Copper)

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Project Dumont
Data Series CRM OREAS 14P - Nickel
Data Type DDH Samples
Commodity Ni in %
Laboratory Expert Laboratories
Analytical Method AqR-AAS or Total Digest-AAS
Detection Limit 0.0002% or 0.01%

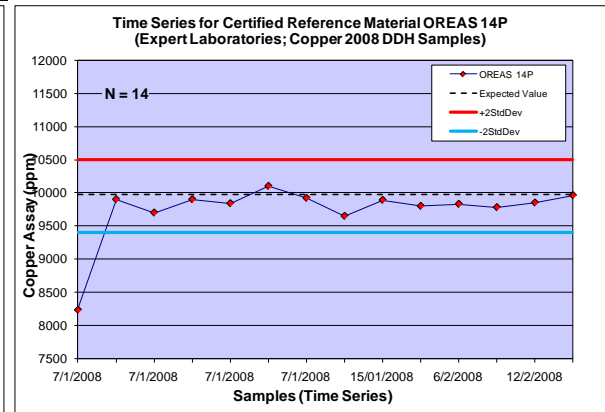
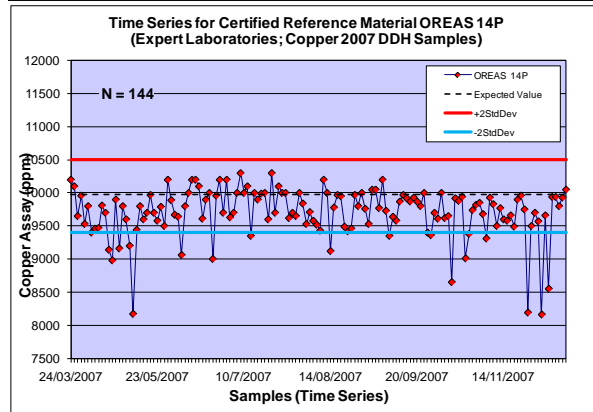
Statistics	2007	2008
Sample Count	144	14
Expected Value	2.09	2.09
Standard Deviation	0.075	0.075
Mean	1.98	2.03
Outside 2StdDev	24.3%	7.1%
Below 2StdDev	35	1
Above 2StdDev	0	0



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Project Dumont
Data Series CRM OREAS 14P - Copper
Data Type DDH Samples
Commodity Cu in ppm
Laboratory Expert Laboratories
Analytical Method AqR-AAS or Total Digest-AAS
Detection Limit 2ppm or 100ppm

Statistics	2007	2008
Sample Count	144	14
Expected Value	9,970	9,970
Standard Deviation	285	285
Mean	9,703	9,740
Outside 2StdDev	12.5%	7.1%
Below 2StdDev	18	1
Above 2StdDev	0	0

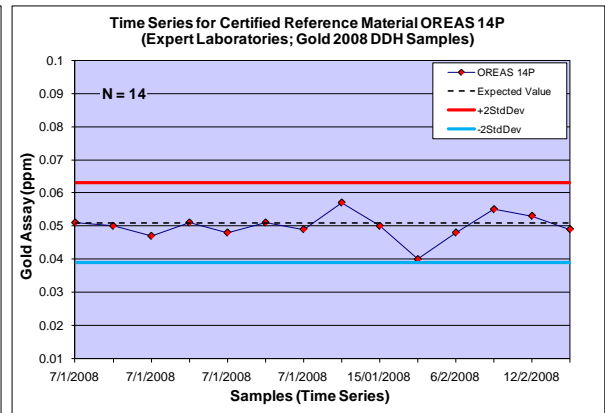
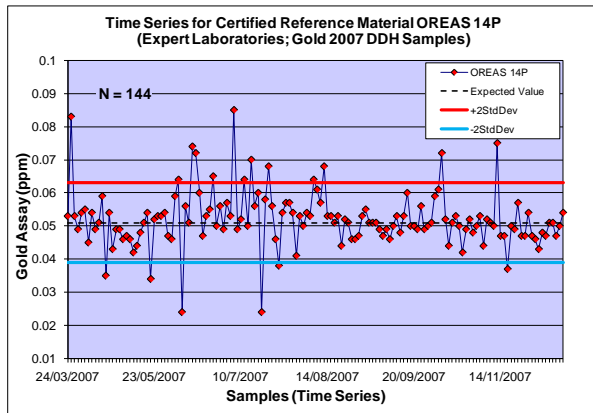


Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2007 and 2008 – OREAS 14P (Gold and Platinum)

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Project Dumont
Data Series CRM OREAS 14P - Gold
Data Type DDH Samples
Commodity Au in ppm
Laboratory Expert Laboratories
Analytical Method AqR-AAS or Total Digest-AAS
Detection Limit 2ppm or 100ppm

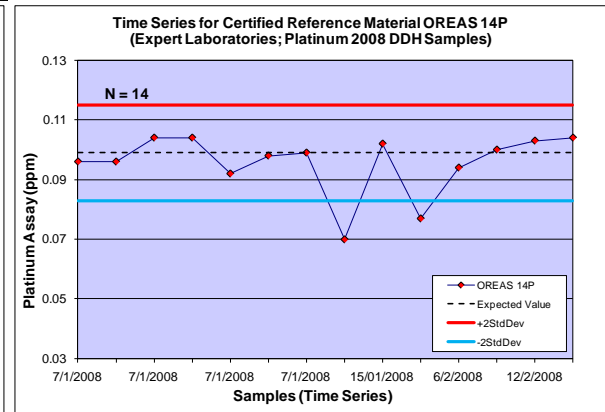
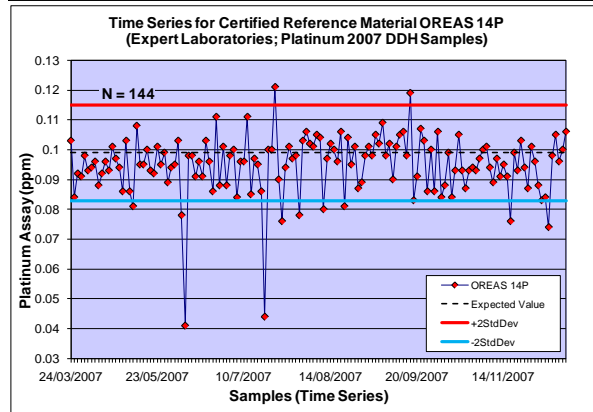
Statistics	2007	2008
Sample Count	144	14
Expected Value	0.051	0.051
Standard Deviation	0.006	0.006
Mean	0.052	0.050
Outside 2StdDev	13.2%	0.0%
Below 2StdDev	6	0
Above 2StdDev	13	0




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Project Dumont
Data Series CRM OREAS 14P - Platinum
Data Type DDH Samples
Commodity Pt in ppm
Laboratory Expert Laboratories
Analytical Method AqR-AAS or Total Digest-AAS
Detection Limit 2ppm or 100ppm

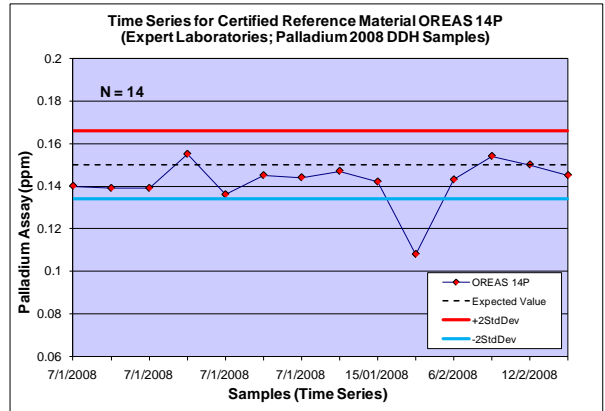
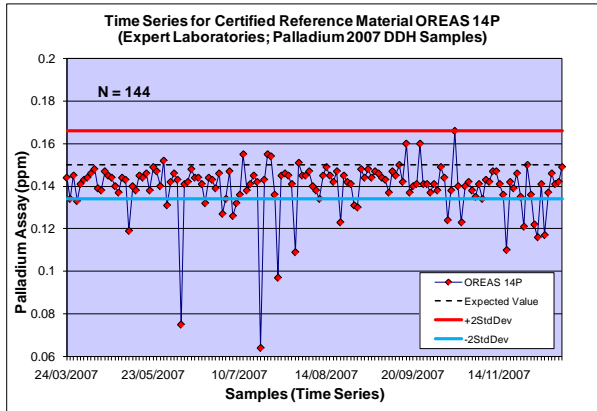
Statistics	2007	2008
Sample Count	144	14
Expected Value	0.099	0.099
Standard Deviation	0.008	0.008
Mean	0.095	0.096
Outside 2StdDev	8.3%	14.3%
Below 2StdDev	10	2
Above 2StdDev	2	0



Time Series Plots for Standard Reference Materials assayed by Laboratoire Expert and ALS Chemex between 2007 and 2008 – OREAS 14P (Palladium)

	
Project	Dumont
Data Series	CRM OREAS 14P - Palladium
Data Type	DDH Samples
Commodity	Pd in ppm
Laboratory	Expert Laboratories
Analytical Method	AqR-AAS or Total Digest-AAS
Detection Limit	2ppm or 100ppm

Statistics	2007	2008
Sample Count	144	14
Expected Value	0.150	0.150
Standard Deviation	0.008	0.008
Mean	0.140	0.142
Outside 2StdDev	14.6%	7.1%
Below 2StdDev	21	1
Above 2StdDev	0	0

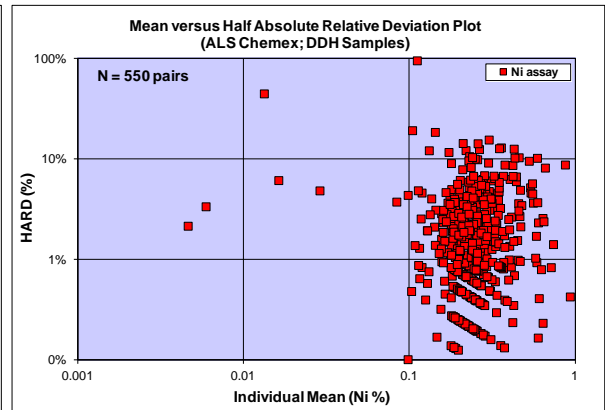
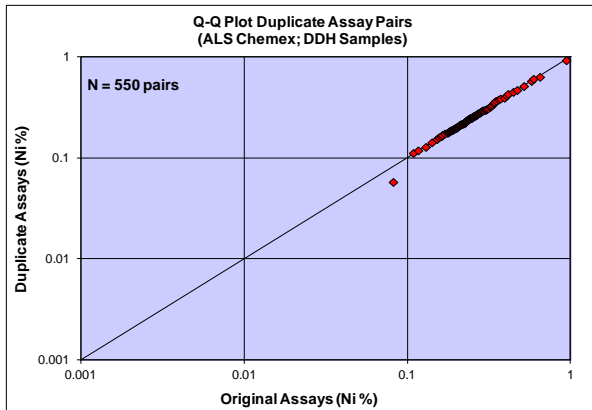
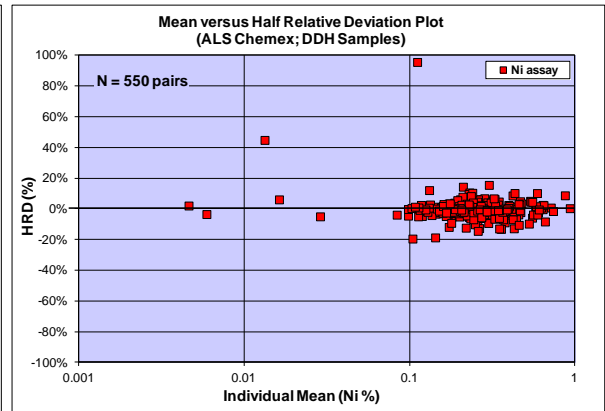
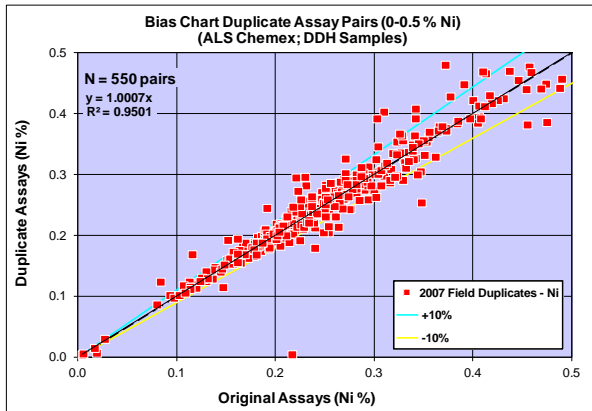
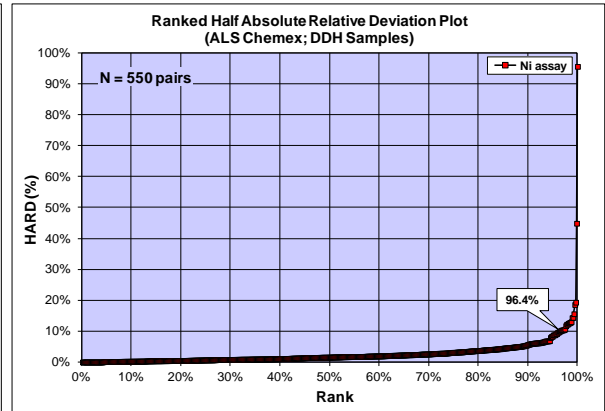
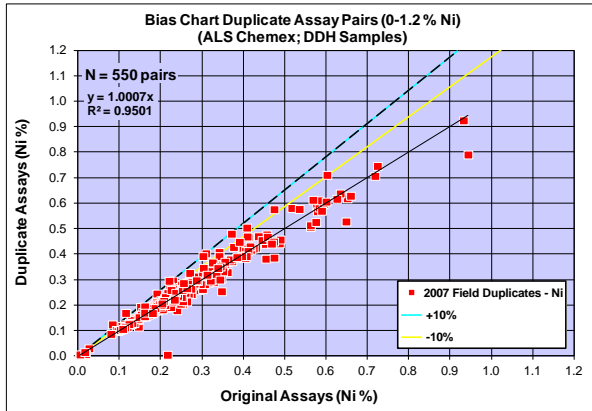


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Nickel (2007)

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Project Dumont
Data Series 2007 Field Duplicates - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES
Detection Limit 0.0001%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	0.0047	0.0045
Maximum Value	0.944	0.925
Mean	0.261	0.262
Median	0.240	0.244
Standard Error	0.005	0.005
Standard Deviation	0.109	0.109
Correlation Coefficient	0.9752	
Pairs ≤ 10% HARD	96.4%	

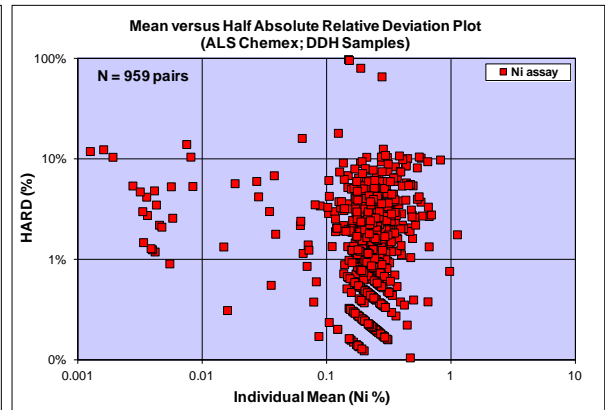
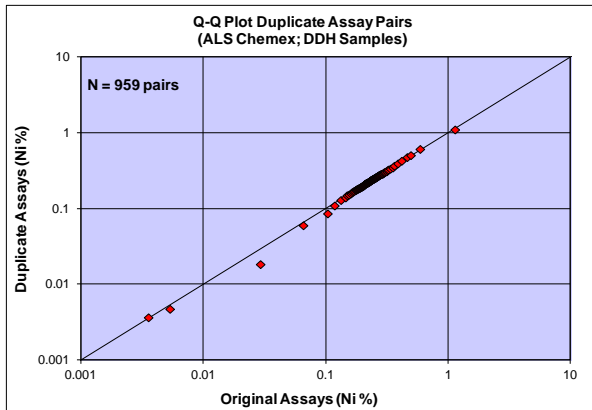
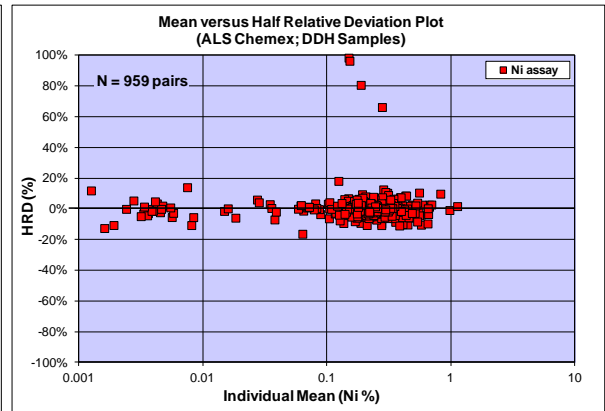
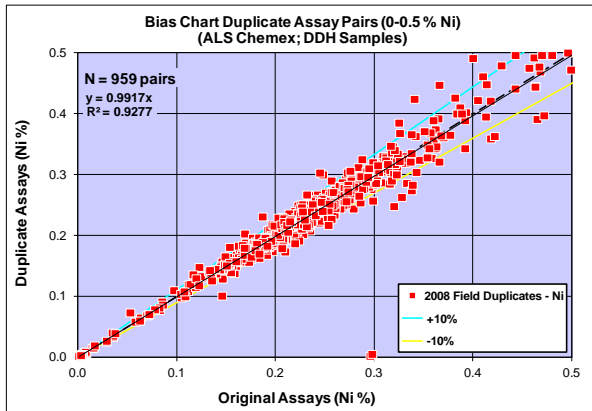
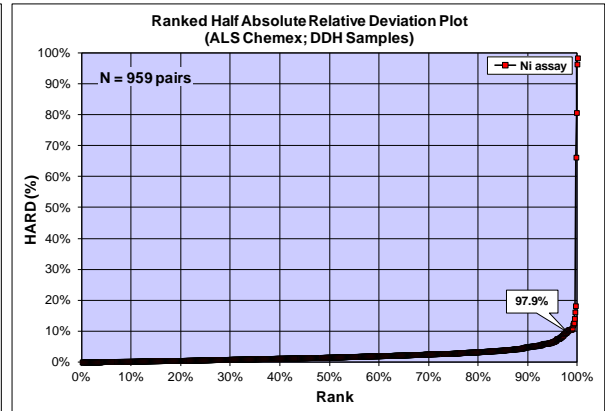
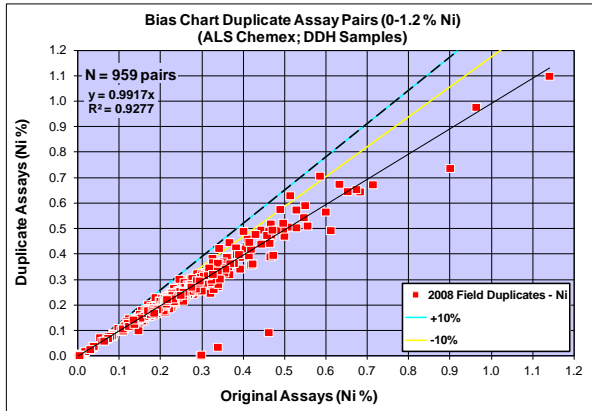


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Nickel (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES
Detection Limit 0.0001%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	0.0014	0.0011
Maximum Value	1.140	1.100
Mean	0.237	0.236
Median	0.230	0.230
Standard Error	0.003	0.003
Standard Deviation	0.099	0.100
Correlation Coefficient	0.9634	
Pairs ≤ 10% HARD	97.9%	

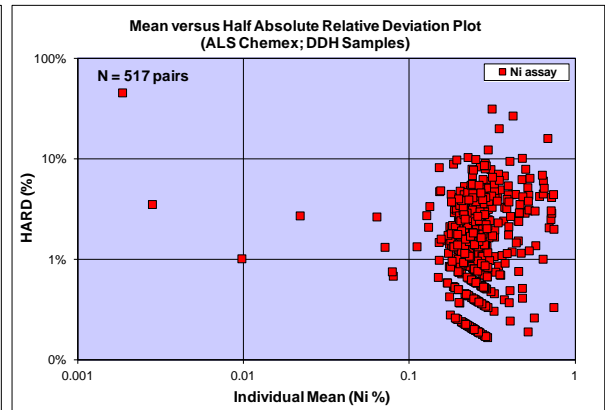
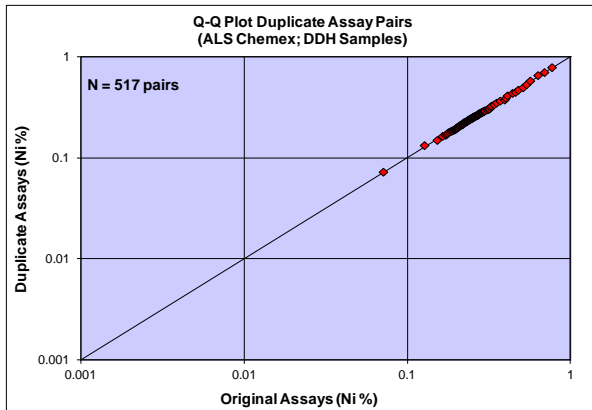
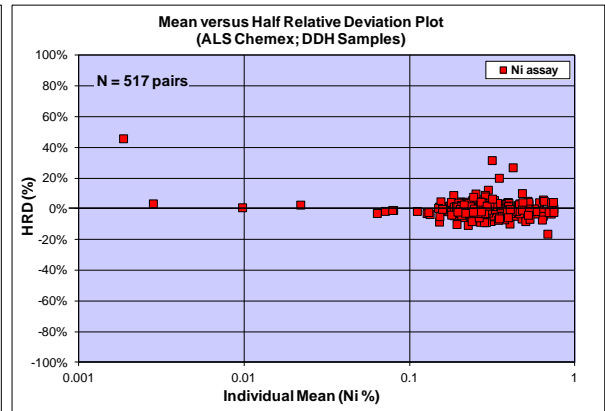
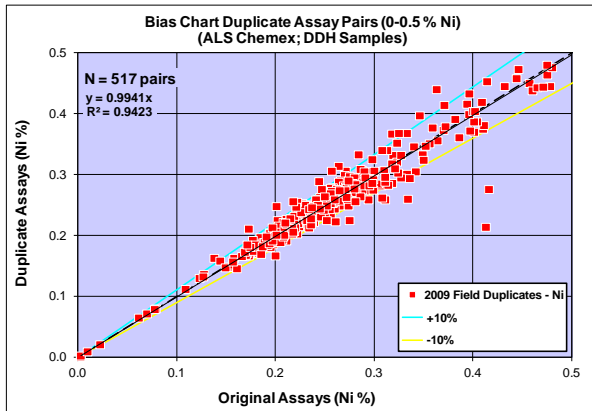
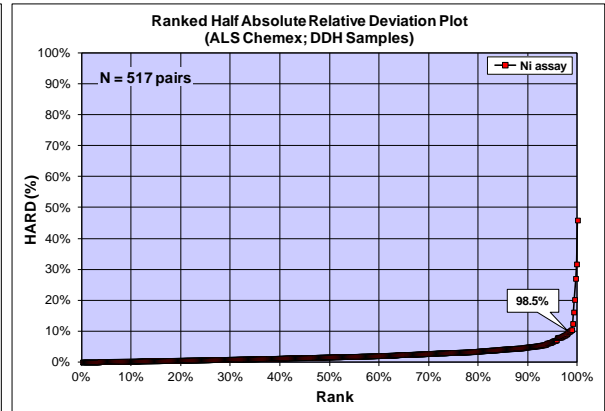
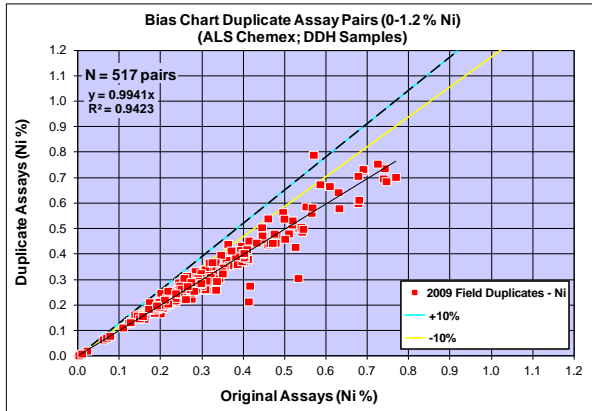


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Nickel (2009)

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Project Dumont
Data Series 2009 Field Duplicates - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES
Detection Limit 0.0001%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	0.0027	0.0010
Maximum Value	0.769	0.790
Mean	0.271	0.270
Median	0.248	0.247
Standard Error	0.005	0.005
Standard Deviation	0.108	0.108
Correlation Coefficient	0.9709	
Pairs ≤ 10% HARD	98.5%	

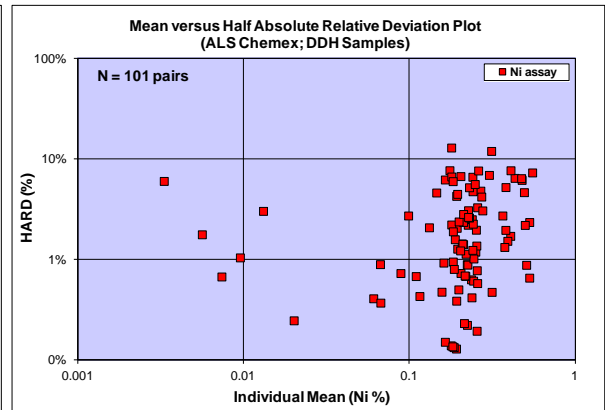
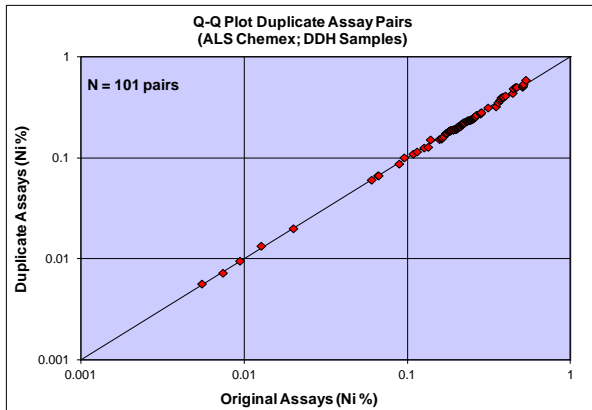
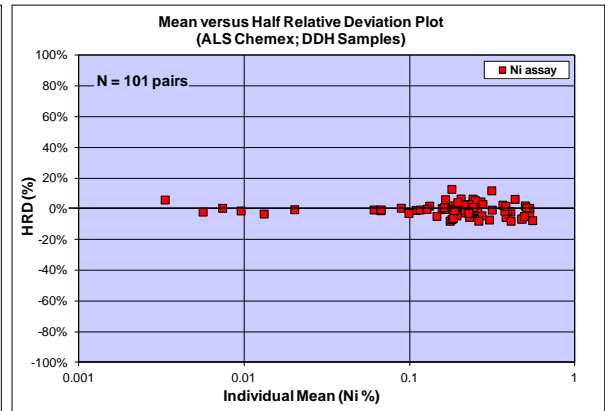
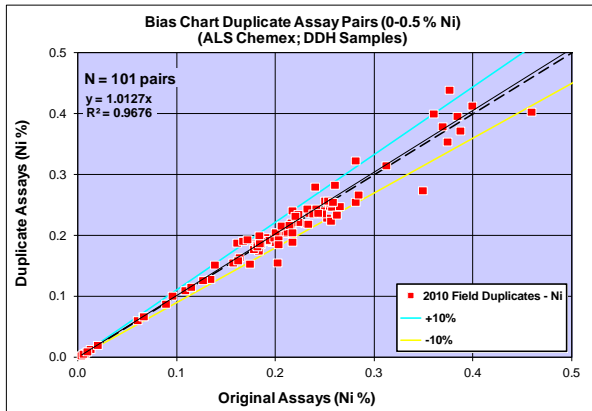
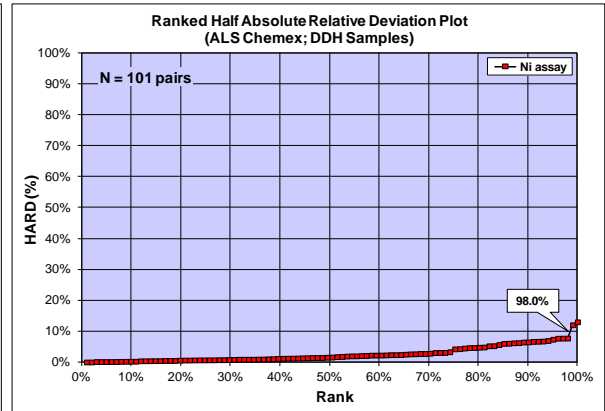
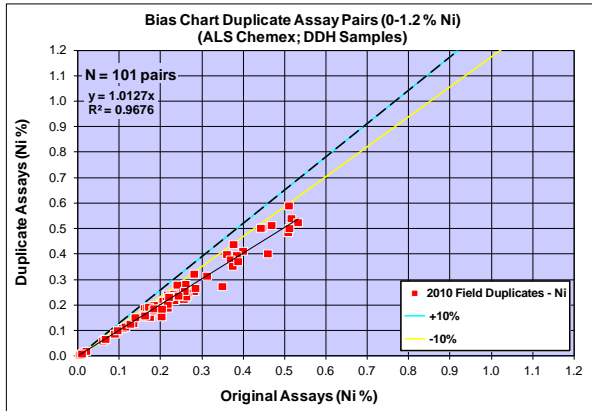


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Nickel (2010)


srk consulting

Project Dumont
Data Series 2010 Field Duplicates - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES
Detection Limit 0.0001%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

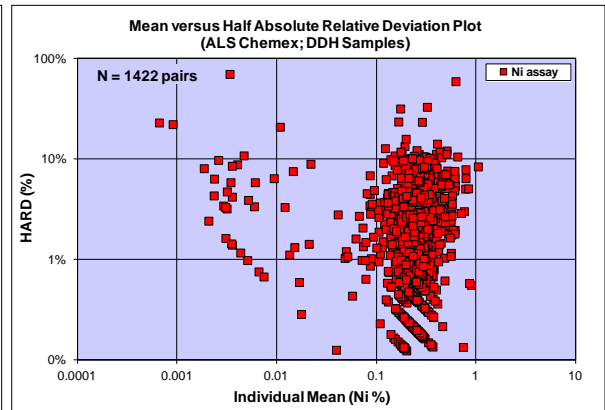
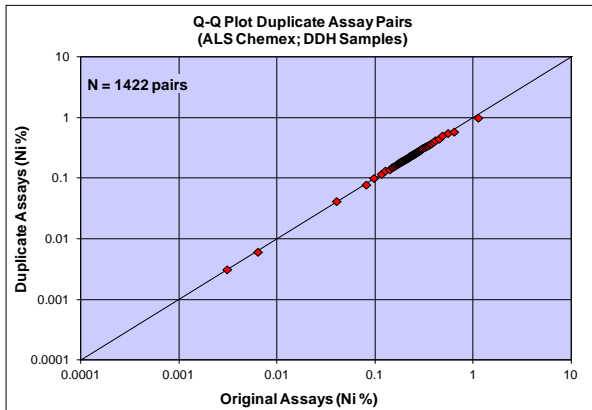
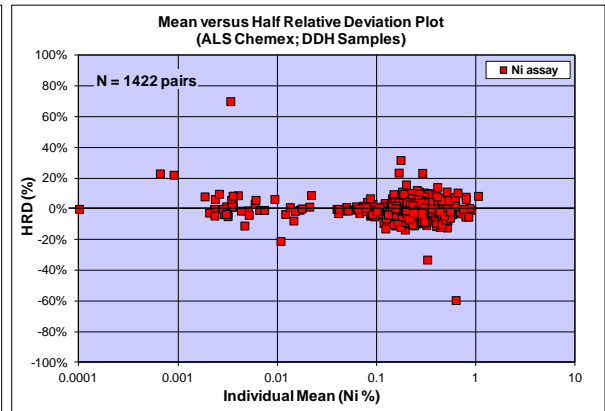
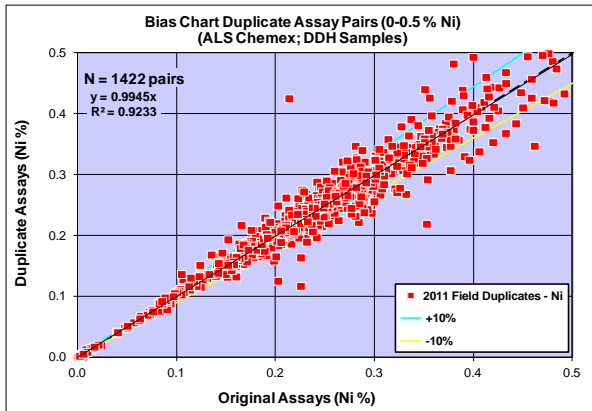
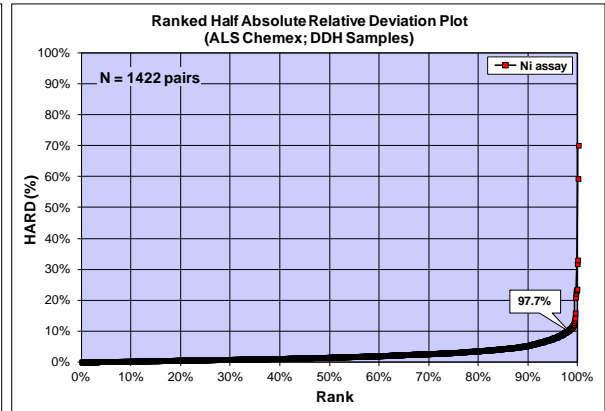
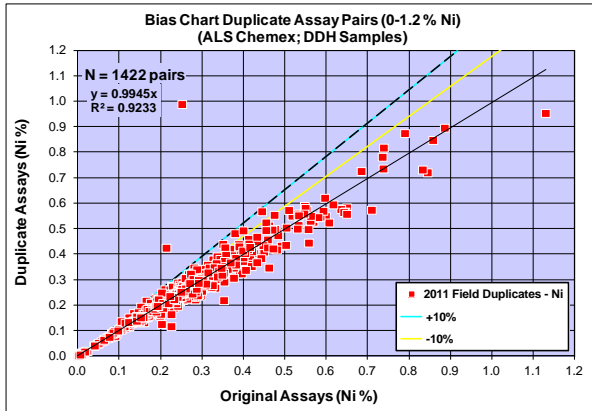
Statistics	Original	Duplicate
Sample Count	101	101
Minimum Value	0.0035	0.0031
Maximum Value	0.532	0.591
Mean	0.230	0.232
Median	0.216	0.217
Standard Error	0.011	0.012
Standard Deviation	0.116	0.121
Correlation Coefficient	0.9839	
Pairs ≤ 10% HARD	98.0%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Nickel (2011)

	
Project	Dumont
Data Series	2011 Field Duplicates - Ni
Data Type	DDH Samples
Commodity	Ni in %
Analytical Method	AqR-ICP-AES
Detection Limit	0.0001%
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	0.0001	0.0001
Maximum Value	1.130	0.989
Mean	0.245	0.245
Median	0.237	0.238
Standard Error	0.003	0.003
Standard Deviation	0.105	0.104
Correlation Coefficient	0.9617	
Pairs ≤ 10% HARD	97.7%	

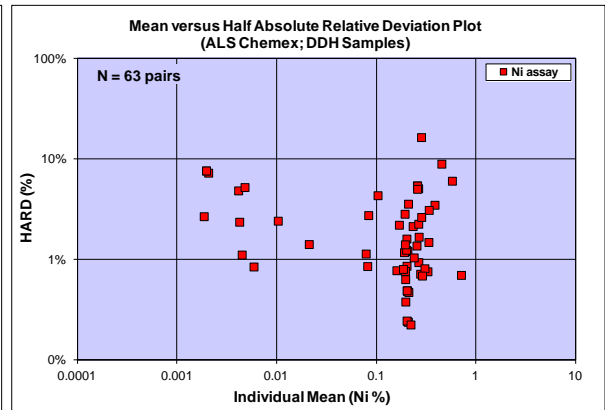
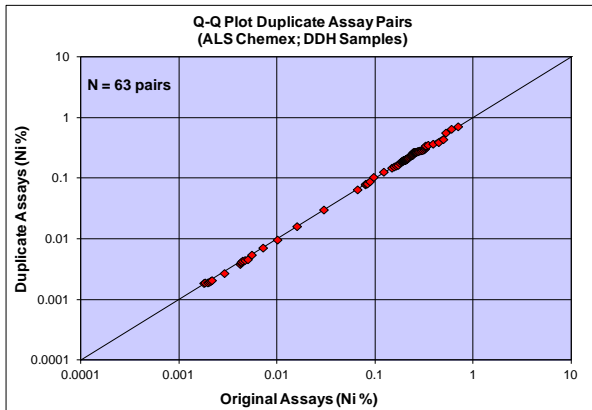
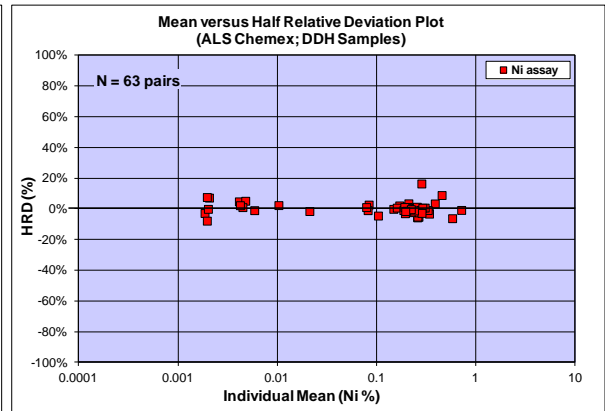
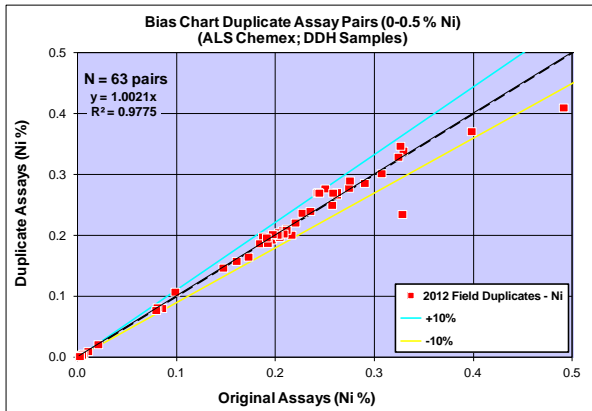
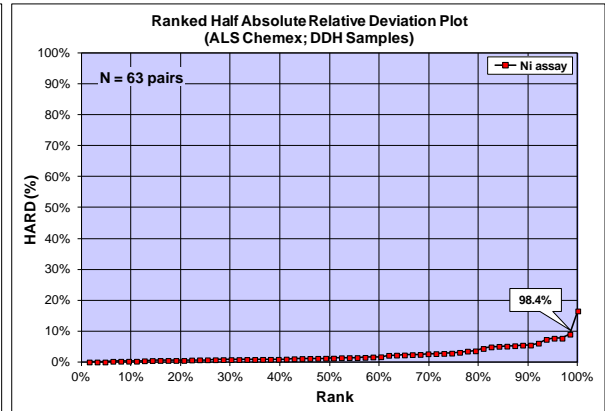
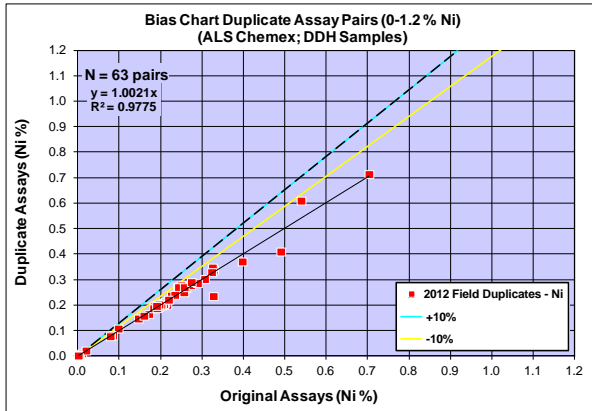


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Nickel (2012)

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Project Dumont
Data Series 2012 Field Duplicates - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES
Detection Limit 0.0001%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	0.0018	0.0018
Maximum Value	0.704	0.714
Mean	0.197	0.197
Median	0.204	0.202
Standard Error	0.017	0.017
Standard Deviation	0.135	0.136
Correlation Coefficient	0.9887	
Pairs ≤ 10% HARD	98.4%	

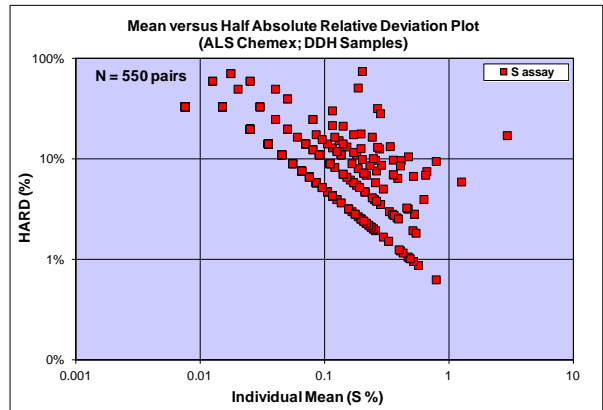
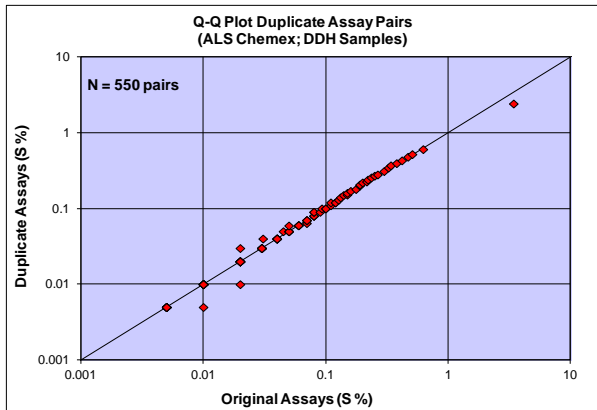
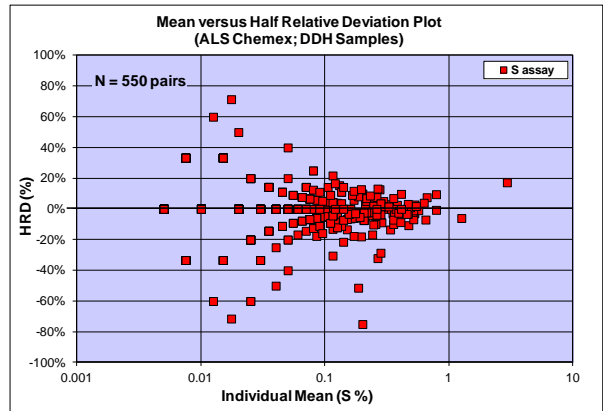
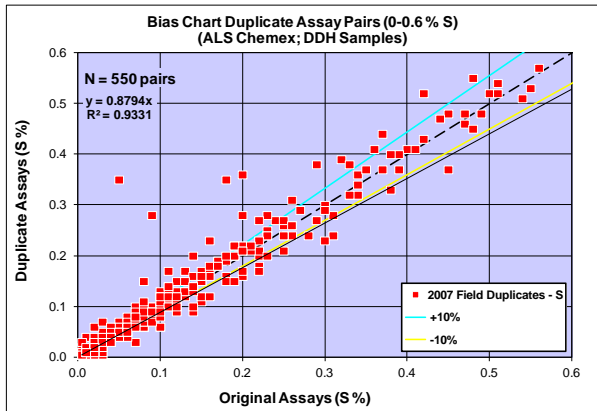
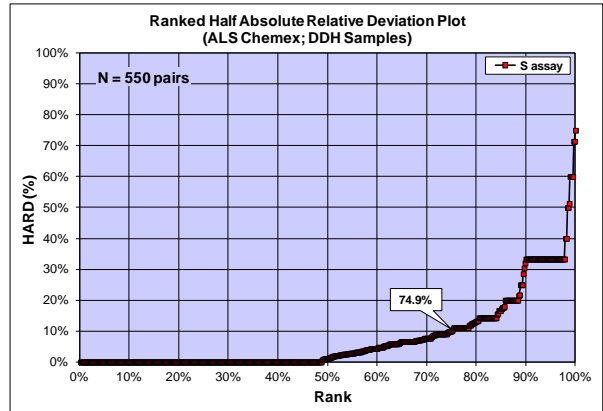
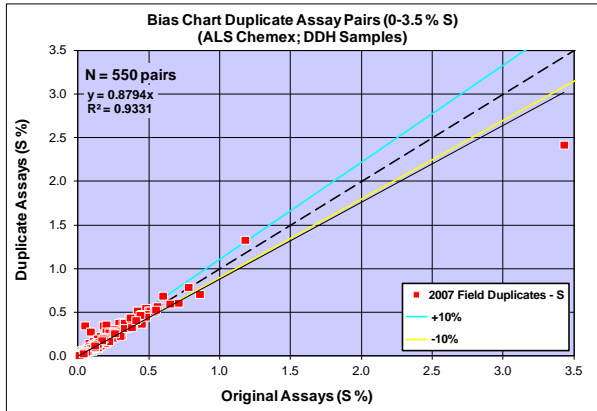


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Sulphur (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - S
Data Type DDH Samples
Commodity S in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	0.005	0.005
Maximum Value	3.43	2.42
Mean	0.102	0.103
Median	0.045	0.050
Standard Error	0.008	0.007
Standard Deviation	0.195	0.169
Correlation Coefficient	0.9701	
Pairs ≤ 10% HARD	74.9%	

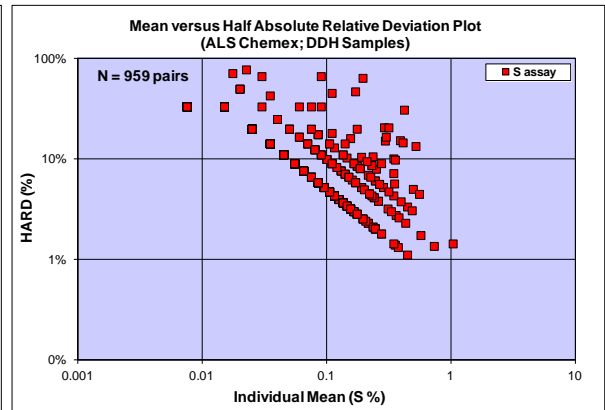
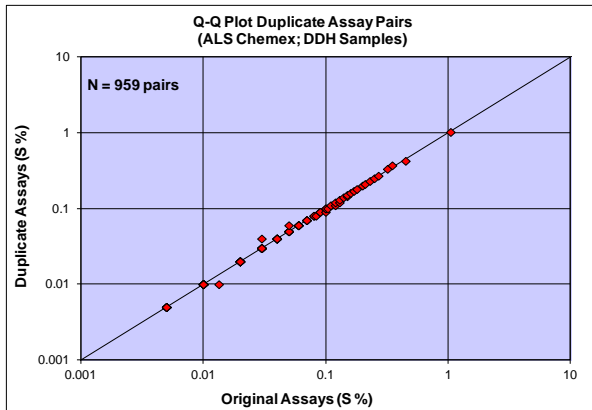
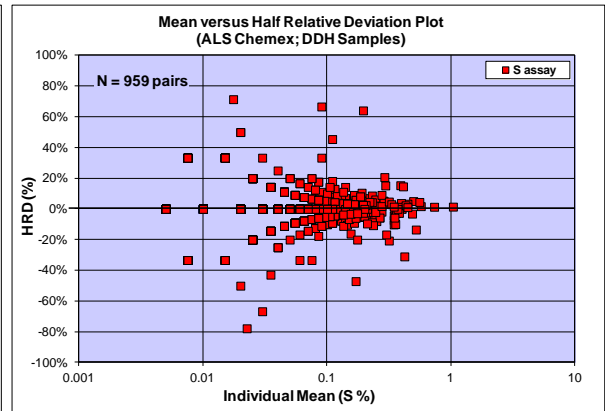
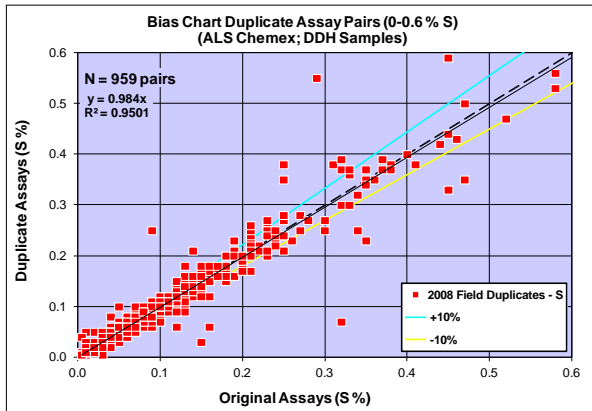
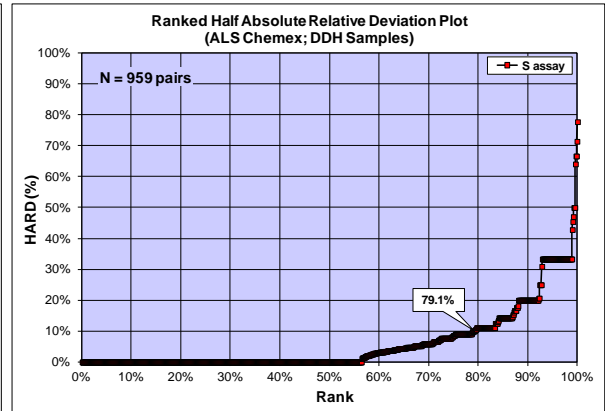
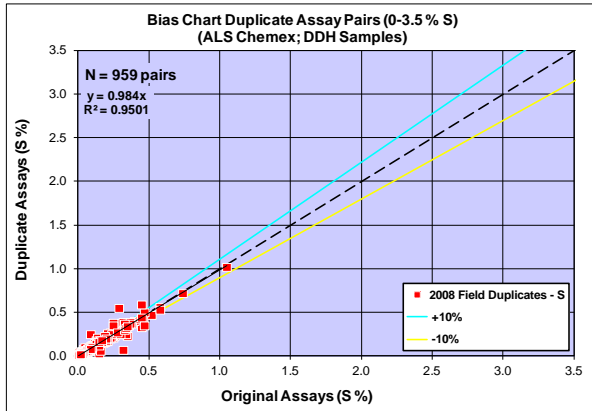


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Sulphur (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - S
Data Type DDH Samples
Commodity S in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	0.005	0.005
Maximum Value	1.05	1.02
Mean	0.072	0.072
Median	0.040	0.040
Standard Error	0.003	0.003
Standard Deviation	0.093	0.093
Correlation Coefficient	0.9748	
Pairs ≤ 10% HARD	79.1%	

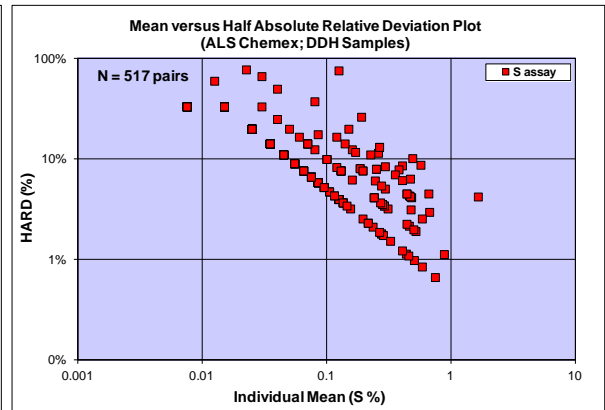
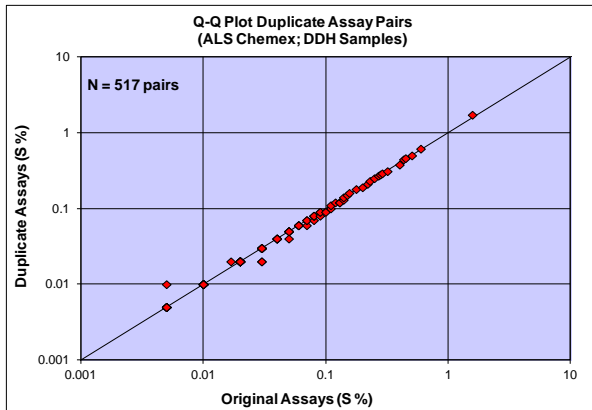
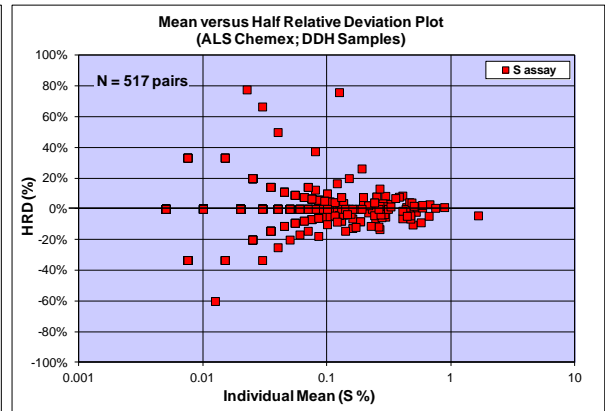
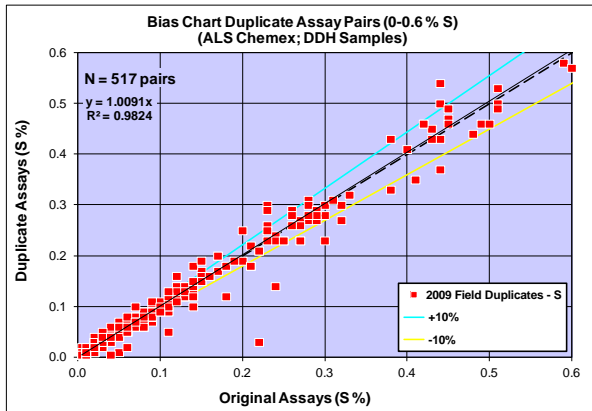
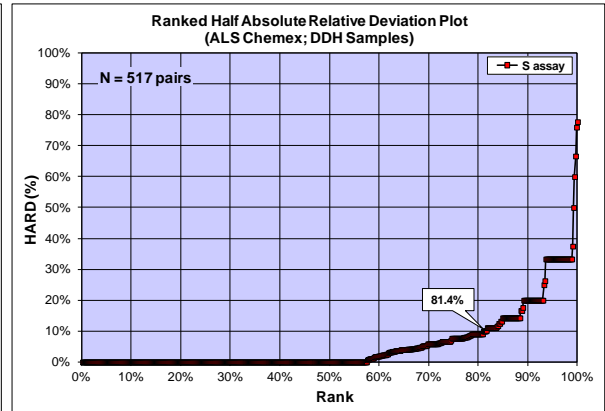
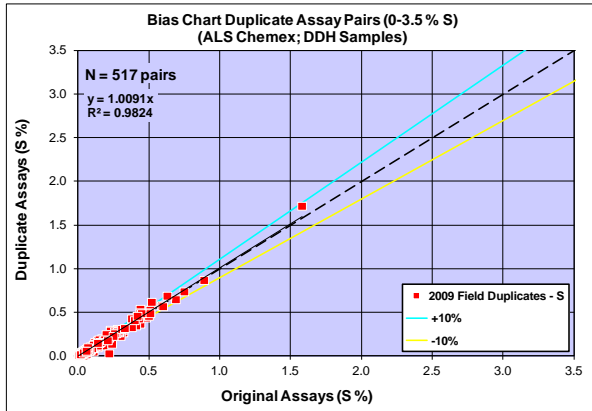


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Sulphur (2009)


srk consulting

Project Dumont
Data Series 2009 Field Duplicates - S
Data Type DDH Samples
Commodity S in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

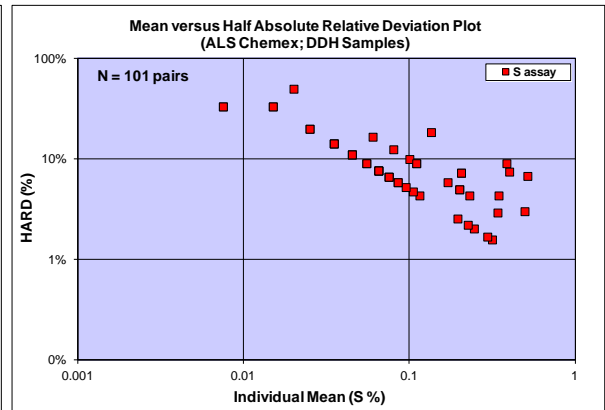
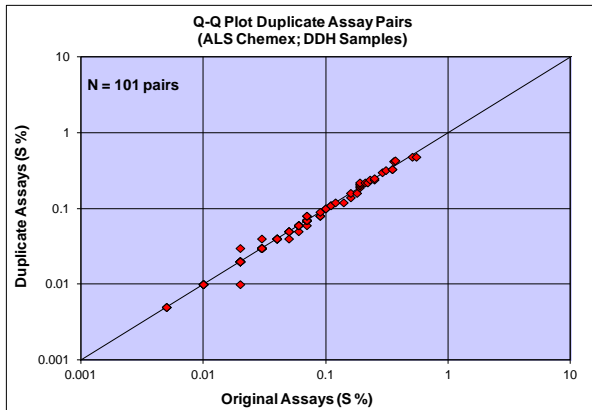
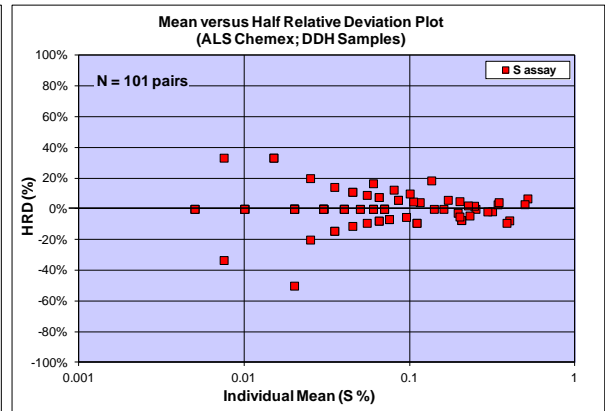
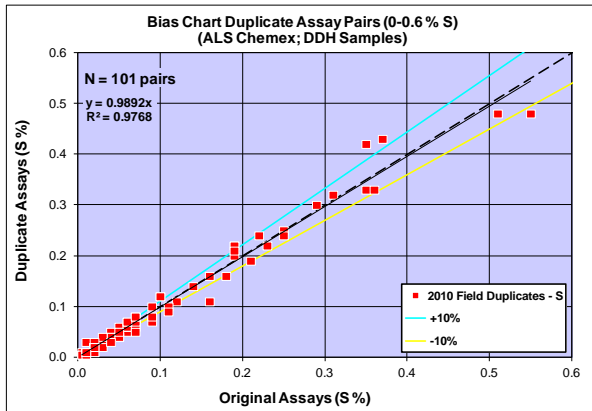
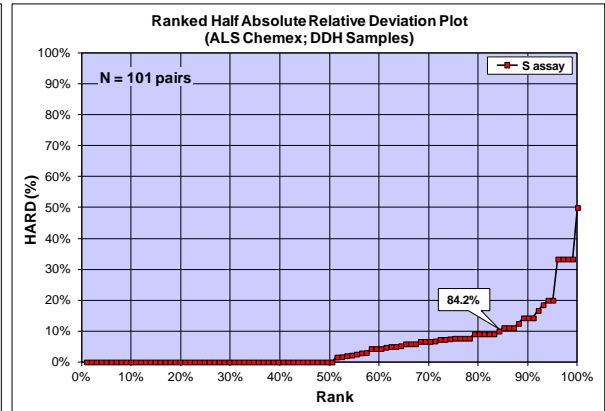
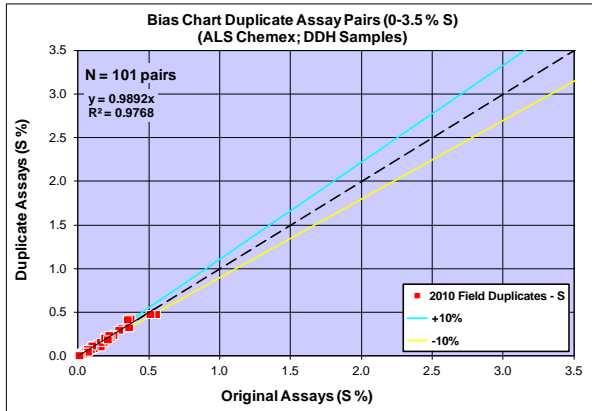
Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	0.005	0.005
Maximum Value	1.58	1.72
Mean	0.089	0.088
Median	0.030	0.030
Standard Error	0.006	0.006
Standard Deviation	0.141	0.144
Correlation Coefficient	0.9912	
Pairs ≤ 10% HARD	81.4%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Sulphur (2010)

	
Project	Dumont
Data Series	2010 Field Duplicates - S
Data Type	DDH Samples
Commodity	S in %
Analytical Method	AqR-ICP-AES
Detection Limit	0.01%
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	101	101
Minimum Value	0.005	0.005
Maximum Value	0.55	0.48
Mean	0.091	0.091
Median	0.050	0.050
Standard Error	0.011	0.011
Standard Deviation	0.108	0.107
Correlation Coefficient	0.9884	
Pairs ≤ 10% HARD	84.2%	

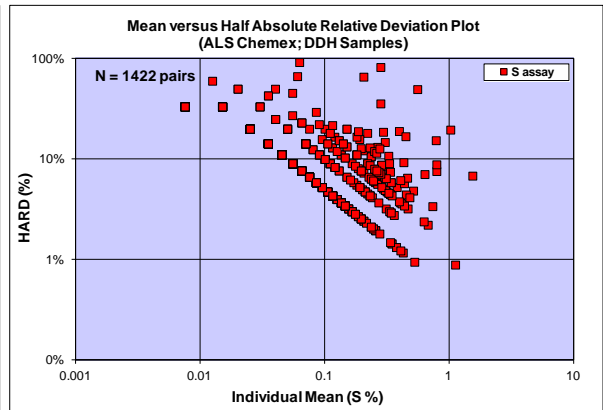
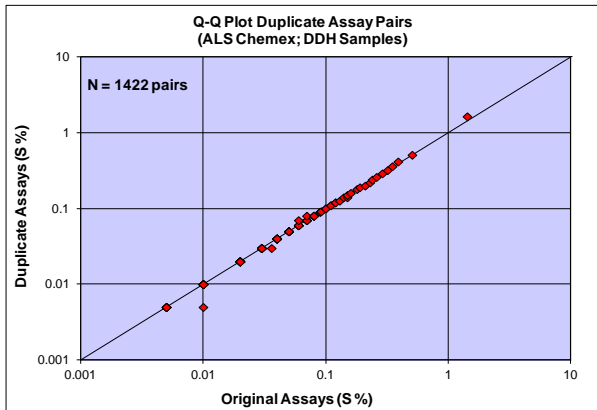
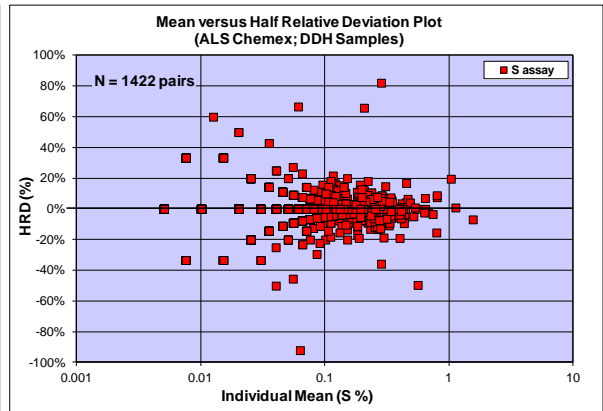
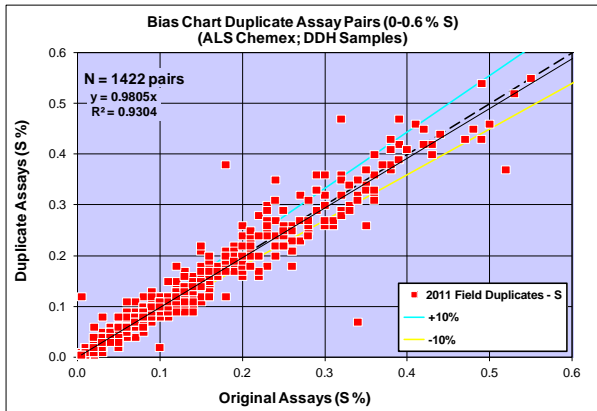
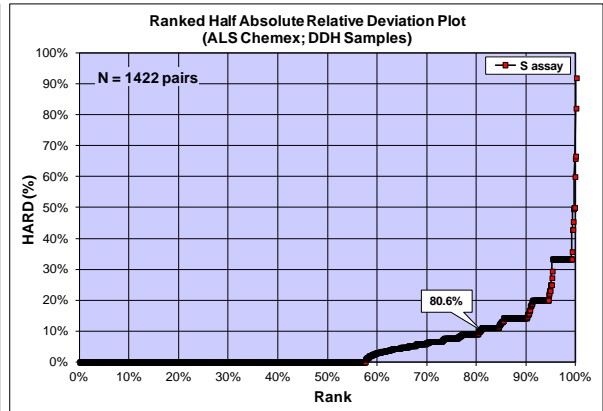
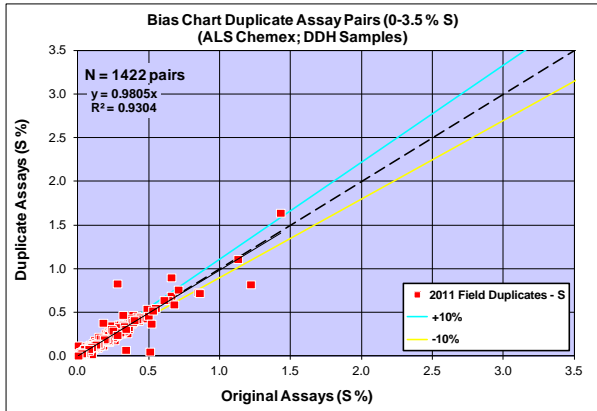


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Sulphur (2011)

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Project Dumont
Data Series 2011 Field Duplicates - S
Data Type DDH Samples
Commodity S in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	0.005	0.005
Maximum Value	1.43	1.64
Mean	0.080	0.080
Median	0.040	0.040
Standard Error	0.003	0.003
Standard Deviation	0.113	0.113
Correlation Coefficient	0.9647	
Pairs ≤ 10% HARD	80.6%	

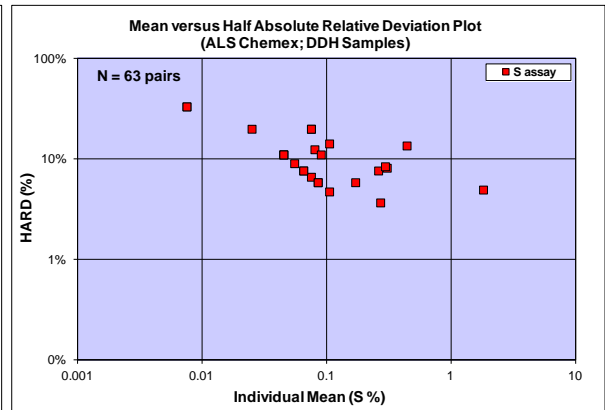
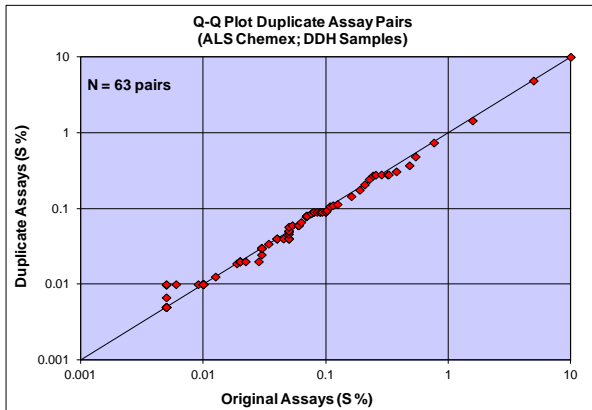
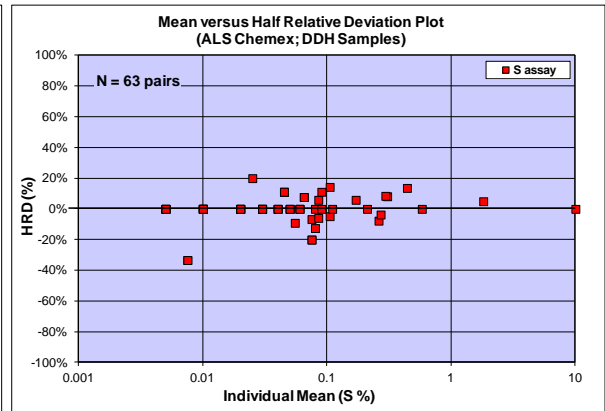
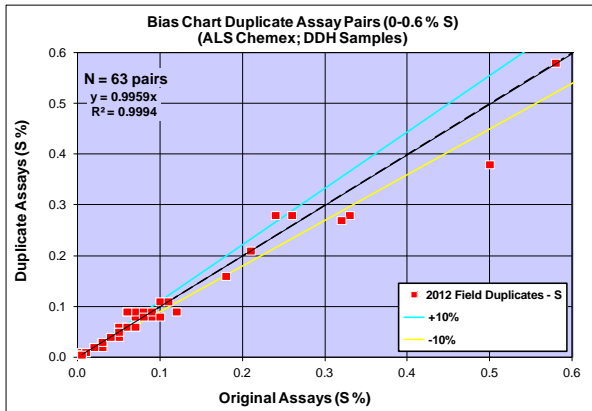
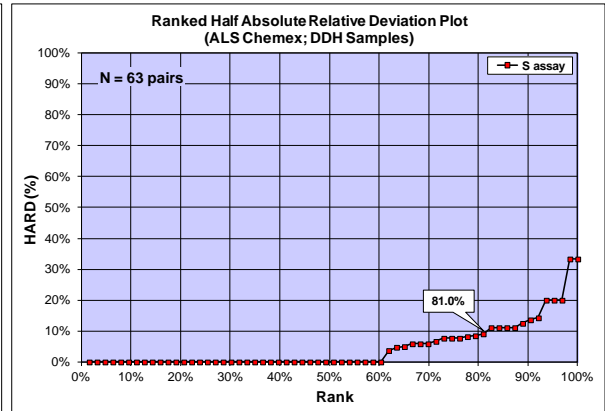
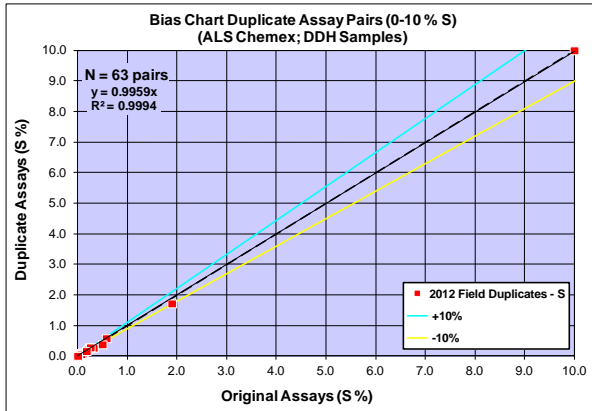


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Sulphur (2012)

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Project Dumont
Data Series 2012 Field Duplicates - S
Data Type DDH Samples
Commodity S in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	0.005	0.005
Maximum Value	10.00	10.00
Mean	0.266	0.260
Median	0.050	0.040
Standard Error	0.160	0.160
Standard Deviation	1.272	1.268
Correlation Coefficient	0.9997	
Pairs ≤ 10% HARD	81.0%	

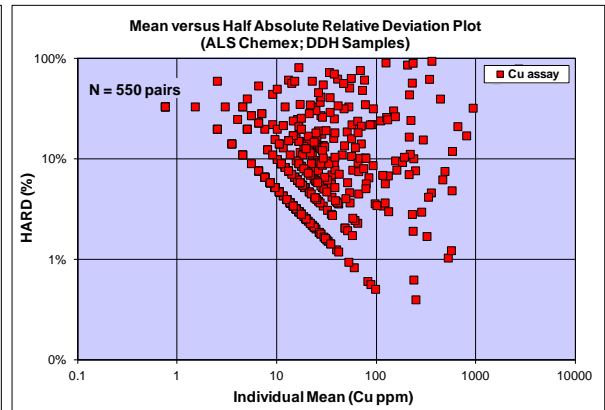
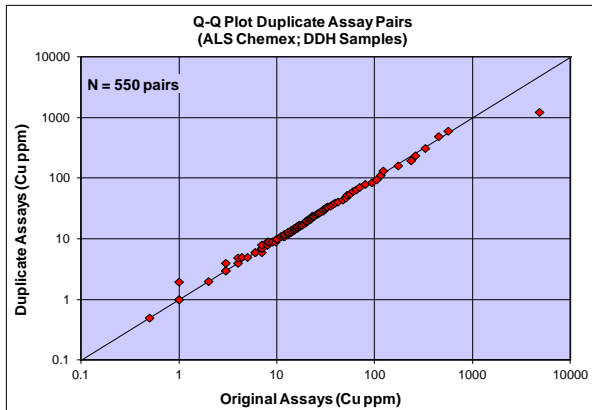
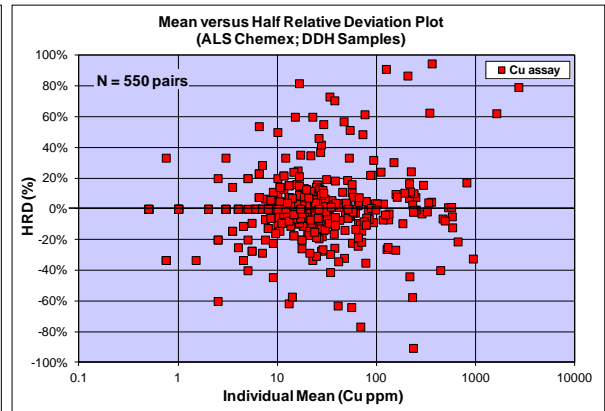
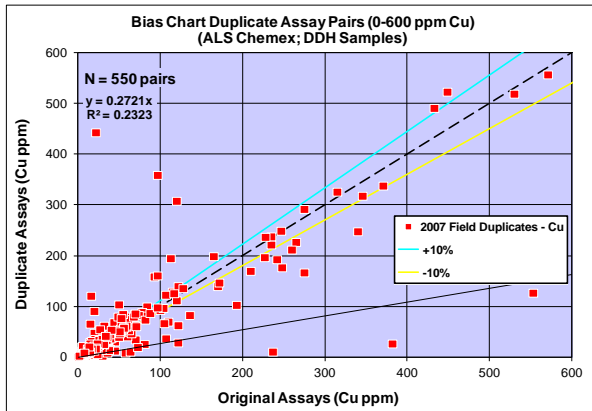
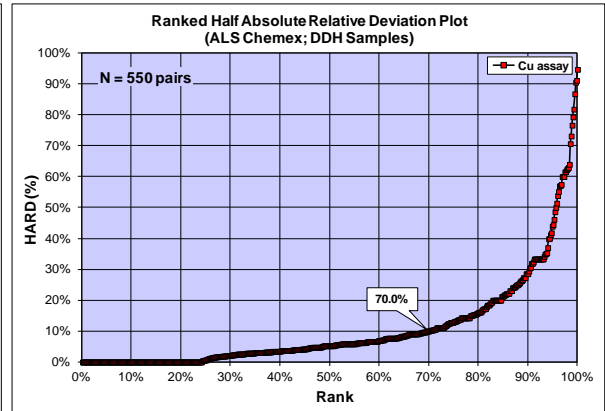
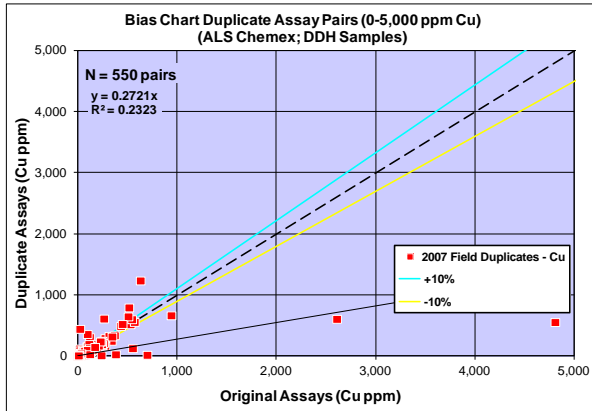


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Copper (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - Cu
Data Type DDH Samples
Commodity Cu in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	0.5	0.5
Maximum Value	4,810	1,235
Mean	57.44	46.11
Median	17	16
Standard Error	10.64	4.62
Standard Deviation	249.59	108.36
Correlation Coefficient	0.5619	
Pairs ≤ 10% HARD	70.0%	

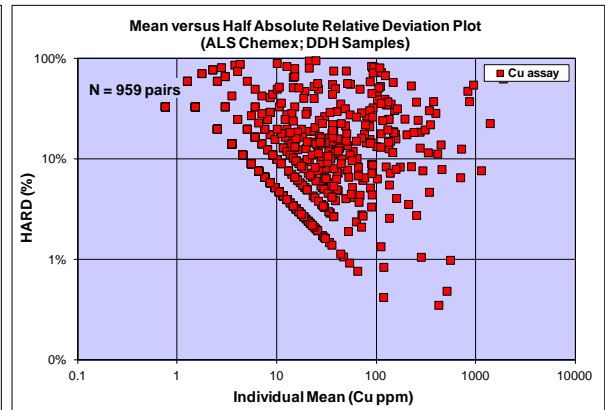
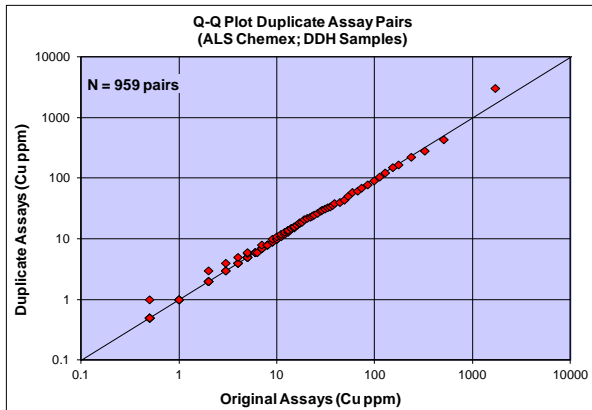
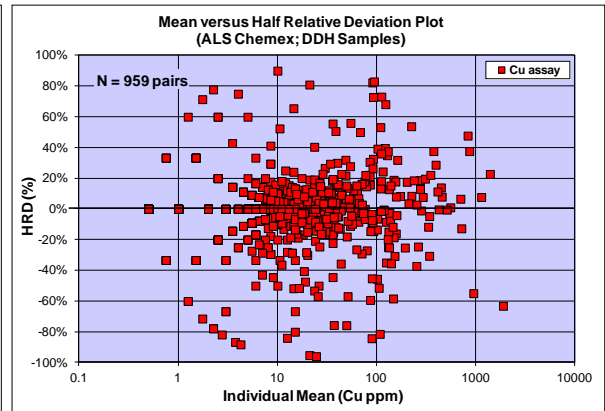
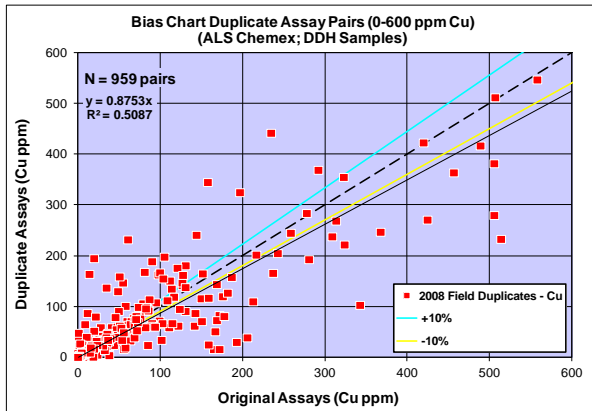
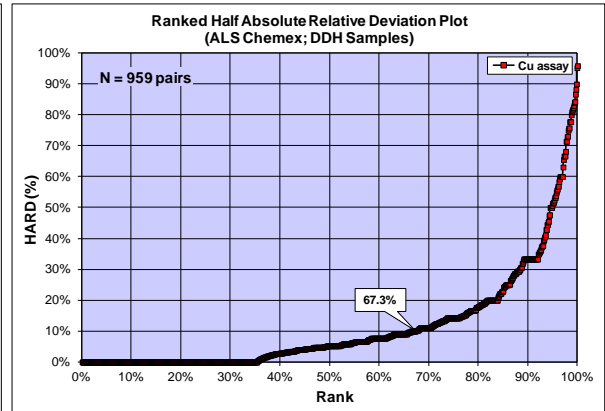
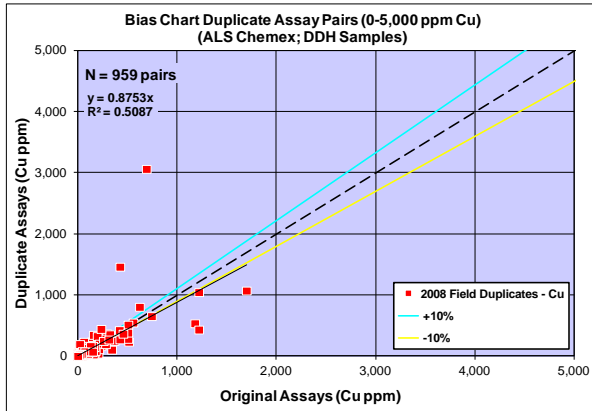


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Copper (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Cu
Data Type DDH Samples
Commodity Cu in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	0.5	0.5
Maximum Value	1,700	3,060
Mean	37.17	37.22
Median	9	10
Standard Error	3.66	4.42
Standard Deviation	113.36	136.79
Correlation Coefficient	0.7141	
Pairs ≤ 10% HARD	67.3%	

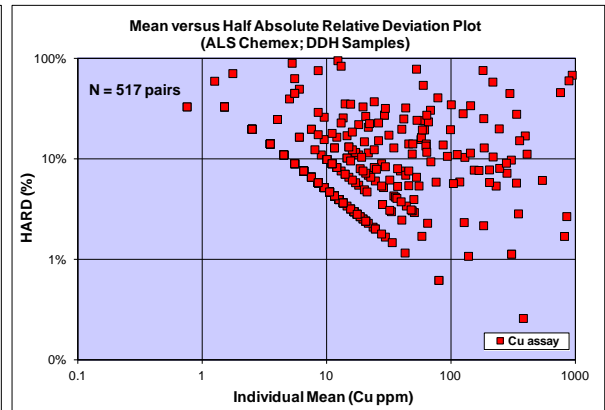
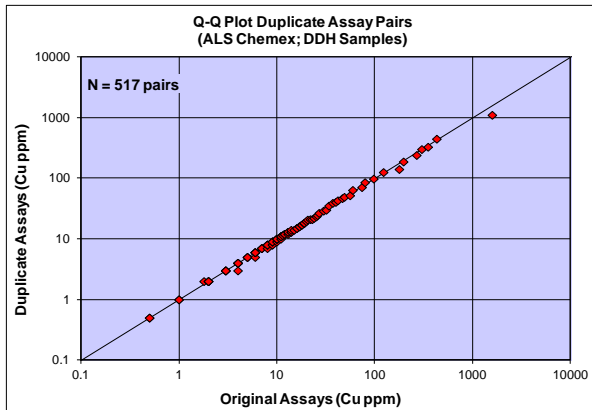
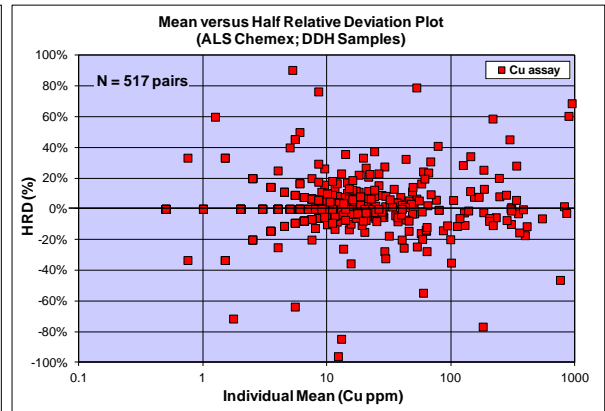
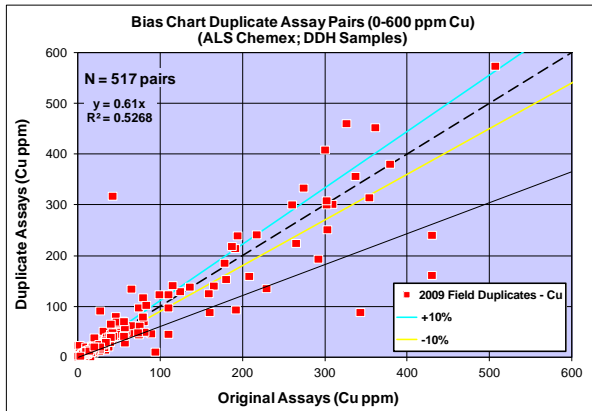
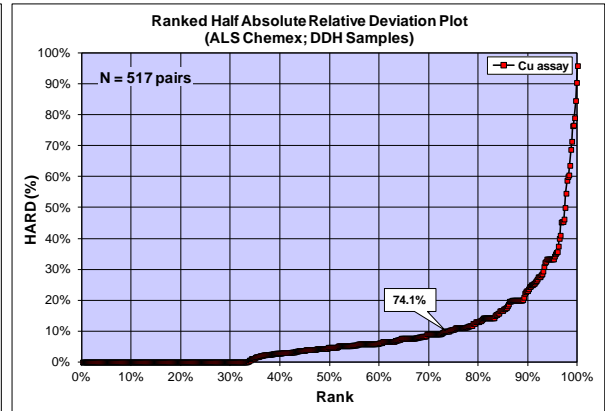
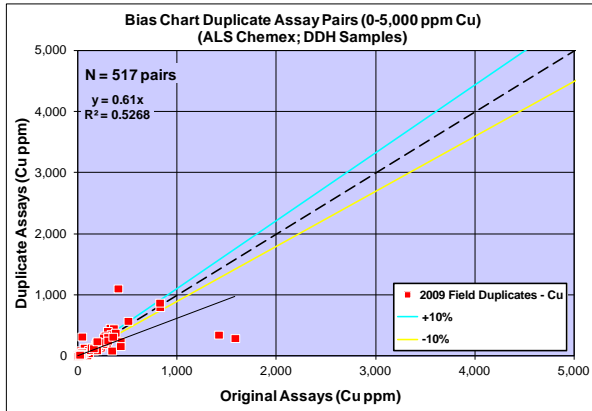


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Copper (2009)


srk consulting

Project Dumont
Data Series 2009 Field Duplicates - Cu
Data Type DDH Samples
Commodity Cu in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

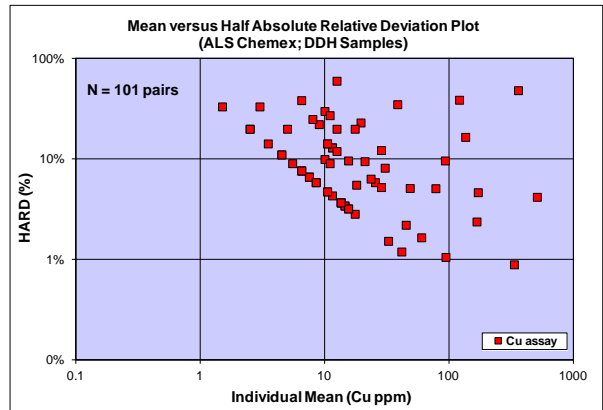
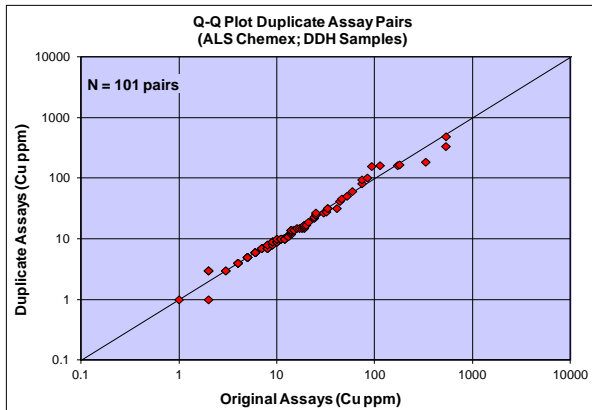
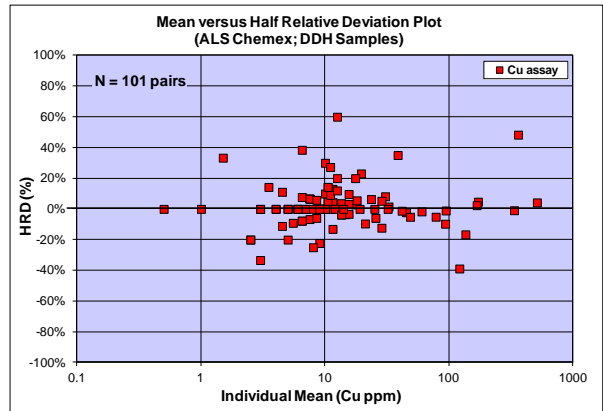
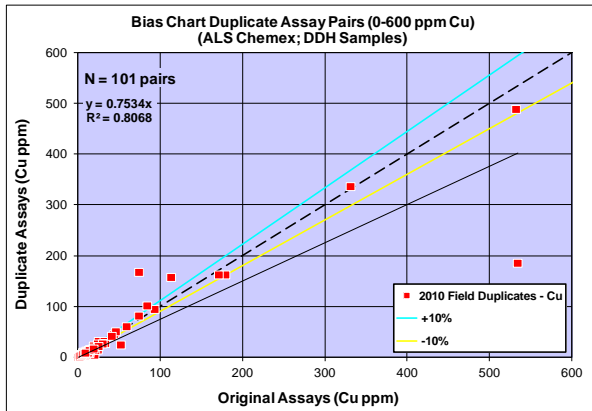
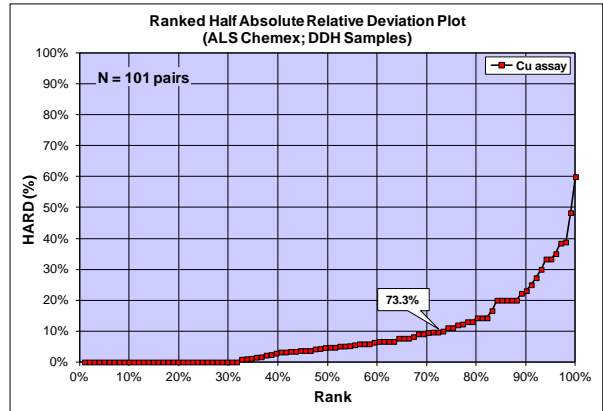
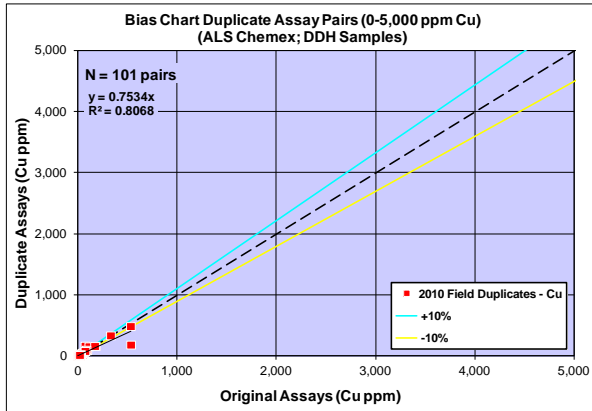
<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	517	517
Minimum Value	0.5	0.5
Maximum Value	1,585	1,105
Mean	41.64	37.65
Median	11	11
Standard Error	5.49	4.30
<u>Standard Deviation</u>	<u>124.89</u>	<u>97.72</u>
Correlation Coefficient	0.7377	
Pairs ≤ 10% HARD	74.1%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Copper (2010)

	
Project	Dumont
Data Series	2010 Field Duplicates - Cu
Data Type	DDH Samples
Commodity	Cu in ppm
Analytical Method	AqR-ICP-AES
Detection Limit	1ppm
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	101	101
Minimum Value	0.5	0.5
Maximum Value	534	489
Mean	33.64	30.50
Median	11	10
Standard Error	8.28	6.68
Standard Deviation	83.17	67.13
Correlation Coefficient	0.9021	
Pairs ≤ 10% HARD	73.3%	

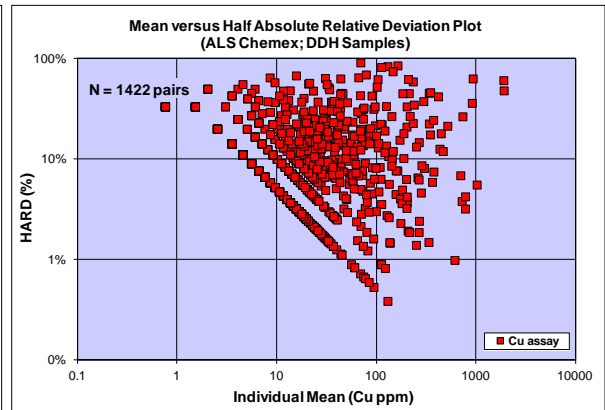
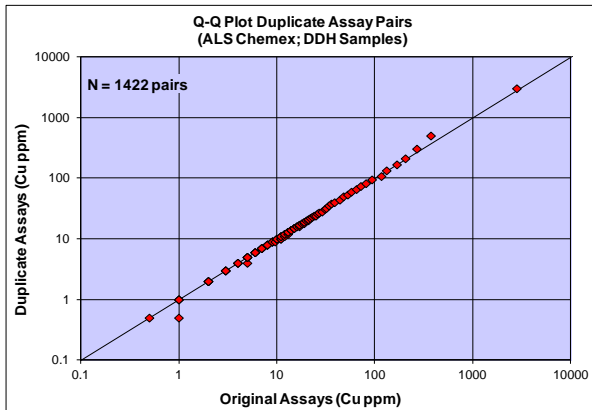
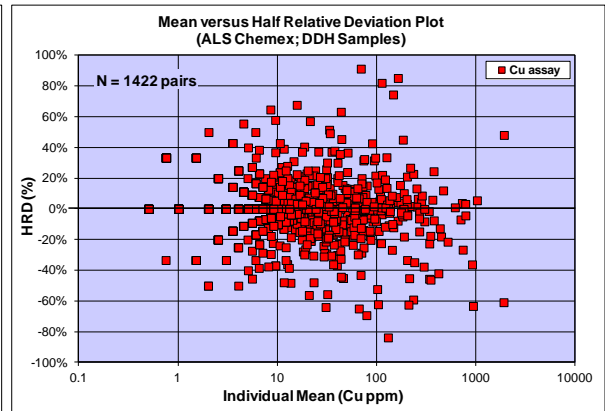
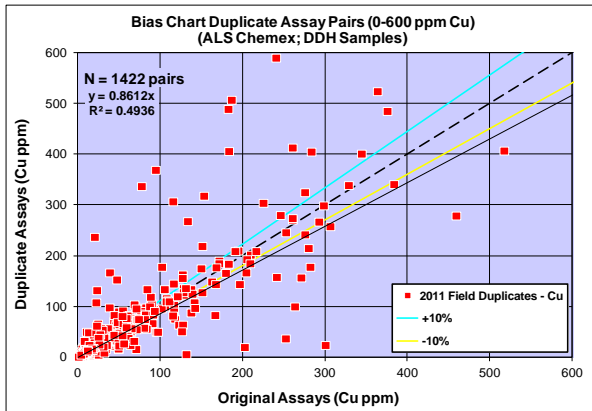
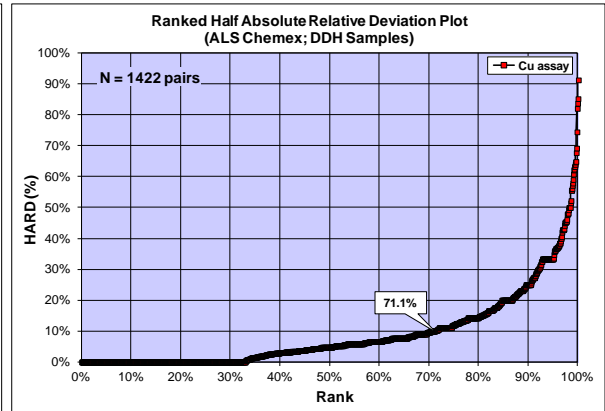
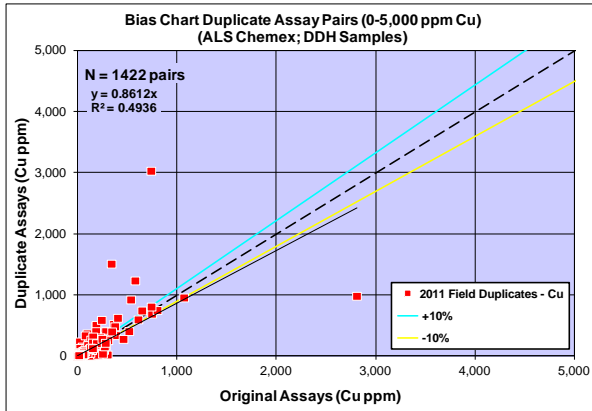


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Copper (2011)

srk consulting

Project Dumont
Data Series 2011 Field Duplicates - Cu
Data Type DDH Samples
Commodity Cu in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	0.5	0.5
Maximum Value	2,810	3,030
Mean	33.91	37.06
Median	12	11
Standard Error	2.82	3.35
Standard Deviation	106.26	126.15
Correlation Coefficient	0.7056	
Pairs ≤ 10% HARD	71.1%	

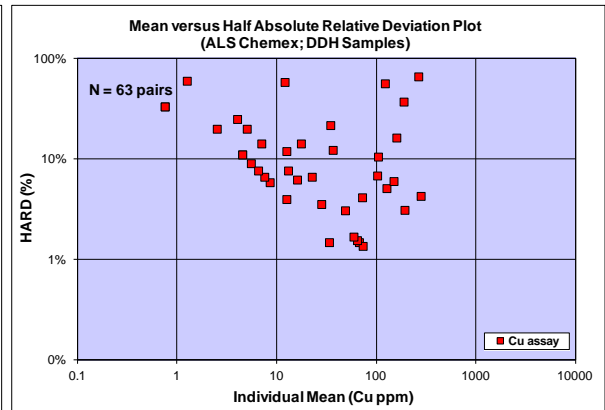
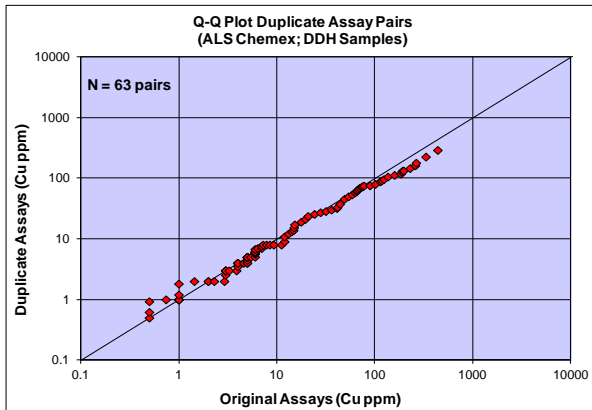
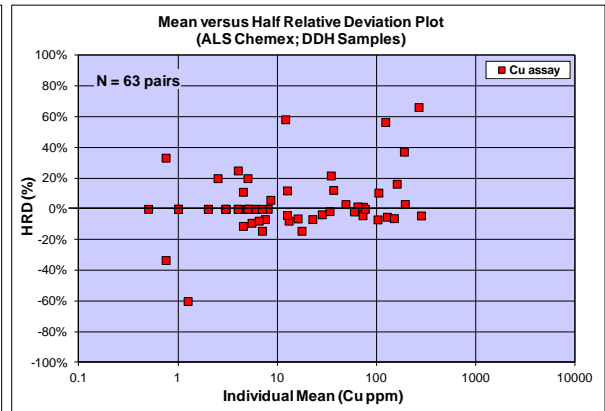
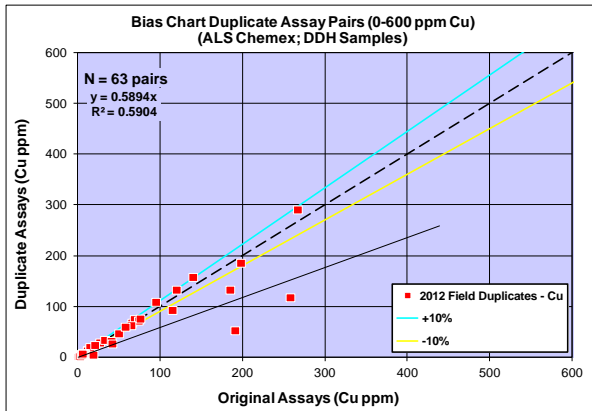
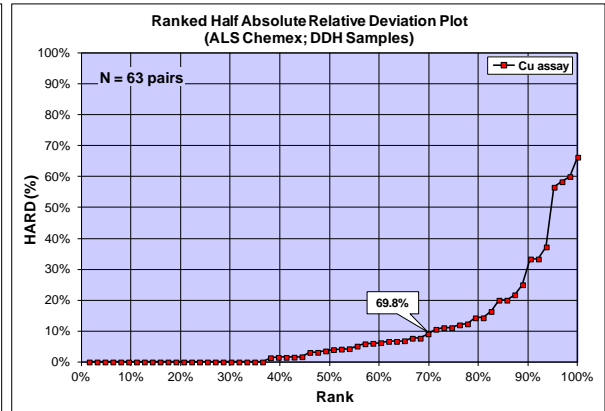
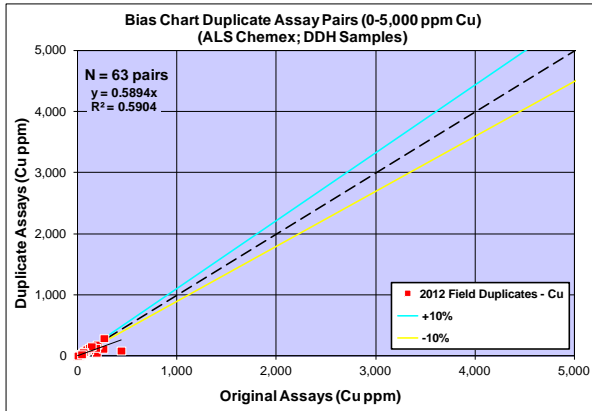


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Copper (2012)

srk consulting

Project Dumont
Data Series 2012 Field Duplicates - Cu
Data Type DDH Samples
Commodity Cu in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	0.5	0.5
Maximum Value	439	291
Mean	45.31	34.73
Median	7	7
Standard Error	10.19	6.90
Standard Deviation	80.88	54.78
Correlation Coefficient	0.7869	
Pairs ≤ 10% HARD	69.8%	

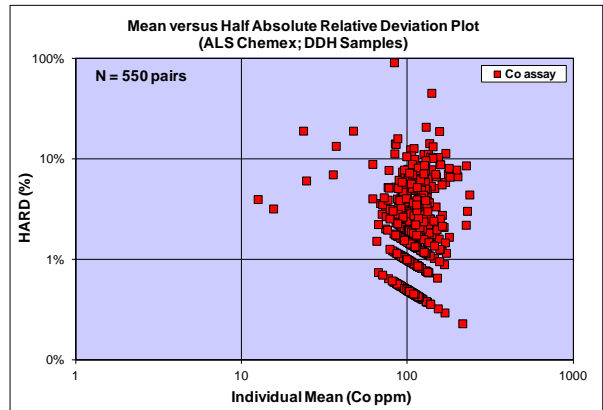
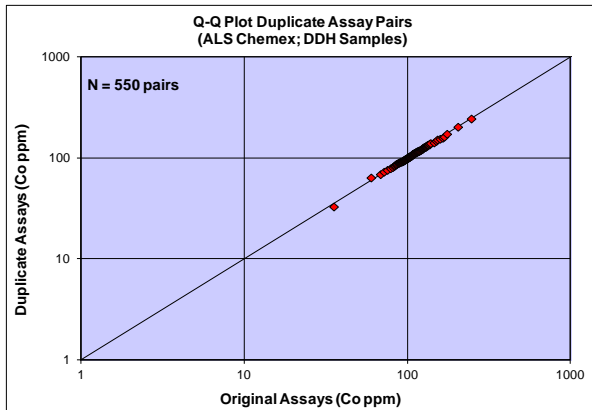
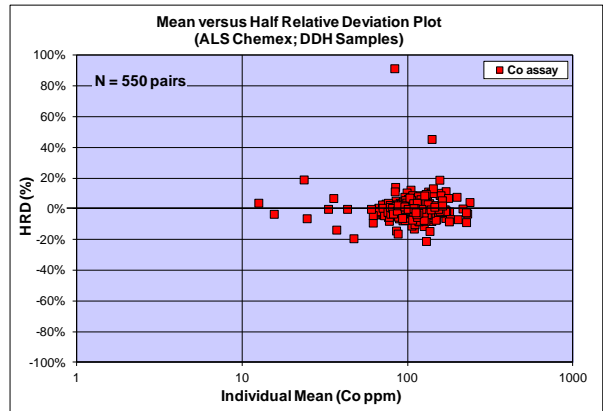
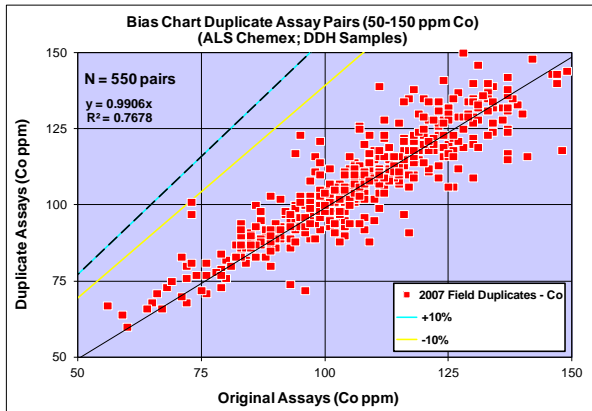
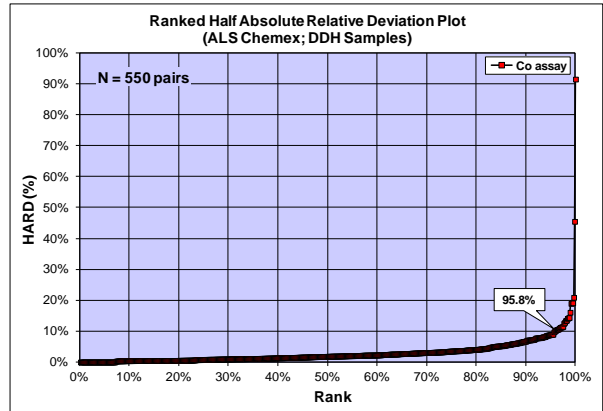
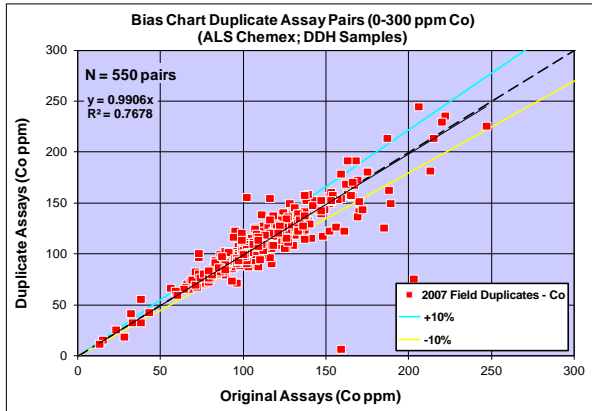


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Cobalt (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - Co
Data Type DDH Samples
Commodity Co in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	13	7
Maximum Value	247	245
Mean	110.49	110.16
Median	107	108
Standard Error	1.14	1.13
Standard Deviation	26.70	26.58
Correlation Coefficient	0.8837	
Pairs ≤ 10% HARD	95.8%	

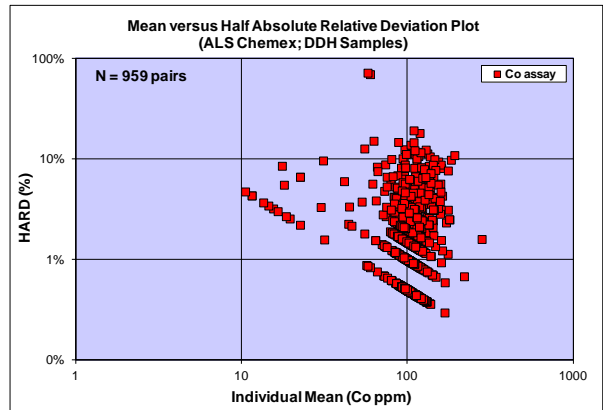
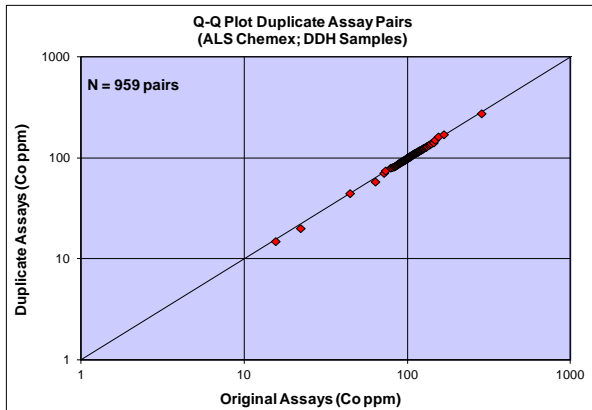
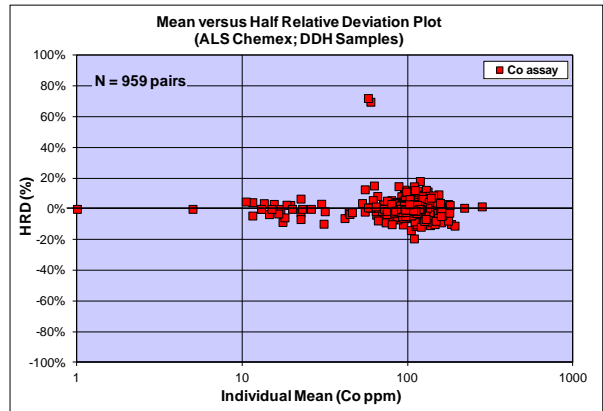
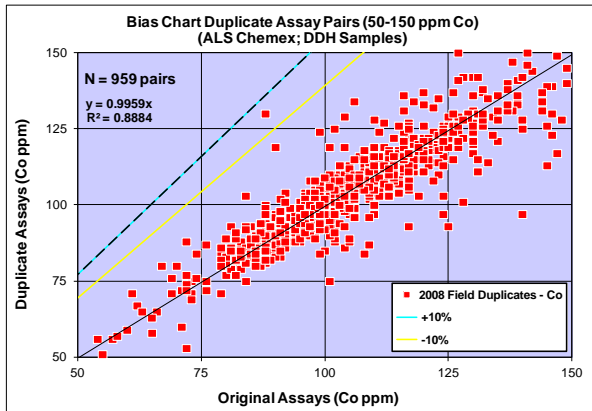
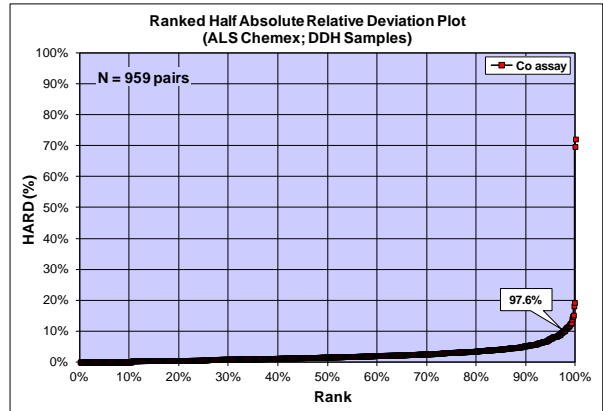
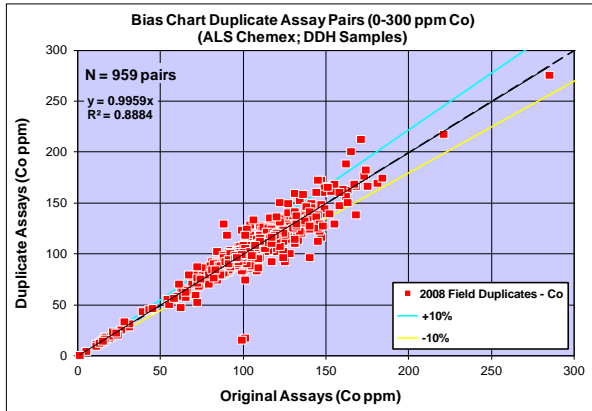


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Cobalt (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Co
Data Type DDH Samples
Commodity Co in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	1	1
Maximum Value	285	276
Mean	104.14	103.87
Median	104	103
Standard Error	0.79	0.82
Standard Deviation	24.55	25.25
Correlation Coefficient	0.9429	
Pairs ≤ 10% HARD	97.6%	

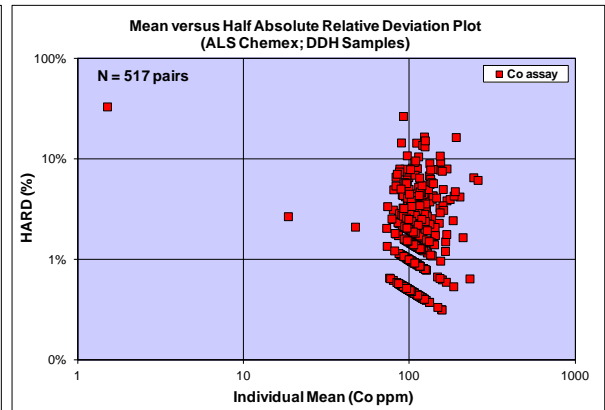
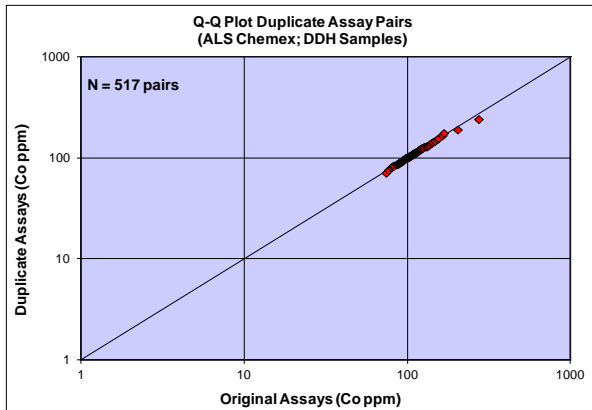
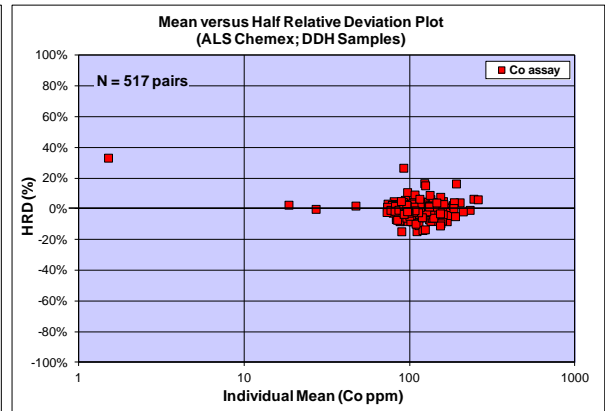
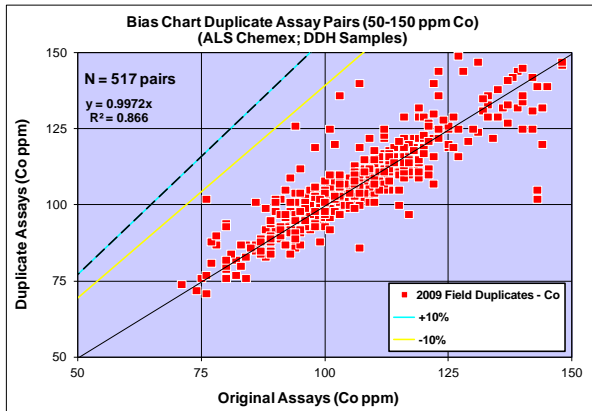
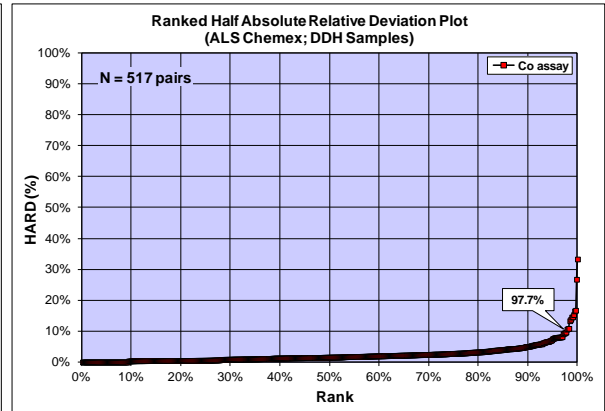
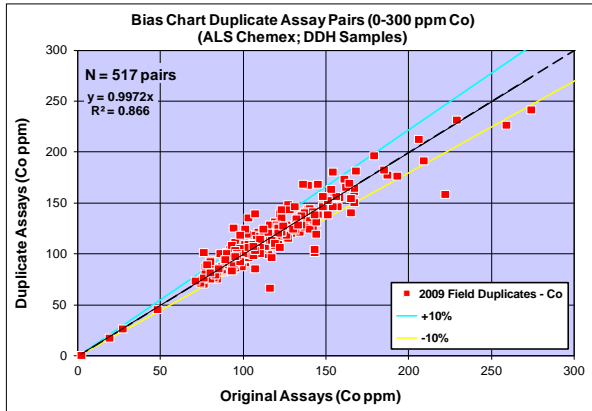


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Cobalt (2009)

srk consulting

Project Dumont
Data Series 2009 Field Duplicates - Co
Data Type DDH Samples
Commodity Co in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	2	1
Maximum Value	274	242
Mean	109.83	110.05
Median	106	106
Standard Error	1.07	1.03
Standard Deviation	24.37	23.44
Correlation Coefficient	0.9362	
Pairs ≤ 10% HARD	97.7%	

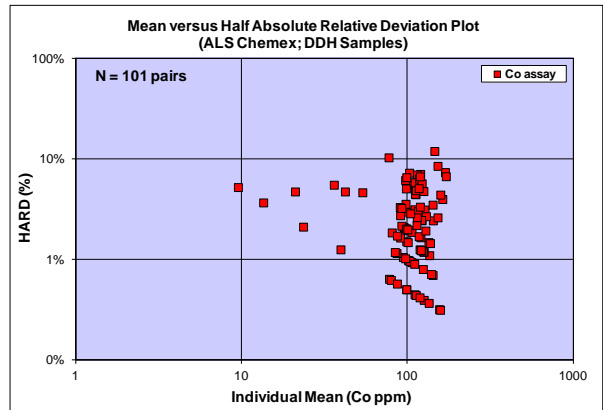
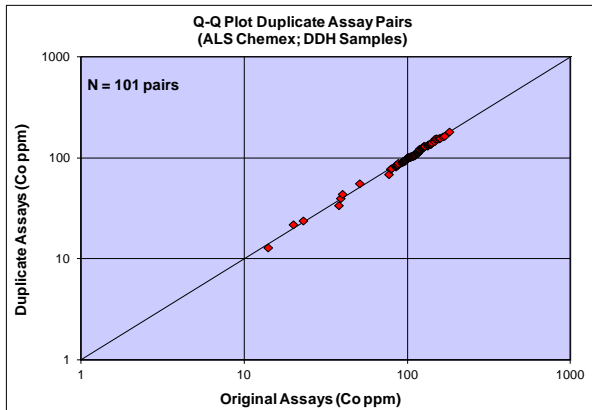
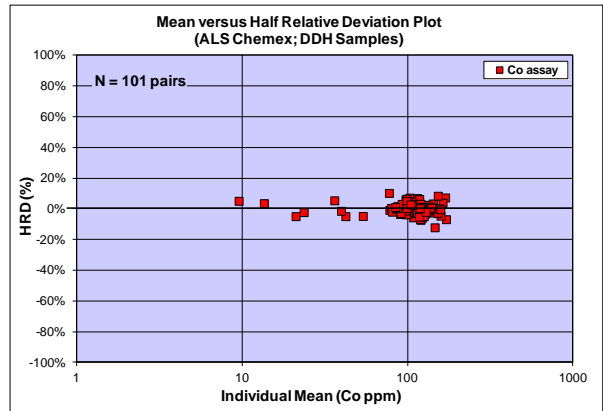
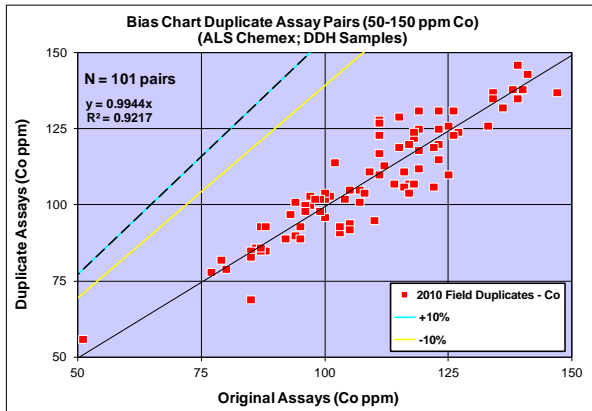
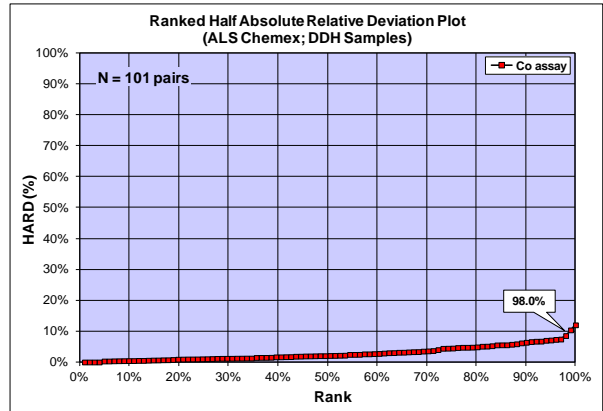
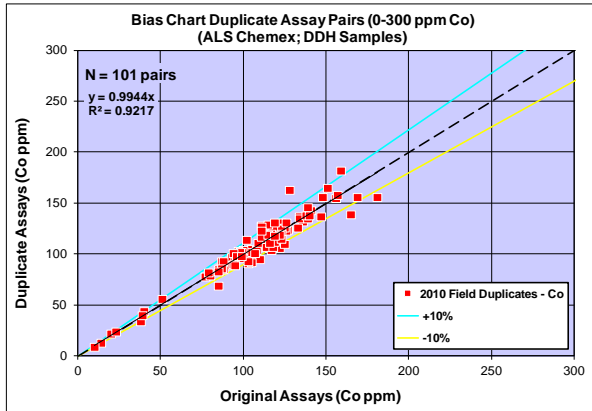


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Cobalt (2010)

srk consulting

Project Dumont
Data Series 2010 Field Duplicates - Co
Data Type DDH Samples
Commodity Co in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	101	101
Minimum Value	10	9
Maximum Value	181	182
Mean	107.39	106.98
Median	111	106
Standard Error	3.10	3.14
Standard Deviation	31.15	31.57
Correlation Coefficient	0.9603	
Pairs ≤ 10% HARD	98.0%	

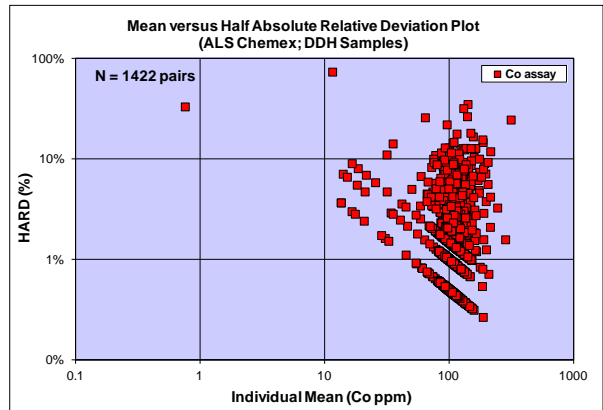
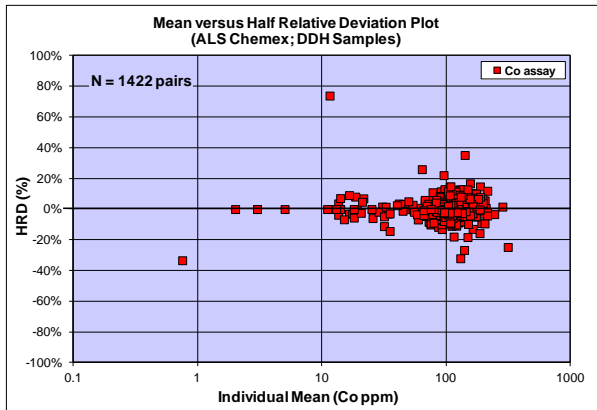
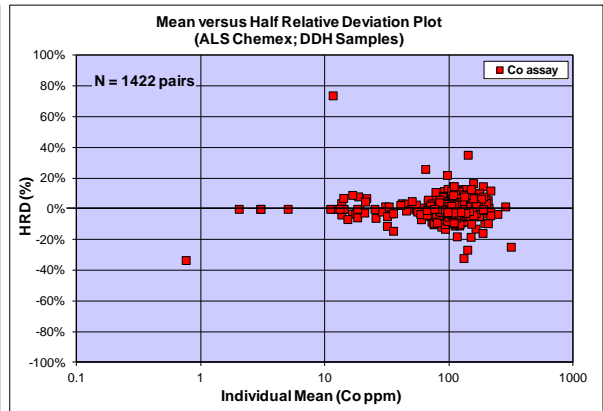
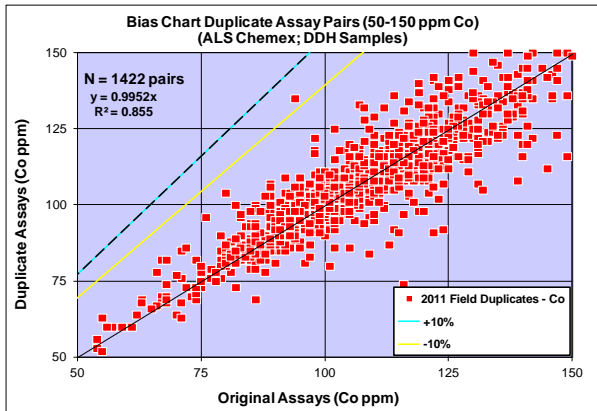
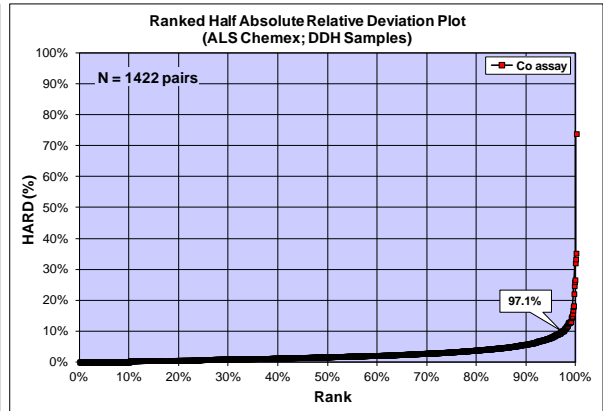
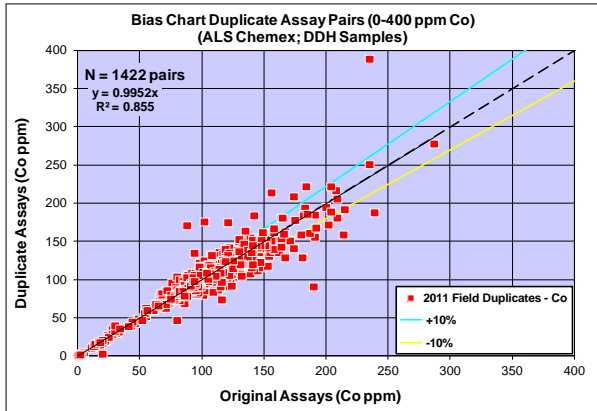


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Cobalt (2011)

srk consulting

Project Dumont
Data Series 2011 Field Duplicates - Co
Data Type DDH Samples
Commodity Co in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	1	1
Maximum Value	287	389
Mean	105.96	105.85
Median	105	105
Standard Error	0.71	0.71
Standard Deviation	26.61	26.89
Correlation Coefficient	0.9266	
Pairs ≤ 10% HARD	97.1%	

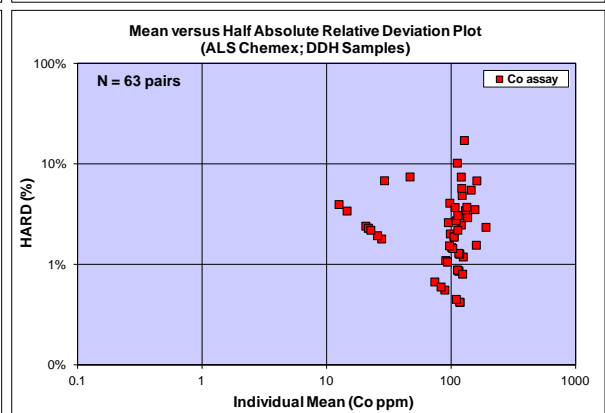
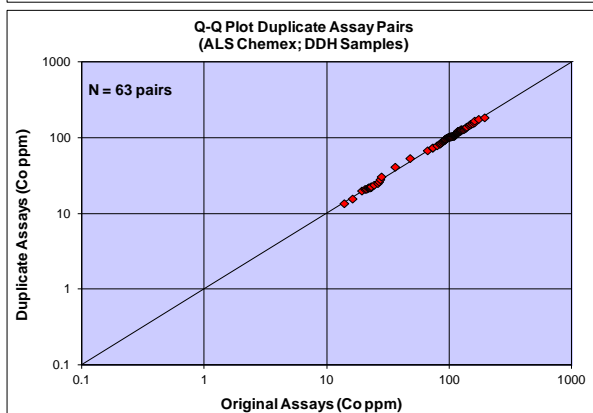
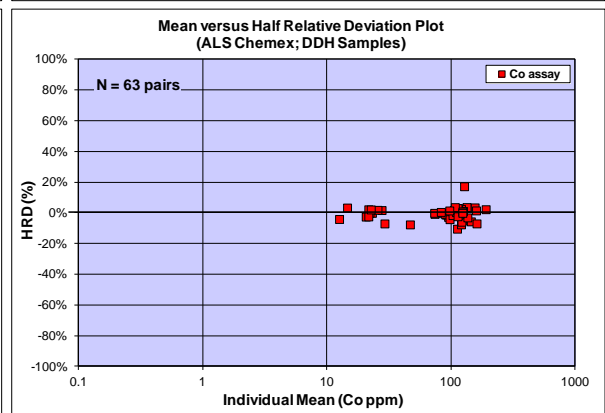
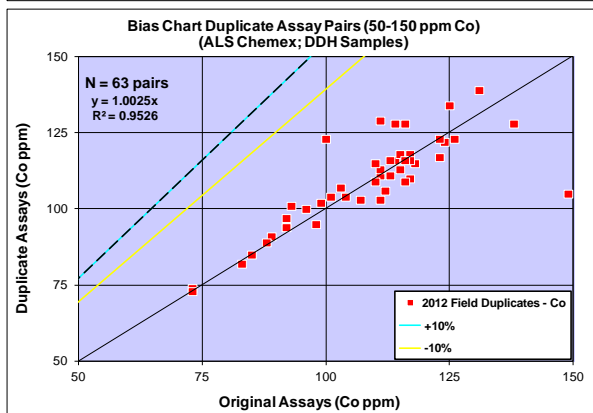
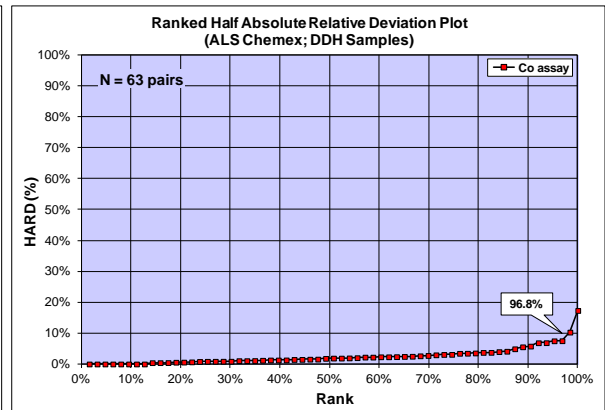
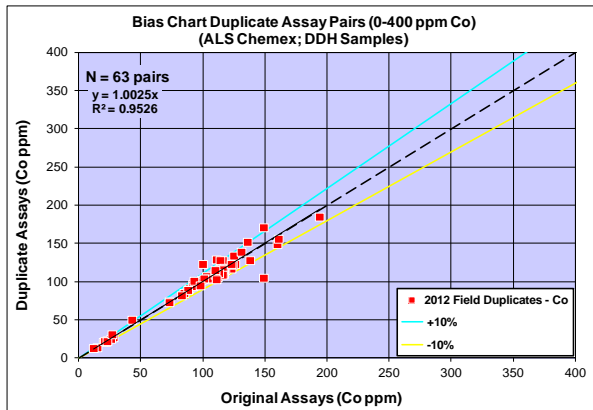


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Cobalt (2012)

srk consulting

Project Dumont
Data Series 2012 Field Duplicates - Co
Data Type DDH Samples
Commodity Co in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	12	13
Maximum Value	194	185
Mean	96.29	97.03
Median	110	107
Standard Error	5.16	5.15
Standard Deviation	40.98	40.84
Correlation Coefficient	0.9765	
Pairs ≤ 10% HARD	96.8%	

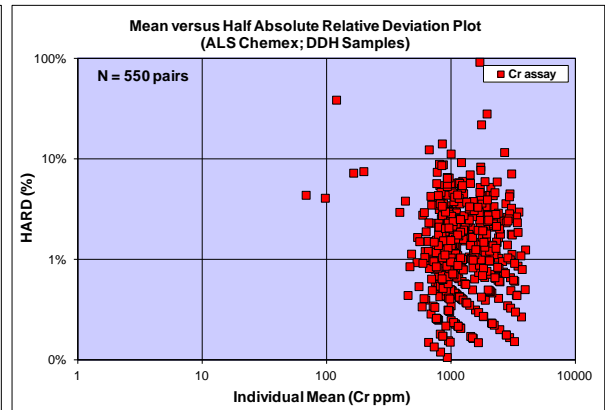
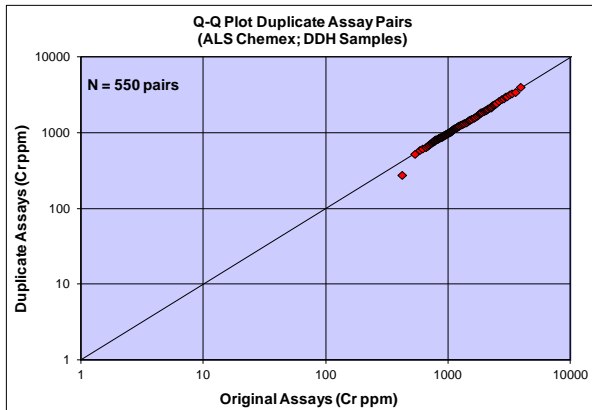
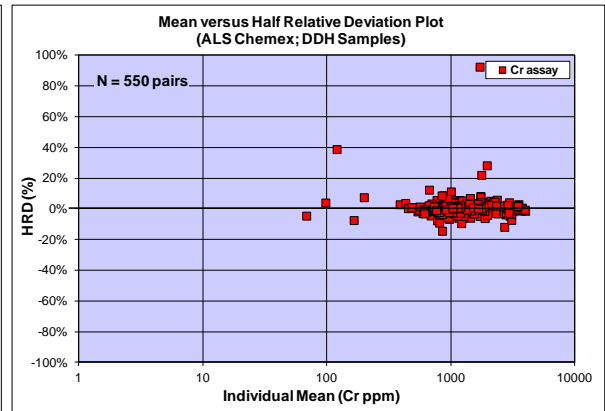
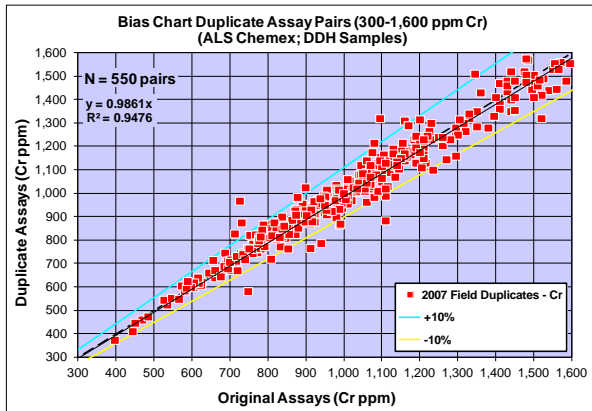
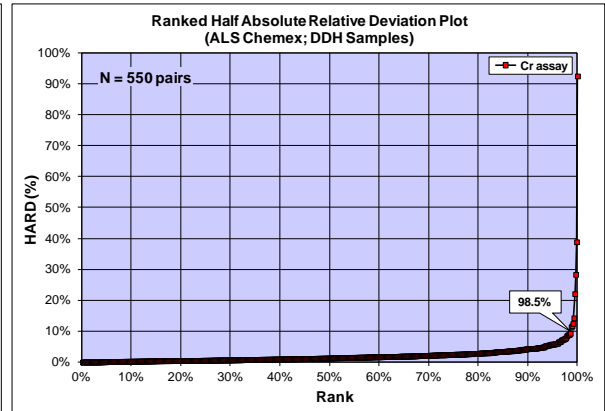
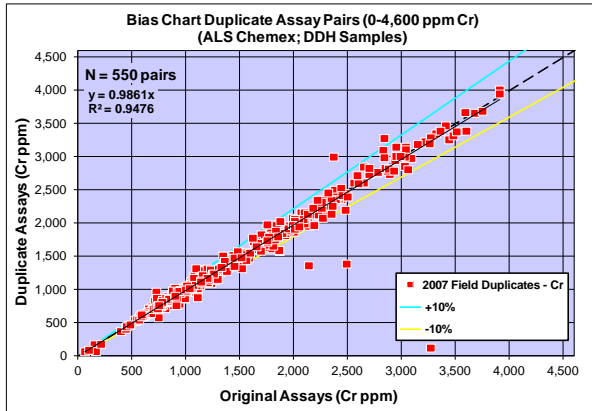


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Chromium (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - Cr
Data Type DDH Samples
Commodity Cr in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	65	71
Maximum Value	3,910	4,010
Mean	1,373.79	1,362.14
Median	1,100.0	1,112.5
Standard Error	30.70	30.48
Standard Deviation	720.09	714.79
Correlation Coefficient	0.9737	
Pairs ≤ 10% HARD	98.5%	

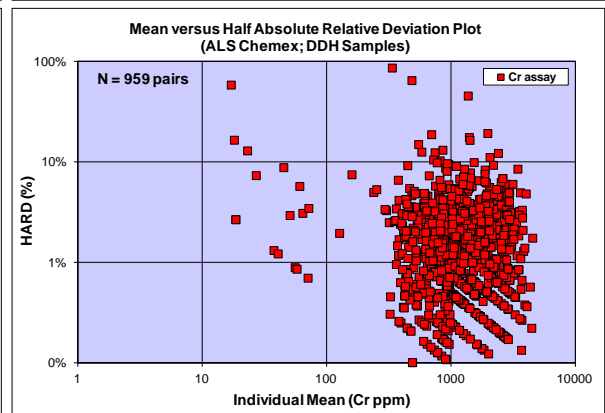
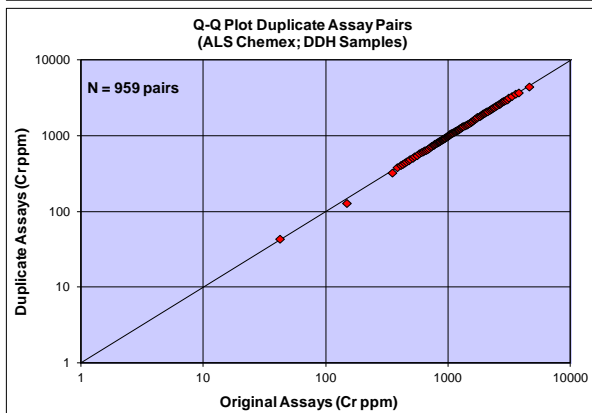
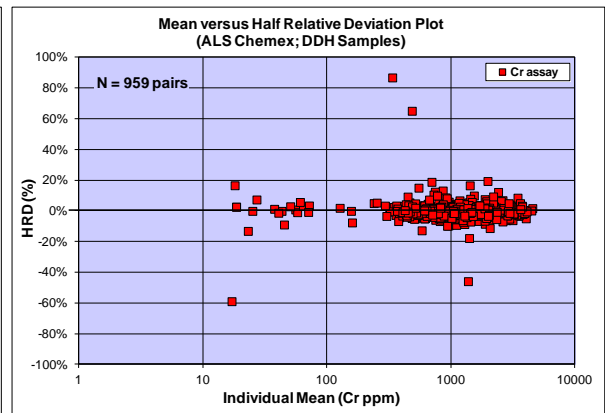
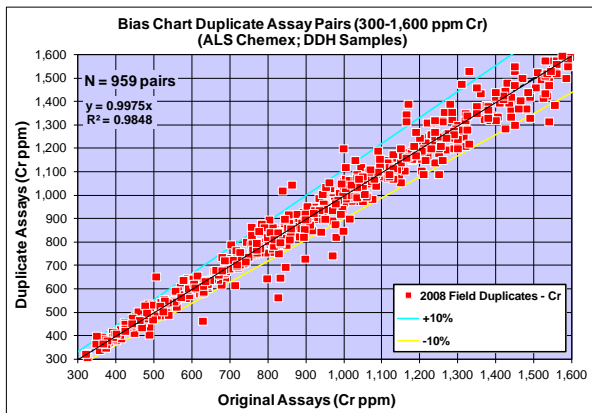
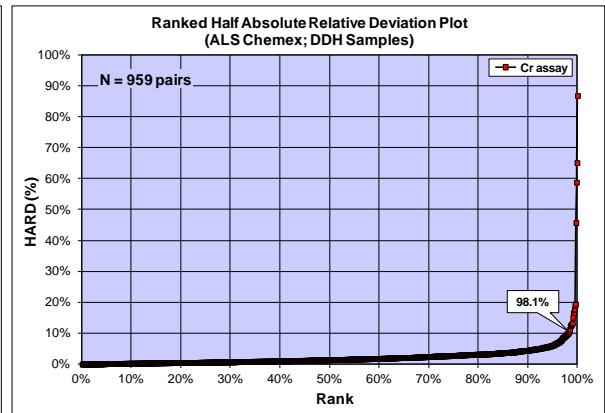
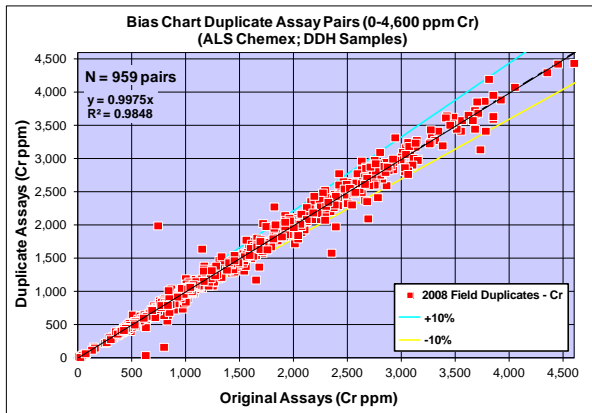


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Chromium (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Cr
Data Type DDH Samples
Commodity Cr in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	7	15
Maximum Value	4,600	4,440
Mean	1,383.31	1,381.21
Median	1,120	1,120
Standard Error	27.50	27.57
Standard Deviation	851.54	853.76
Correlation Coefficient	0.9924	
Pairs ≤ 10% HARD	98.1%	

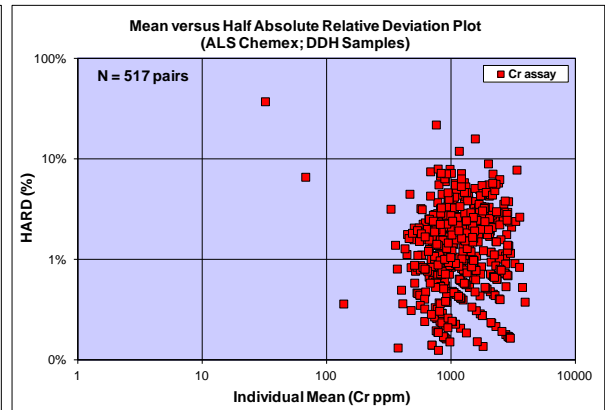
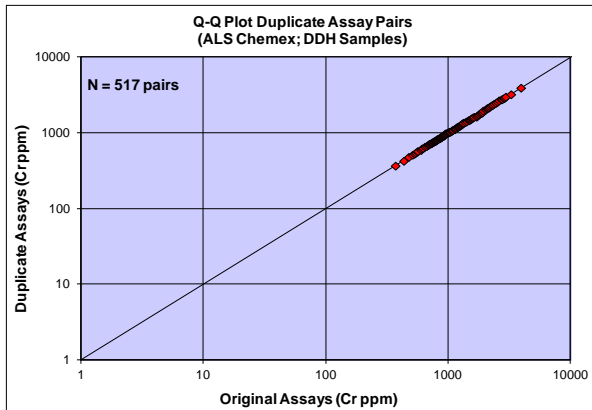
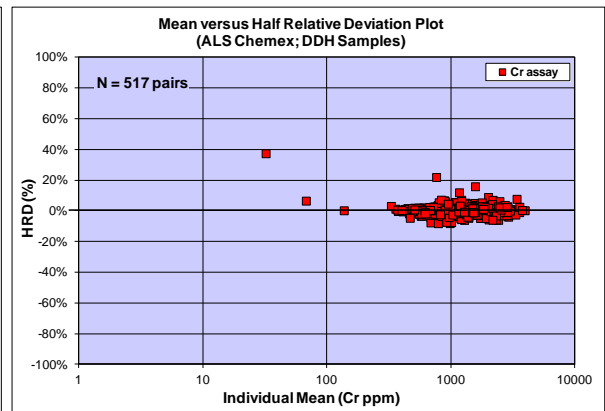
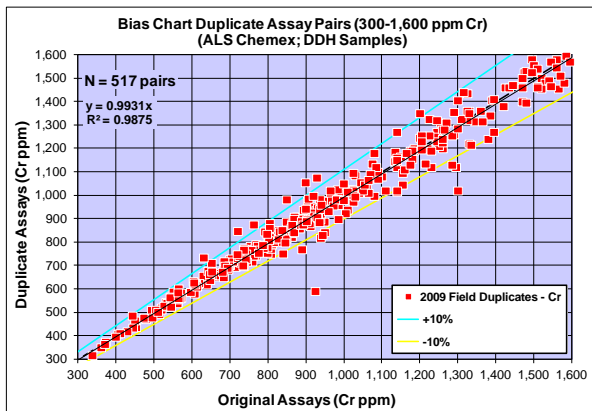
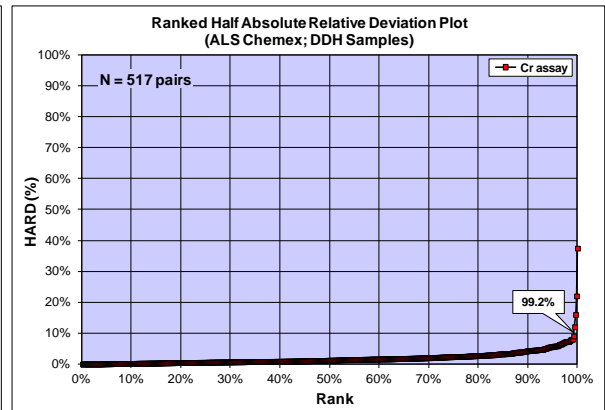
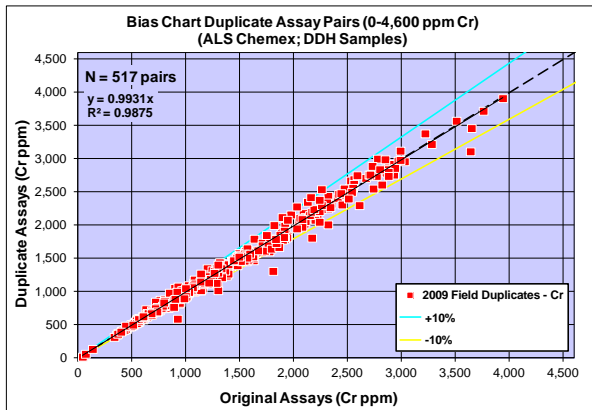


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Chromium (2009)

srk consulting

Project Dumont
Data Series 2009 Field Duplicates - Cr
Data Type DDH Samples
Commodity Cr in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	44	20
Maximum Value	3,940	3,910
Mean	1,286.87	1,279.61
Median	1,025	1,020
Standard Error	31.00	30.84
Standard Deviation	704.77	701.21
Correlation Coefficient	0.9937	
Pairs ≤ 10% HARD	99.2%	

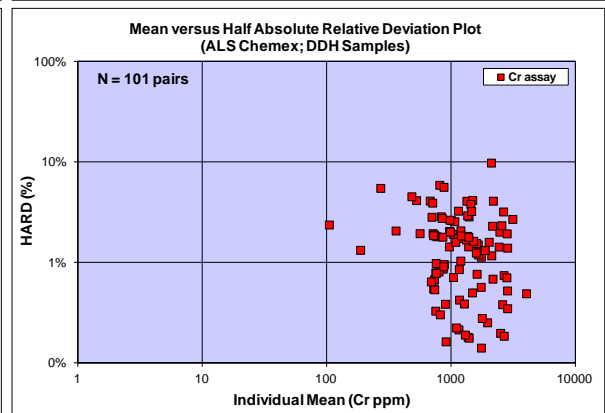
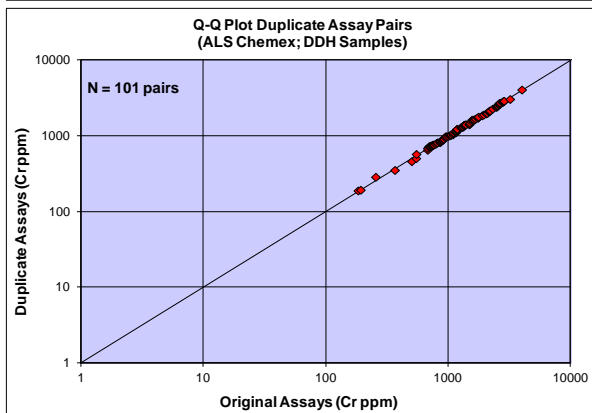
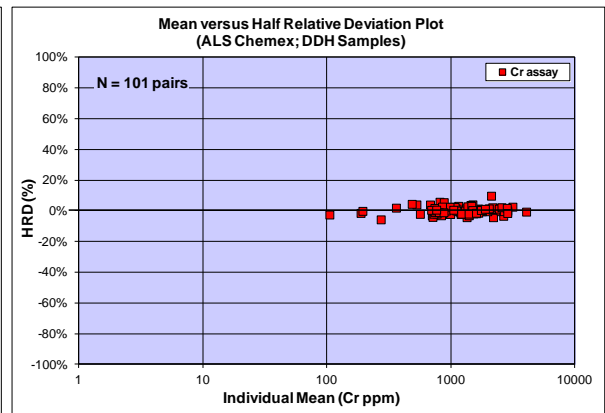
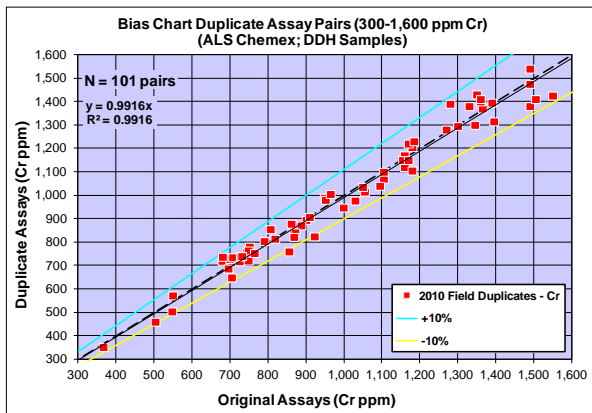
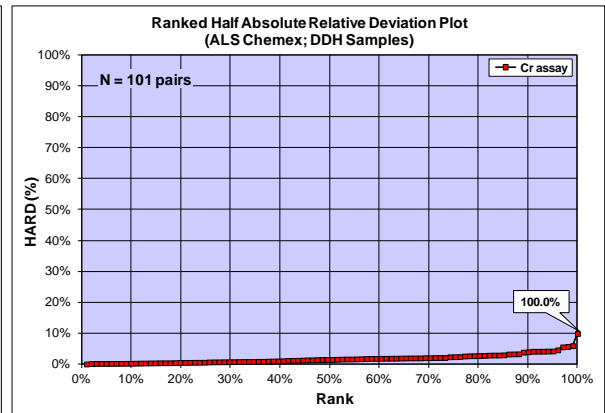
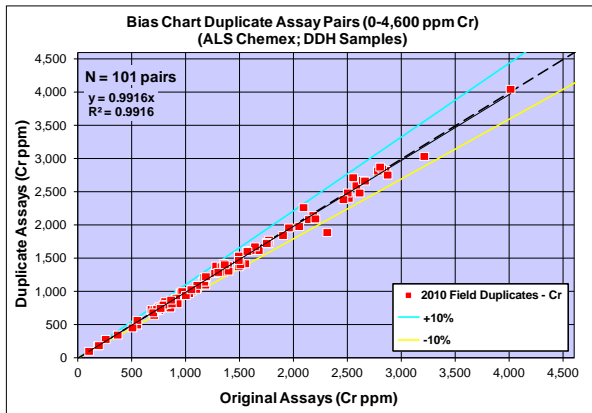


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Chromium (2010)

srk consulting

Project Dumont
Data Series 2010 Field Duplicates - Cr
Data Type DDH Samples
Commodity Cr in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	101	101
Minimum Value	102	107
Maximum Value	4,010	4,050
Mean	1,382.51	1,372.22
Median	1,180	1,205
Standard Error	75.39	74.83
Standard Deviation	757.70	752.00
Correlation Coefficient	0.9958	
Pairs ≤ 10% HARD	100.0%	

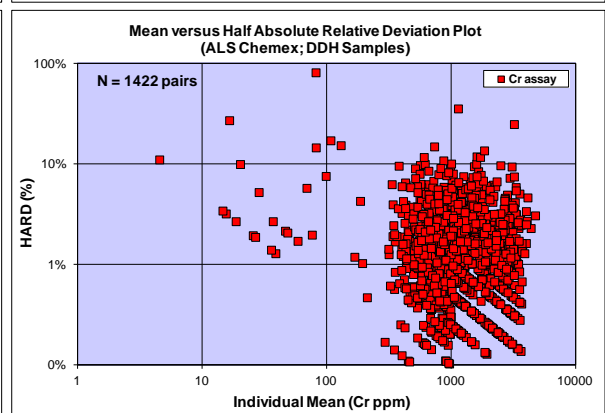
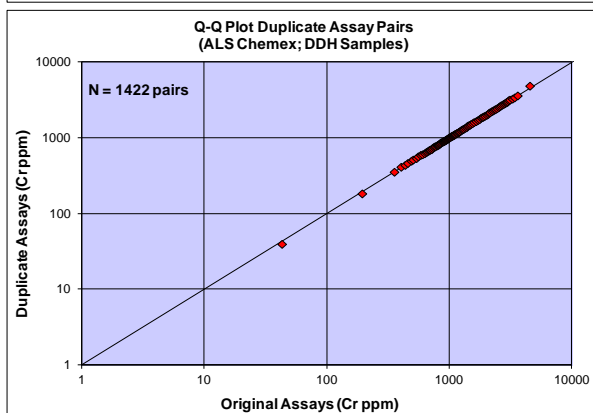
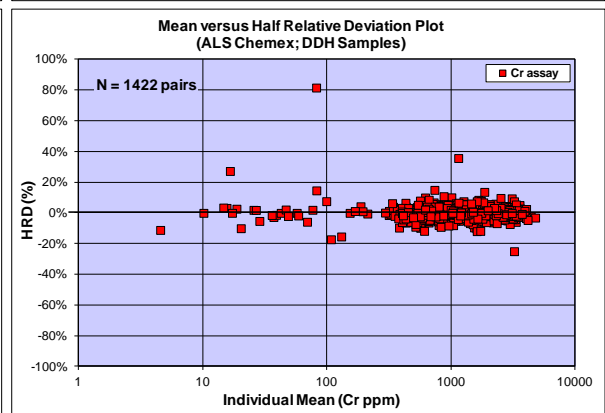
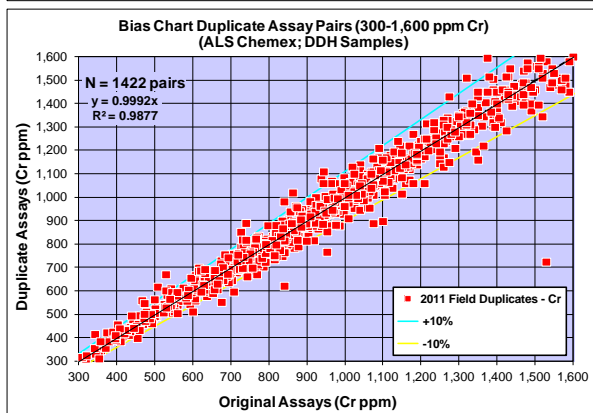
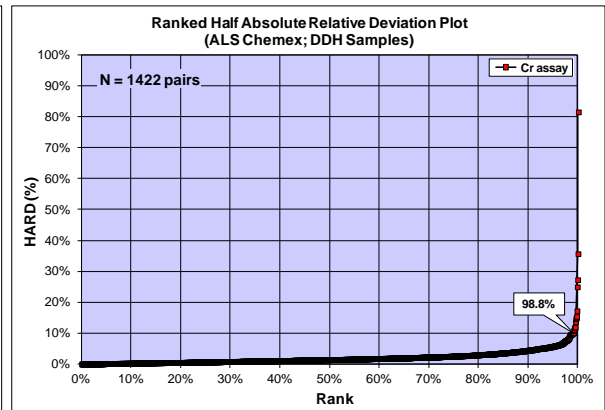
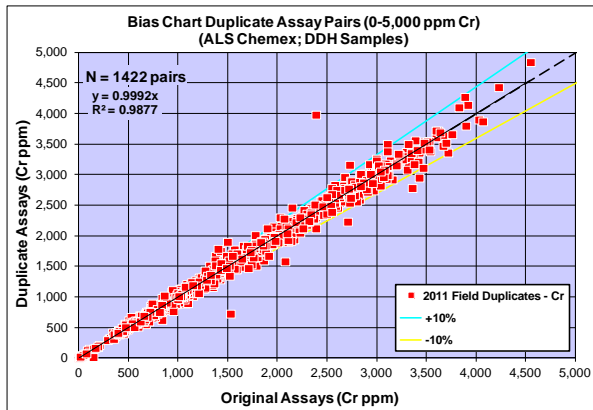


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Chromium (2011)

srk consulting

Project Dumont
Data Series 2011 Field Duplicates - Cr
Data Type DDH Samples
Commodity Cr in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	4	5
Maximum Value	4,550	4,840
Mean	1,395.85	1,395.45
Median	1,100	1,090
Standard Error	22.39	22.48
Standard Deviation	844.34	847.57
Correlation Coefficient	0.9938	
Pairs ≤ 10% HARD	98.8%	

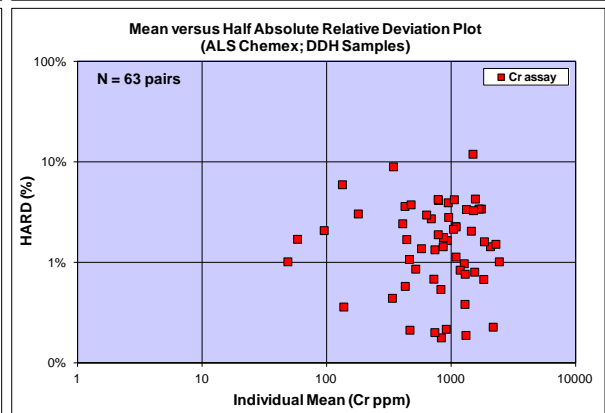
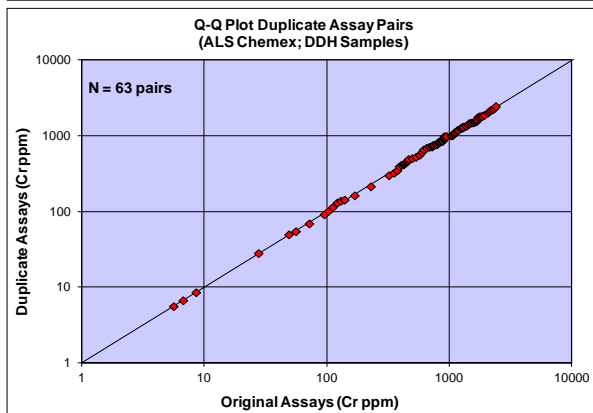
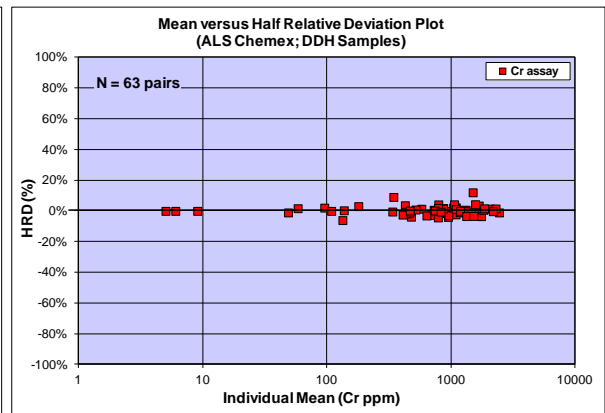
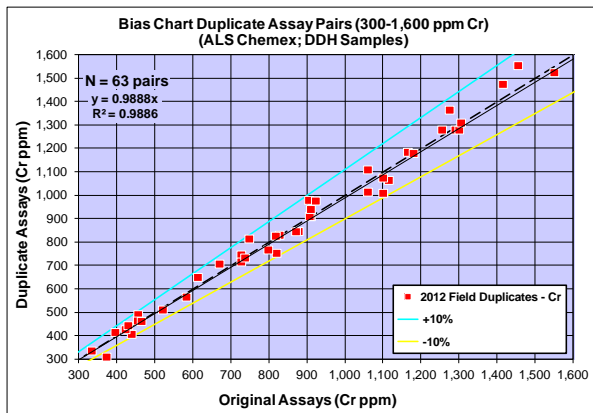
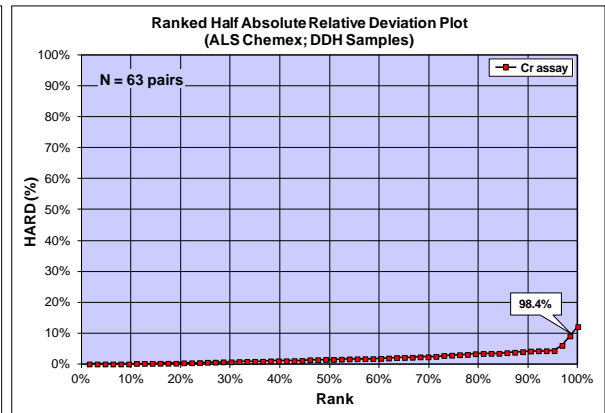
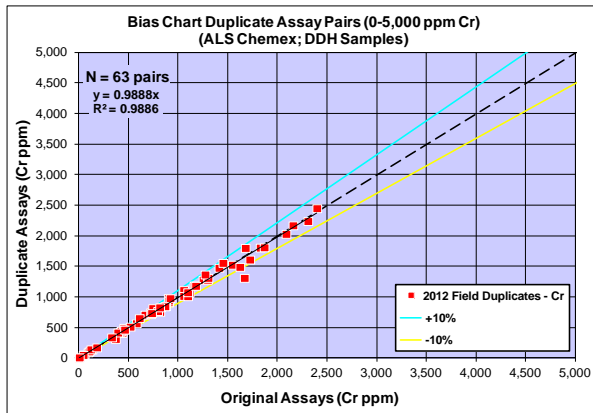


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Chromium (2012)


srk consulting

Project Dumont
Data Series 2012 Field Duplicates - Cr
Data Type DDH Samples
Commodity Cr in ppm
Analytical Method AqR-ICP-AES
Detection Limit 1ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

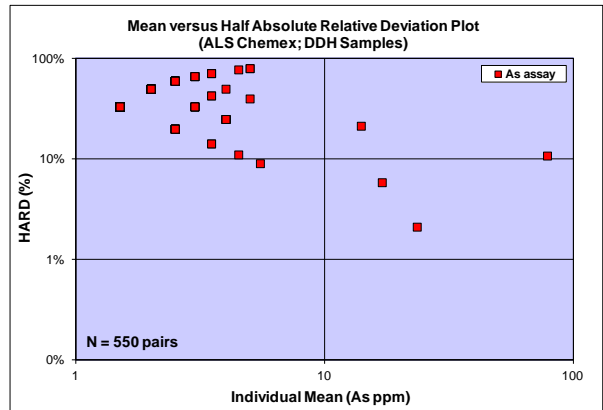
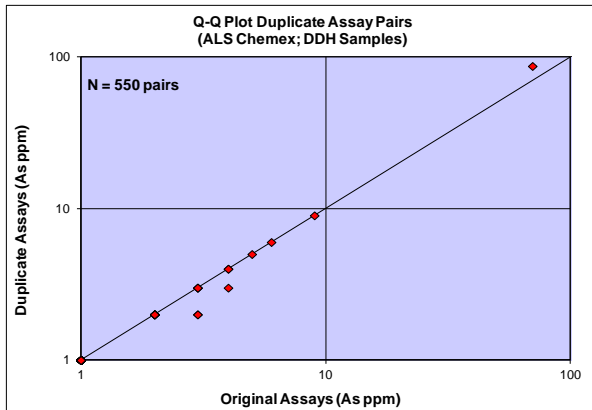
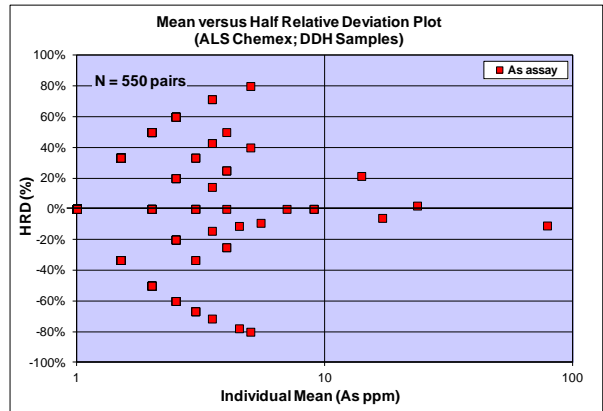
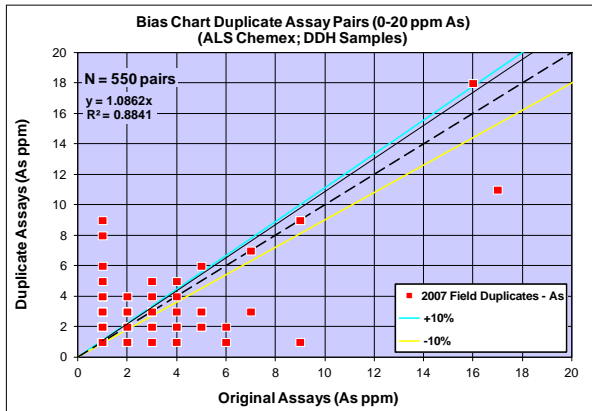
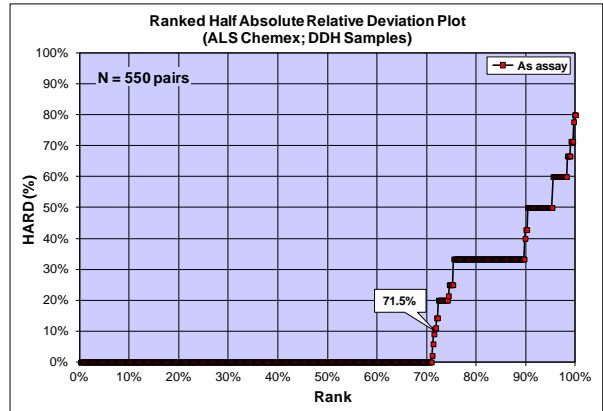
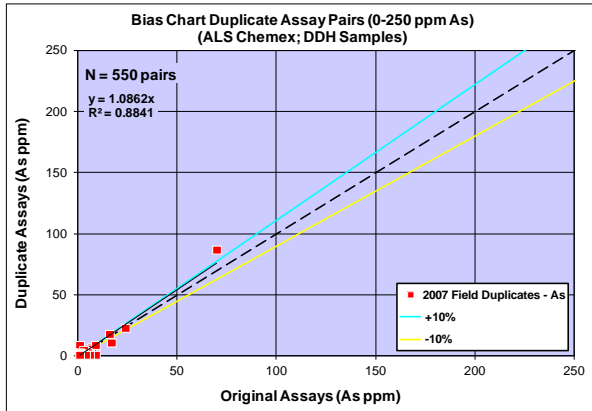
Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	5	5
Maximum Value	2,400	2,450
Mean	911.56	904.92
Median	871	846
Standard Error	76.61	75.48
Standard Deviation	608.06	599.08
Correlation Coefficient	0.9944	
Pairs ≤ 10% HARD	98.4%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Arsenic (2007)

	
Project	Dumont
Data Series	2007 Field Duplicates - As
Data Type	DDH Samples
Commodity	As in ppm
Analytical Method	AqR-ICP-AES
Detection Limit	2ppm
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	550	550
Minimum Value	1	1
Maximum Value	70	87
Mean	1.66	1.65
Median	1	1
Standard Error	0.14	0.17
Standard Deviation	3.40	4.00
Correlation Coefficient	0.9412	
Pairs ≤ 10% HARD	71.5%	

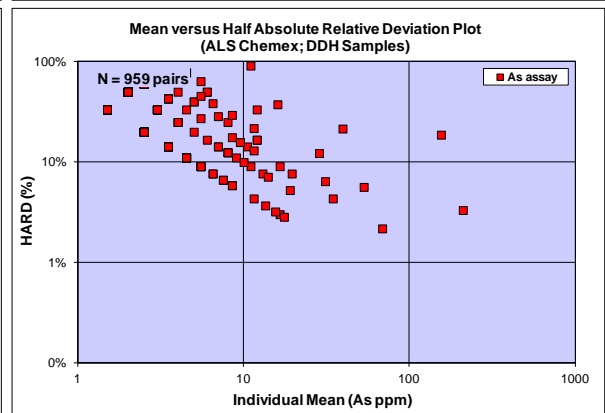
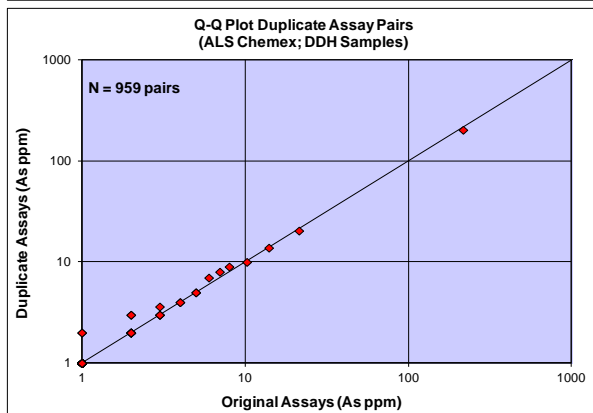
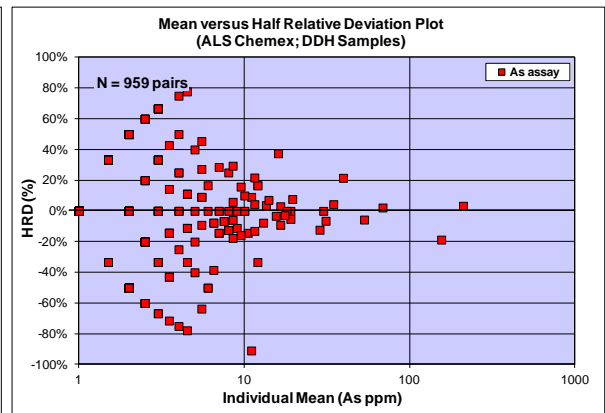
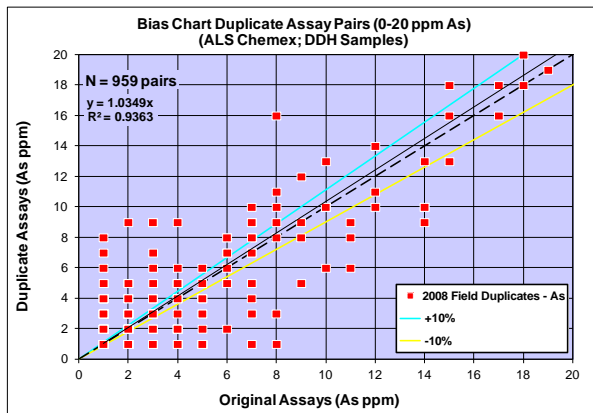
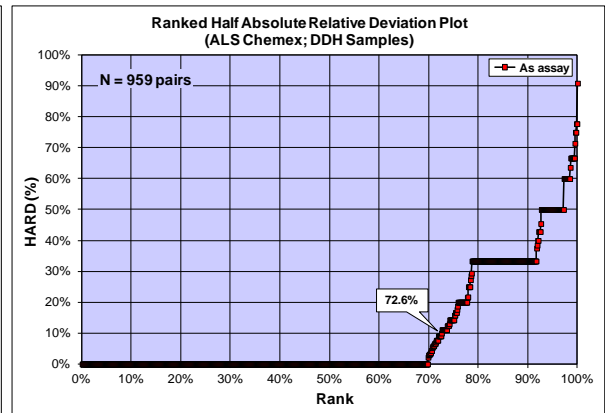
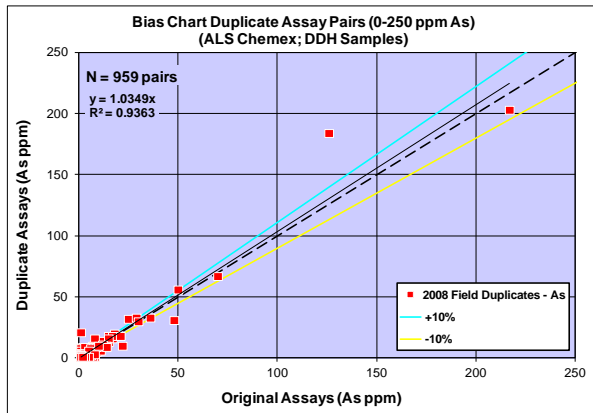


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Arsenic (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - As
Data Type DDH Samples
Commodity As in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	1	1
Maximum Value	217	203
Mean	2.5	2.6
Median	1	1
Standard Error	0.29	0.31
Standard Deviation	9.10	9.73
Correlation Coefficient	0.9676	
Pairs ≤ 10% HARD	72.6%	

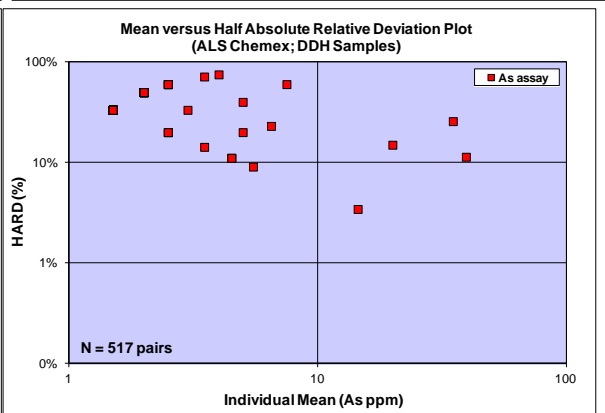
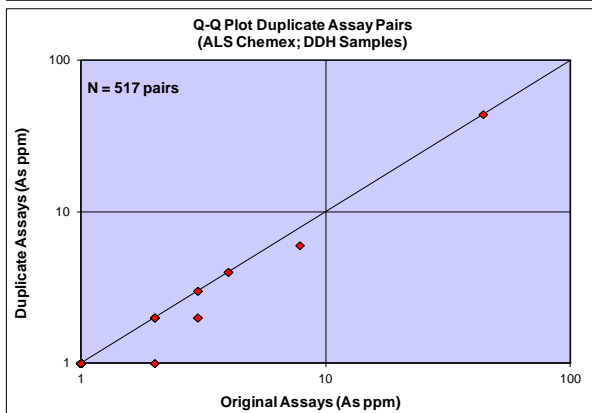
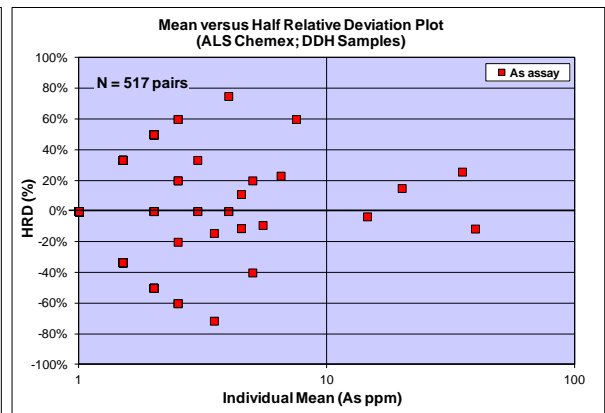
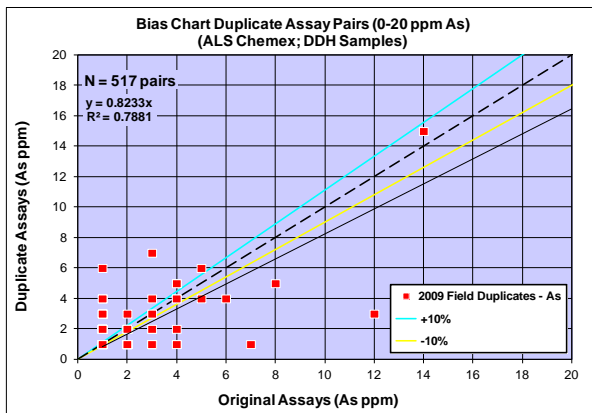
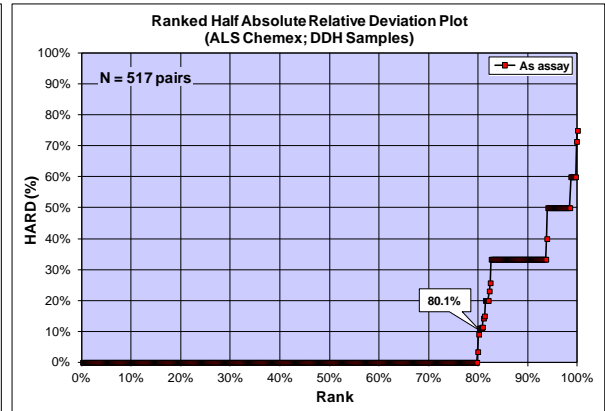
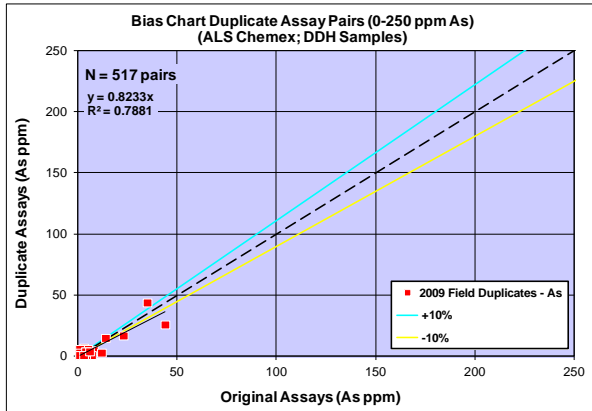


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Arsenic (2009)

srk consulting

Project Dumont
Data Series 2009 Field Duplicates - As
Data Type DDH Samples
Commodity As in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	1	1
Maximum Value	44	44
Mean	1.49	1.40
Median	1	1
Standard Error	0.12	0.11
Standard Deviation	2.78	2.46
Correlation Coefficient	0.8915	
Pairs ≤ 10% HARD	80.1%	

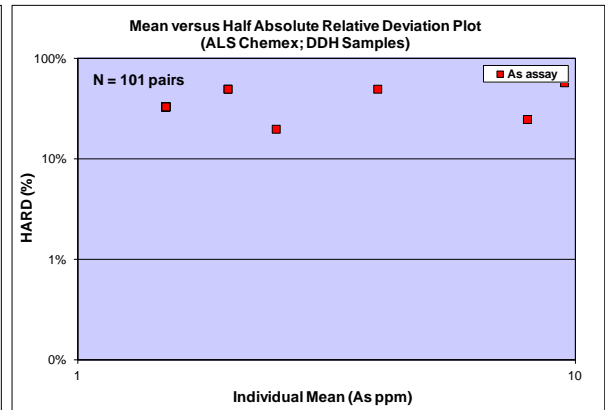
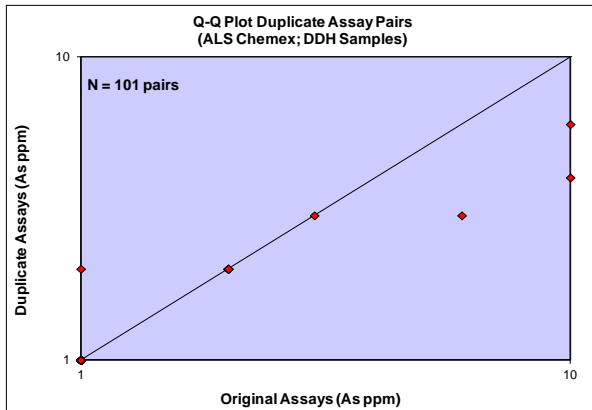
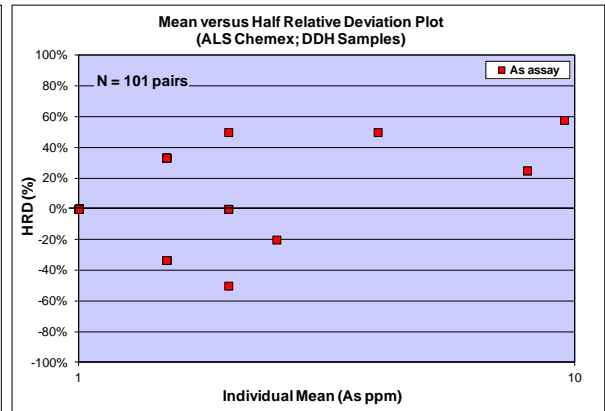
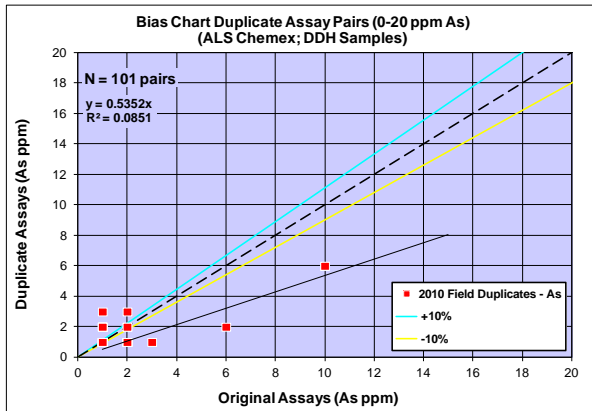
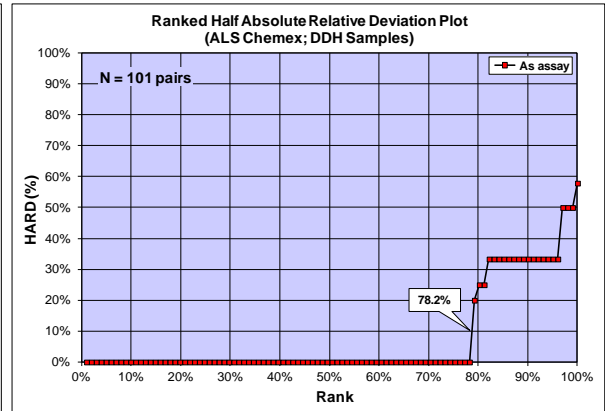
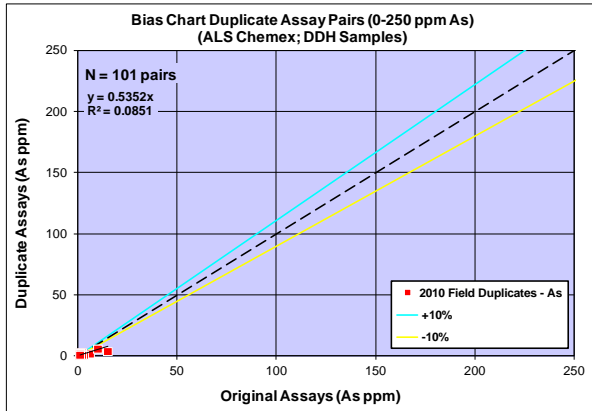


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Arsenic (2010)

srk consulting

Project Dumont
Data Series 2010 Field Duplicates - As
Data Type DDH Samples
Commodity As in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	101	101
Minimum Value	1	1
Maximum Value	15	6
Mean	1.49	1.28
Median	1	1
Standard Error	0.19	0.08
Standard Deviation	1.93	0.84
Correlation Coefficient	0.7870	
Pairs ≤ 10% HARD	78.2%	

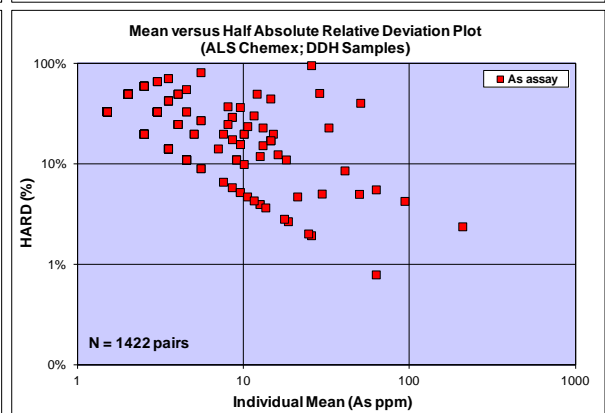
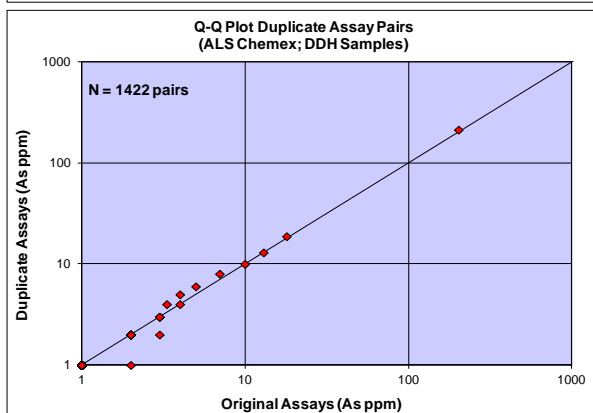
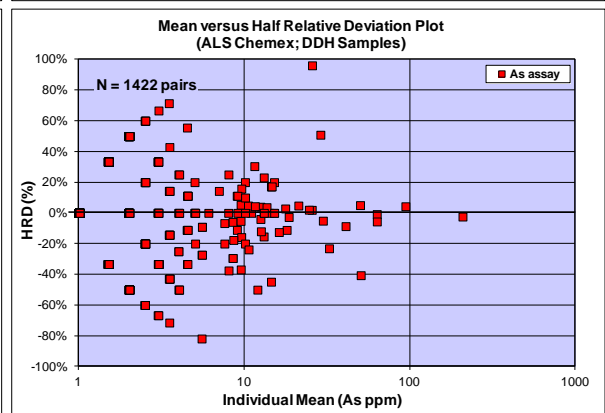
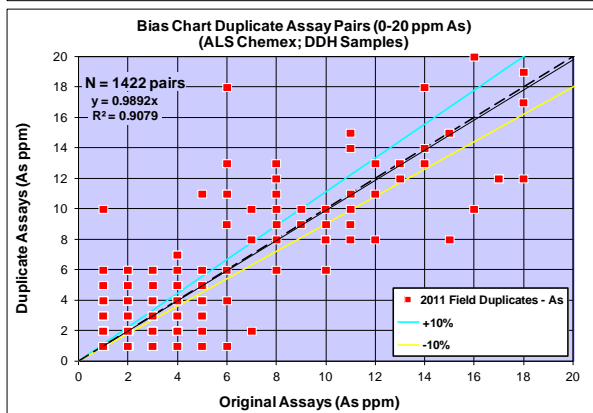
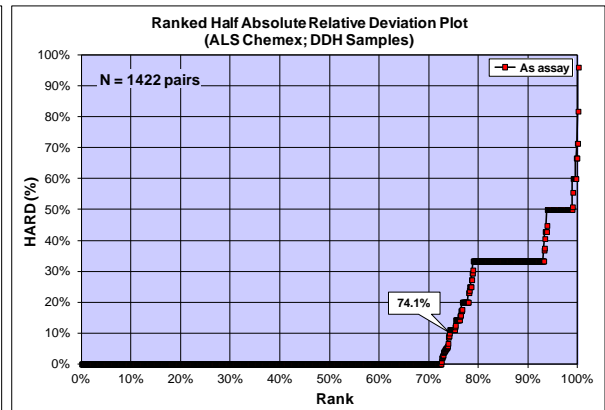
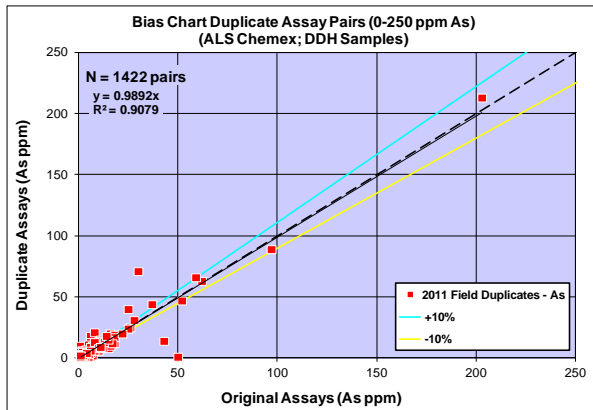


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Arsenic (2011)

srk consulting

Project Dumont
Data Series 2011 Field Duplicates - As
Data Type DDH Samples
Commodity As in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	1	1
Maximum Value	203	213
Mean	2.19	2.21
Median	1	1
Standard Error	0.19	0.20
Standard Deviation	7.20	7.46
Correlation Coefficient	0.9529	
Pairs ≤ 10% HARD	74.1%	

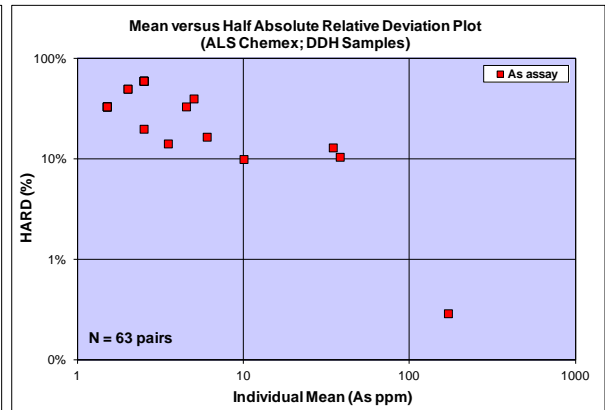
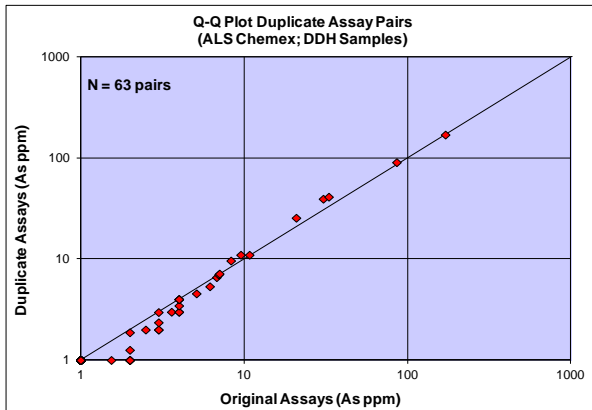
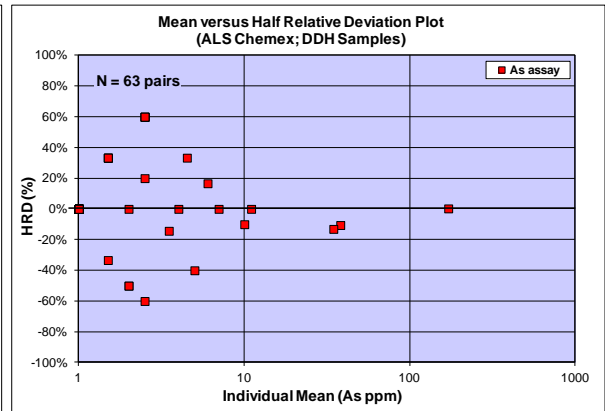
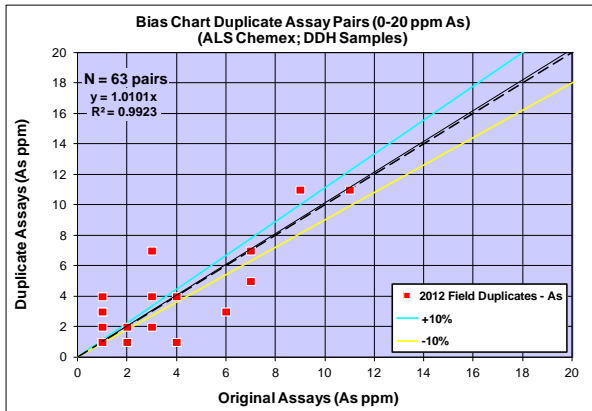
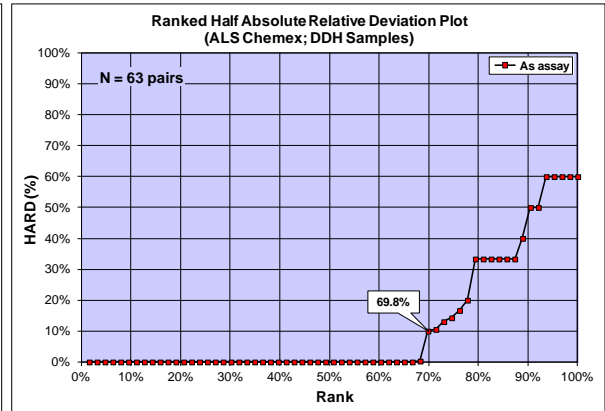
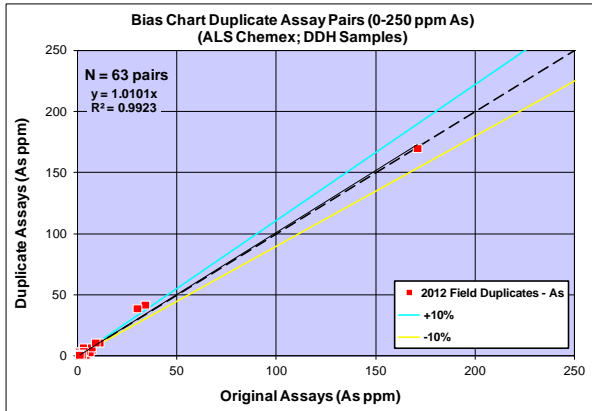


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Arsenic (2012)

srk consulting

Project Dumont
Data Series 2012 Field Duplicates - As
Data Type DDH Samples
Commodity As in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	1	1
Maximum Value	171	170
Mean	5.65	5.79
Median	1	1
Standard Error	2.76	2.80
Standard Deviation	21.92	22.20
Correlation Coefficient	0.9961	
Pairs \leq 10% HARD	69.8%	

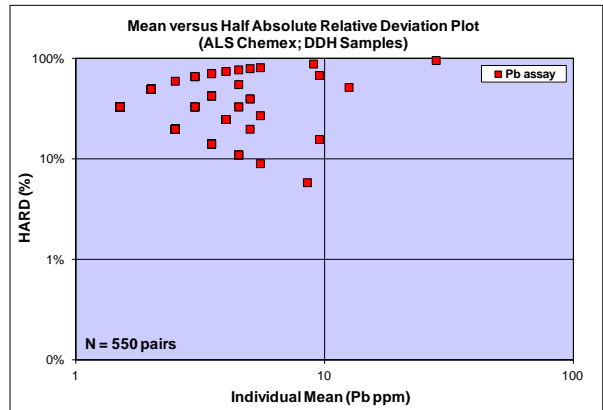
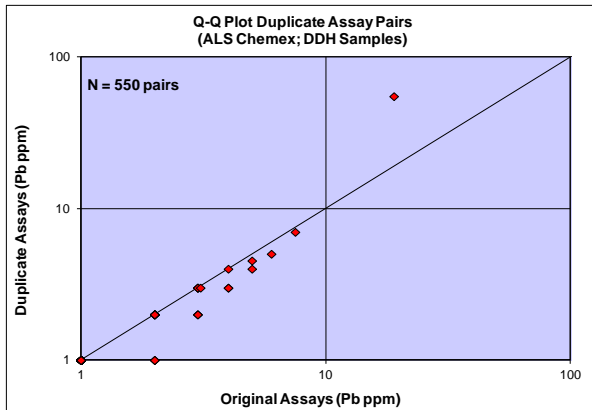
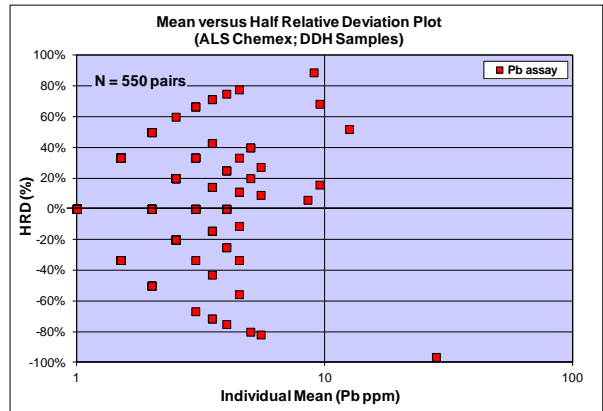
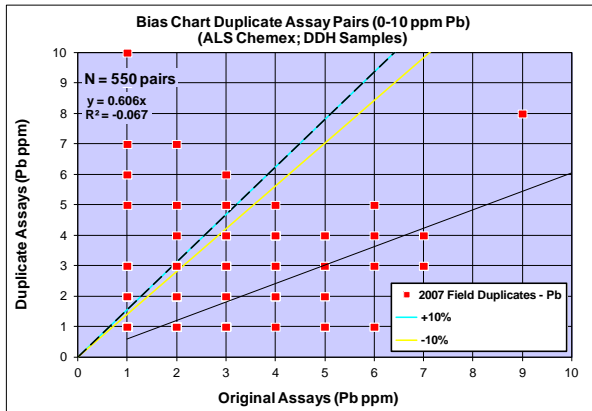
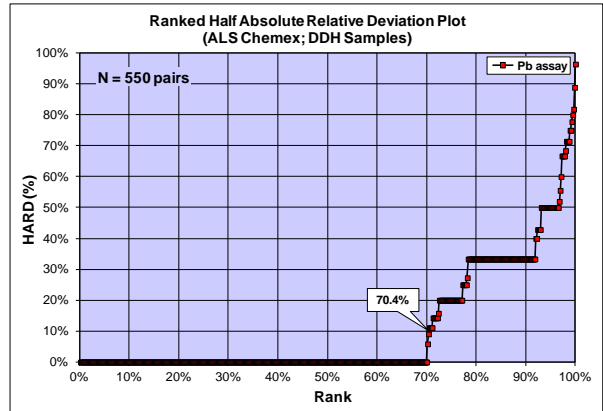
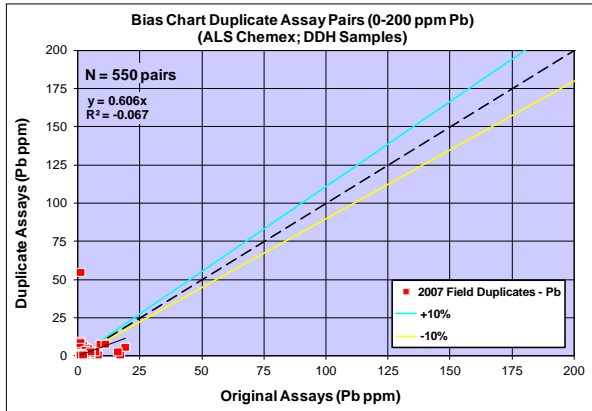


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Lead (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - Pb
Data Type DDH Samples
Commodity Pb in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	1	1
Maximum Value	19	55
Mean	1.68	1.60
Median	1	1
Standard Error	0.07	0.11
Standard Deviation	1.71	2.55
Correlation Coefficient	0.1837	
Pairs ≤ 10% HARD	70.4%	

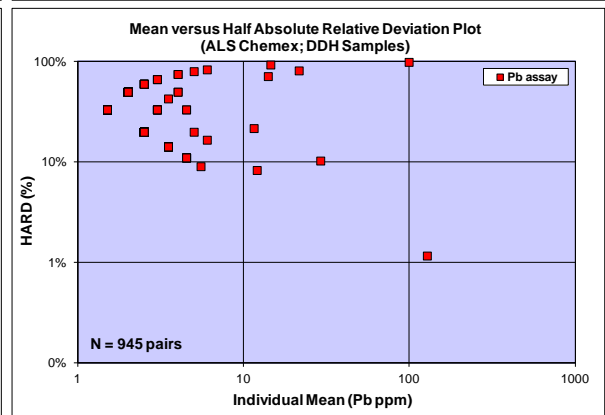
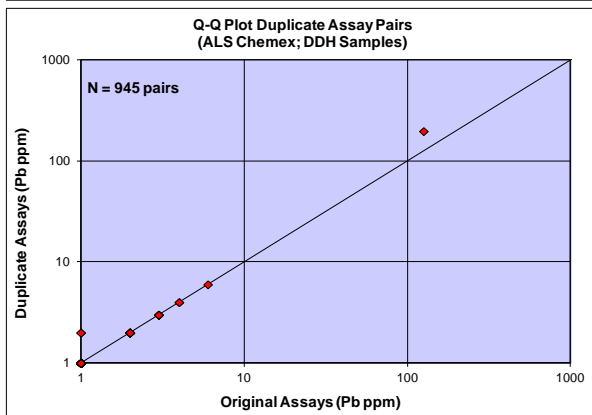
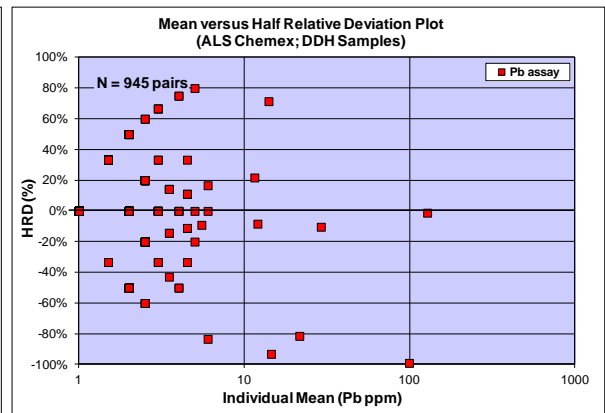
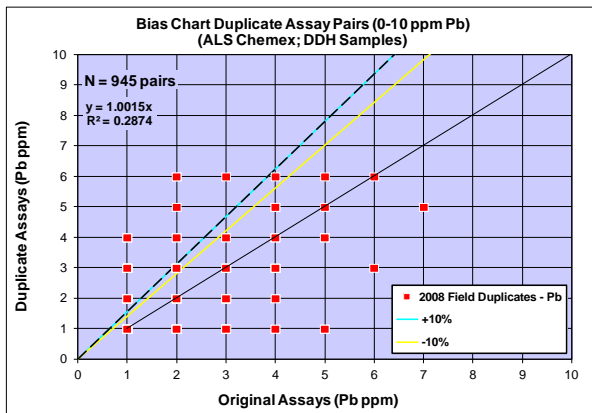
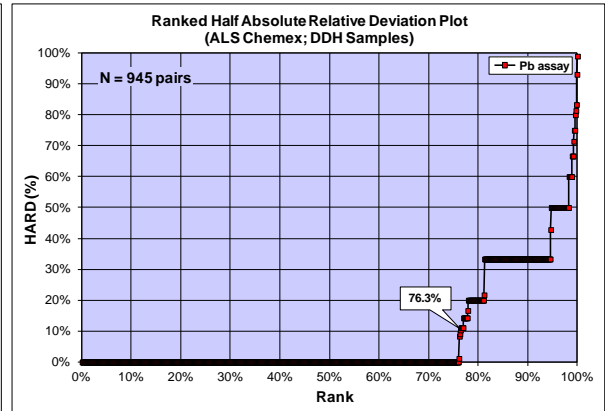
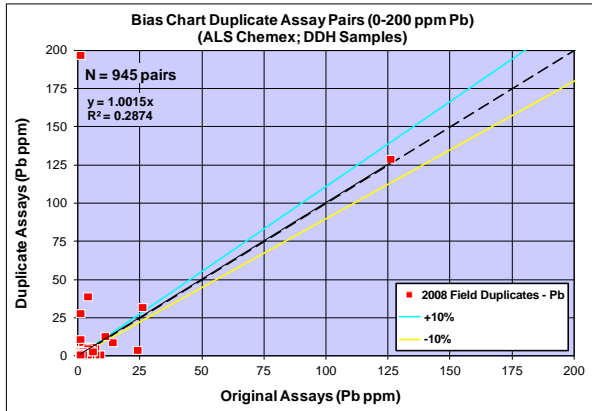


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Lead (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Pb
Data Type DDH Samples
Commodity Pb in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	1	1
Maximum Value	126	197
Mean	1.53	1.80
Median	1	1
Standard Error	0.14	0.25
Standard Deviation	4.28	7.80
Correlation Coefficient	0.5373	
Pairs ≤ 10% HARD	76.3%	

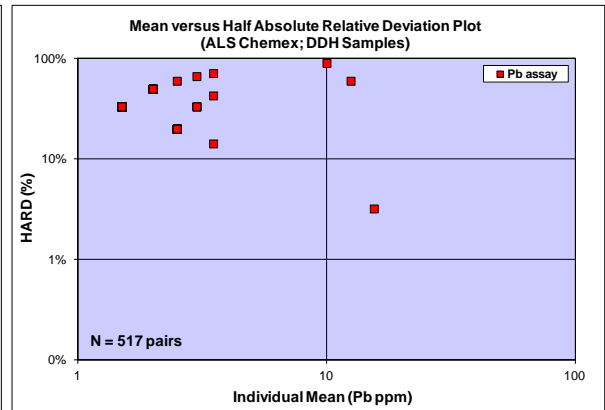
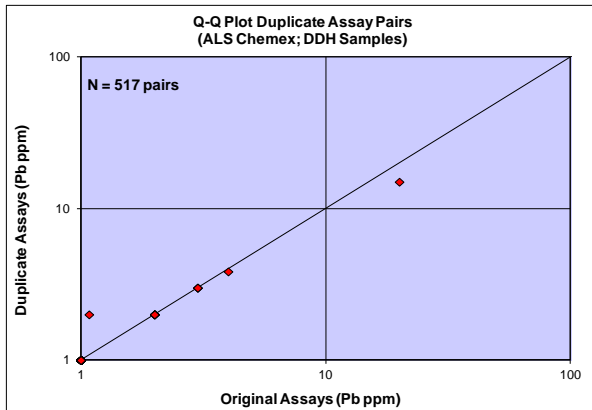
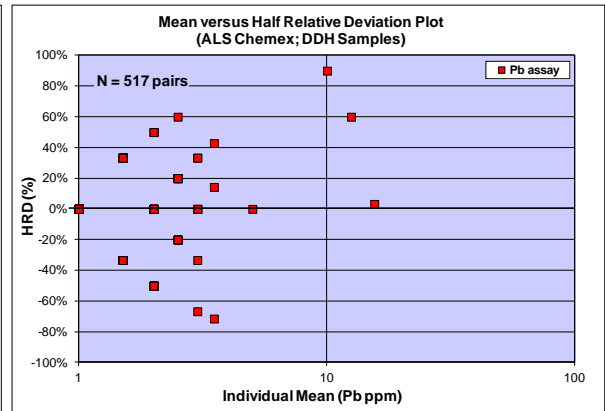
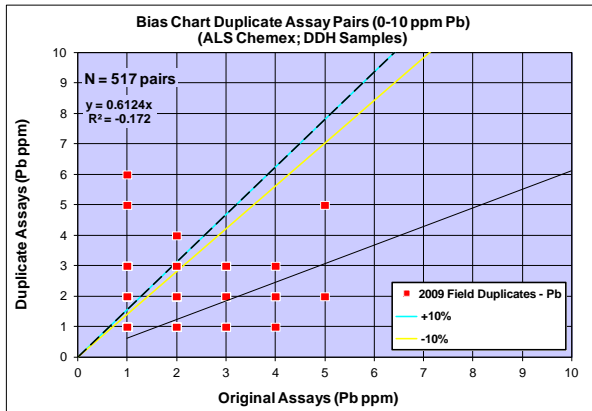
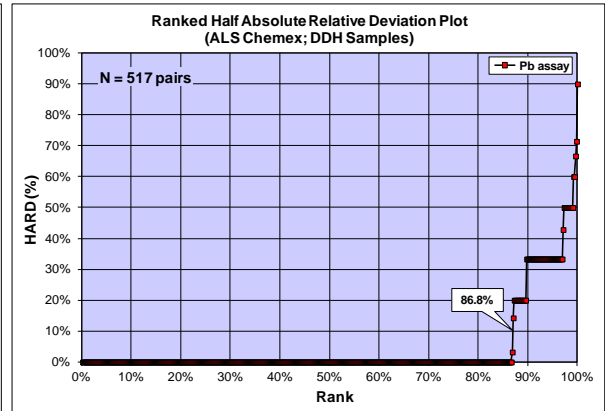
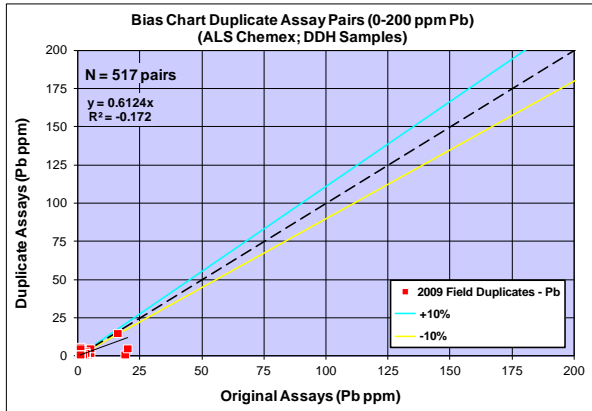


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Lead (2009)

srk consulting

Project Dumont
Data Series 2009 Field Duplicates - Pb
Data Type DDH Samples
Commodity Pb in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	1	1
Maximum Value	20	15
Mean	1.27	1.22
Median	1.0	1.0
Standard Error	0.06	0.04
Standard Deviation	1.42	0.84
Correlation Coefficient	0.5642	
Pairs ≤ 10% HARD	86.8%	

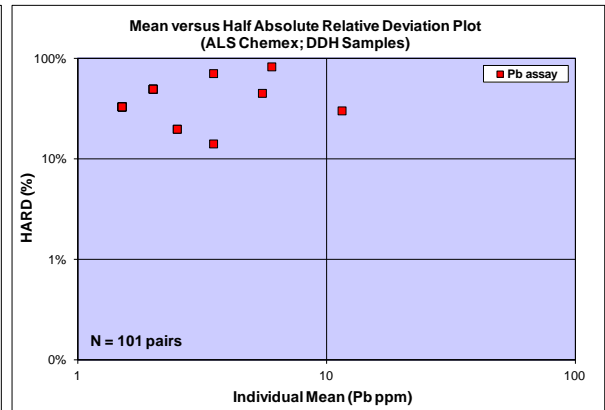
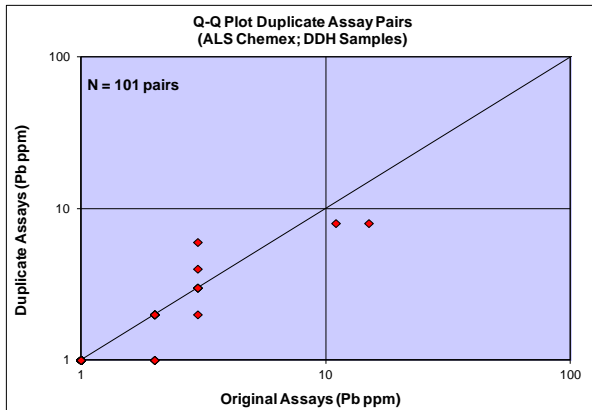
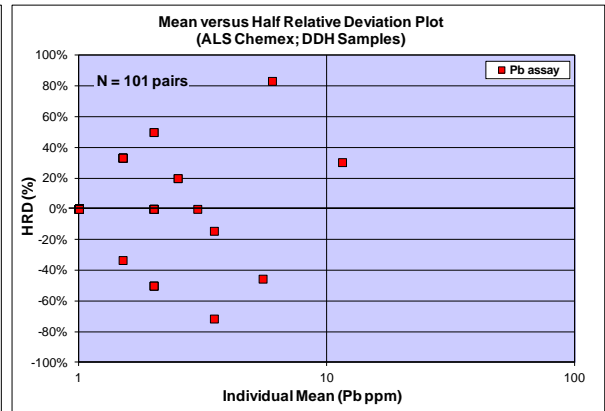
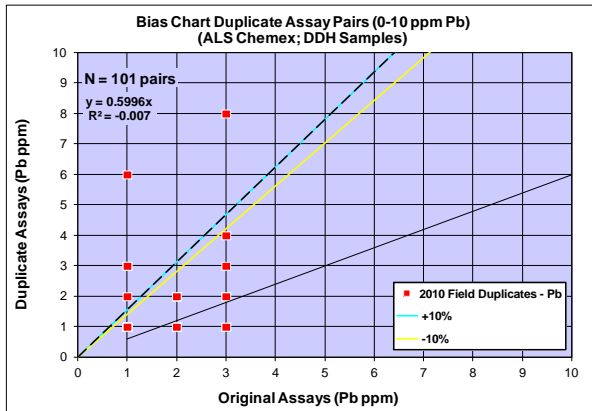
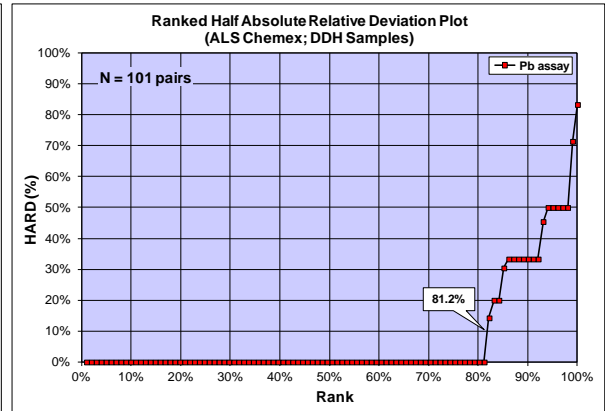
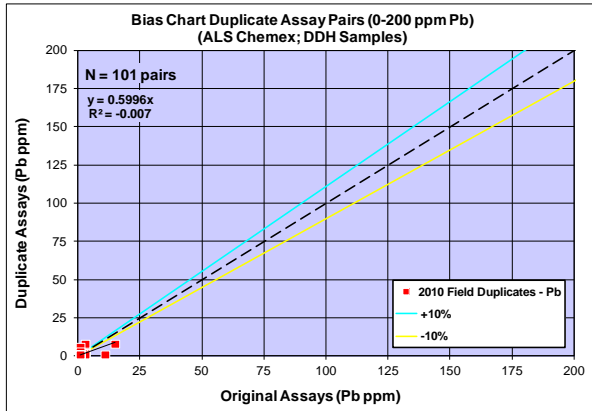


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Lead (2010)

srk consulting

Project Dumont
Data Series 2010 Field Duplicates - Pb
Data Type DDH Samples
Commodity Pb in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	101	101
Minimum Value	1	1
Maximum Value	15	8
Mean	1.50	1.39
Median	1	1
Standard Error	0.18	0.12
Standard Deviation	1.76	1.19
Correlation Coefficient	0.5362	
Pairs ≤ 10% HARD	81.2%	

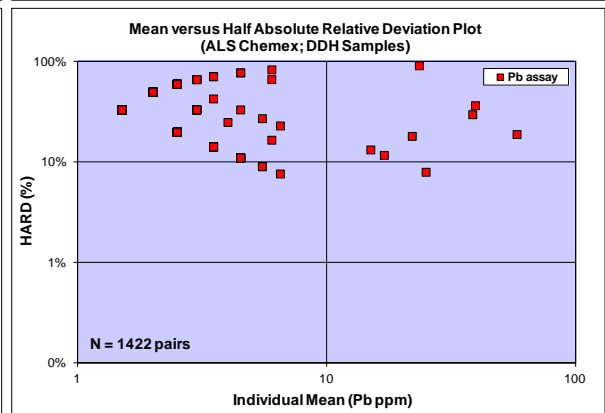
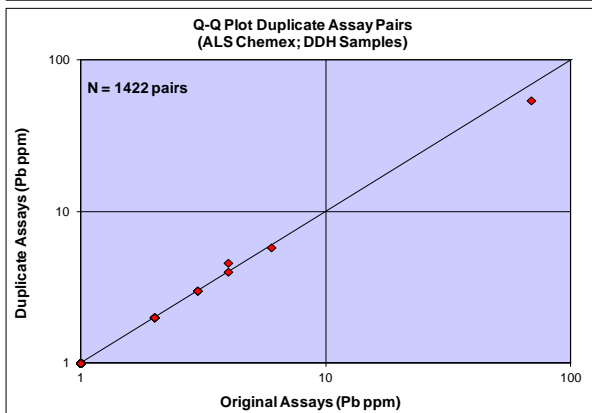
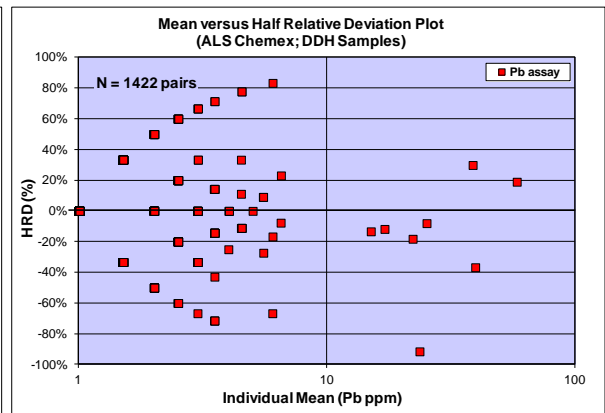
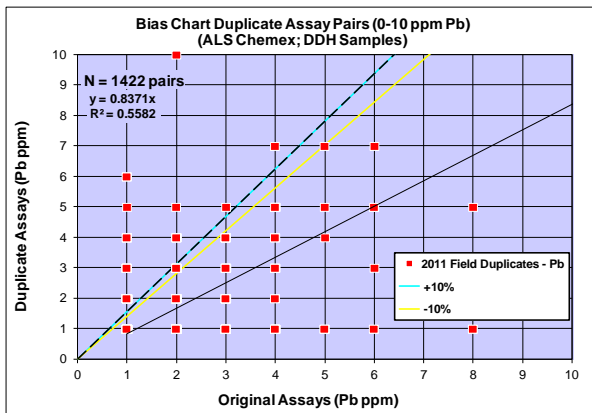
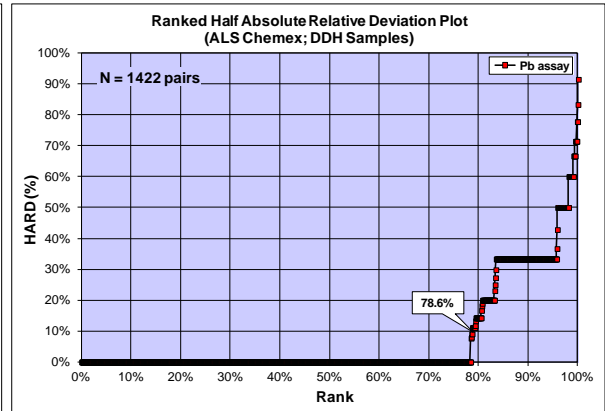
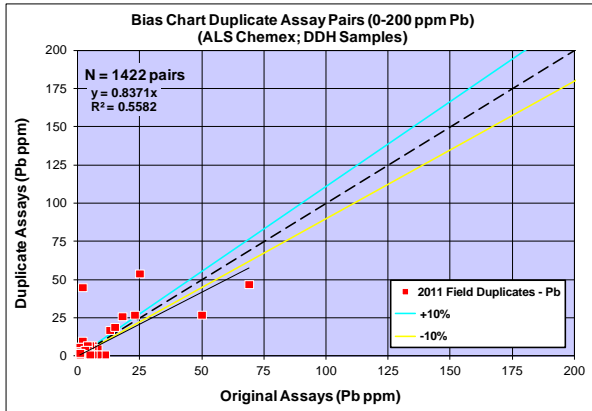


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Lead (2011)

srk consulting

Project Dumont
Data Series 2011 Field Duplicates - Pb
Data Type DDH Samples
Commodity Pb in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	1	1
Maximum Value	69	54
Mean	1.44	1.47
Median	1	1
Standard Error	0.07	0.07
Standard Deviation	2.59	2.67
Correlation Coefficient	0.7558	
Pairs ≤ 10% HARD	78.6%	

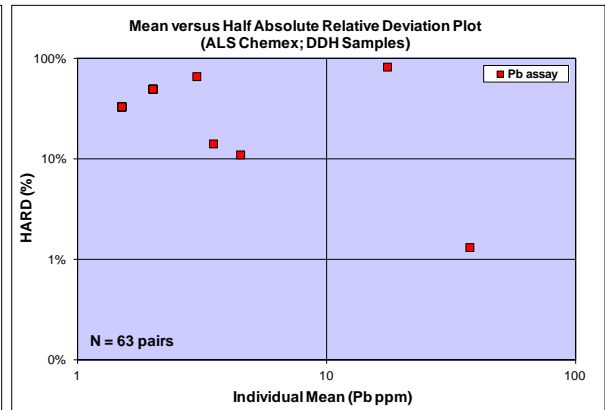
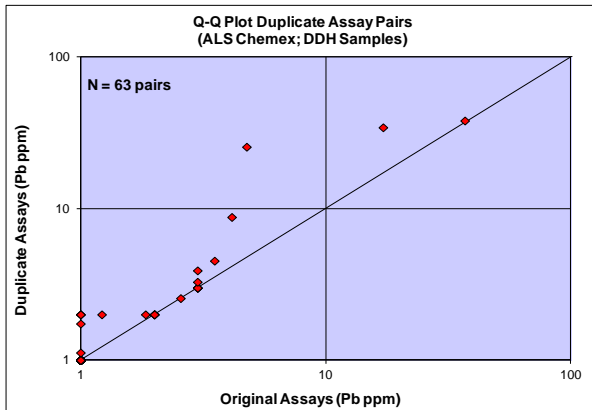
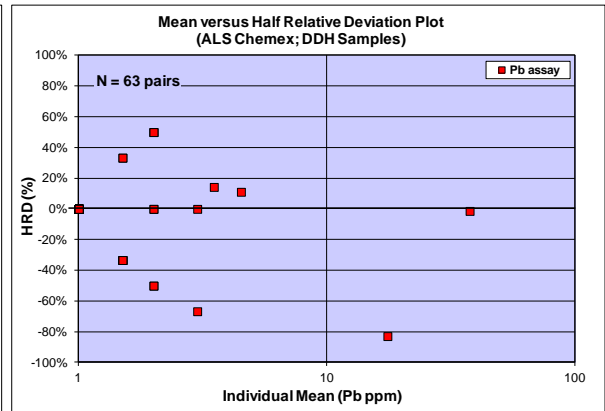
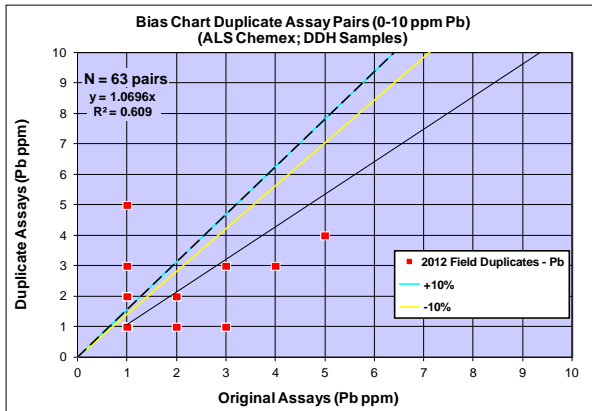
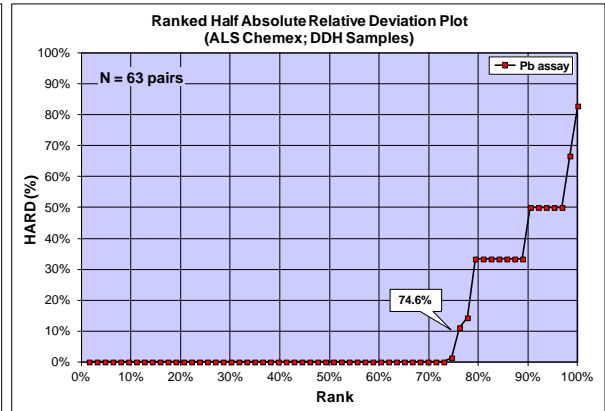
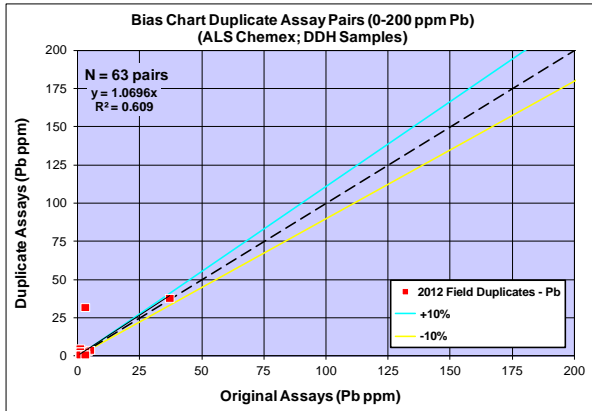


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Lead (2012)


srk consulting

Project Dumont
Data Series 2012 Field Duplicates - Pb
Data Type DDH Samples
Commodity Pb in ppm
Analytical Method AqR-ICP-AES
Detection Limit 2ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

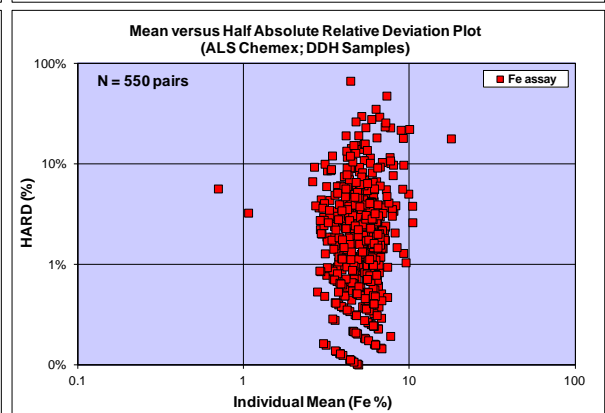
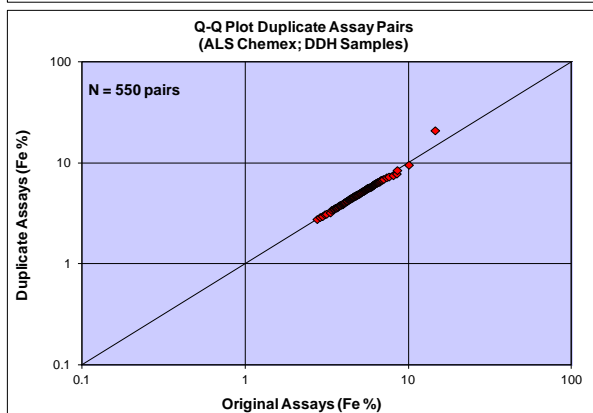
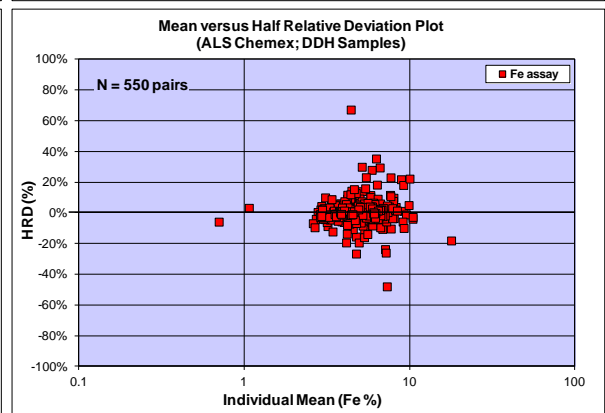
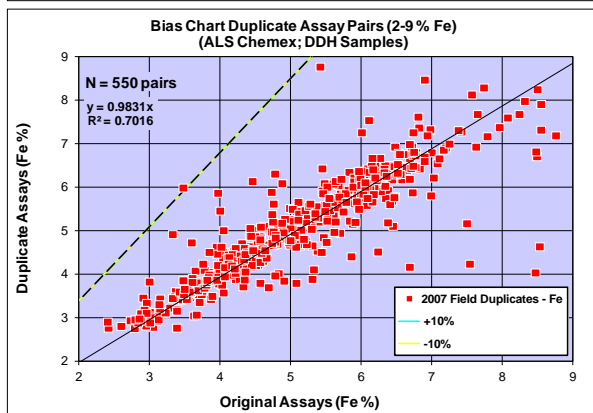
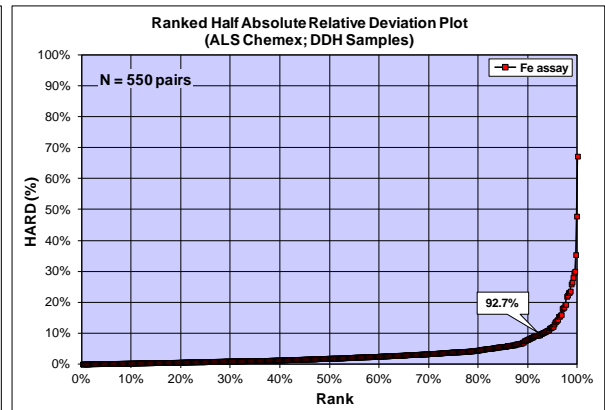
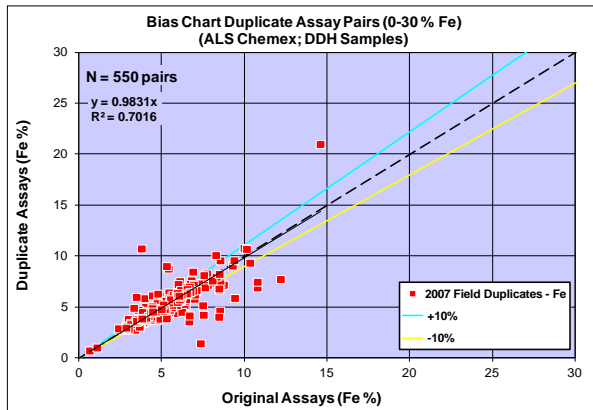
Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	1	1
Maximum Value	37	38
Mean	1.90	2.43
Median	1	1
Standard Error	0.58	0.76
Standard Deviation	4.57	6.02
Correlation Coefficient	0.7836	
Pairs \leq 10% HARD	74.6%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Iron (2007)

	
Project	Dumont
Data Series	2007 Field Duplicates - Fe
Data Type	DDH Samples
Commodity	Fe in %
Analytical Method	AqR-ICP-AES
Detection Limit	0.01%
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	550	550
Minimum Value	0.66	0.74
Maximum Value	14.6	21.0
Mean	5.23	5.19
Median	5.11	5.08
Standard Error	0.063	0.065
Standard Deviation	1.49	1.52
Correlation Coefficient	0.8459	
Pairs ≤ 10% HARD	92.7%	

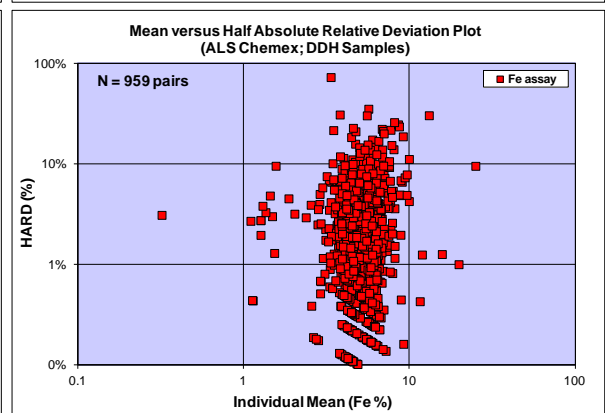
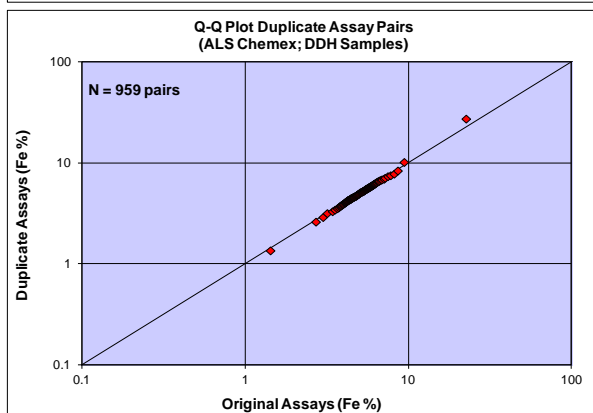
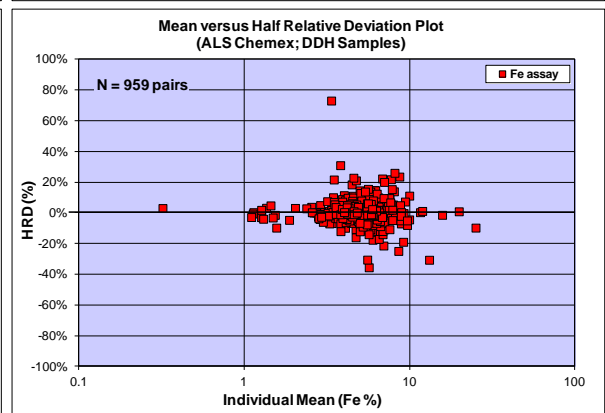
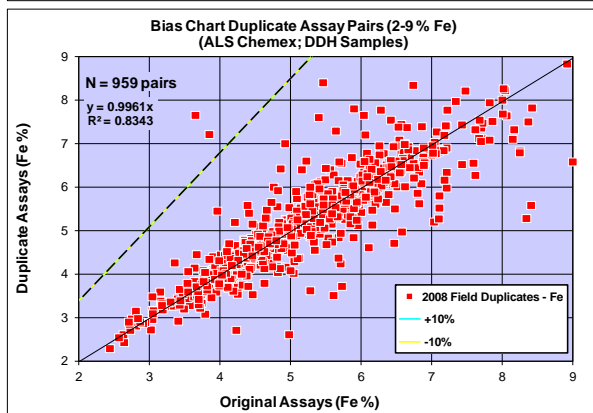
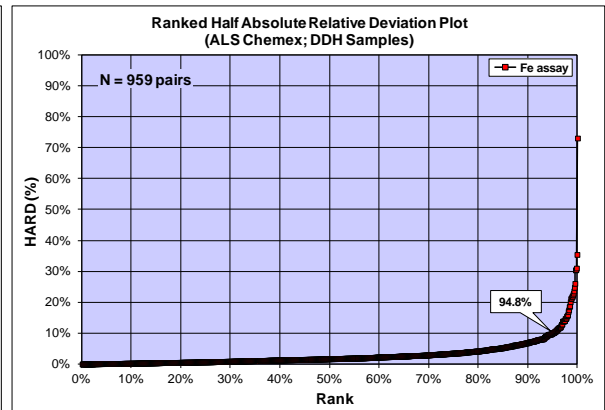
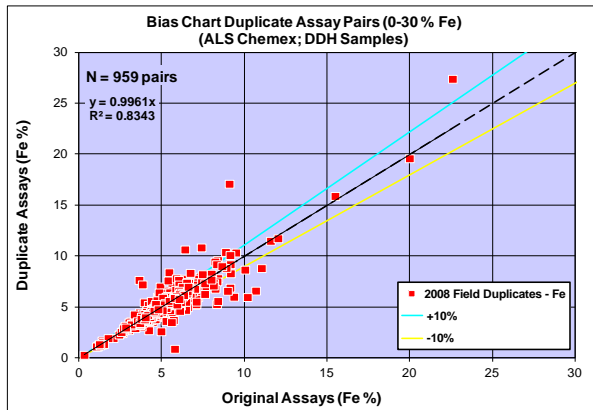


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Iron (2008)

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Project Dumont
Data Series 2008 Field Duplicates - Fe
Data Type DDH Samples
Commodity Fe in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	0.33	0.31
Maximum Value	22.6	27.4
Mean	5.25	5.24
Median	5.16	5.16
Standard Error	0.051	0.054
Standard Deviation	1.56	1.67
Correlation Coefficient	0.9137	
Pairs ≤ 10% HARD	94.8%	

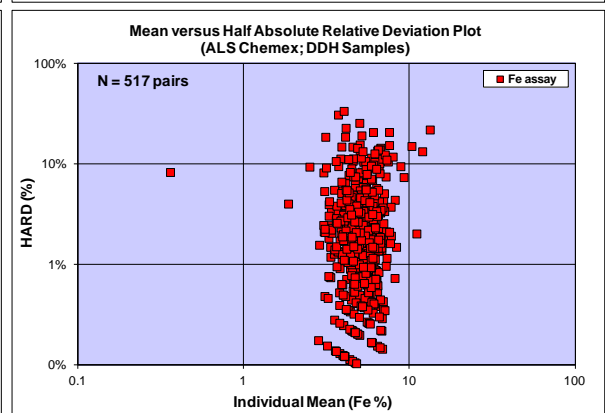
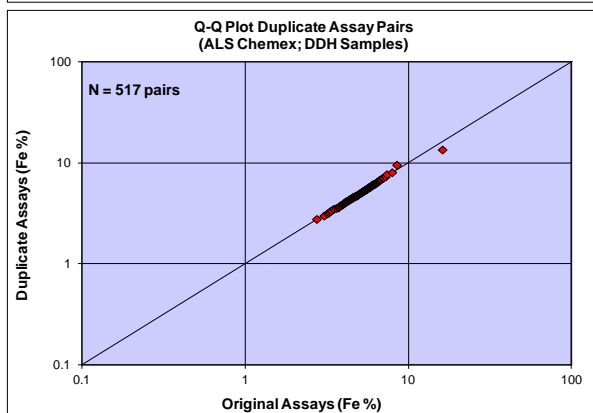
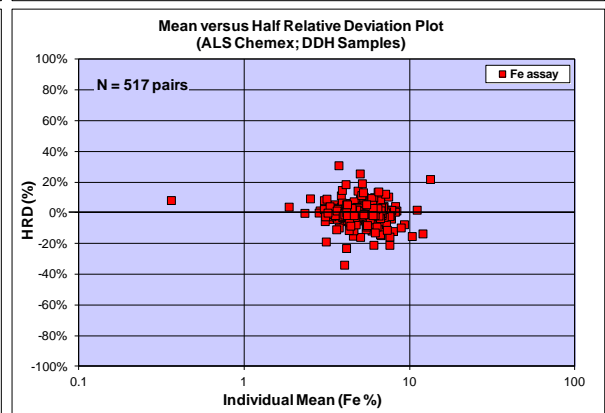
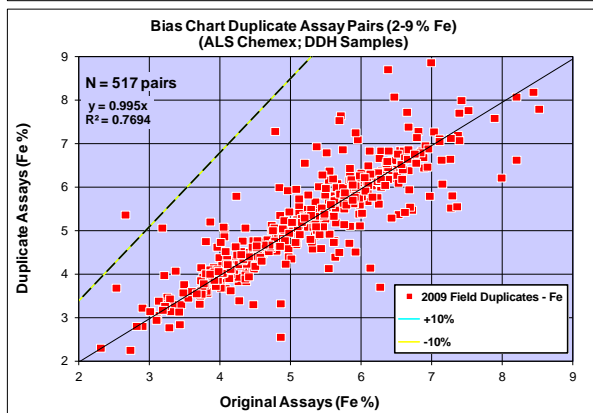
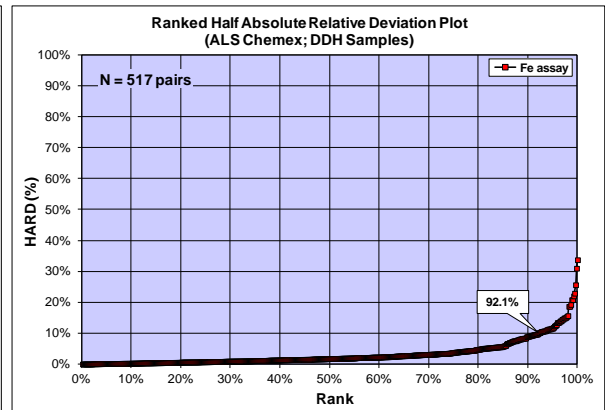
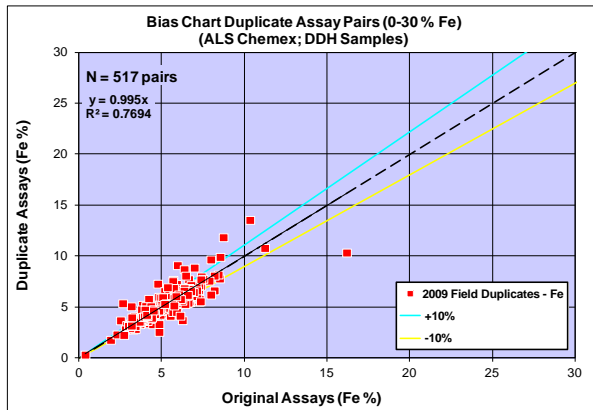


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Iron (2009)


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Project Dumont
Data Series 2009 Field Duplicates - Fe
Data Type DDH Samples
Commodity Fe in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

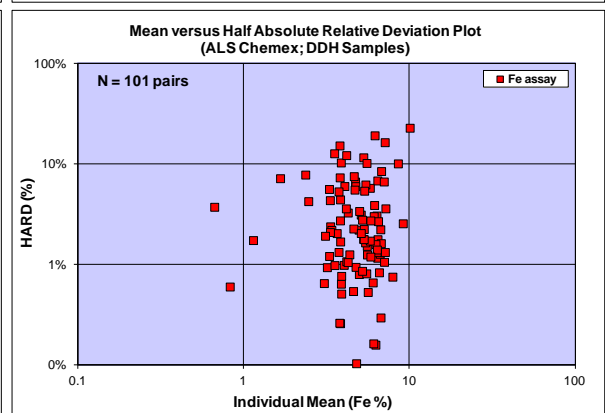
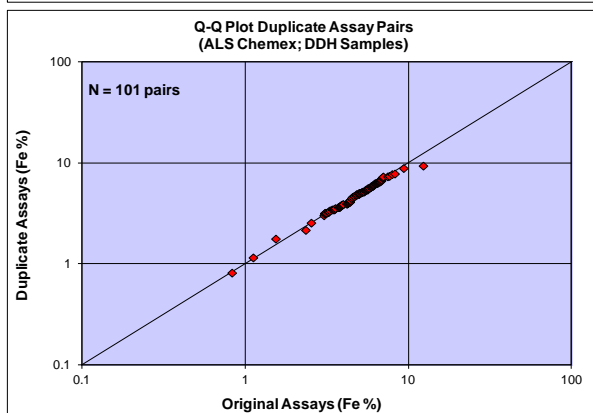
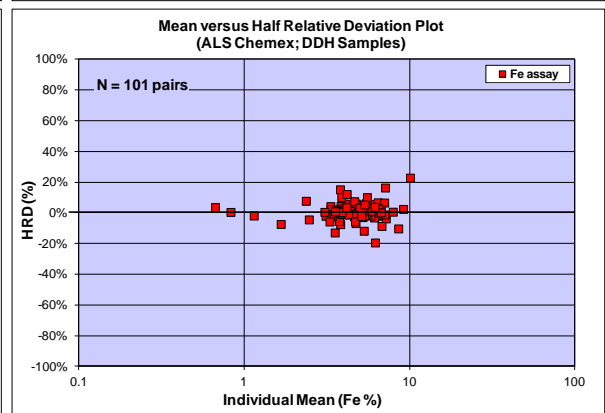
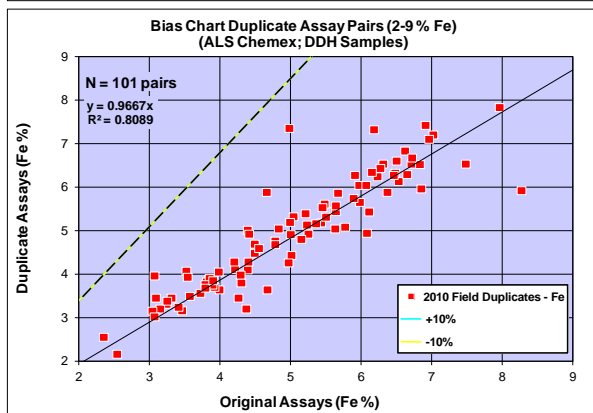
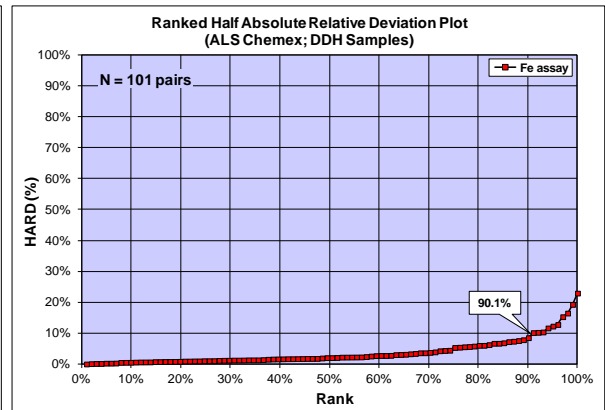
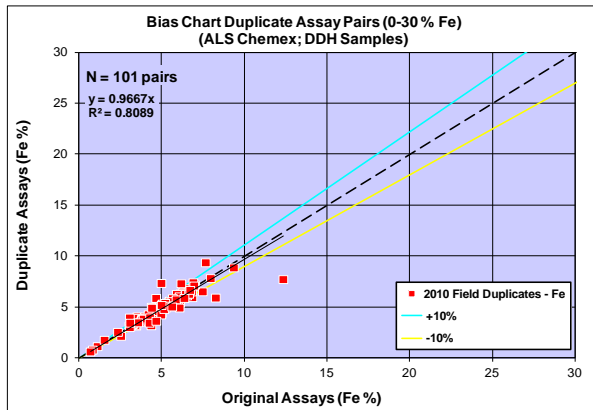
Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	0.39	0.33
Maximum Value	16.20	13.55
Mean	5.20	5.21
Median	5.19	5.13
Standard Error	0.057	0.059
Standard Deviation	1.31	1.35
Correlation Coefficient	0.8814	
Pairs ≤ 10% HARD	92.1%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Iron (2010)

	
Project	Dumont
Data Series	2010 Field Duplicates - Fe
Data Type	DDH Samples
Commodity	Fe in %
Analytical Method	AqR-ICP-AES
Detection Limit	0.01%
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	101	101
Minimum Value	0.69	0.64
Maximum Value	12.35	9.39
Mean	5.02	4.92
Median	4.99	4.95
Standard Error	0.172	0.159
Standard Deviation	1.73	1.60
Correlation Coefficient	0.9109	
Pairs ≤ 10% HARD	90.1%	

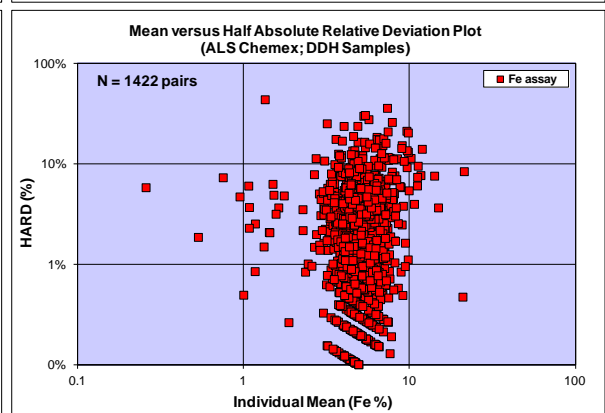
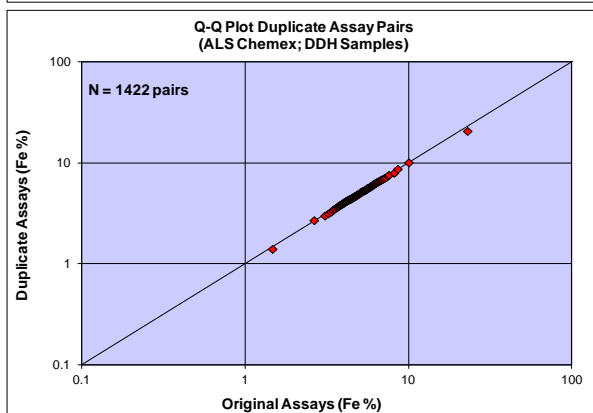
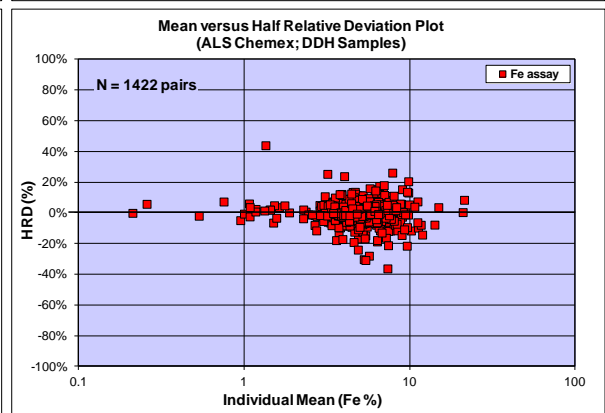
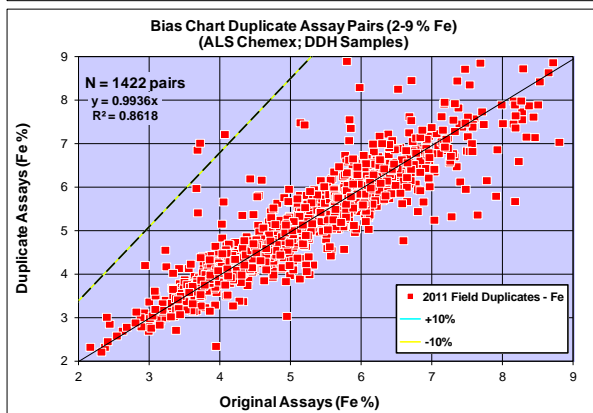
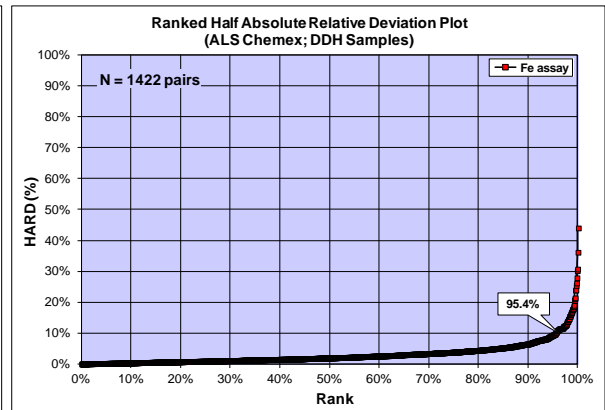
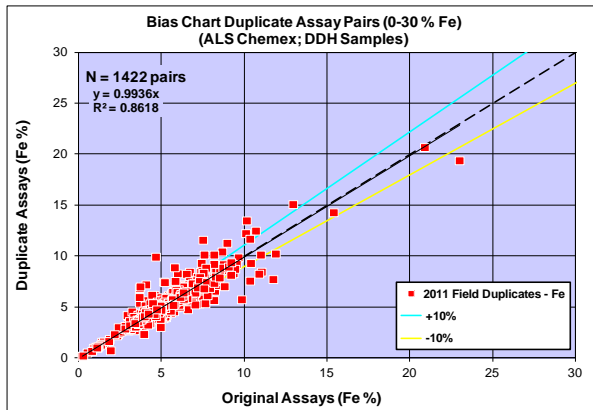


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Iron (2011)

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Project Dumont
Data Series 2011 Field Duplicates - Fe
Data Type DDH Samples
Commodity Fe in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	0.21	0.21
Maximum Value	23.0	20.7
Mean	5.16	5.16
Median	4.99	5.00
Standard Error	0.041	0.041
Standard Deviation	1.55	1.55
Correlation Coefficient	0.9309	
Pairs ≤ 10% HARD	95.4%	

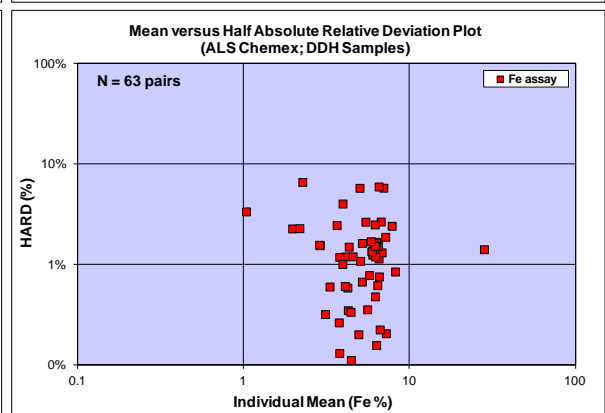
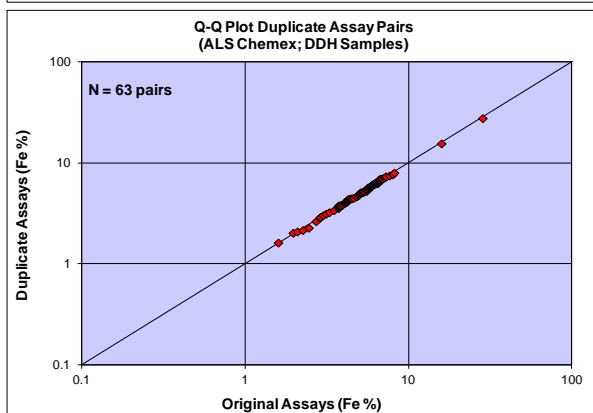
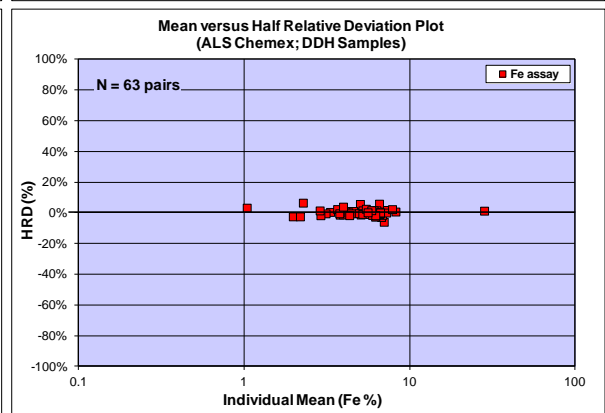
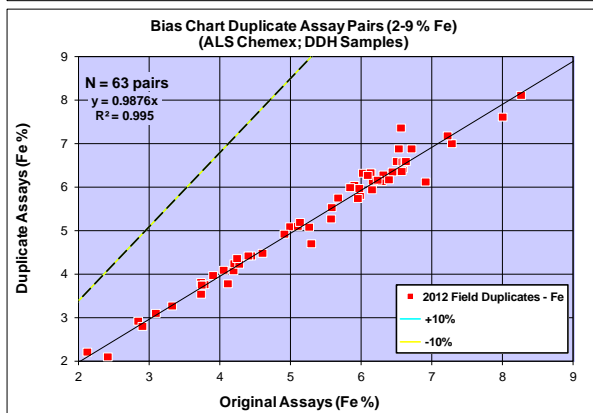
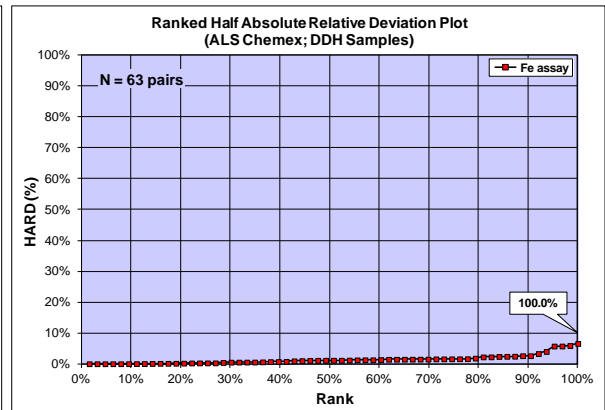
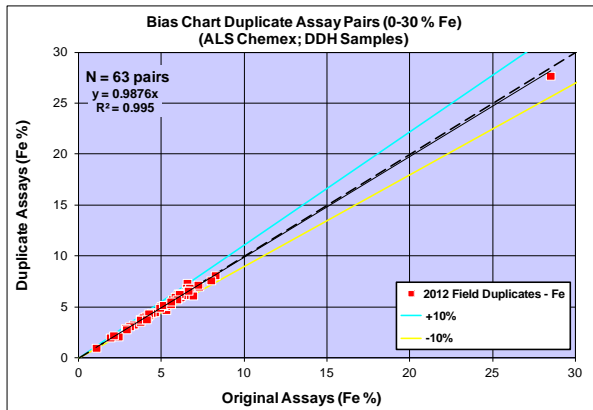


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Iron (2012)

srk consulting

Project Dumont
Data Series 2012 Field Duplicates - Fe
Data Type DDH Samples
Commodity Fe in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	1.07	1.00
Maximum Value	28.5	27.7
Mean	5.63	5.59
Median	5.84	5.76
Standard Error	0.416	0.405
Standard Deviation	3.30	3.22
Correlation Coefficient	0.9977	
Pairs ≤ 10% HARD	100.0%	

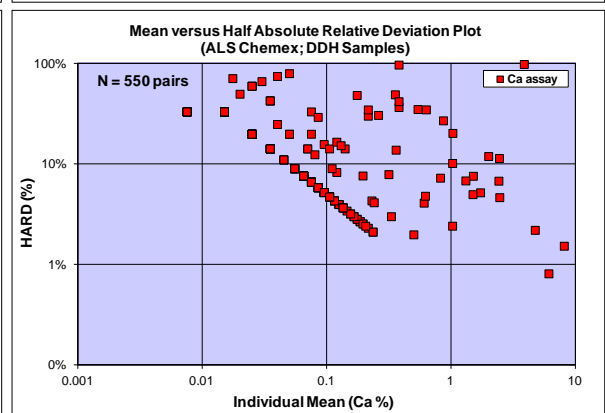
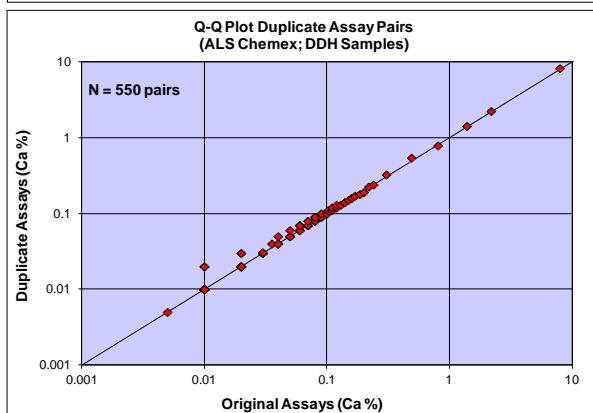
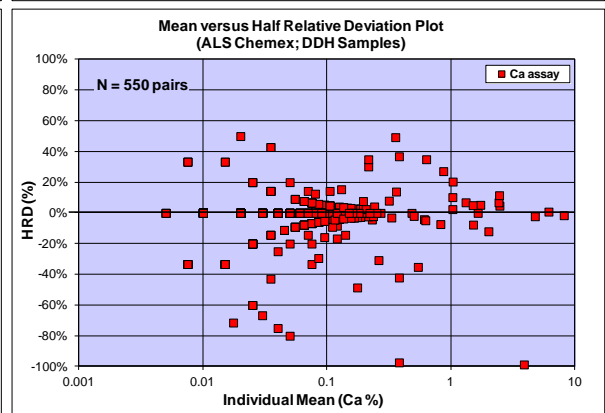
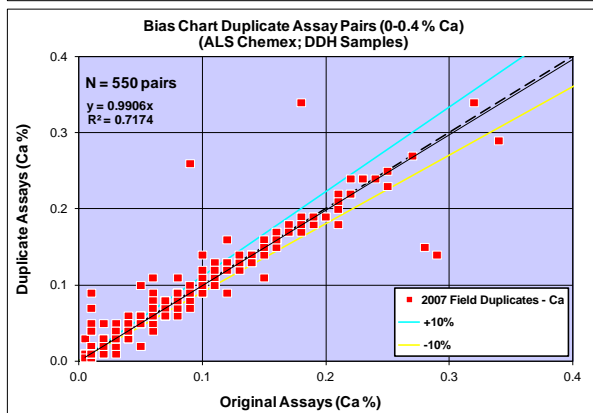
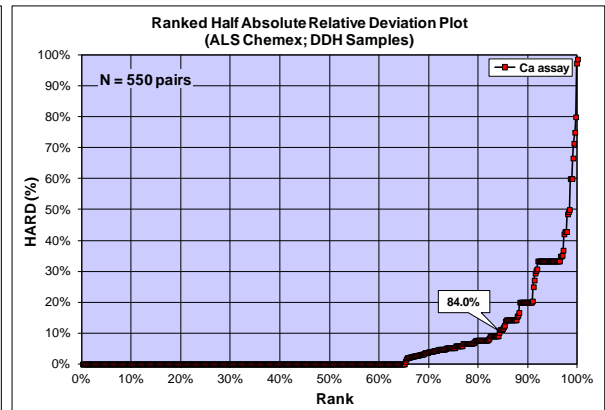
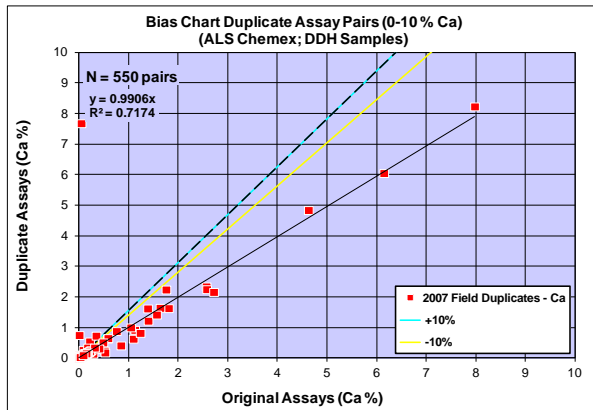


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Calcium (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - Ca
Data Type DDH Samples
Commodity Ca in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	0.005	0.005
Maximum Value	7.98	8.23
Mean	0.14	0.15
Median	0.05	0.05
Standard Error	0.023	0.027
Standard Deviation	0.54	0.63
Correlation Coefficient	0.8473	
Pairs ≤ 10% HARD	84.0%	

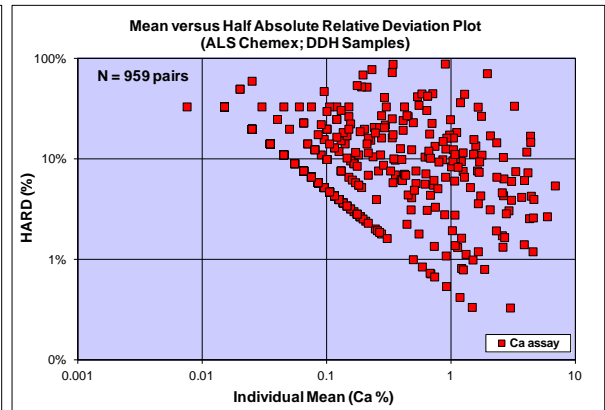
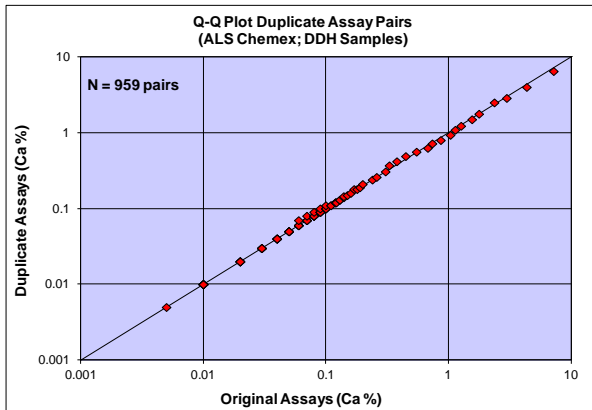
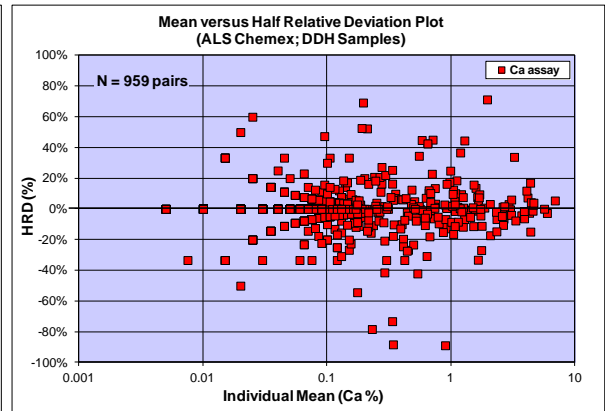
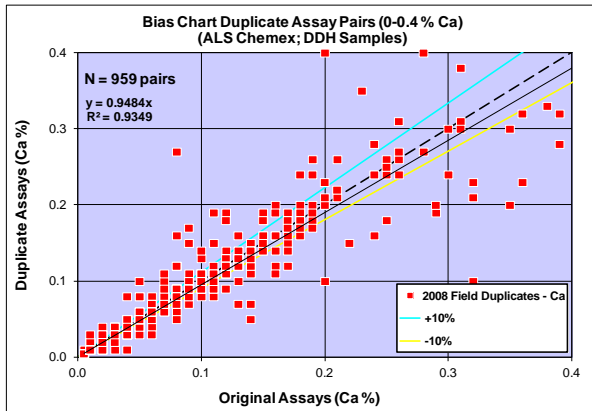
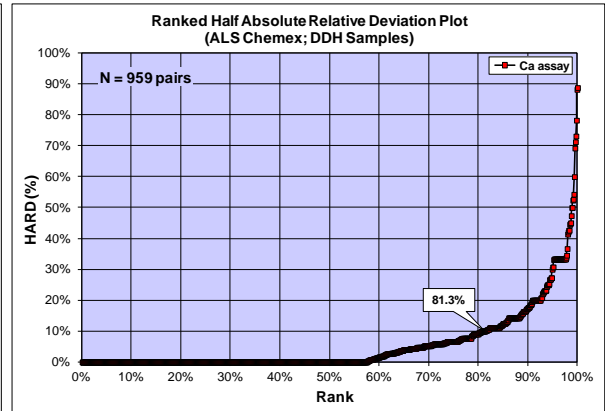
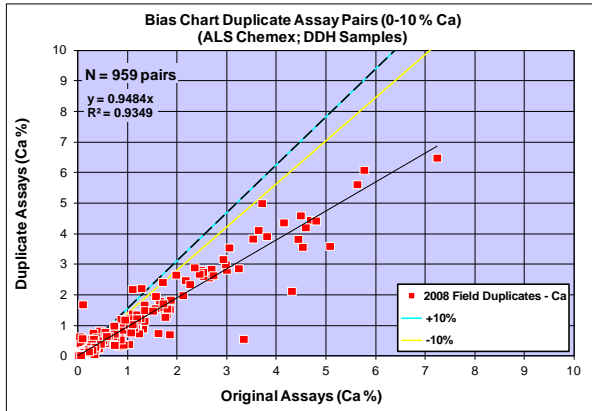


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Calcium (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Ca
Data Type DDH Samples
Commodity Ca in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	0.005	0.005
Maximum Value	7.24	6.49
Mean	0.30	0.29
Median	0.08	0.08
Standard Error	0.024	0.023
Standard Deviation	0.74	0.72
Correlation Coefficient	0.9671	
Pairs ≤ 10% HARD	81.3%	

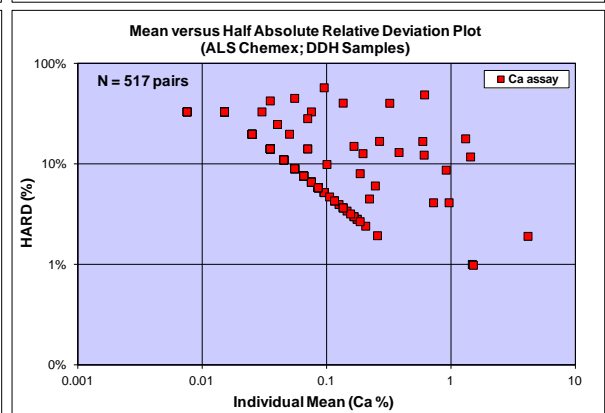
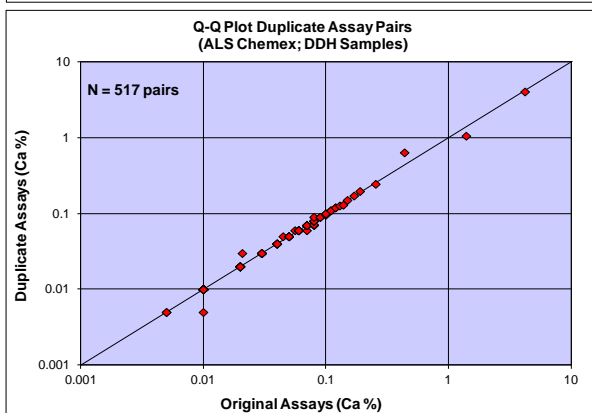
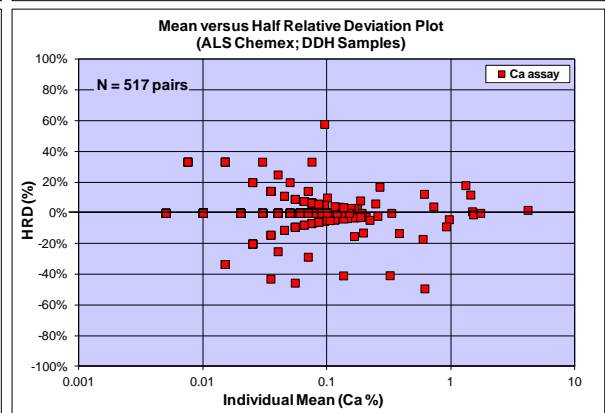
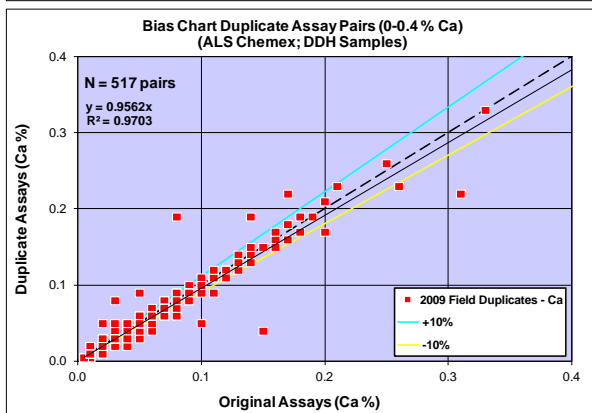
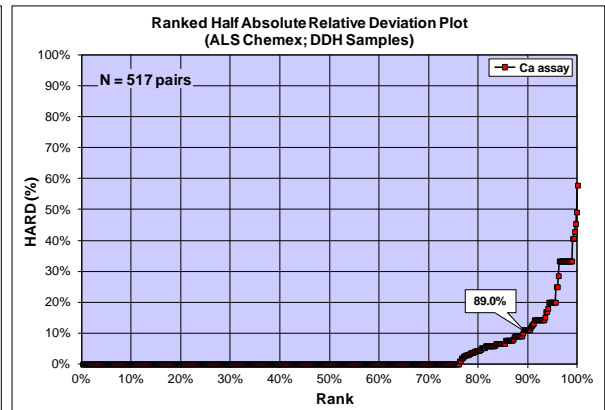
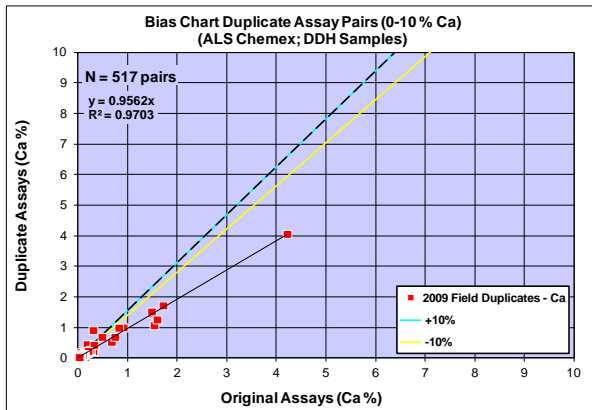


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Calcium (2009)

srk consulting

Project Dumont
Data Series 2009 Field Duplicates - Ca
Data Type DDH Samples
Commodity Ca in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	0.005	0.005
Maximum Value	4.22	4.06
Mean	0.08	0.08
Median	0.04	0.04
Standard Error	0.011	0.011
Standard Deviation	0.25	0.24
Correlation Coefficient	0.9852	
Pairs ≤ 10% HARD	89.0%	

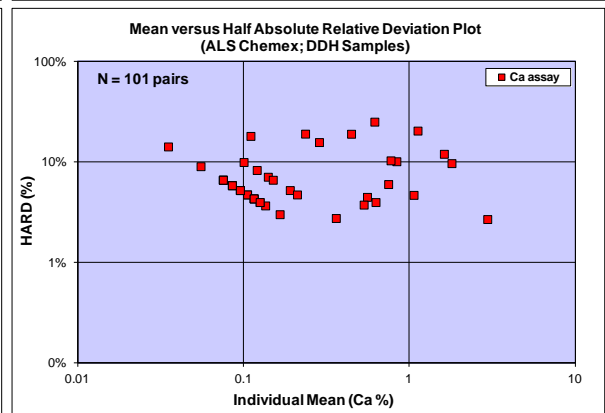
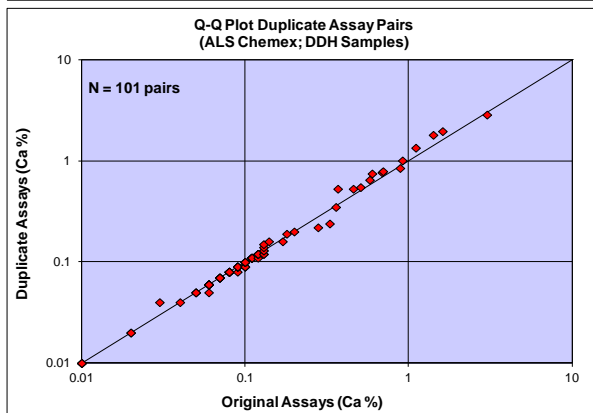
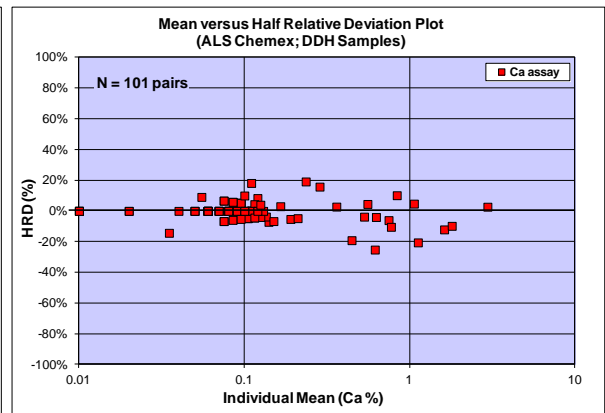
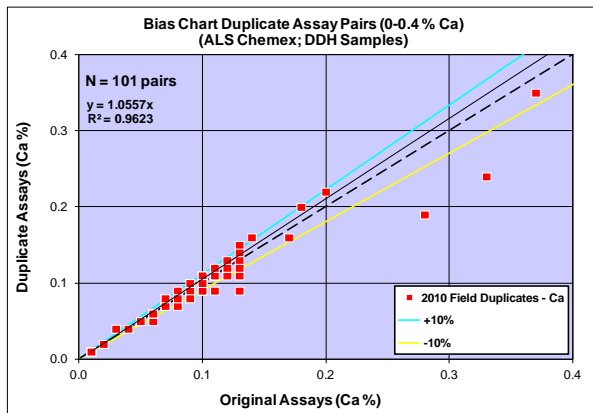
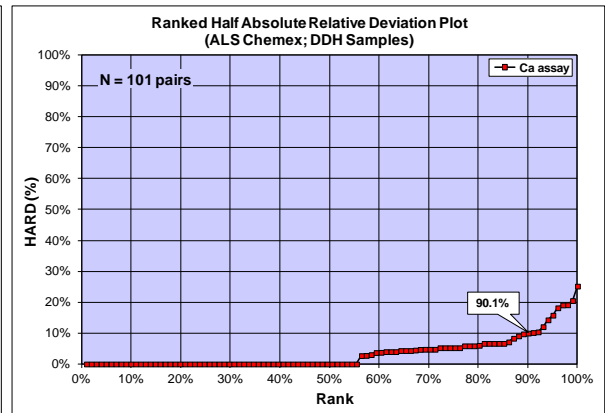
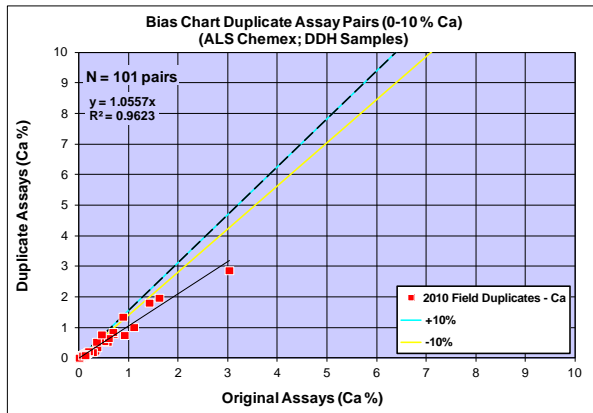


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Calcium (2010)

srk consulting

Project Dumont
Data Series 2010 Field Duplicates - Ca
Data Type DDH Samples
Commodity Ca in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	101	101
Minimum Value	0.01	0.01
Maximum Value	3.03	2.87
Mean	0.21	0.22
Median	0.10	0.09
Standard Error	0.039	0.042
Standard Deviation	0.39	0.42
Correlation Coefficient	0.9810	
Pairs ≤ 10% HARD	90.1%	

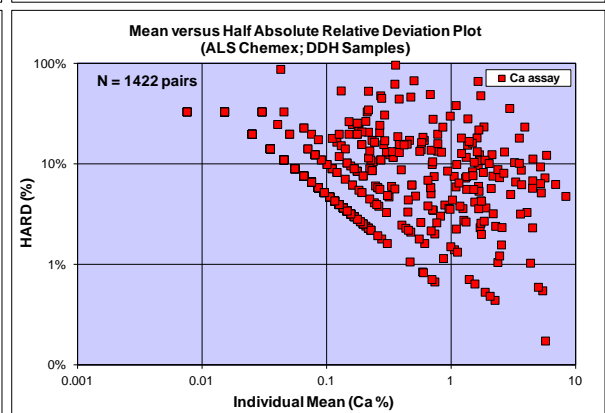
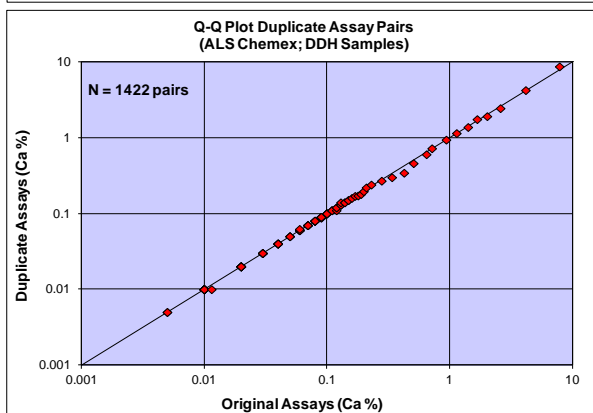
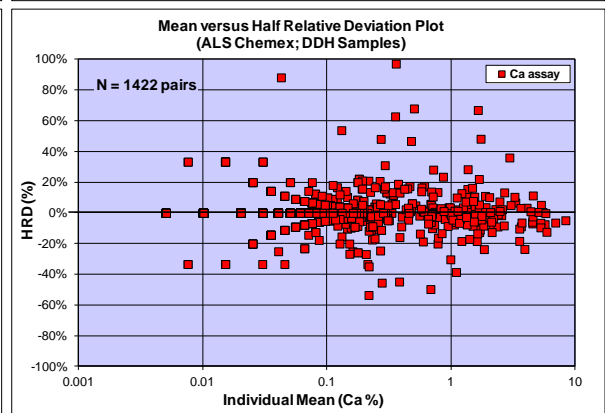
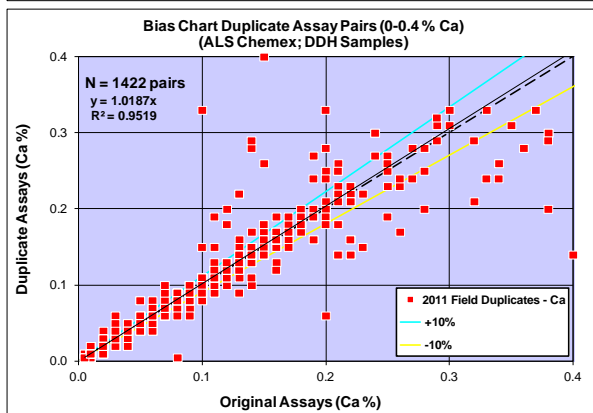
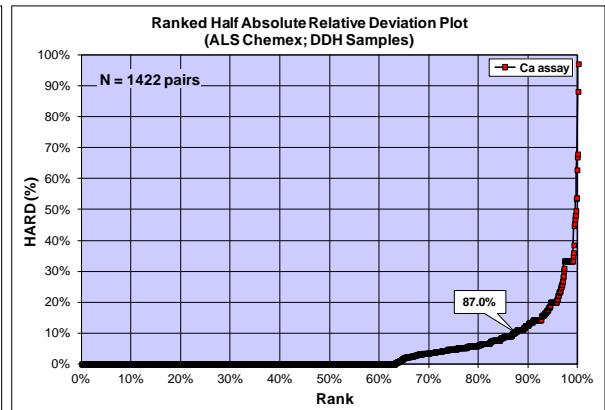
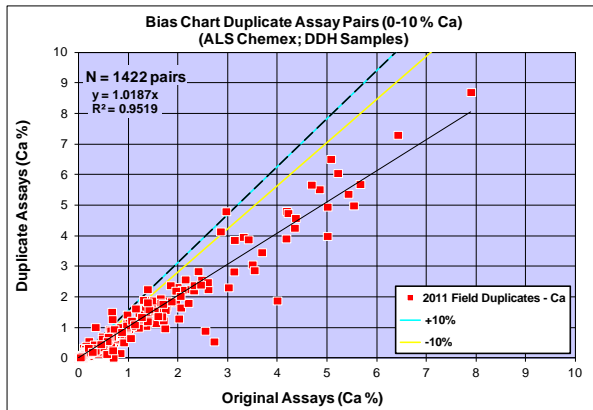


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Calcium (2011)

srk consulting

Project Dumont
Data Series 2011 Field Duplicates - Ca
Data Type DDH Samples
Commodity Ca in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	0.005	0.005
Maximum Value	7.9	8.7
Mean	0.26	0.26
Median	0.08	0.08
Standard Error	0.019	0.020
Standard Deviation	0.707	0.739
Correlation Coefficient	0.9756	
Pairs ≤ 10% HARD	87.0%	

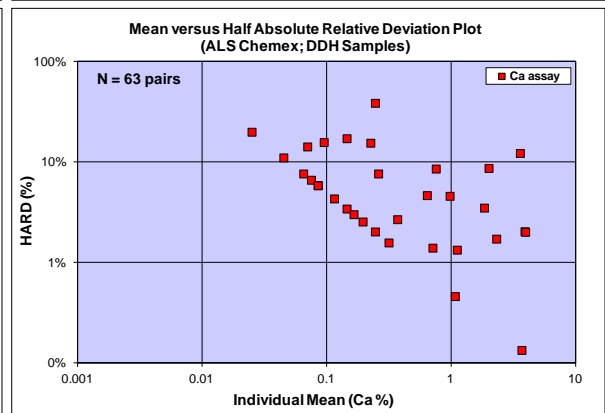
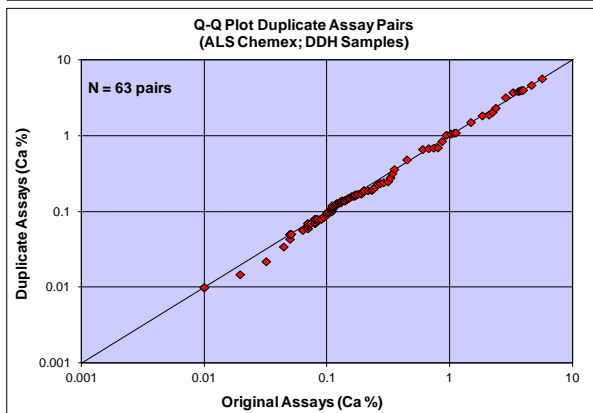
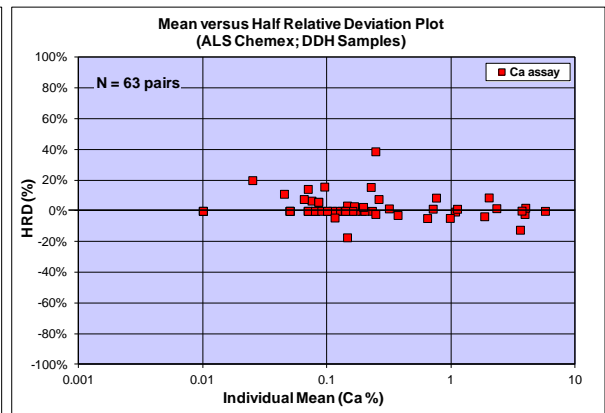
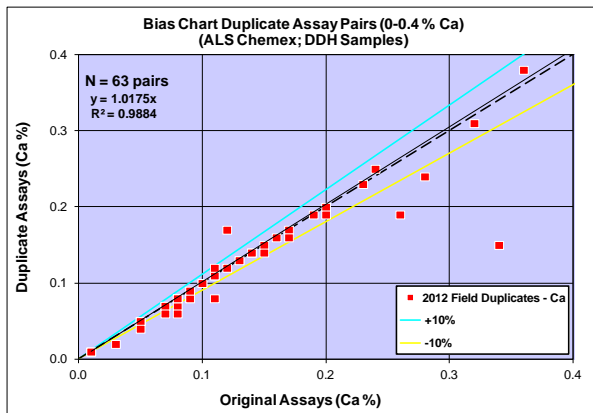
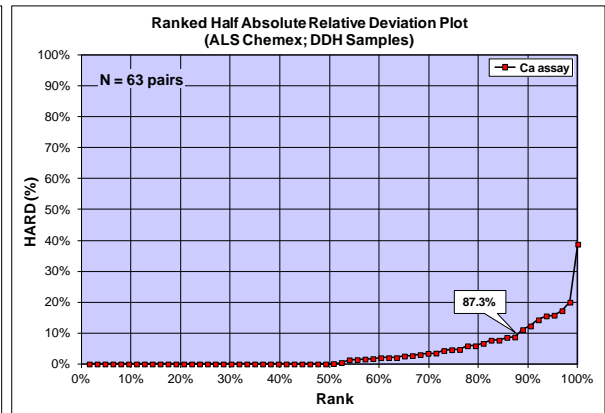
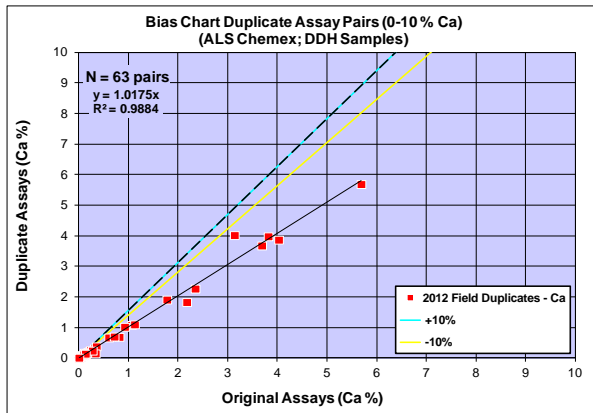


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Calcium (2012)

srk consulting

Project Dumont
Data Series 2012 Field Duplicates - Ca
Data Type DDH Samples
Commodity Ca in %
Analytical Method AqR-ICP-AES
Detection Limit 0.01%
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	0.010	0.010
Maximum Value	5.7	5.7
Mean	0.61	0.61
Median	0.14	0.14
Standard Error	0.146	0.150
Standard Deviation	1.157	1.188
Correlation Coefficient	0.9942	
Pairs ≤ 10% HARD	87.3%	

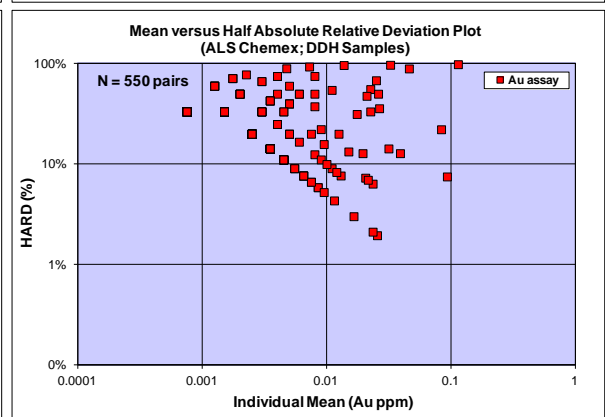
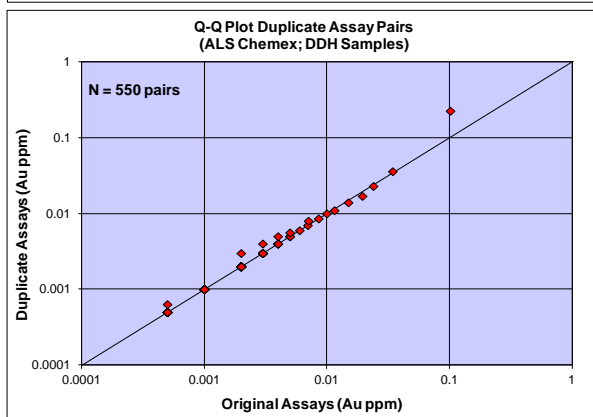
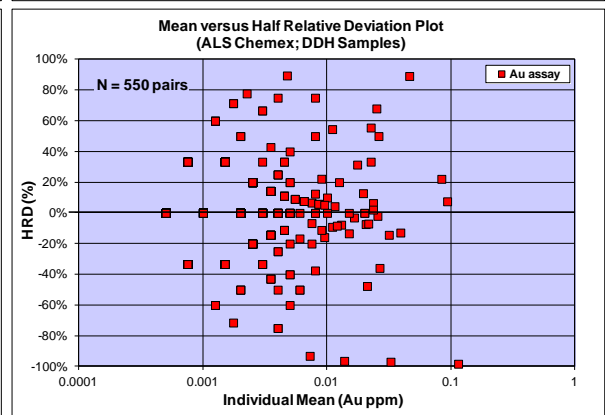
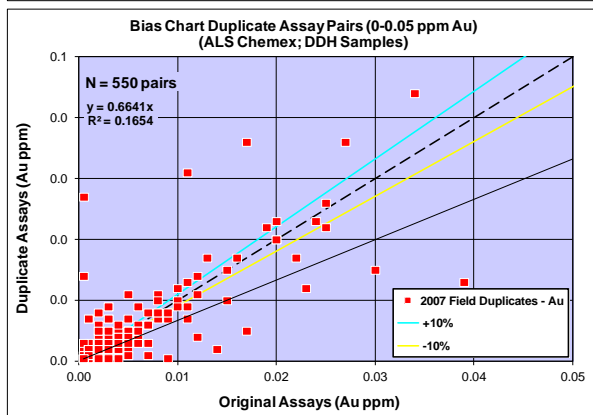
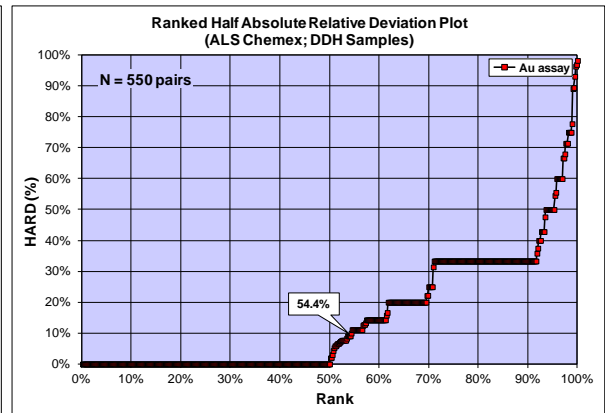
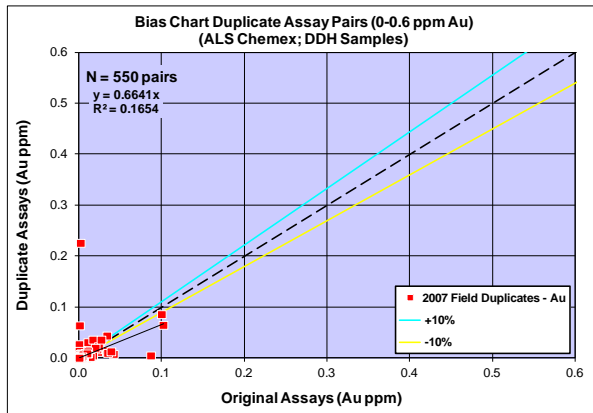


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Gold (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - Au
Data Type DDH Samples
Commodity Au in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	0.0005	0.0005
Maximum Value	0.102	0.226
Mean	0.004	0.004
Median	0.002	0.002
Standard Error	0.0004	0.0005
Standard Deviation	0.008	0.012
Correlation Coefficient	0.4273	
Pairs ≤ 10% HARD	54.4%	

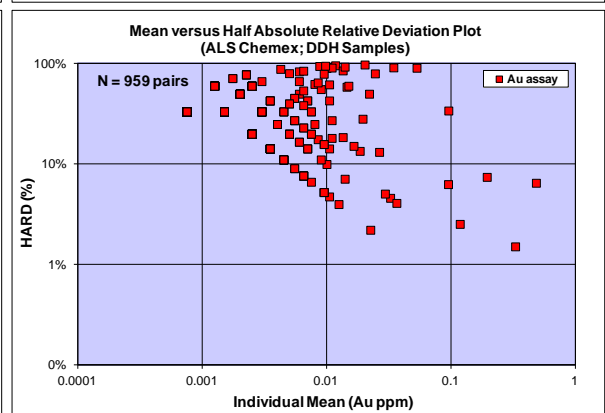
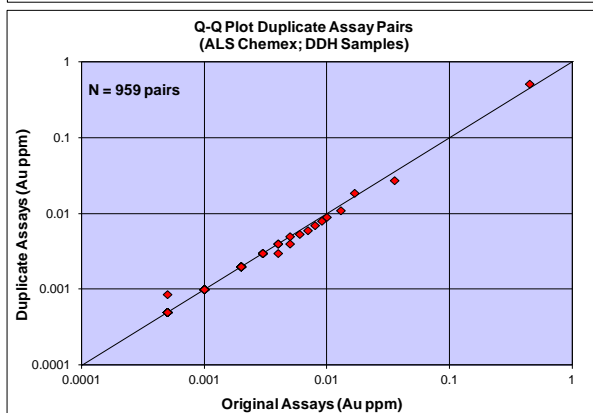
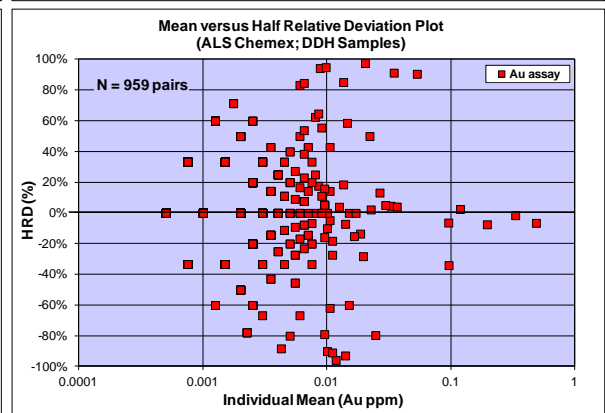
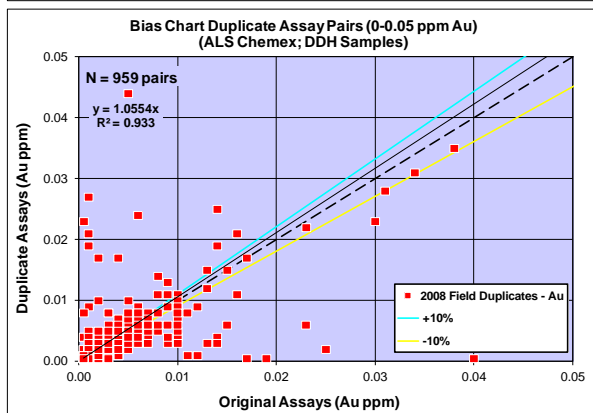
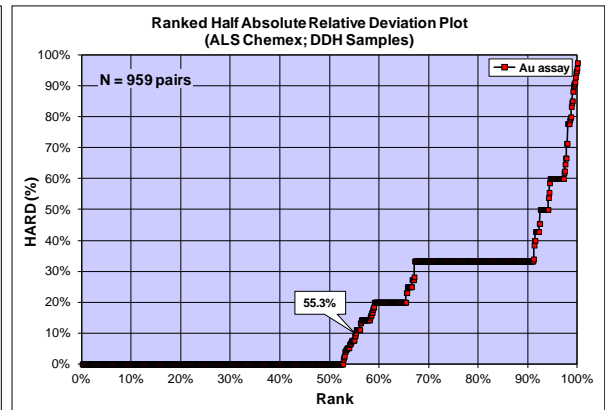
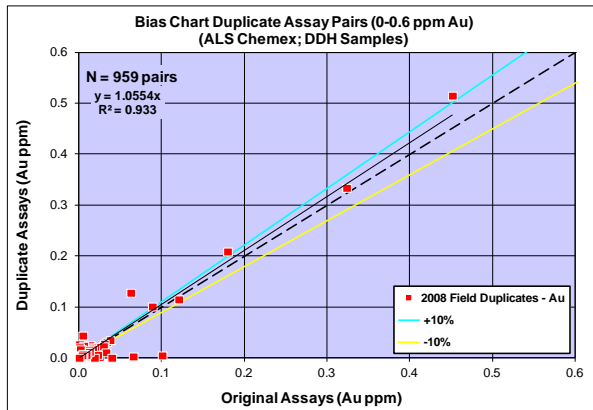


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Gold (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Au
Data Type DDH Samples
Commodity Au in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	959	959
Minimum Value	0.0005	0.0005
Maximum Value	0.452	0.515
Mean	0.004	0.004
Median	0.001	0.001
Standard Error	0.0007	0.0007
<u>Standard Deviation</u>	<u>0.020</u>	<u>0.022</u>
Correlation Coefficient	0.9660	
Pairs ≤ 10% HARD	55.3%	

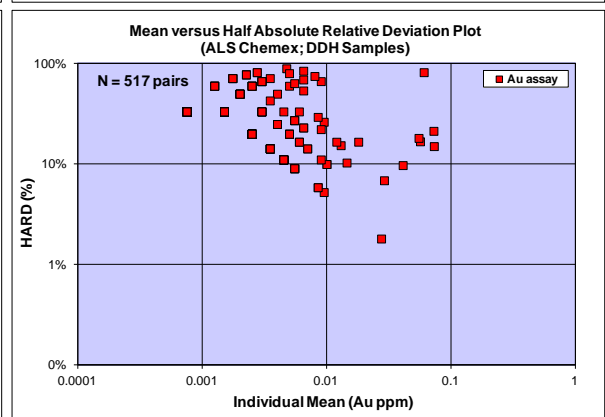
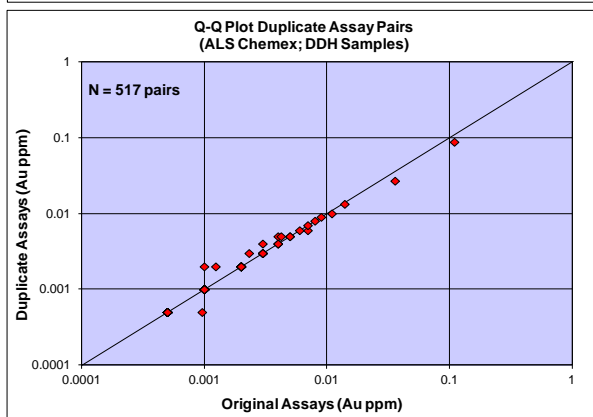
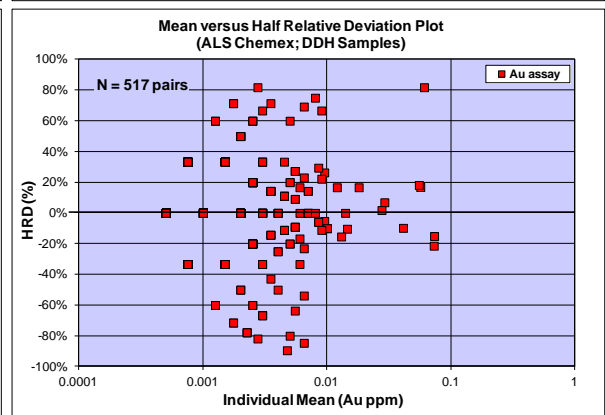
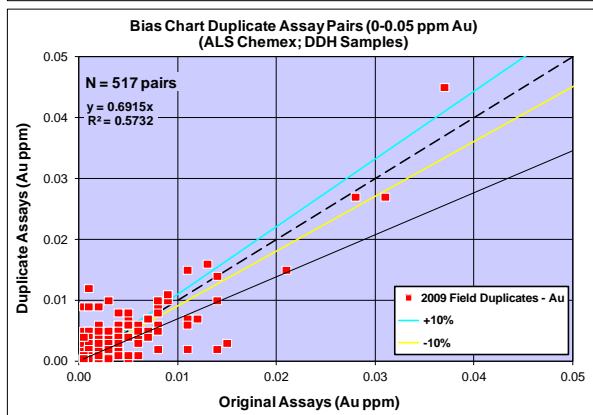
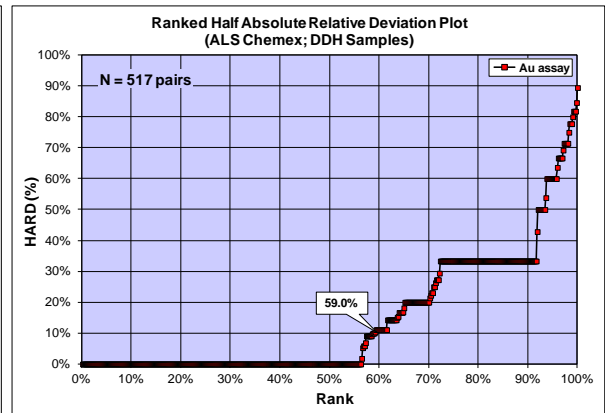
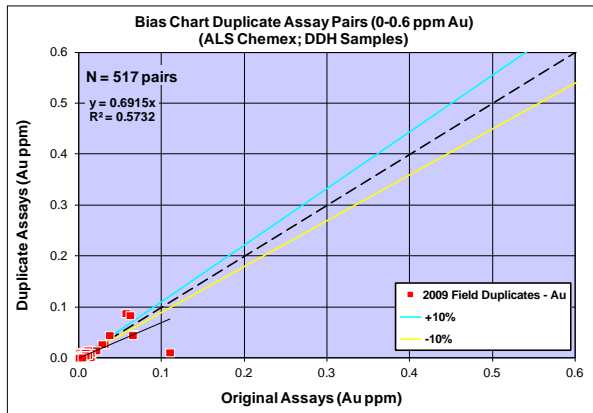


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Gold (2009)

srk consulting

Project Dumont
Data Series 2009 Field Duplicates - Au
Data Type DDH Samples
Commodity Au in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	0.0005	0.0005
Maximum Value	0.110	0.088
Mean	0.003	0.003
Median	0.001	0.001
Standard Error	0.00035	0.00030
Standard Deviation	0.008	0.007
Correlation Coefficient	0.7649	
Pairs ≤ 10% HARD	59.0%	

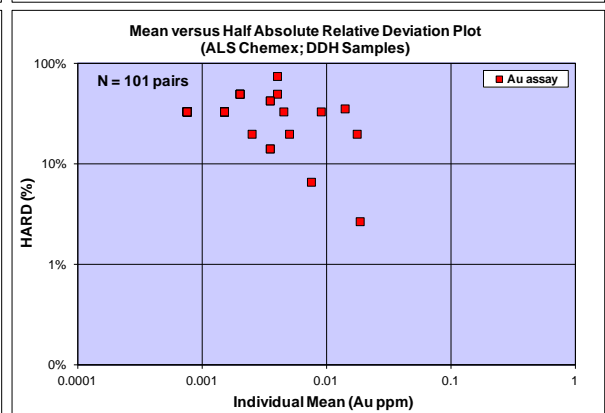
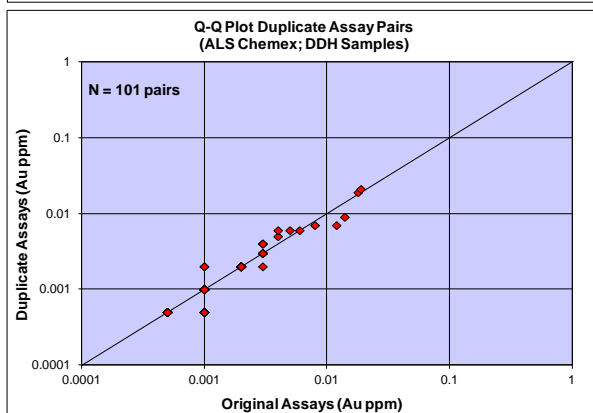
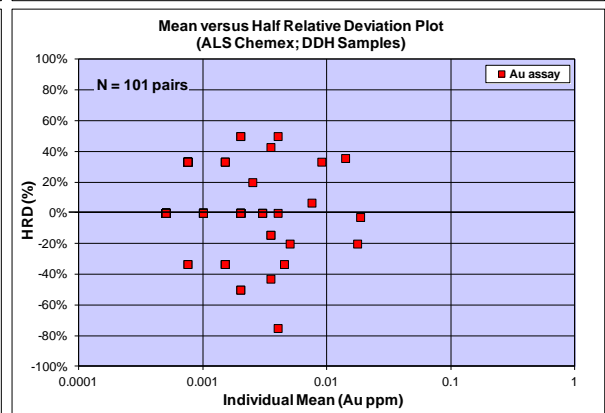
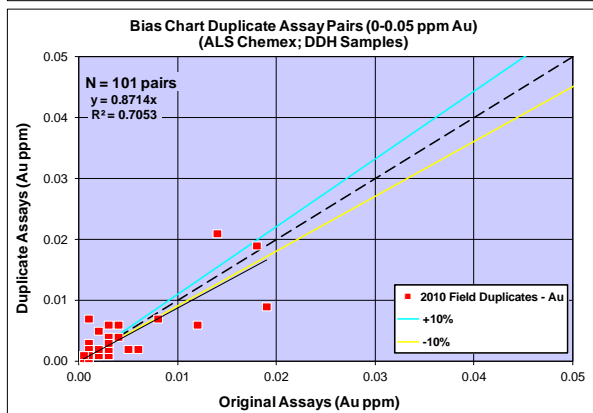
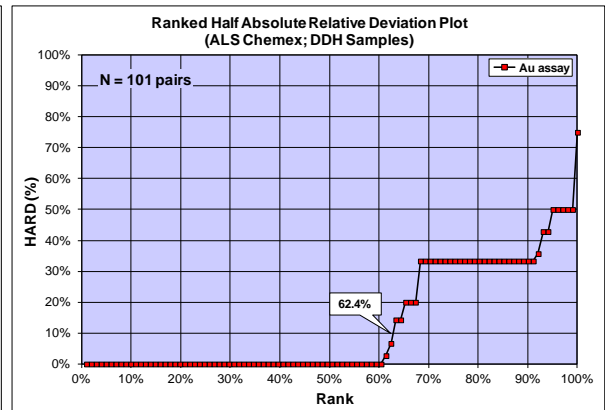
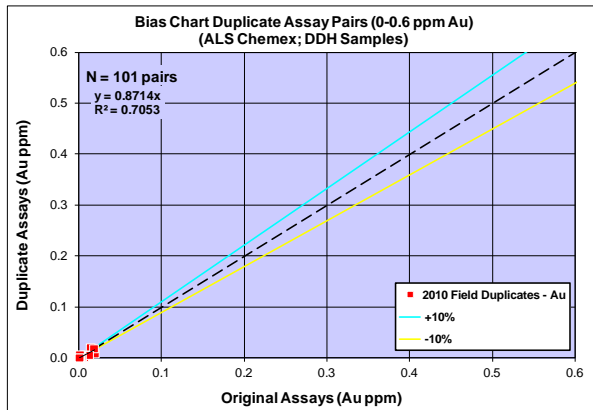


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Gold (2010)

srk consulting

Project Dumont
Data Series 2010 Field Duplicates - Au
Data Type DDH Samples
Commodity Au in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	101	101
Minimum Value	0.0005	0.0005
Maximum Value	0.019	0.021
Mean	0.002	0.002
Median	0.001	0.001
Standard Error	0.00031	0.00031
Standard Deviation	0.003	0.003
Correlation Coefficient	0.8435	
Pairs ≤ 10% HARD	62.4%	

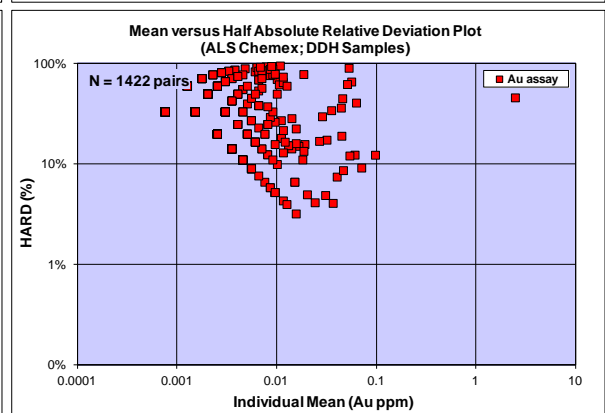
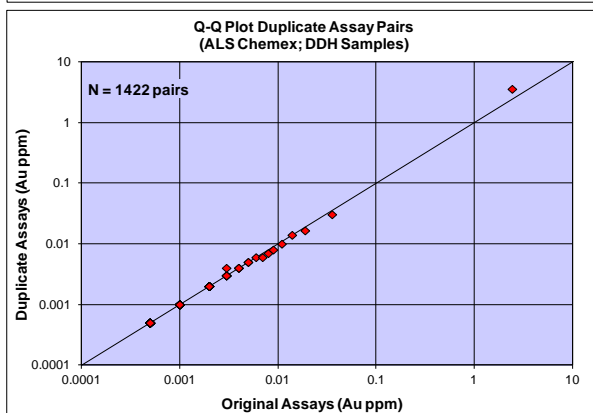
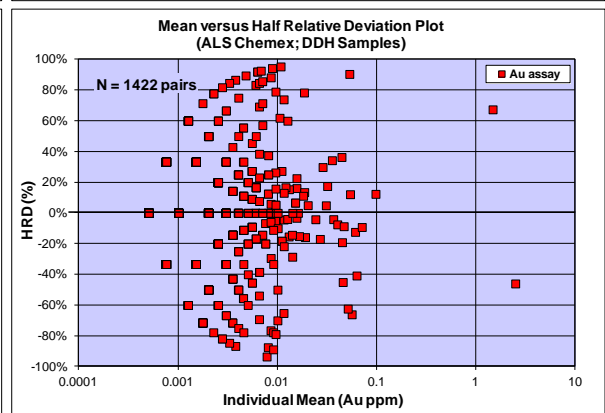
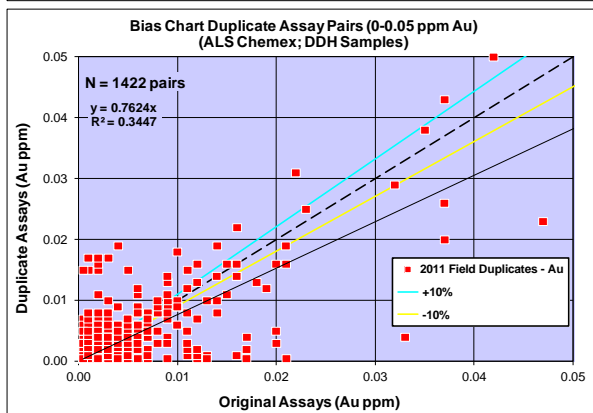
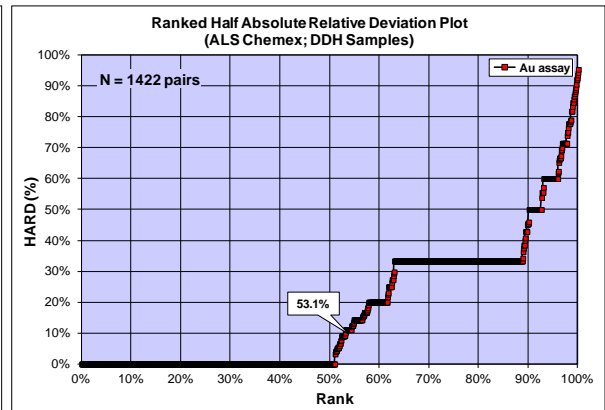
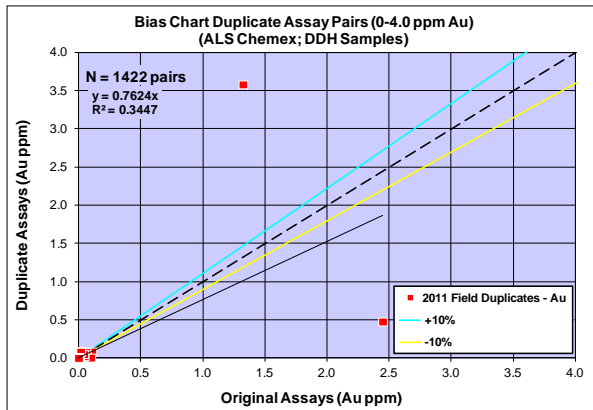


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Gold (2011)

srk consulting

Project Dumont
Data Series 2011 Field Duplicates - Au
Data Type DDH Samples
Commodity Au in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	0.0005	0.0005
Maximum Value	2.450	3.580
Mean	0.005	0.005
Median	0.001	0.001
Standard Error	0.0020	0.0025
Standard Deviation	0.074	0.096
Correlation Coefficient	0.5873	
Pairs ≤ 10% HARD	53.1%	

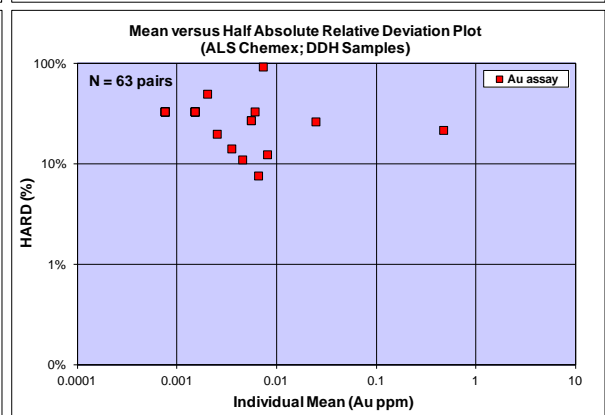
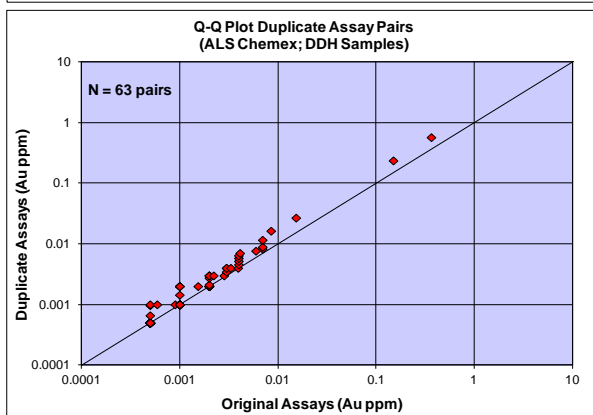
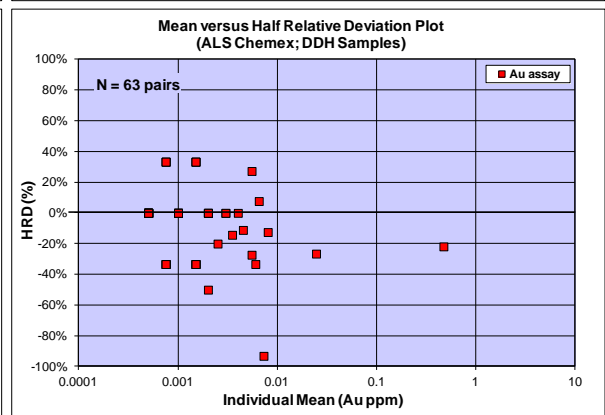
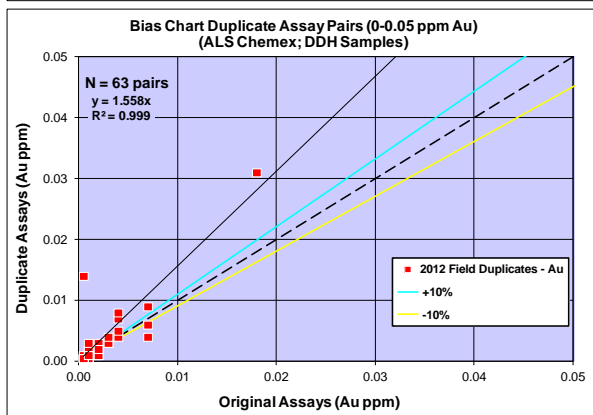
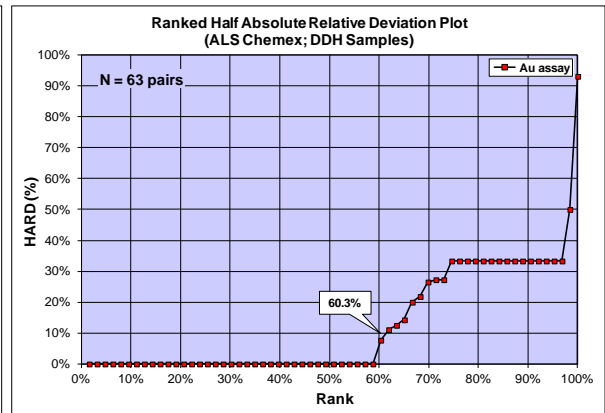
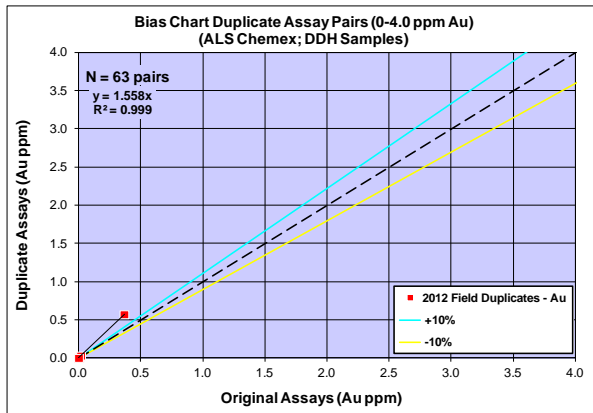


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Gold (2012)

srk consulting

Project Dumont
Data Series 2012 Field Duplicates - Au
Data Type DDH Samples
Commodity Au in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001 ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	0.0005	0.0005
Maximum Value	0.367	0.572
Mean	0.008	0.011
Median	0.001	0.001
Standard Error	0.0058	0.0091
Standard Deviation	0.046	0.072
Correlation Coefficient	0.9995	
Pairs ≤ 10% HARD	60.3%	

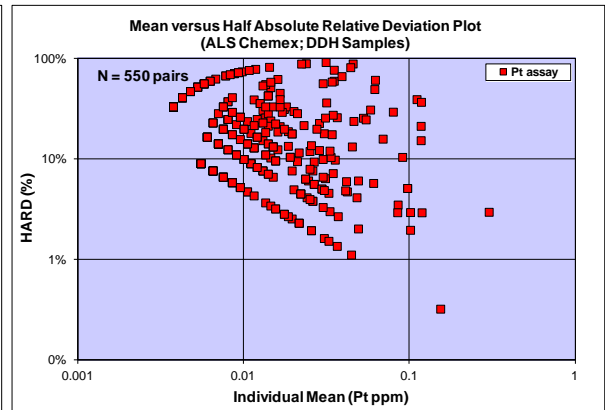
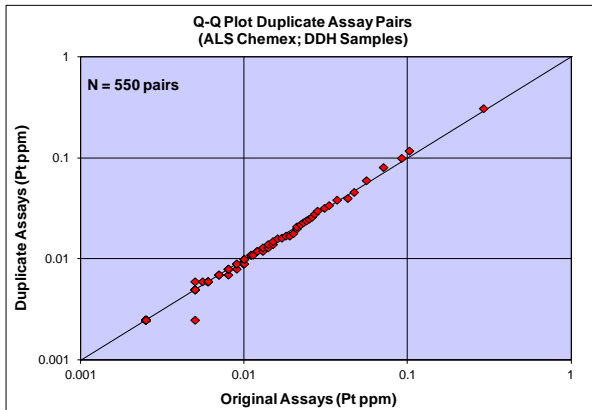
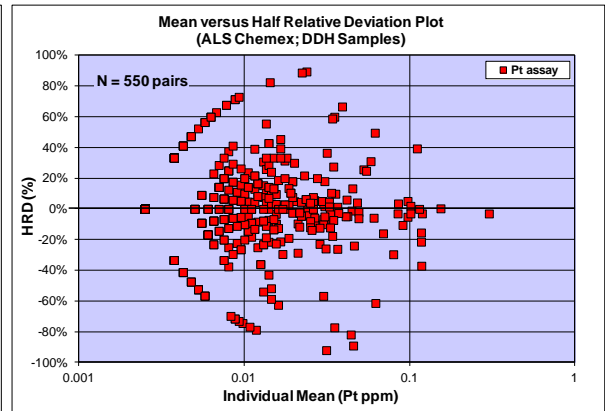
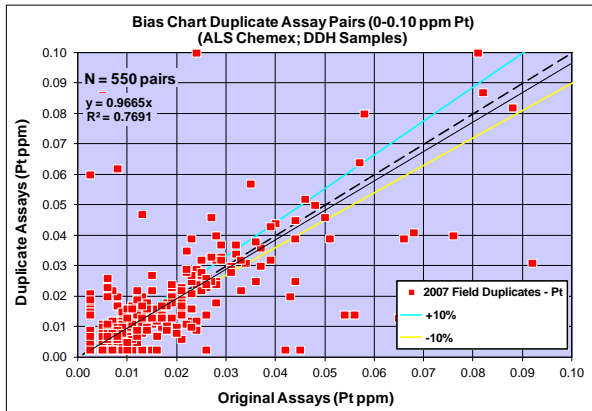
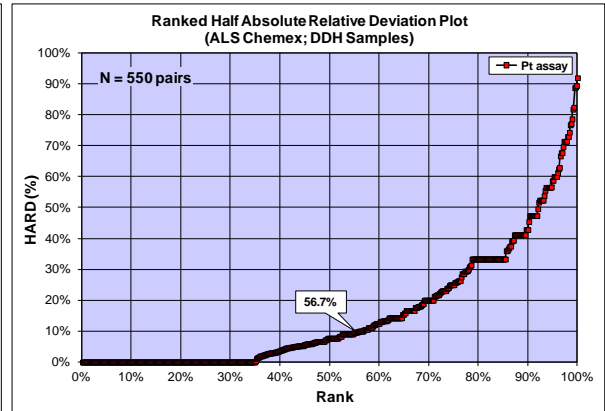
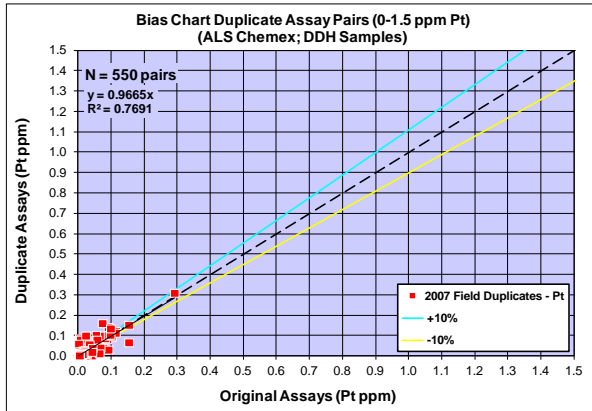


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Platinum (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - Pt
Data Type DDH Samples
Commodity Pt in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.005ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	0.0025	0.0025
Maximum Value	0.292	0.310
Mean	0.014	0.014
Median	0.007	0.007
Standard Error	0.001	0.001
Standard Deviation	0.023	0.024
Correlation Coefficient	0.8777	
Pairs ≤ 10% HARD	56.7%	

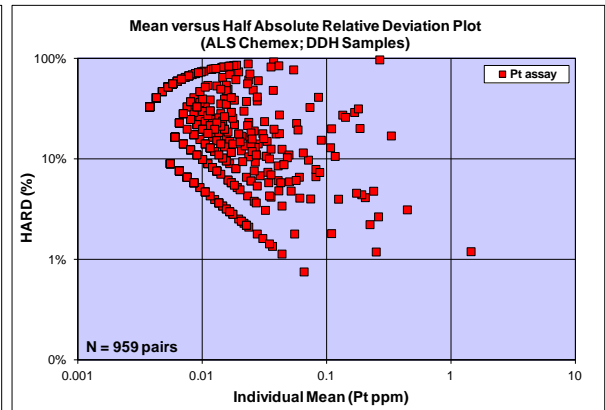
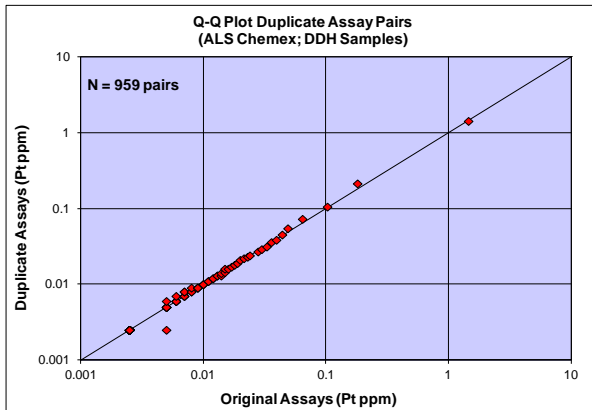
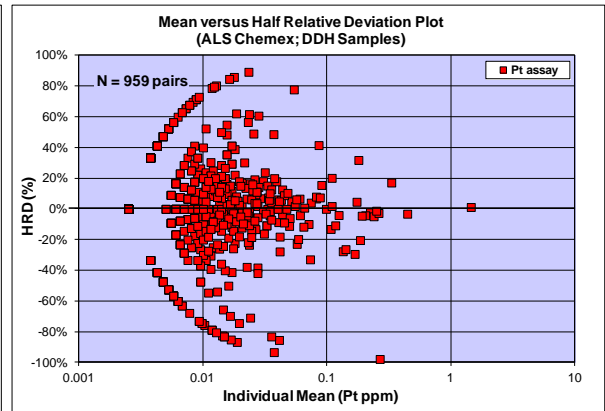
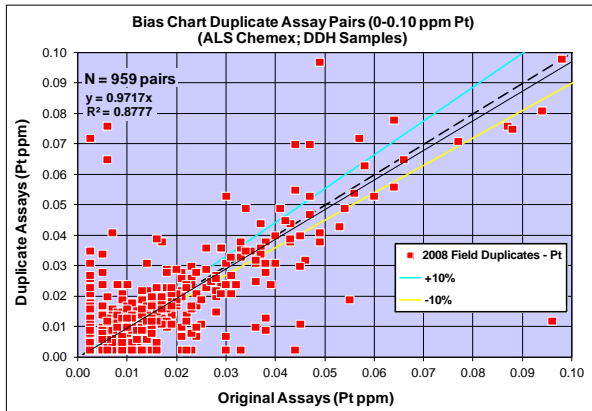
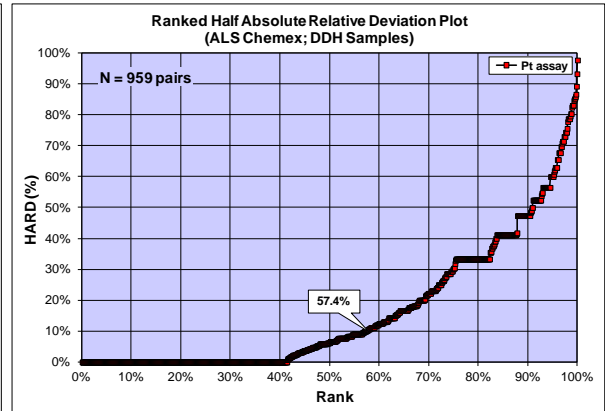
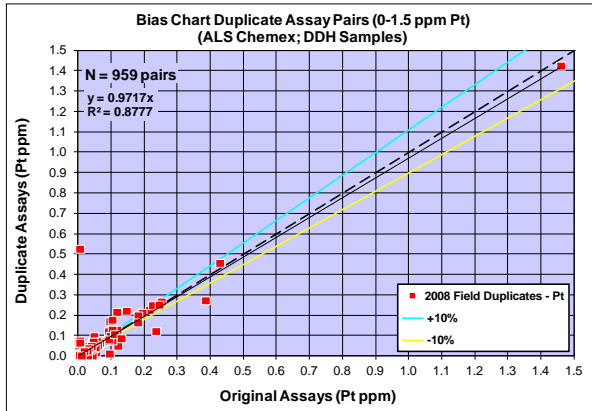


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Platinum (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Pt
Data Type DDH Samples
Commodity Pt in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.005ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	0.0025	0.0025
Maximum Value	1.460	1.425
Mean	0.015	0.016
Median	0.005	0.005
Standard Error	0.002	0.002
Standard Deviation	0.056	0.058
Correlation Coefficient	0.9370	
Pairs ≤ 10% HARD	57.4%	

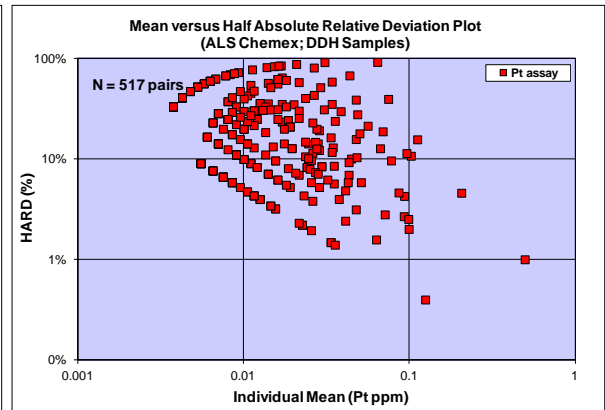
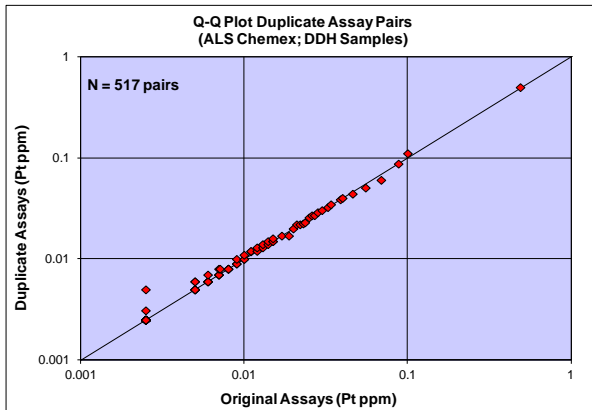
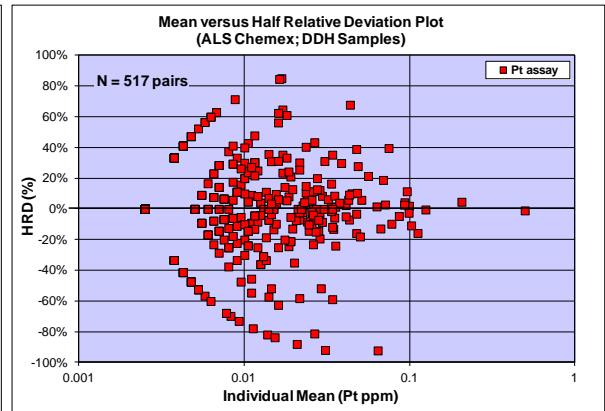
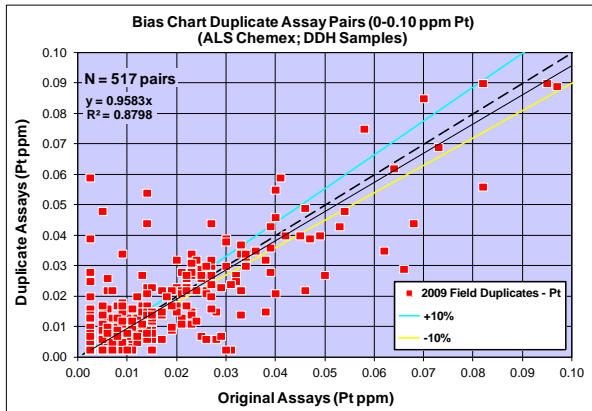
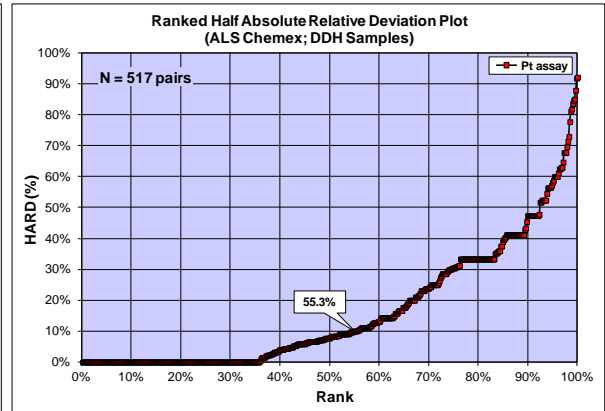
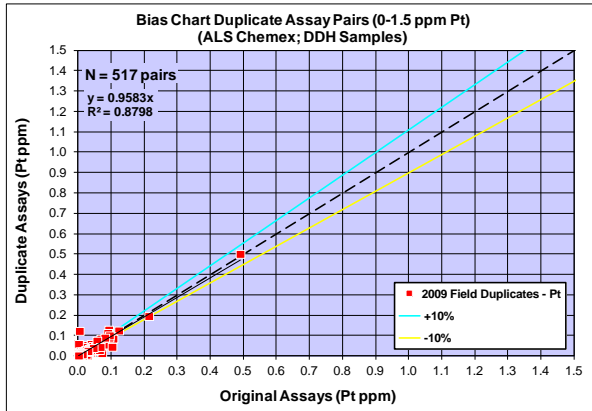


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Platinum (2009)


srk consulting

Project Dumont
Data Series 2009 Field Duplicates - Pt
Data Type DDH Samples
Commodity Pt in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.005ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

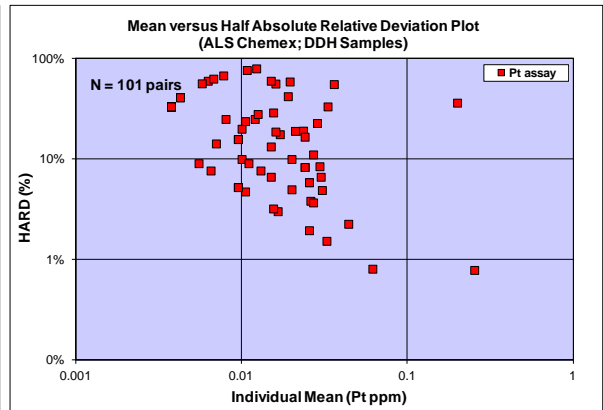
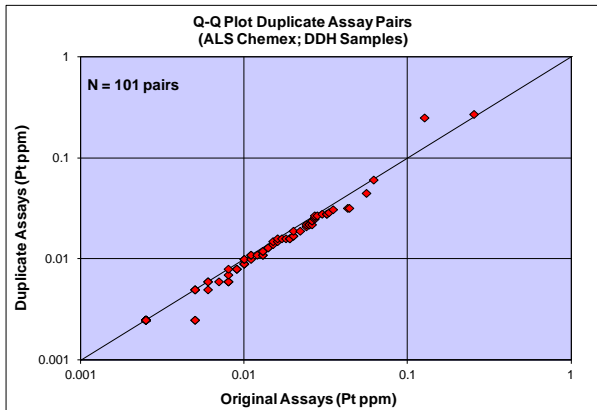
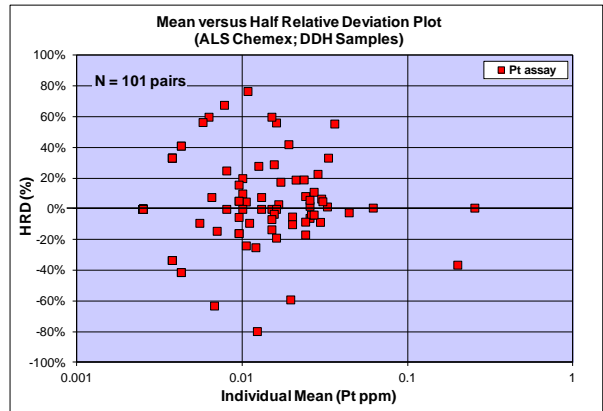
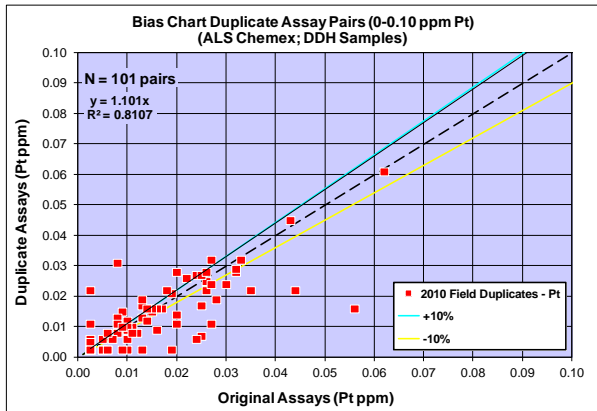
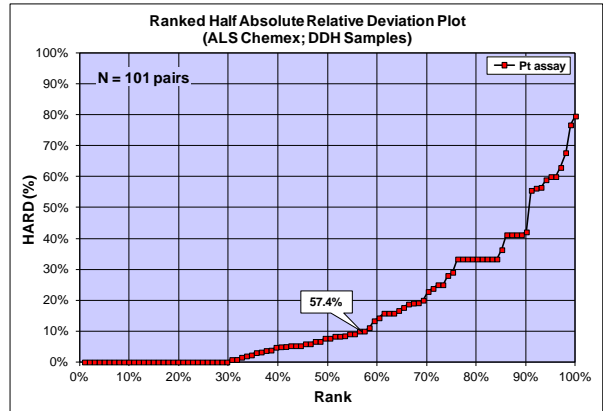
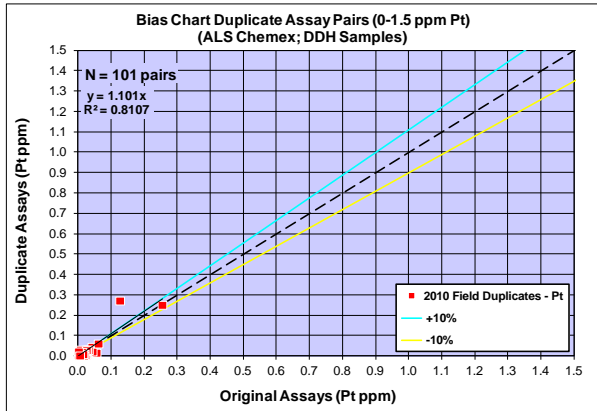
<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	517	517
Minimum Value	0.0025	0.0025
Maximum Value	0.491	0.501
Mean	0.014	0.014
Median	0.006	0.006
Standard Error	0.001	0.001
<u>Standard Deviation</u>	<u>0.029</u>	<u>0.029</u>
Correlation Coefficient	0.9384	
Pairs ≤ 10% HARD	55.3%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Platinum (2010)

	
Project	Dumont
Data Series	2010 Field Duplicates - Pt
Data Type	DDH Samples
Commodity	Pt in ppm
Analytical Method	FA-ICP-AES
Detection Limit	0.005ppm
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	101	101
Minimum Value	0.0025	0.0025
Maximum Value	0.255	0.272
Mean	0.016	0.017
Median	0.010	0.009
Standard Error	0.003	0.004
Standard Deviation	0.029	0.037
Correlation Coefficient	0.9018	
Pairs ≤ 10% HARD	57.4%	

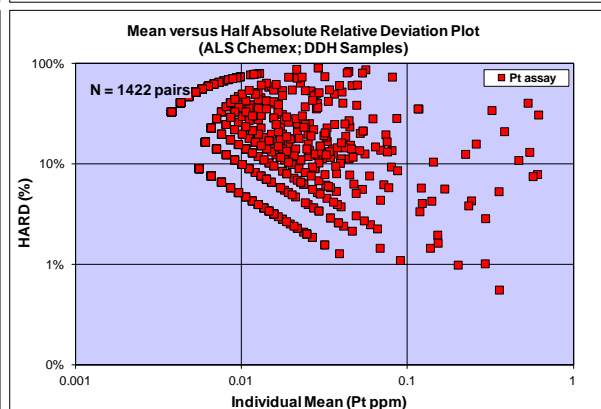
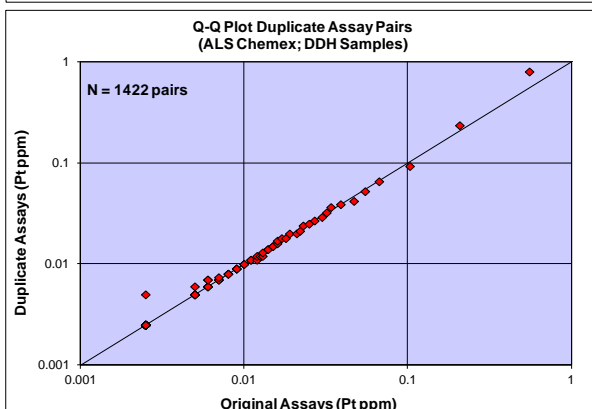
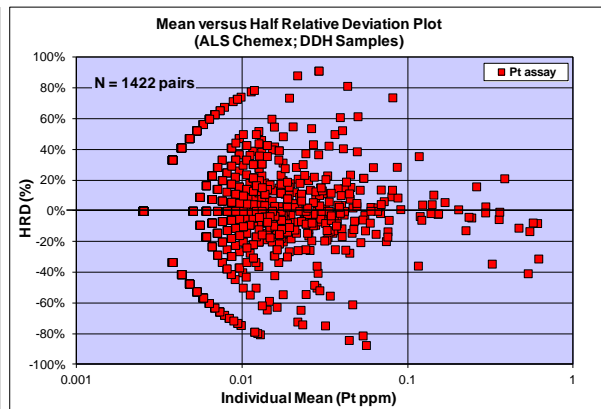
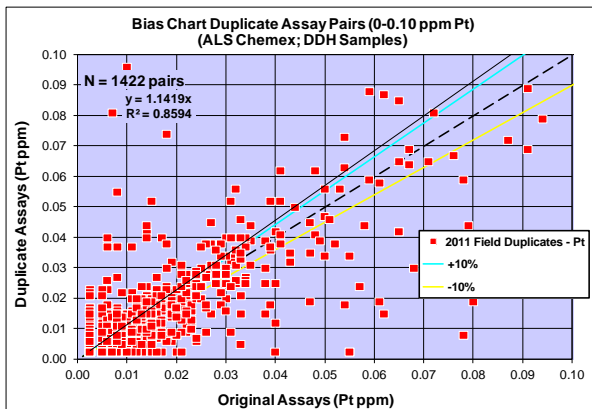
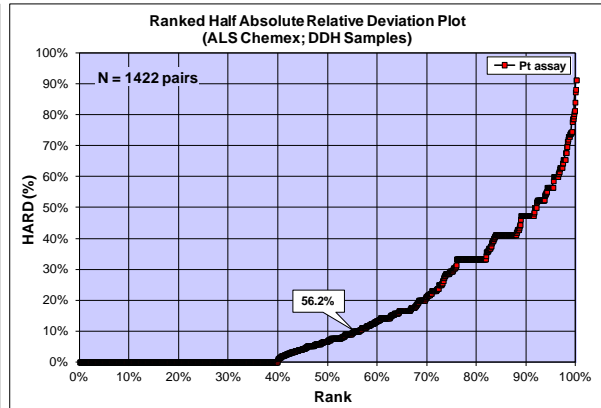
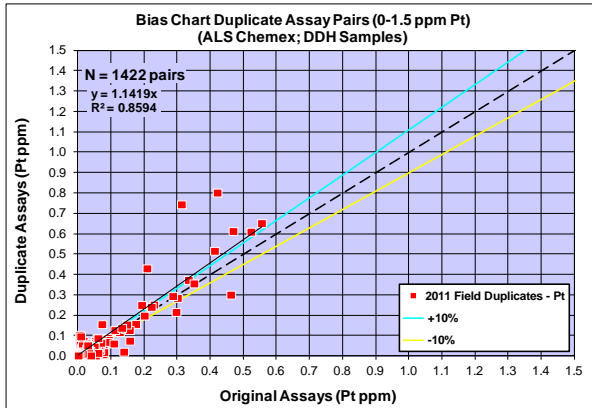


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Platinum (2011)


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Project Dumont
Data Series 2011 Field Duplicates - Pt
Data Type DDH Samples
Commodity Pt in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.005ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

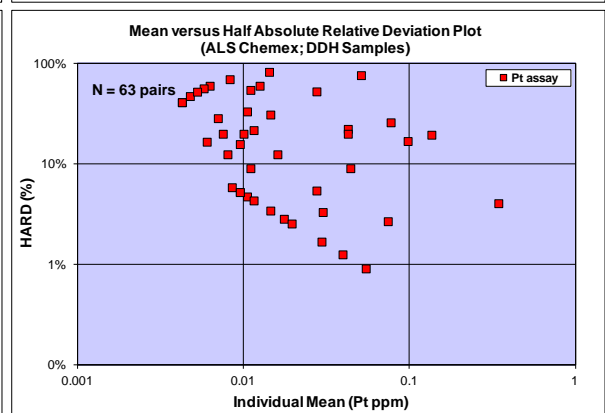
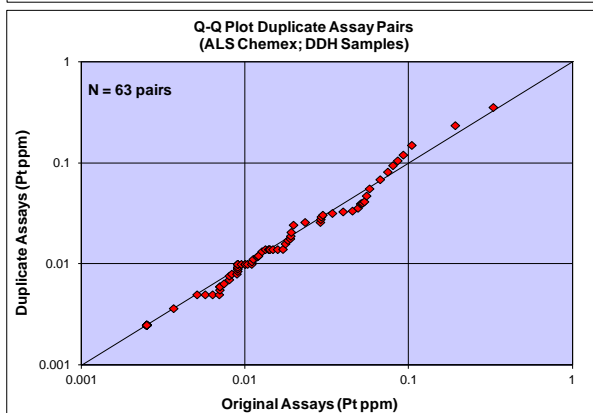
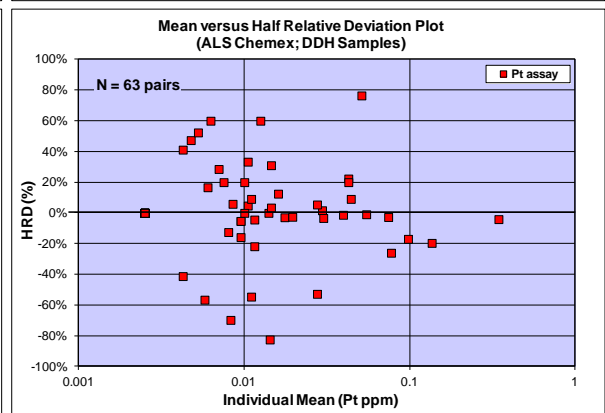
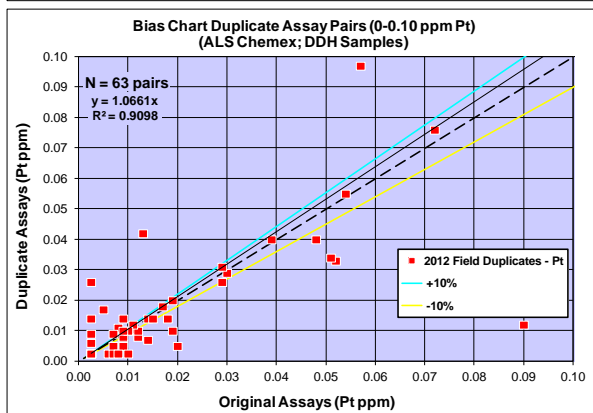
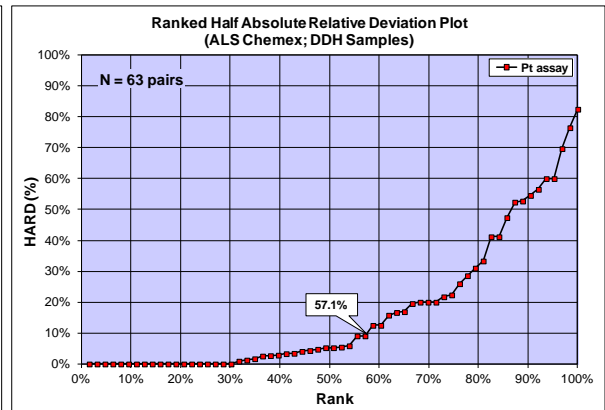
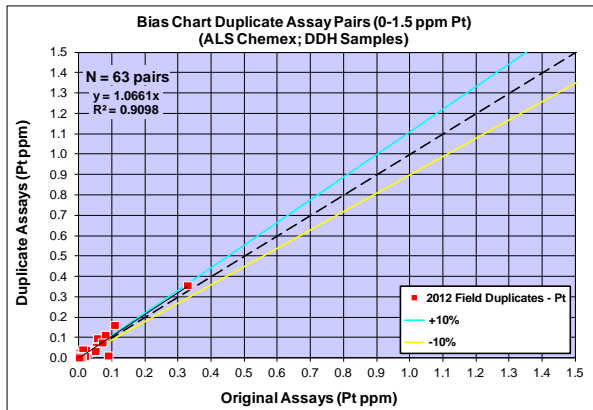
Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	0.0025	0.0025
Maximum Value	0.556	0.802
Mean	0.015	0.016
Median	0.006	0.006
Standard Error	0.001	0.001
Standard Deviation	0.042	0.052
Correlation Coefficient	0.9274	
Pairs ≤ 10% HARD	56.2%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Platinum (2012)

	
Project	Dumont
Data Series	2012 Field Duplicates - Pt
Data Type	DDH Samples
Commodity	Pt in ppm
Analytical Method	FA-ICP-AES
Detection Limit	0.005ppm
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	0.0025	0.0025
Maximum Value	0.329	0.357
Mean	0.023	0.024
Median	0.009	0.010
Standard Error	0.006	0.006
Standard Deviation	0.046	0.051
Correlation Coefficient	0.9539	
Pairs ≤ 10% HARD	57.1%	

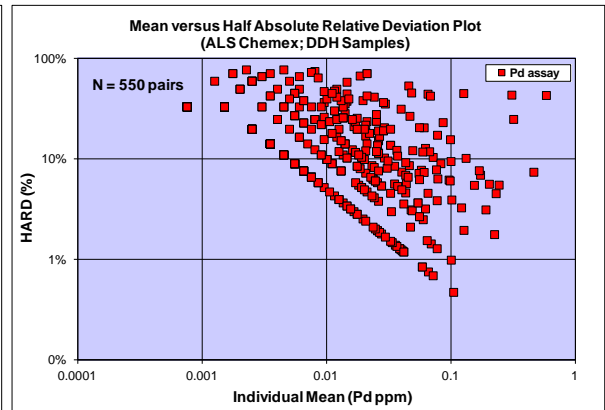
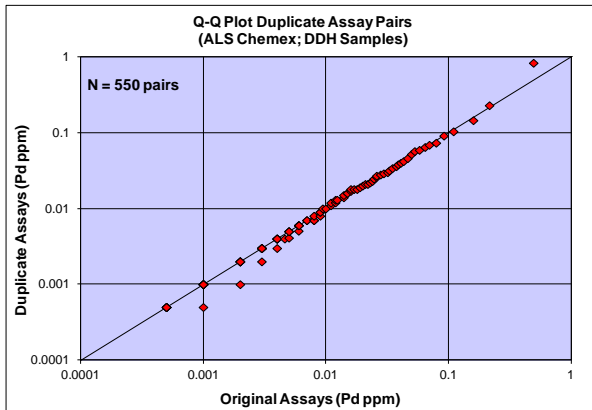
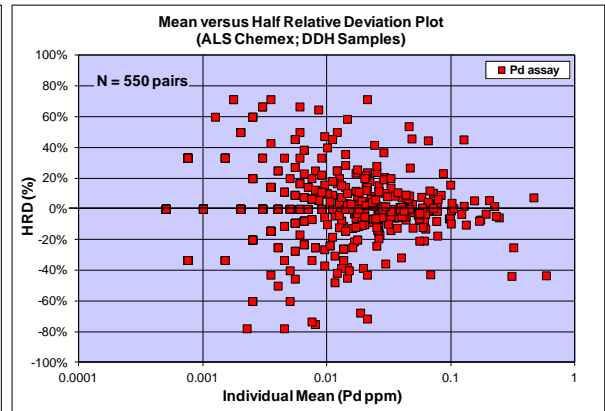
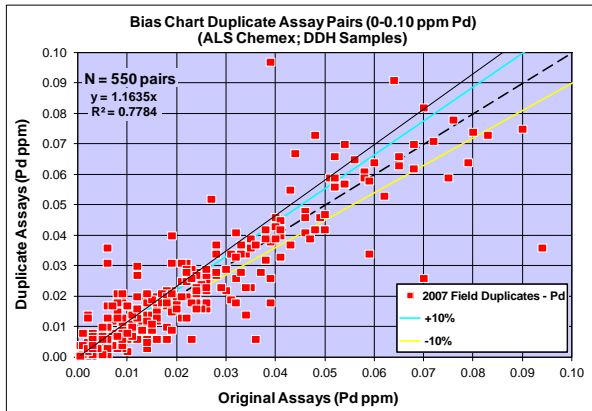
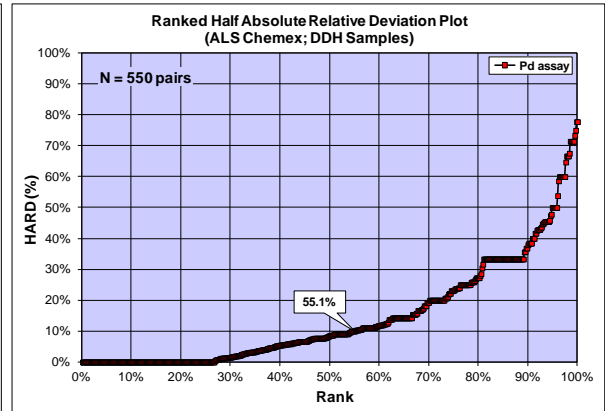
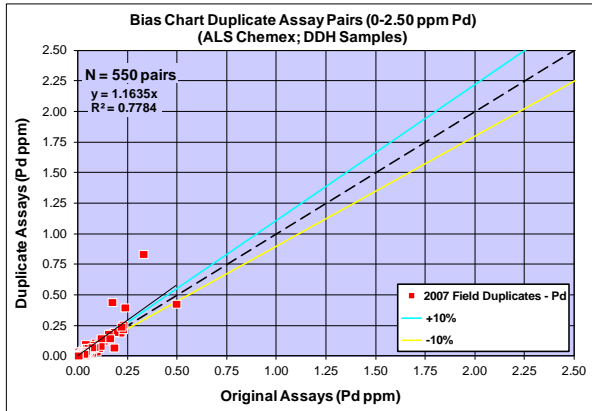


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Palladium (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - Pd
Data Type DDH Samples
Commodity Pd in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	550	550
Minimum Value	0.0005	0.0005
Maximum Value	0.496	0.834
Mean	0.021	0.023
Median	0.008	0.007
Standard Error	0.002	0.002
Standard Deviation	0.041	0.055
Correlation Coefficient	0.8832	
Pairs ≤ 10% HARD	55.1%	

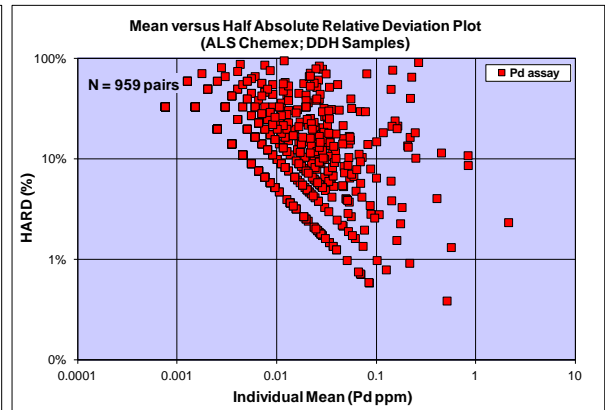
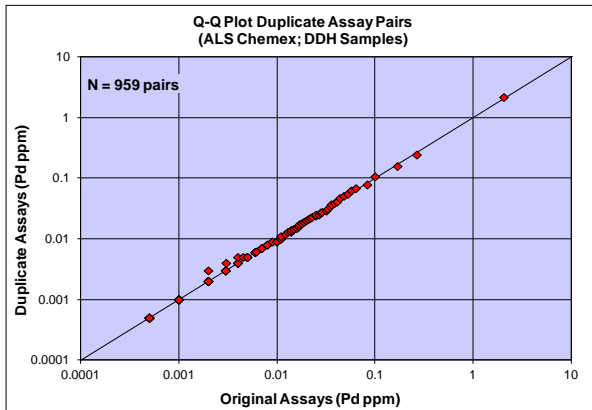
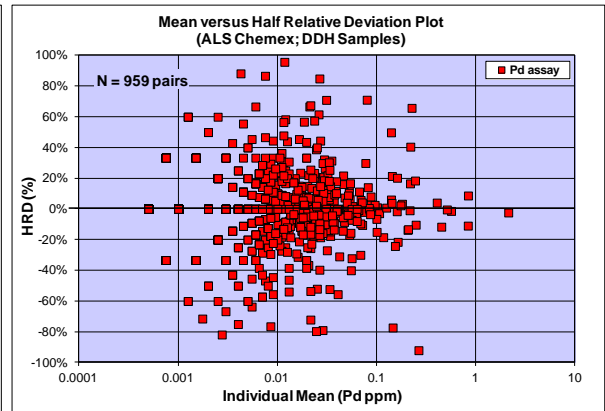
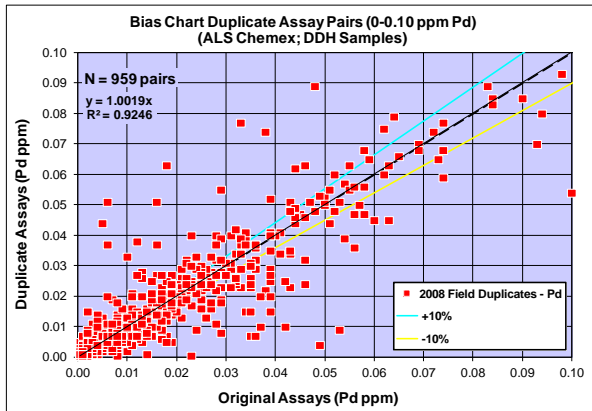
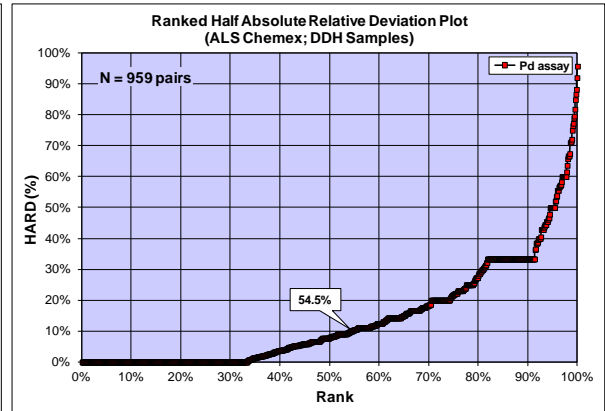
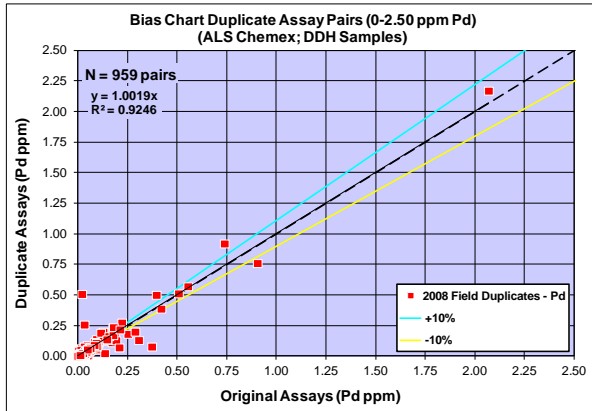


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Palladium (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - Pd
Data Type DDH Samples
Commodity Pd in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	959	959
Minimum Value	0.0005	0.0005
Maximum Value	2.07	2.17
Mean	0.022	0.023
Median	0.006	0.006
Standard Error	0.003	0.003
<u>Standard Deviation</u>	<u>0.088</u>	<u>0.091</u>
Correlation Coefficient	0.9616	
Pairs ≤ 10% HARD	54.5%	

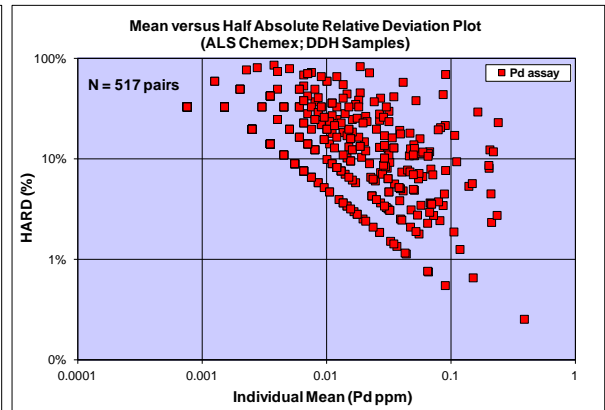
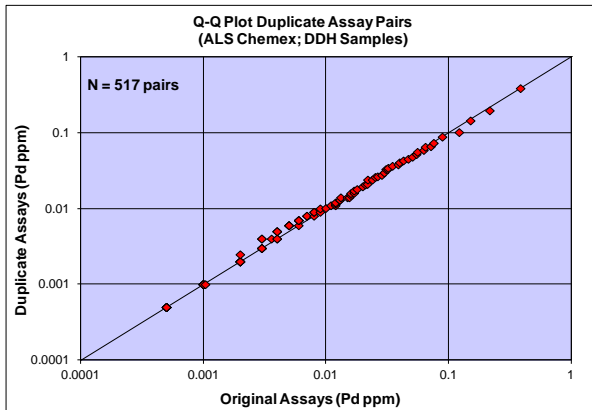
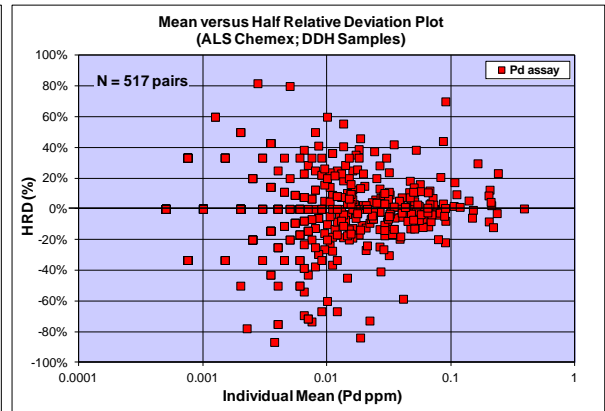
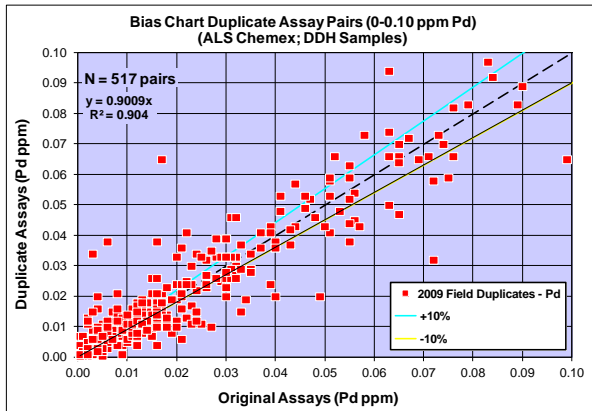
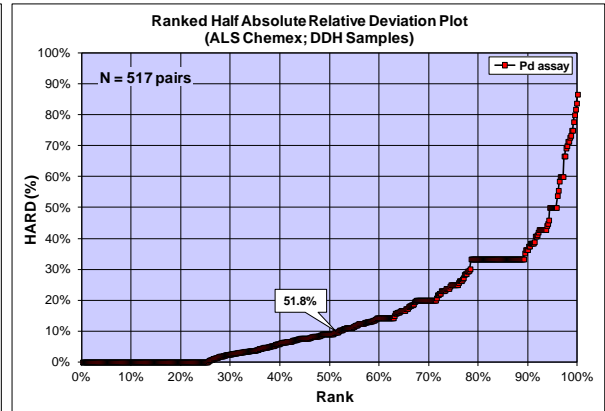
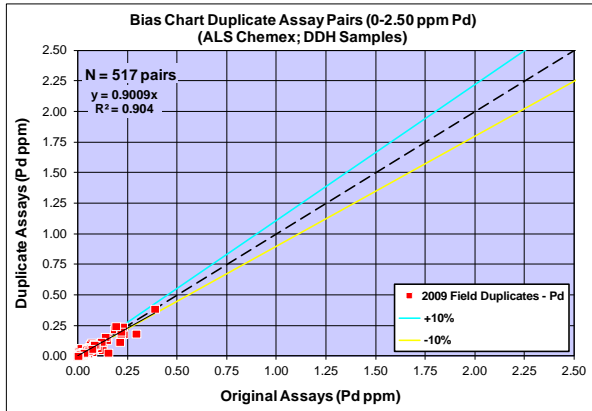


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Palladium (2009)


srk consulting

Project Dumont
Data Series 2009 Field Duplicates - Pd
Data Type DDH Samples
Commodity Pd in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

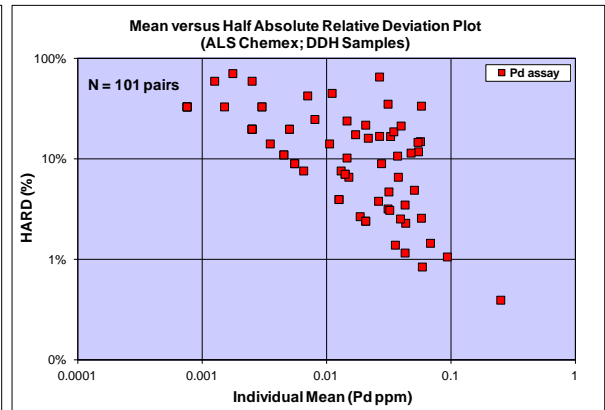
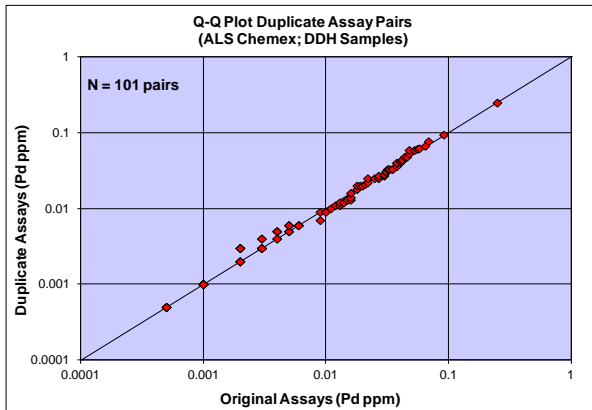
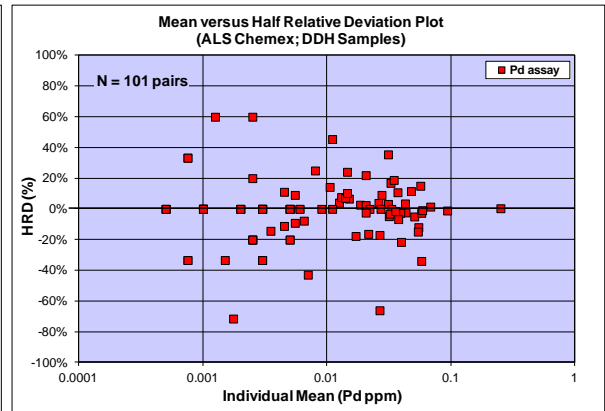
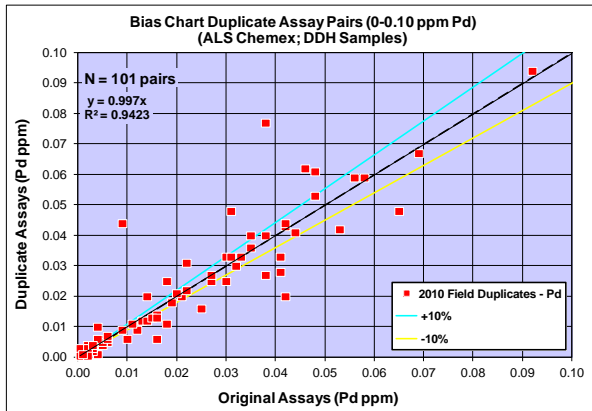
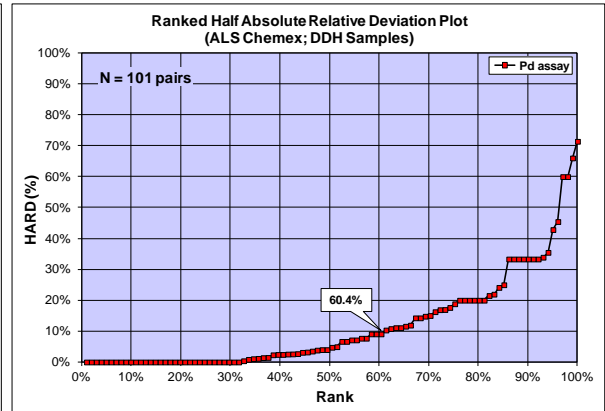
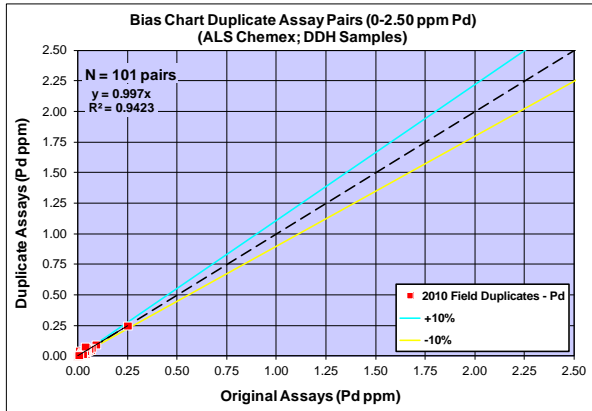
Statistics	Original	Duplicate
Sample Count	517	517
Minimum Value	0.0005	0.0005
Maximum Value	0.388	0.386
Mean	0.021	0.020
Median	0.007	0.008
Standard Error	0.002	0.002
Standard Deviation	0.040	0.037
Correlation Coefficient	0.9518	
Pairs ≤ 10% HARD	51.8%	



Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Palladium (2010)

	
Project	Dumont
Data Series	2010 Field Duplicates - Pd
Data Type	DDH Samples
Commodity	Pd in ppm
Analytical Method	FA-ICP-AES
Detection Limit	0.001ppm
Original Dataset	Original Assays
Paired Dataset	Duplicate Assays

<u>Statistics</u>	<u>Original</u>	<u>Duplicate</u>
Sample Count	101	101
Minimum Value	0.0005	0.0005
Maximum Value	0.251	0.249
Mean	0.019	0.020
Median	0.009	0.007
Standard Error	0.003	0.003
Standard Deviation	0.030	0.031
Correlation Coefficient	0.9709	
Pairs ≤ 10% HARD	60.4%	

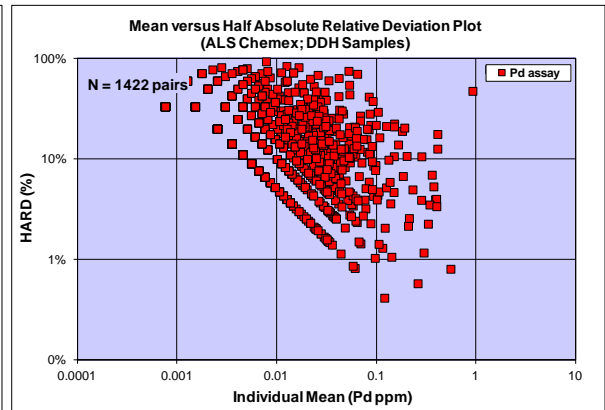
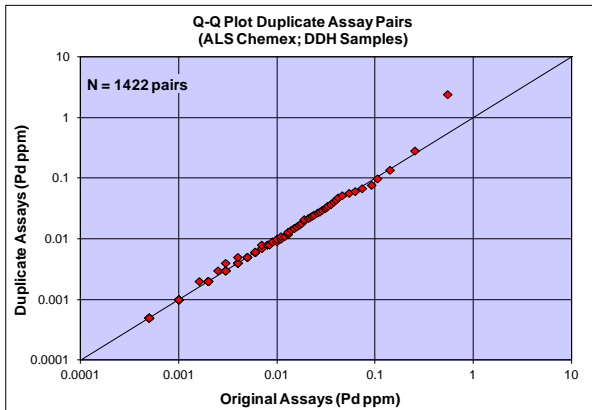
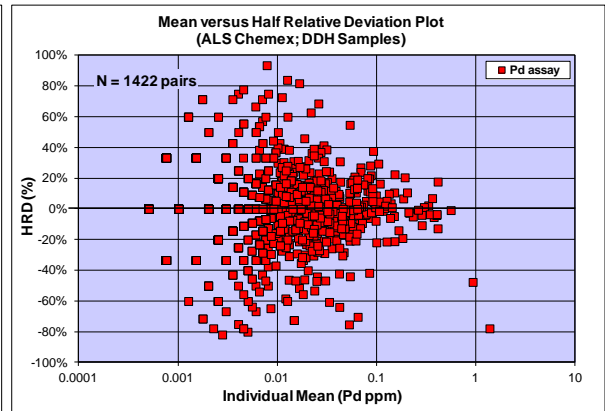
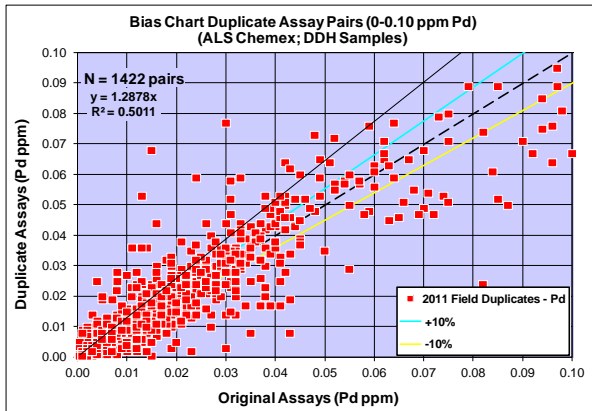
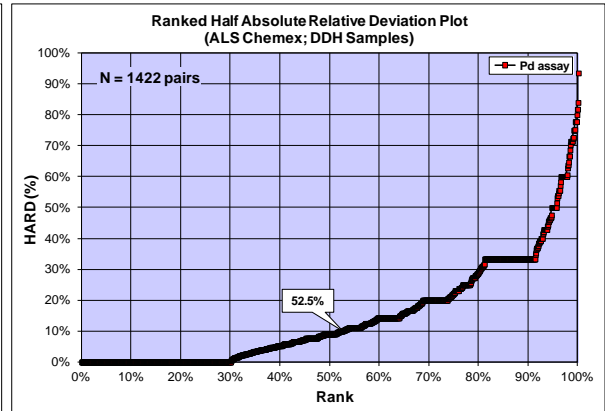
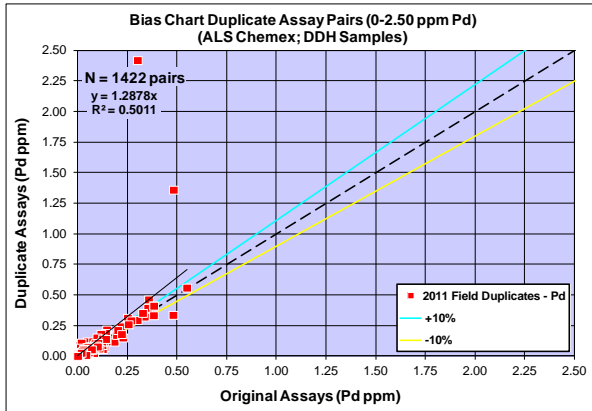


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Palladium (2011)

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Project Dumont
Data Series 2011 Field Duplicates - Pd
Data Type DDH Samples
Commodity Pd in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	1,422	1,422
Minimum Value	0.0005	0.0005
Maximum Value	0.55	2.42
Mean	0.019	0.021
Median	0.006	0.006
Standard Error	0.001	0.002
Standard Deviation	0.046	0.085
Correlation Coefficient	0.7091	
Pairs ≤ 10% HARD	52.5%	

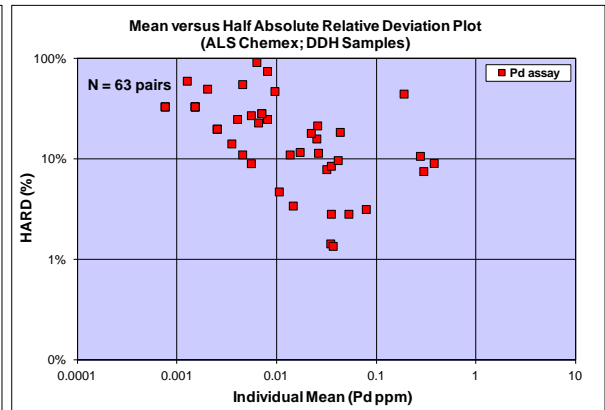
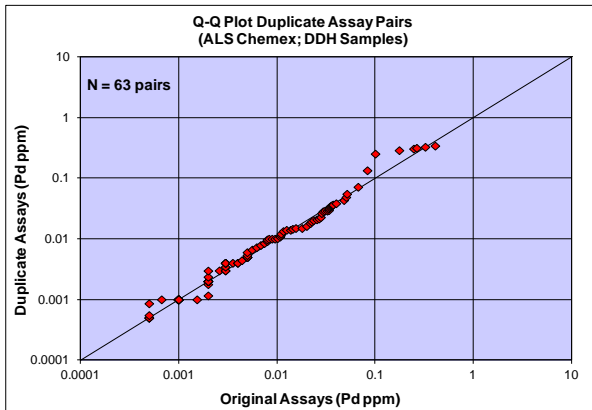
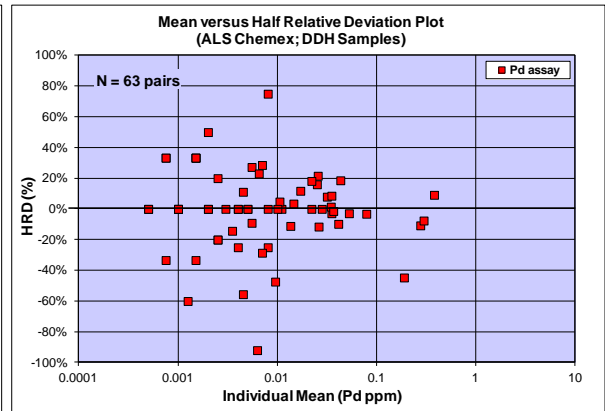
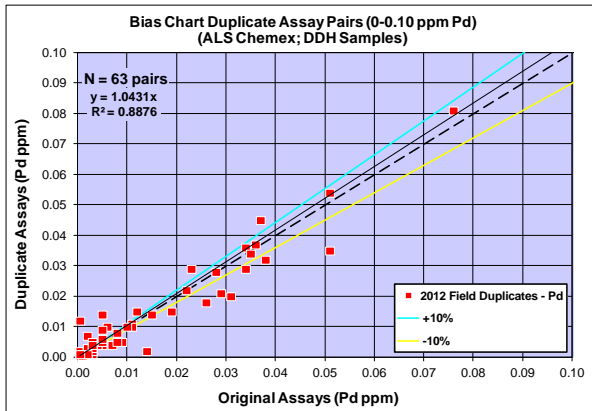
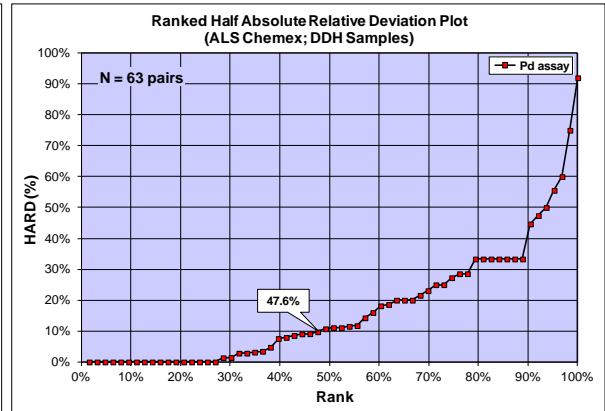
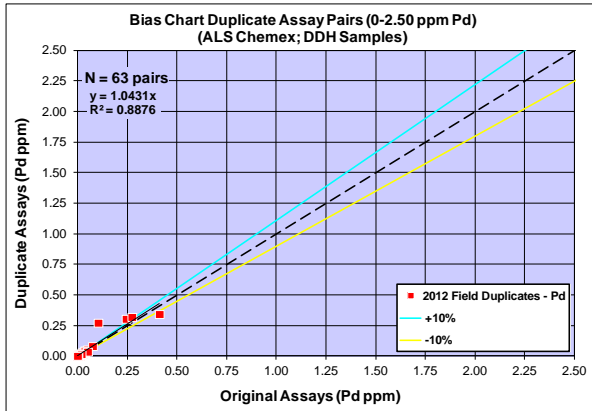


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Palladium (2012)

srk consulting

Project Dumont
Data Series 2012 Field Duplicates - Pd
Data Type DDH Samples
Commodity Pd in ppm
Analytical Method FA-ICP-AES
Detection Limit 0.001 ppm
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	0.0005	0.0005
Maximum Value	0.41	0.34
Mean	0.028	0.031
Median	0.005	0.006
Standard Error	0.009	0.009
Standard Deviation	0.068	0.075
Correlation Coefficient	0.9424	
Pairs ≤ 10% HARD	47.6%	

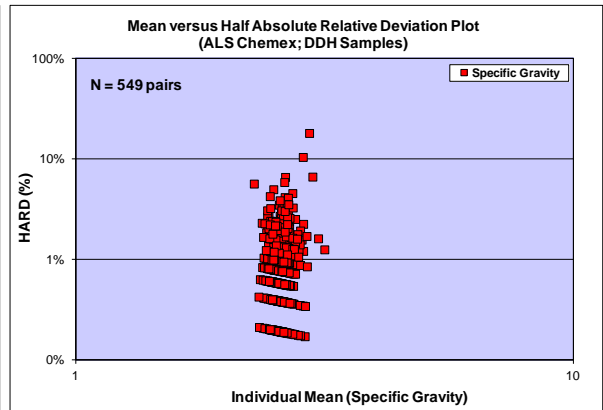
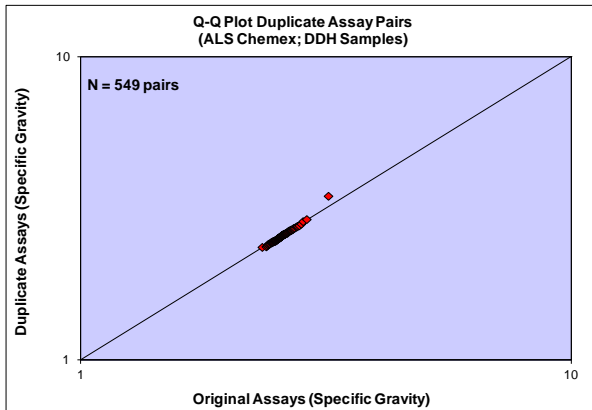
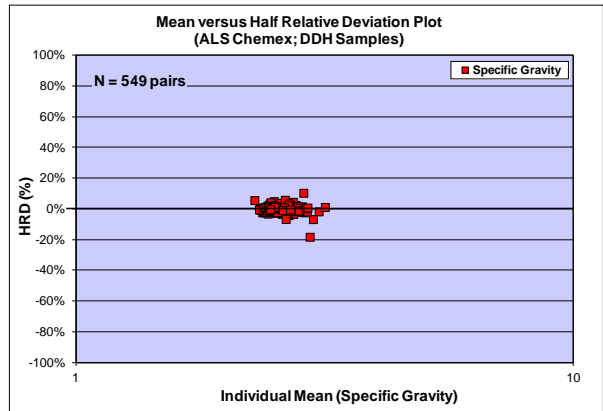
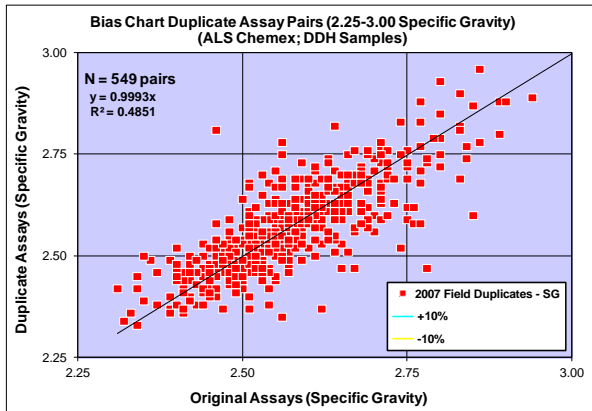
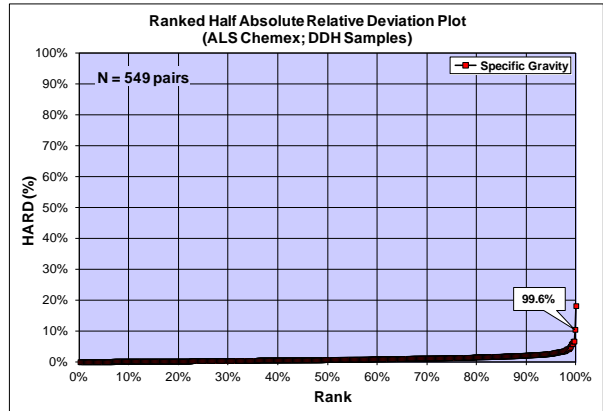
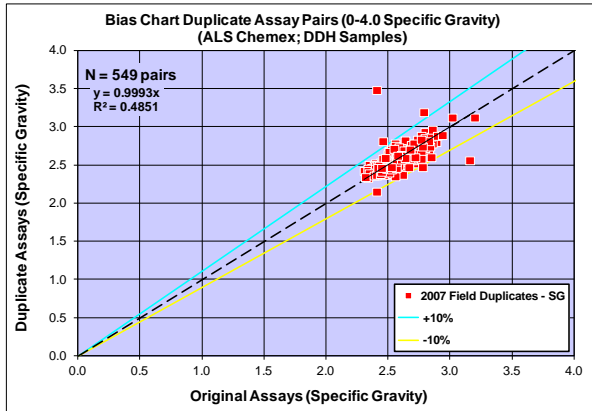


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Specific Gravity (2007)

srk consulting

Project Dumont
Data Series 2007 Field Duplicates - SG
Data Type DDH Samples
Commodity Specific Gravity
Analytical Method Gravimetric
Detection Limit 0.01
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	549	549
Minimum Value	2.31	2.15
Maximum Value	3.20	3.48
Mean	2.58	2.58
Median	2.57	2.57
Standard Error	0.005	0.005
Standard Deviation	0.11	0.12
Correlation Coefficient	0.7236	
Pairs ≤ 10% HARD	99.6%	

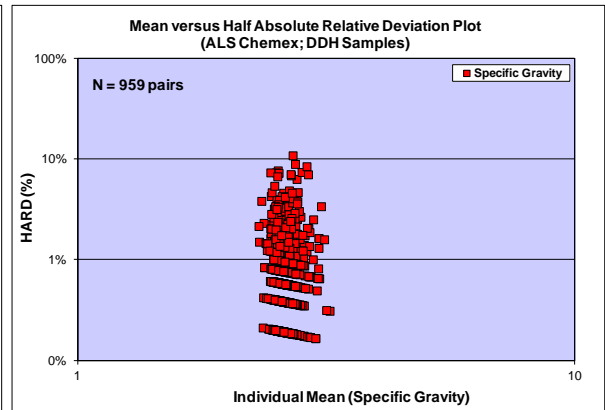
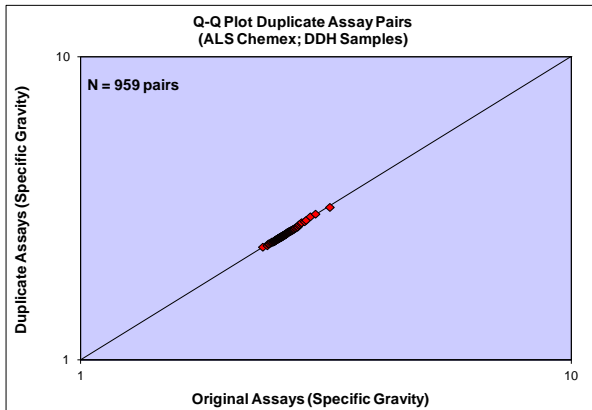
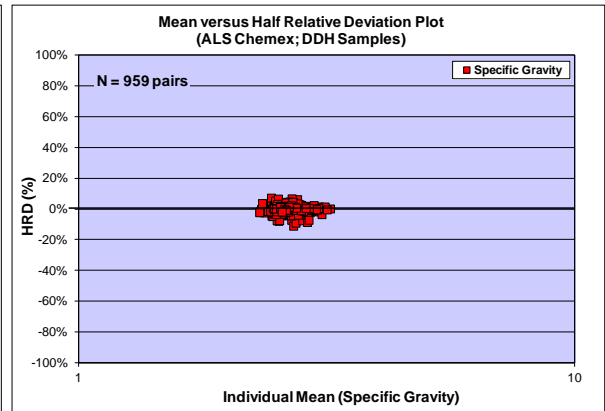
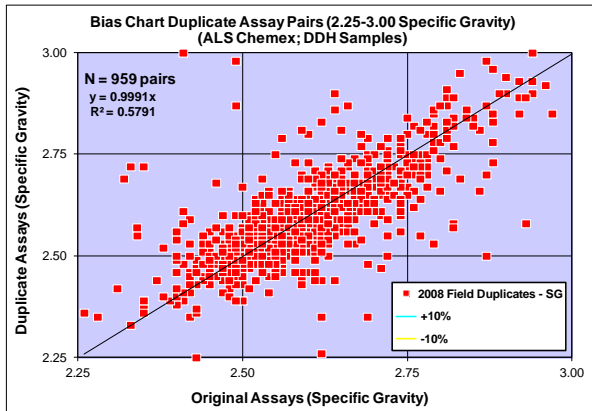
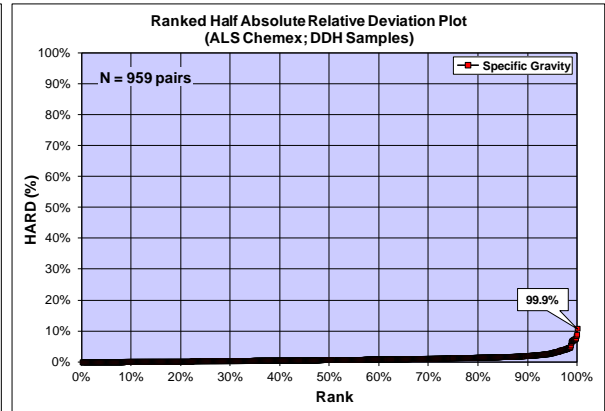
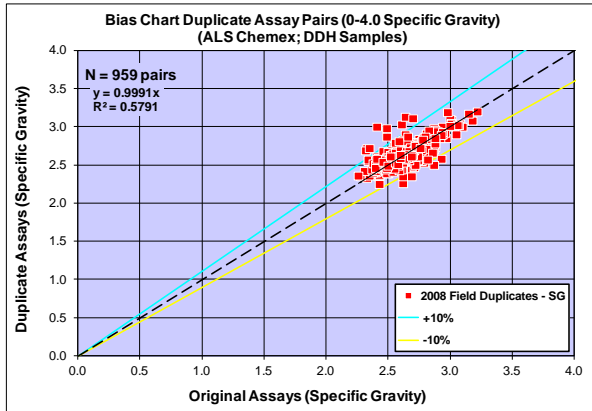


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Specific Gravity (2008)

srk consulting

Project Dumont
Data Series 2008 Field Duplicates - SG
Data Type DDH Samples
Commodity Specific Gravity
Analytical Method Gravimetric
Detection Limit 0.01
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	959	959
Minimum Value	2.26	2.25
Maximum Value	3.22	3.20
Mean	2.60	2.60
Median	2.59	2.58
Standard Error	0.004	0.004
Standard Deviation	0.12	0.13
Correlation Coefficient	0.7839	
Pairs ≤ 10% HARD	99.9%	

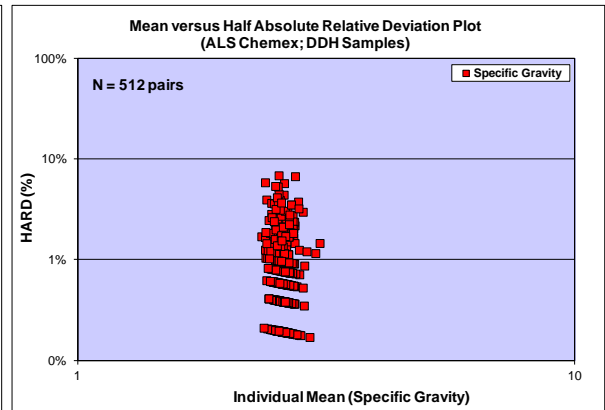
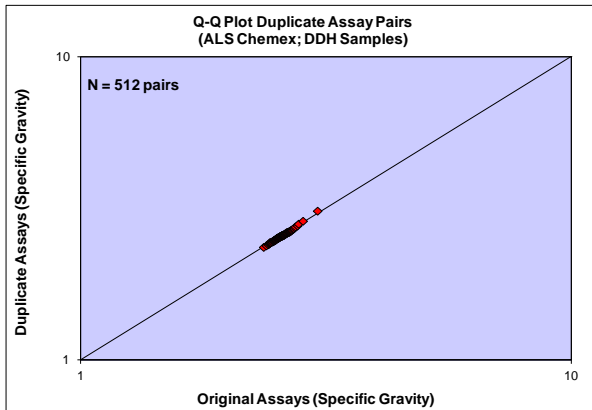
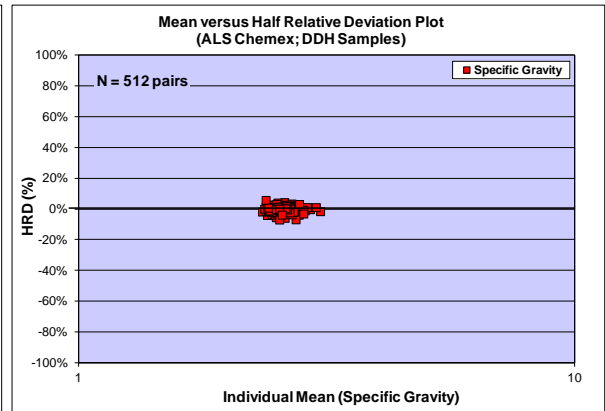
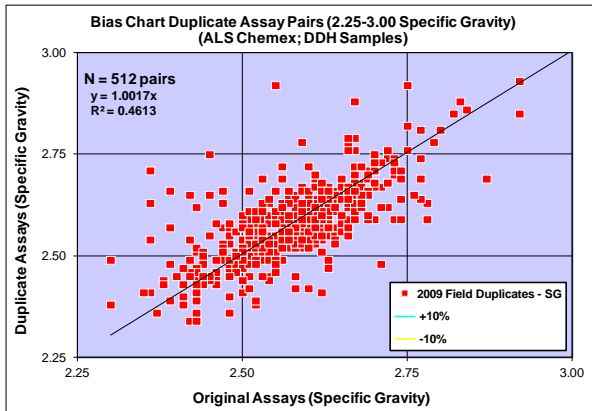
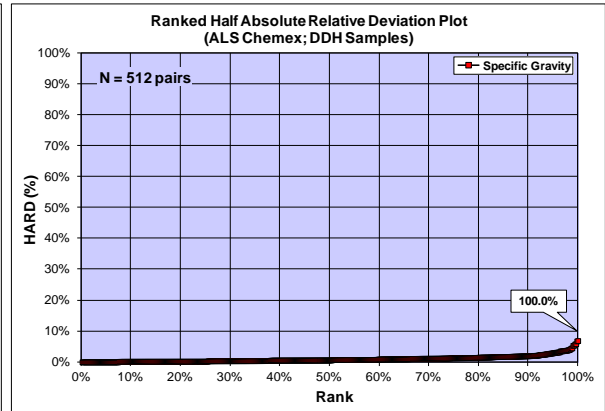
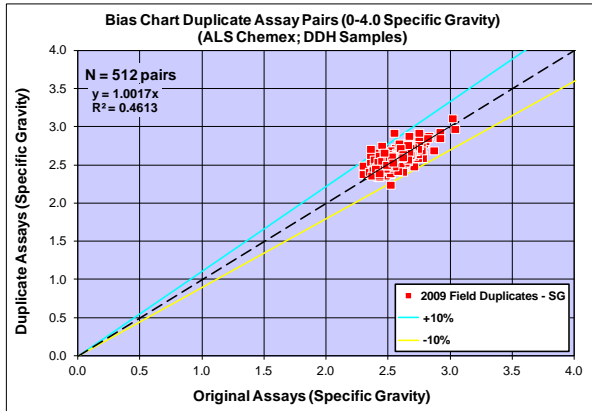


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Specific Gravity (2009)

srk consulting

Project Dumont
Data Series 2009 Field Duplicates - SG
Data Type DDH Samples
Commodity Specific Gravity
Analytical Method Gravimetric
Detection Limit 0.01
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	512	512
Minimum Value	2.30	2.24
Maximum Value	3.04	3.11
Mean	2.58	2.58
Median	2.57	2.58
Standard Error	0.004	0.004
Standard Deviation	0.10	0.10
Correlation Coefficient	0.7294	
Pairs ≤ 10% HARD	100.0%	

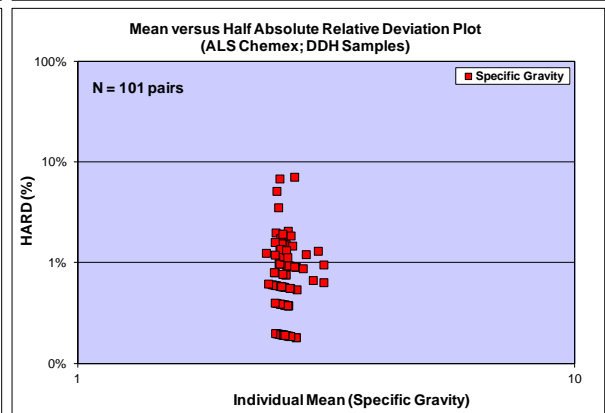
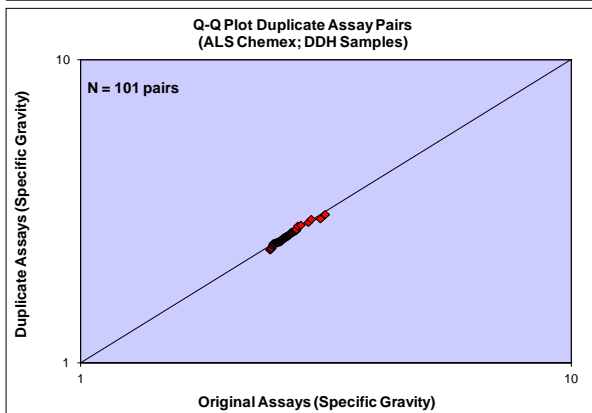
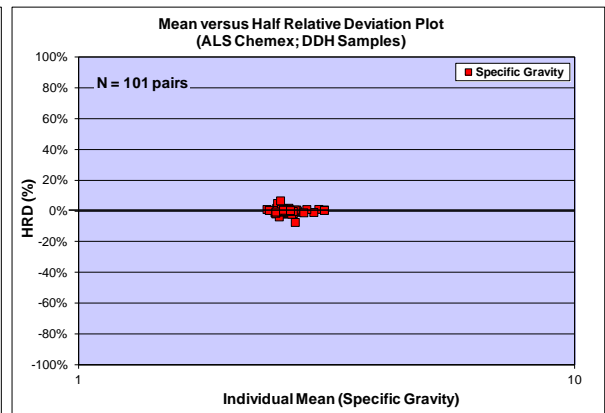
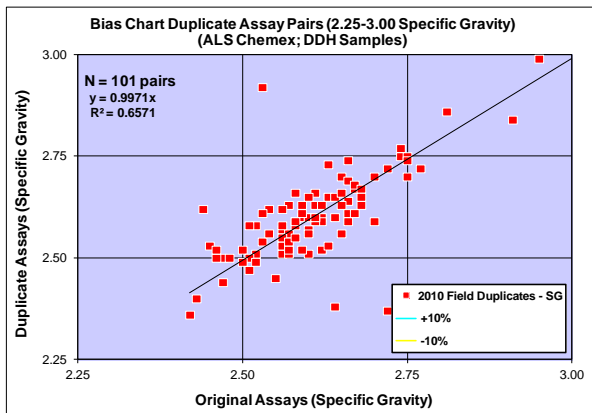
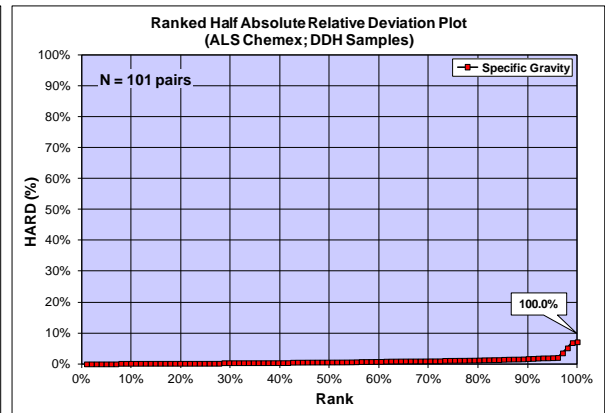
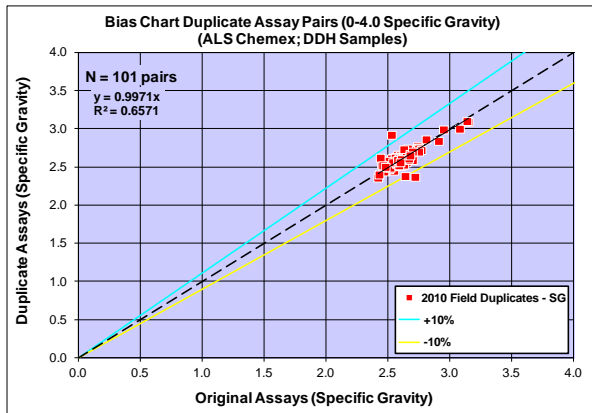


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Specific Gravity (2010)

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Project Dumont
Data Series 2010 Field Duplicates - SG
Data Type DDH Samples
Commodity Specific Gravity
Analytical Method Gravimetric
Detection Limit 0.01
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	101	101
Minimum Value	2.42	2.36
Maximum Value	3.15	3.10
Mean	2.62	2.61
Median	2.60	2.60
Standard Error	0.01	0.01
Standard Deviation	0.13	0.13
Correlation Coefficient	0.8238	
Pairs ≤ 10% HARD	100.0%	

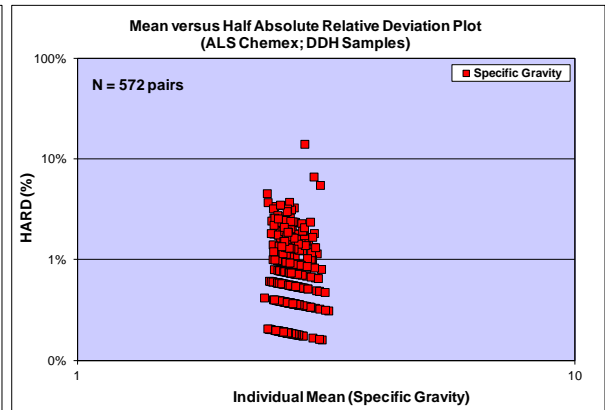
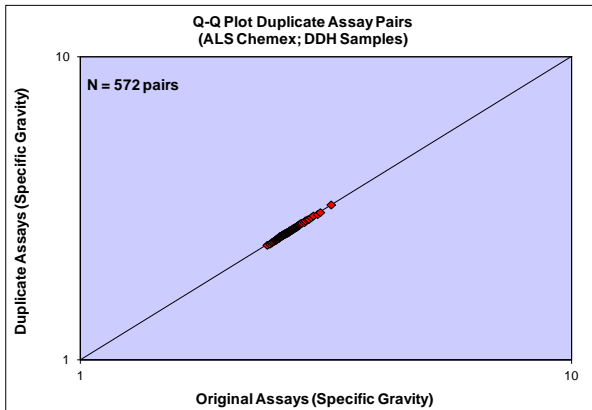
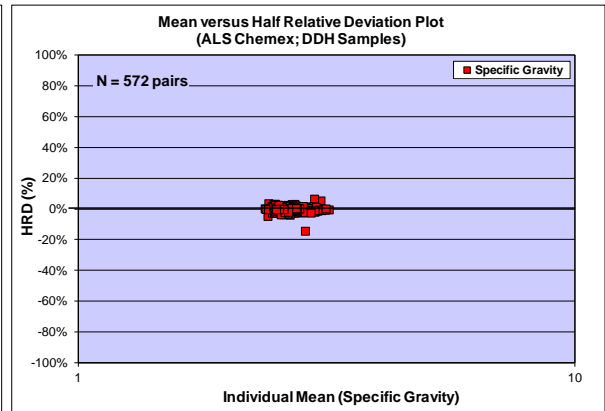
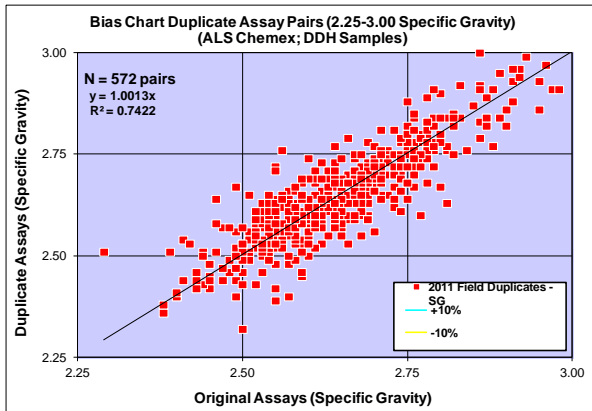
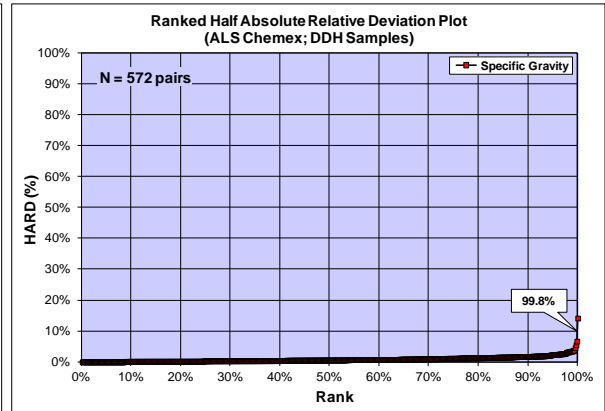
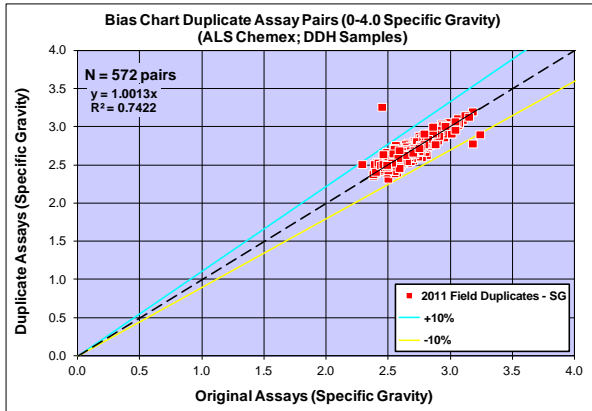


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Specific Gravity (2011)

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Project Dumont
Data Series 2011 Field Duplicates - SG
Data Type DDH Samples
Commodity Specific Gravity
Analytical Method Gravimetric
Detection Limit 0.01
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	572	572
Minimum Value	2.29	2.32
Maximum Value	3.24	3.26
Mean	2.66	2.66
Median	2.64	2.64
Standard Error	0.01	0.01
Standard Deviation	0.14	0.14
Correlation Coefficient	0.8706	
Pairs ≤ 10% HARD	99.8%	

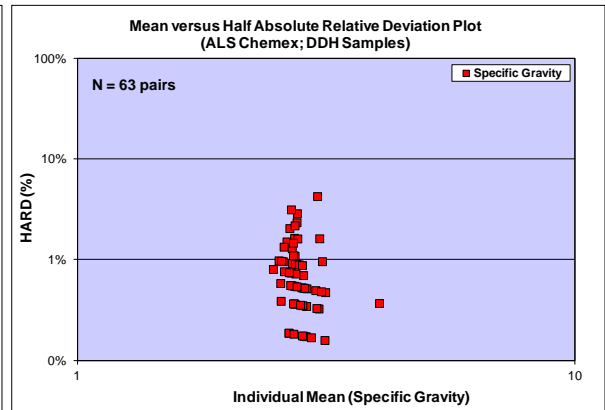
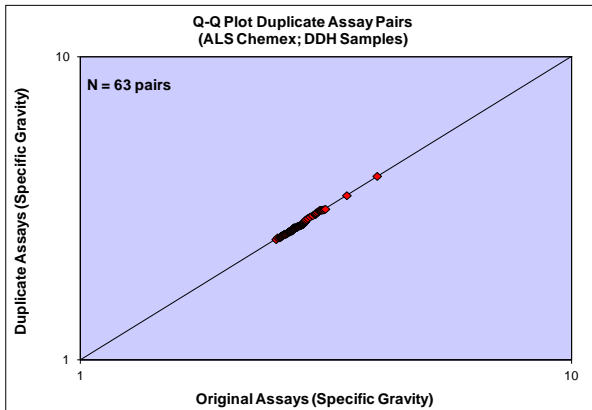
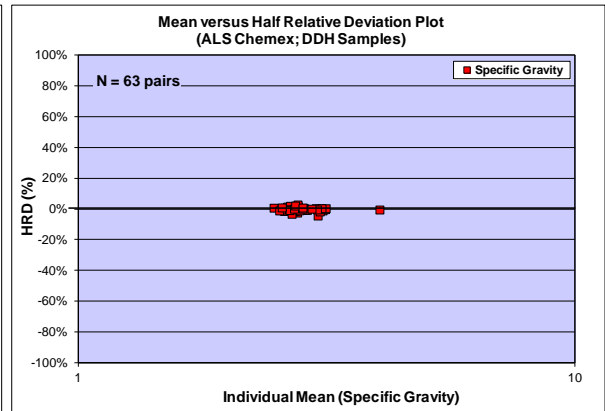
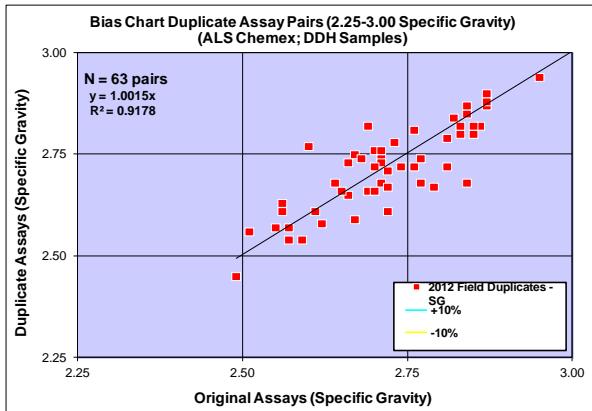
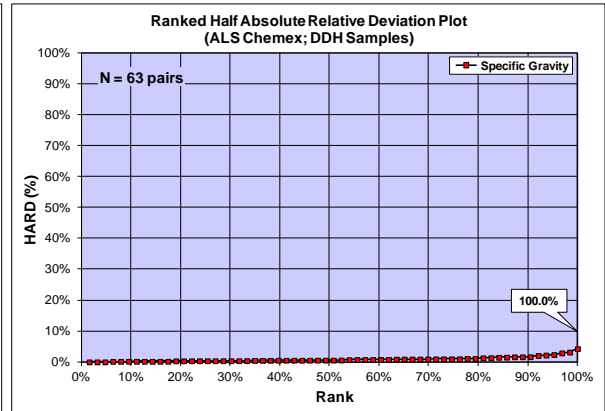
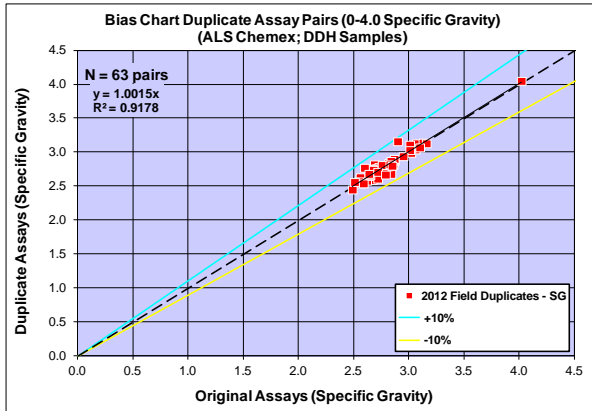


Bias Charts, Quantile-Quantile and Precision Plots for Field Duplicate Assays (ALS Chemex) – Specific Gravity (2012)

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Project Dumont
Data Series 2012 Field Duplicates - SG
Data Type DDH Samples
Commodity Specific Gravity
Analytical Method Gravimetric
Detection Limit 0.01
Original Dataset Original Assays
Paired Dataset Duplicate Assays

Statistics	Original	Duplicate
Sample Count	63	63
Minimum Value	2.49	2.45
Maximum Value	4.02	4.05
Mean	2.79	2.79
Median	2.74	2.74
Standard Error	0.03	0.03
Standard Deviation	0.22	0.23
Correlation Coefficient	0.9580	
Pairs ≤ 10% HARD	100.0%	

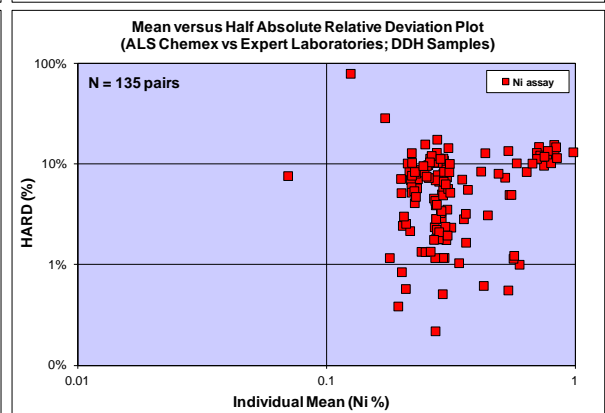
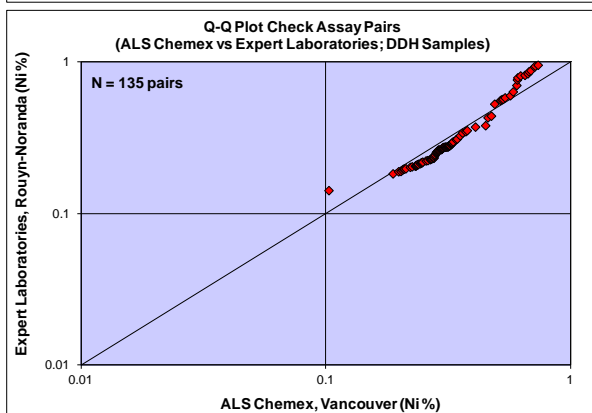
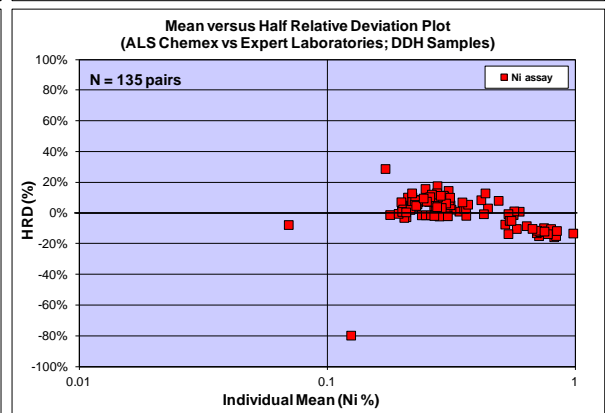
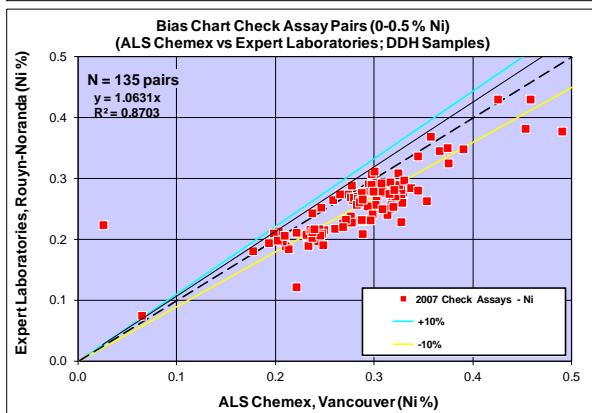
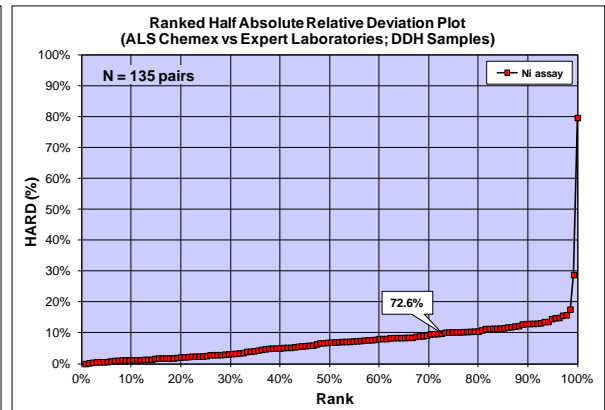
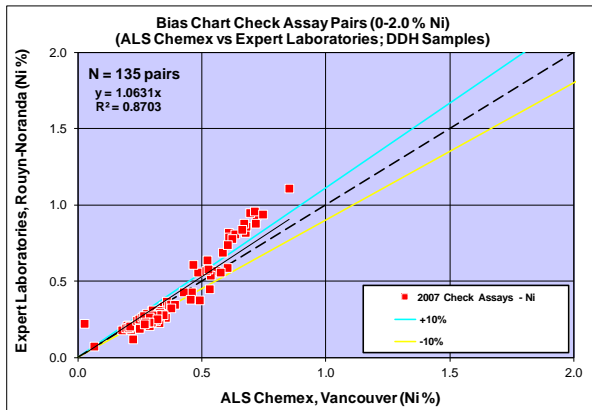


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus Laboratoire Expert) – Nickel (2007)

srk consulting

Project Dumont
Data Series 2007 Check Assays - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES (ALS) vs AqR-AAS (Expert)
Detection Limit 0.0001% (ALS) vs 0.0002% (Expert)
Original Dataset ALS Chemex, Vancouver
Paired Dataset Expert Laboratories, Rouyn-Noranda

Statistics	ALS	Expert
Sample Count	135	135
Minimum Value	0.025	0.075
Maximum Value	0.851	1.110
Mean	0.349	0.351
Median	0.300	0.271
Standard Error	0.013	0.018
Standard Deviation	0.149	0.214
Correlation Coefficient	0.9632	
Pairs ≤ 10% HARD	72.6%	

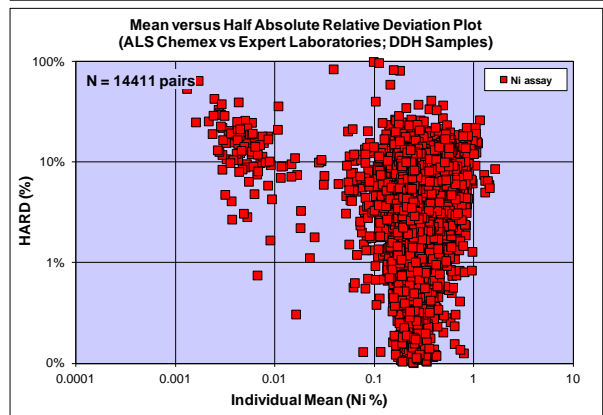
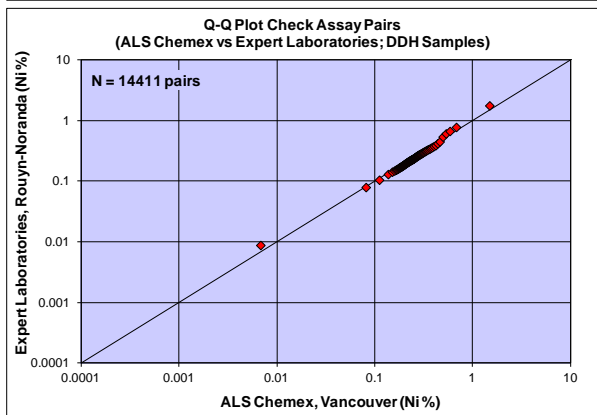
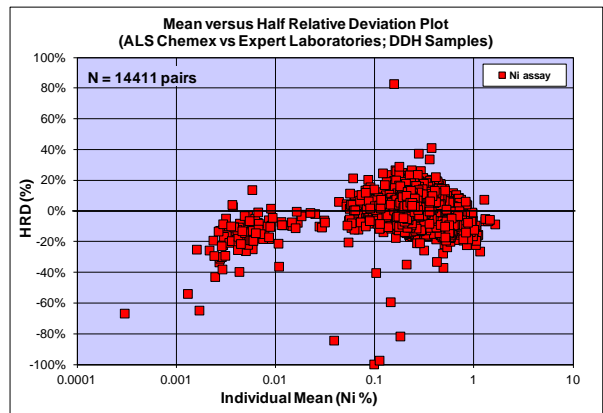
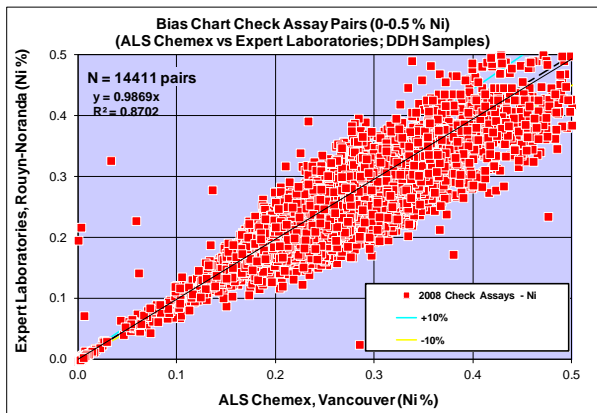
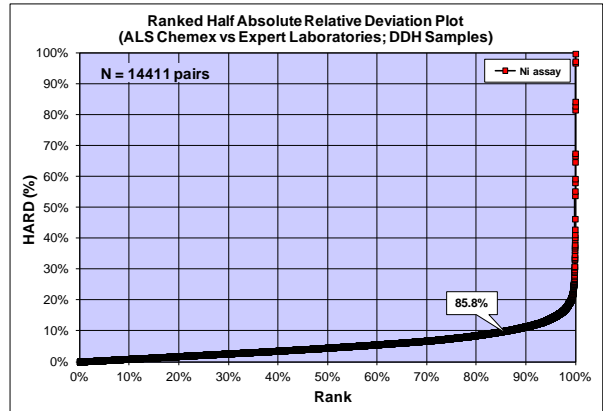
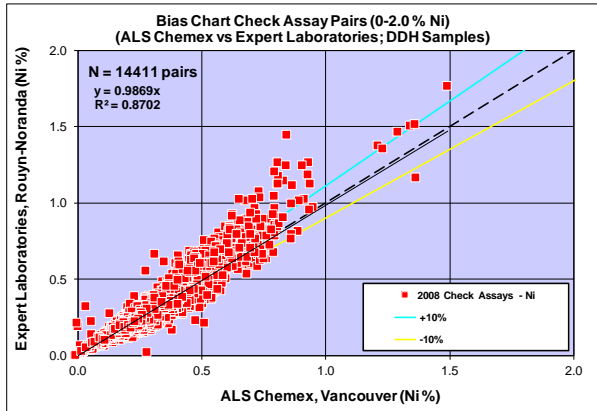


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus Laboratoire Expert) – Nickel (2008)

srk consulting

Project Dumont
Data Series 2008 Check Assays - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES (ALS) vs AqR-AAS (Expert)
Detection Limit 0.0001% (ALS) vs 0.0002% (Expert)
Original Dataset ALS Chemex, Vancouver
Paired Dataset Expert Laboratories, Rouyn-Noranda

Statistics	ALS	Expert
Sample Count	14,411	14,411
Minimum Value	0.000	0.001
Maximum Value	1.490	1.770
Mean	0.260	0.252
Median	0.241	0.228
Standard Error	0.001	0.001
Standard Deviation	0.109	0.126
Correlation Coefficient	0.9399	
Pairs ≤ 10% HARD	85.8%	

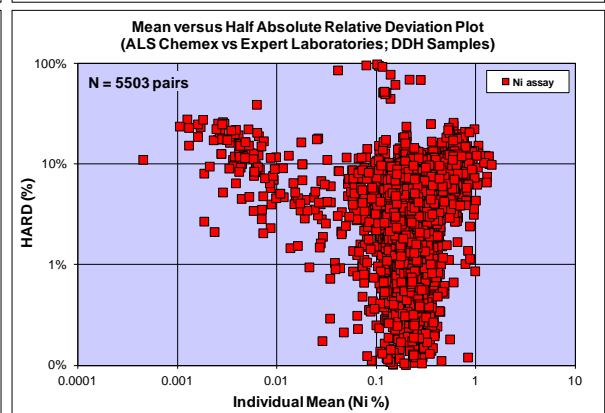
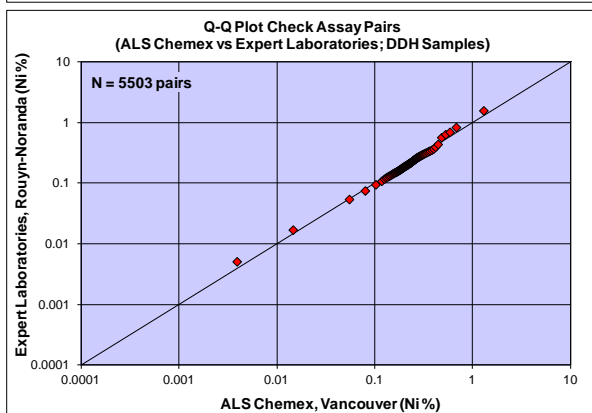
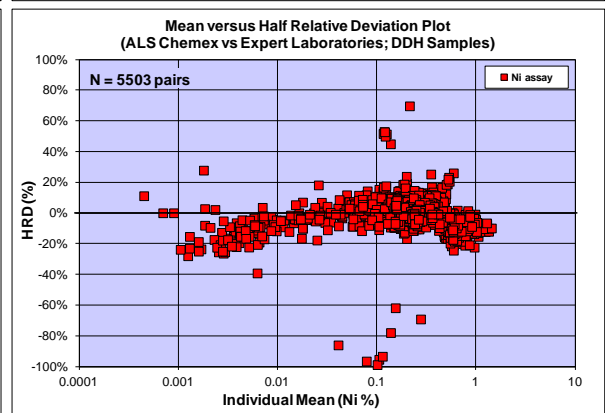
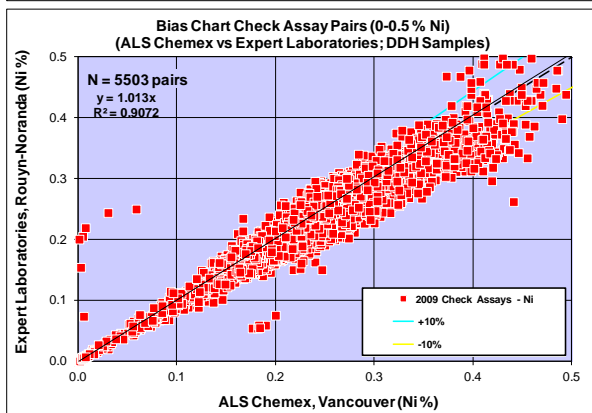
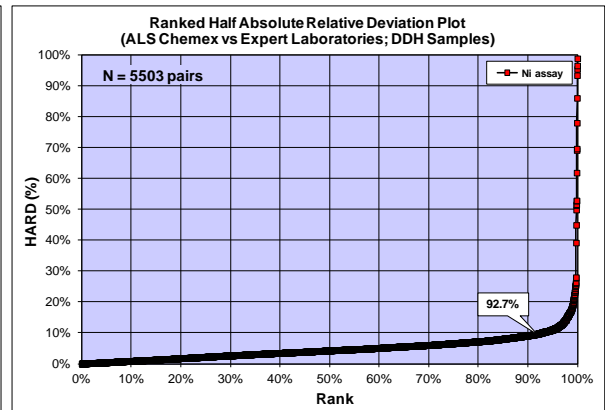
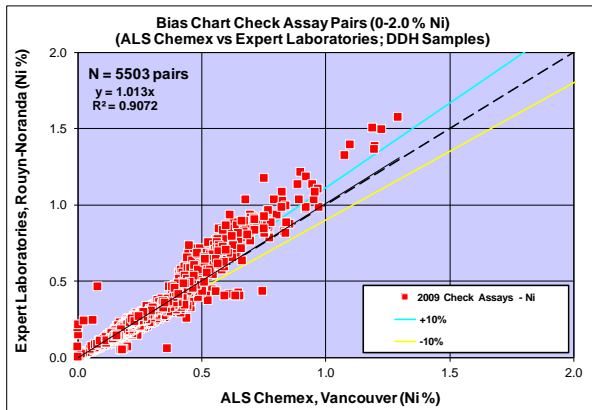


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus Laboratoire Expert) – Nickel (2009)

srk consulting

Project Dumont
Data Series 2009 Check Assays - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES (ALS) vs AqR-AAS (Expert)
Detection Limit 0.0001% (ALS) vs 0.0002% (Expert)
Original Dataset ALS Chemex, Vancouver
Paired Dataset Expert Laboratories, Rouyn-Noranda

Statistics	ALS	Expert
Sample Count	5,503	5,503
Minimum Value	0.001	0.000
Maximum Value	1.295	1.580
Mean	0.240	0.236
Median	0.227	0.214
Standard Error	0.002	0.002
Standard Deviation	0.116	0.139
Correlation Coefficient	0.9603	
Pairs ≤ 10% HARD	92.7%	

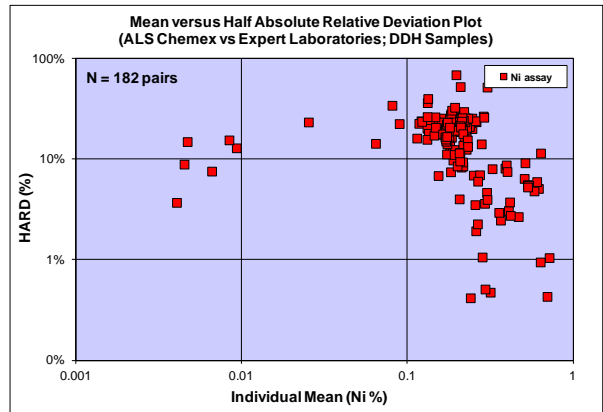
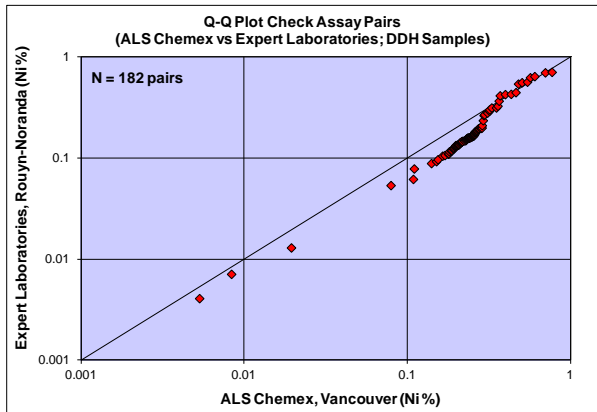
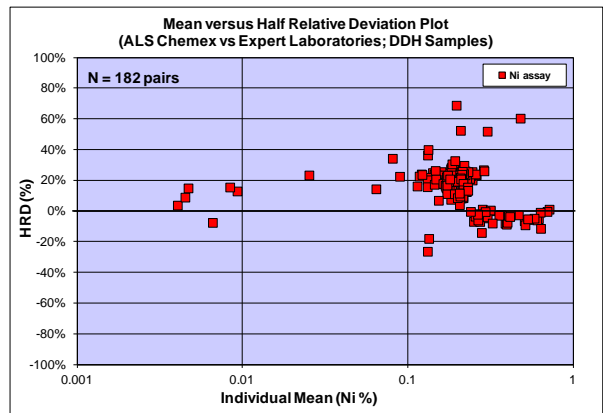
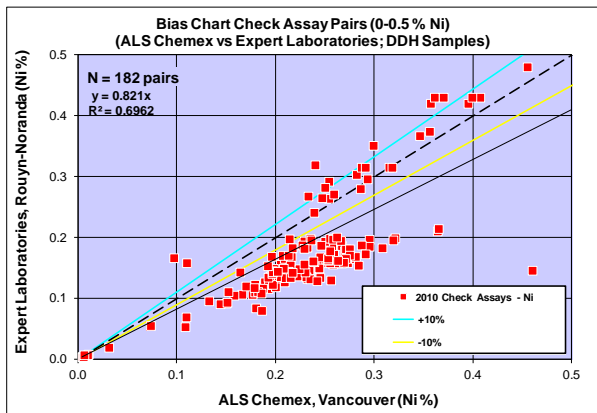
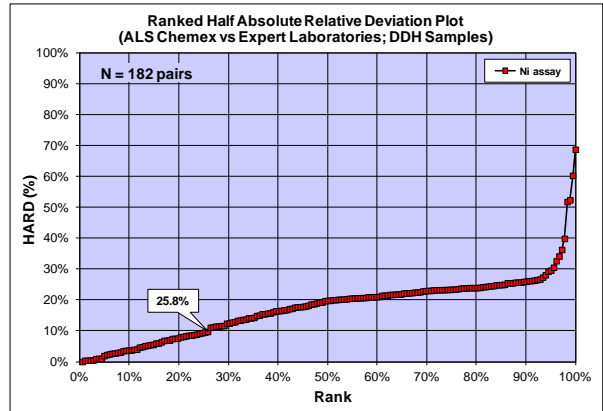
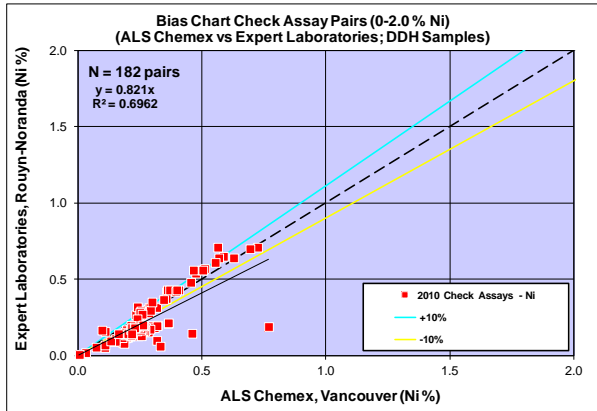


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus Laboratoire Expert) – Nickel (2010)

srk consulting

Project Dumont
Data Series 2010 Check Assays - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES (ALS) vs AqR-AAS (Expert)
Detection Limit 0.0001% (ALS) vs 0.0002% (Expert)
Original Dataset ALS Chemex, Vancouver
Paired Dataset Expert Laboratories, Rouyn-Noranda

Statistics	ALS	Expert
Sample Count	182	182
Minimum Value	0.004	0.004
Maximum Value	0.769	0.710
Mean	0.258	0.202
Median	0.245	0.162
Standard Error	0.009	0.010
Standard Deviation	0.119	0.139
Correlation Coefficient	0.8507	
Pairs ≤ 10% HARD	25.8%	

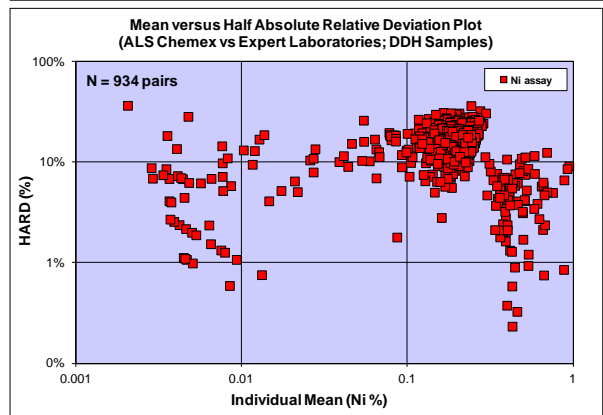
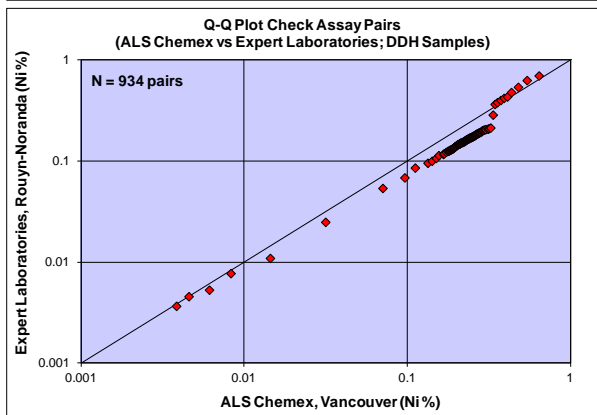
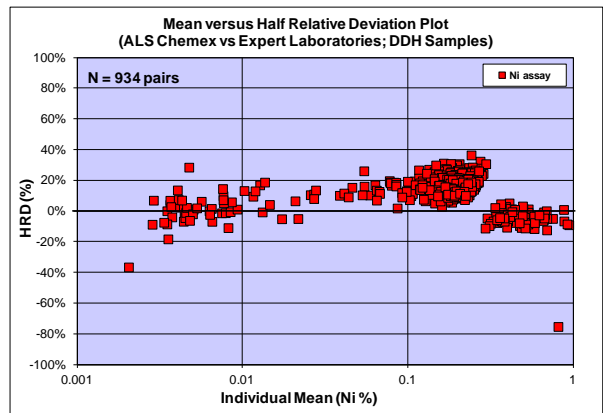
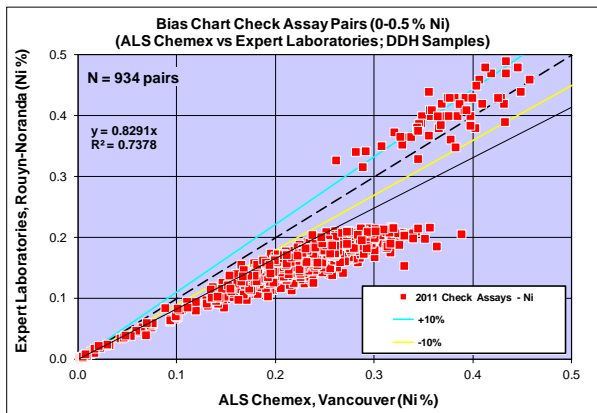
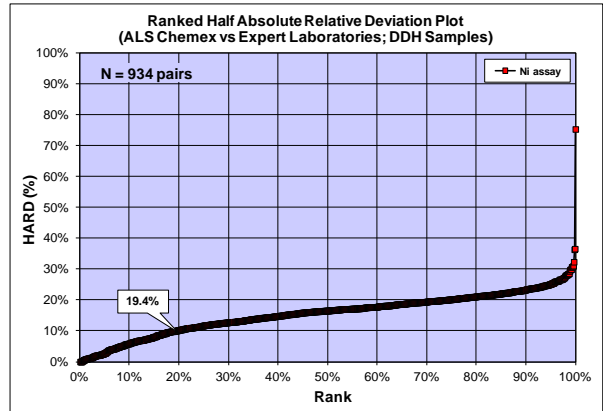
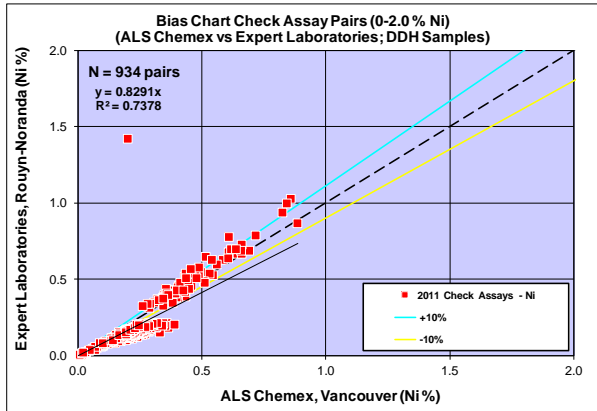


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus Laboratoire Expert) – Nickel (2011)

srk consulting

Project Dumont
Data Series 2011 Check Assays - Ni
Data Type DDH Samples
Commodity Ni in %
Analytical Method AqR-ICP-AES (ALS) vs AqR-AAS (Expert)
Detection Limit 0.0001% (ALS) vs 0.0002% (Expert)
Original Dataset ALS Chemex, Vancouver
Paired Dataset Expert Laboratories, Rouyn-Noranda

Statistics	ALS	Expert
Sample Count	934	934
Minimum Value	0.001	0.003
Maximum Value	0.885	1.424
Mean	0.235	0.183
Median	0.230	0.162
Standard Error	0.004	0.004
Standard Deviation	0.110	0.131
Correlation Coefficient	0.8838	
Pairs ≤ 10% HARD	19.4%	

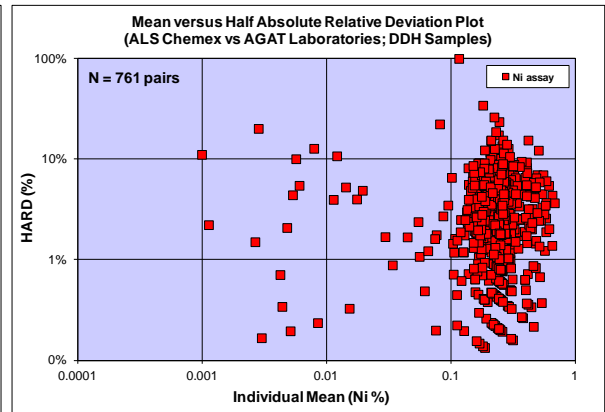
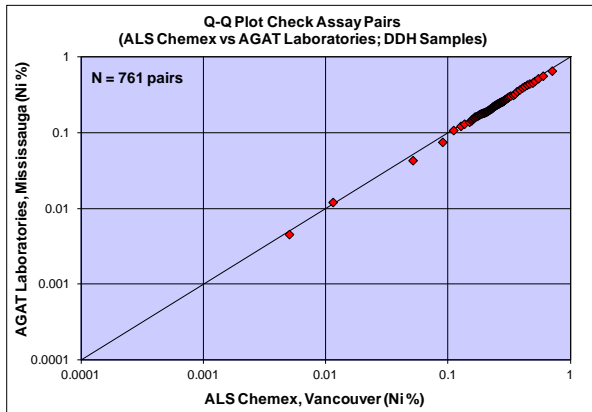
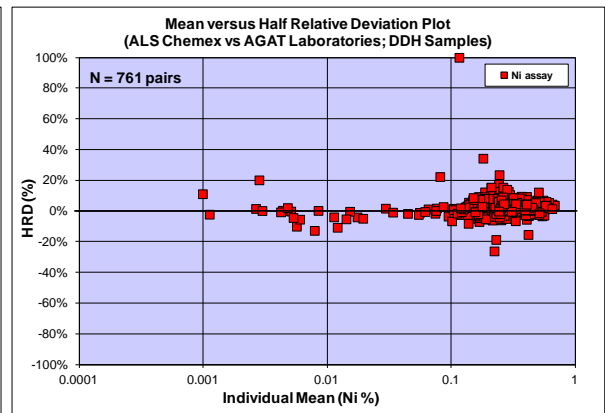
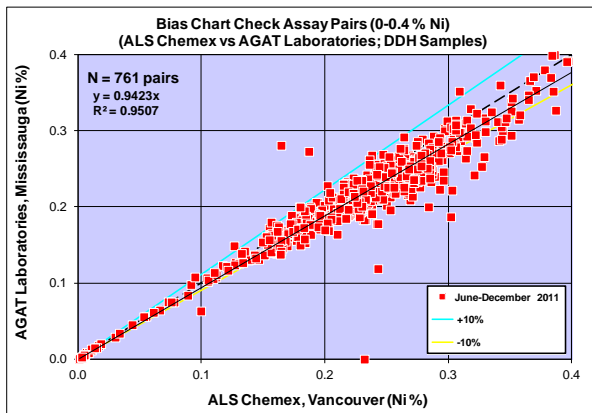
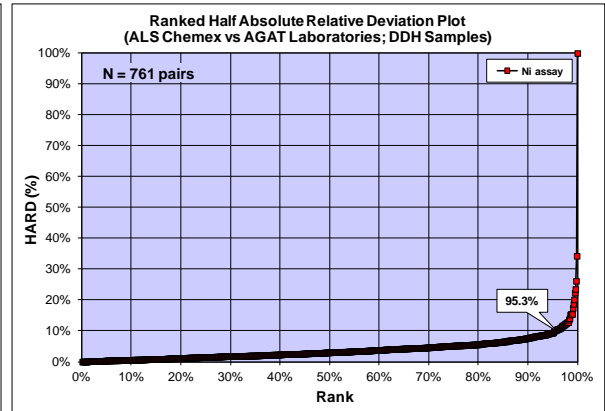
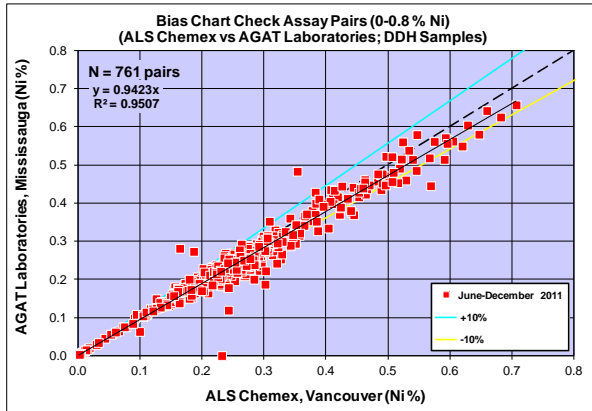


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Nickel (June-December 2011)

srk consulting

Project Dumont
Data Series June-December 2011
Data Type DDH Samples
Commodity Ni in %
Analytical Method Aqua Regia Digest & ICP-AES Finish
Detection Limit 0.0001 % vs 0.00005 %
Original Dataset ALS Chemex, Vancouver
Paired Dataset AGAT Laboratories, Mississauga

Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	0.001	0.000
Maximum Value	0.707	0.657
Mean	0.250	0.236
Median	0.241	0.228
Standard Error	0.004	0.004
Standard Deviation	0.102	0.097
Correlation Coefficient	0.9752	
Pairs ≤ 10% HARD	95.3%	

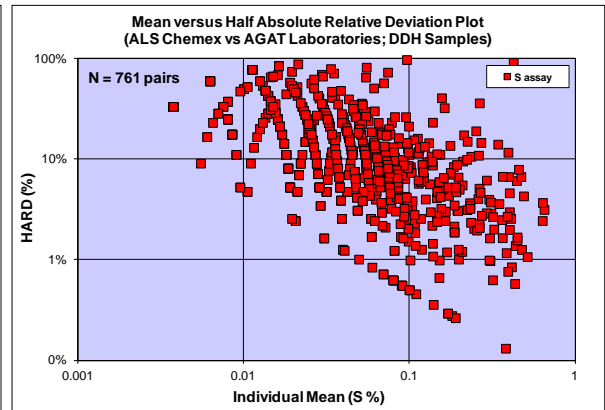
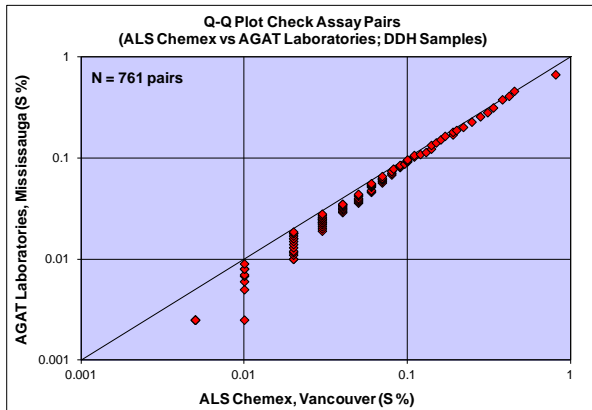
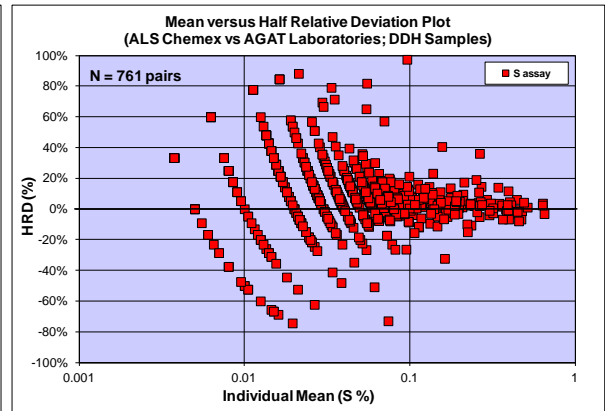
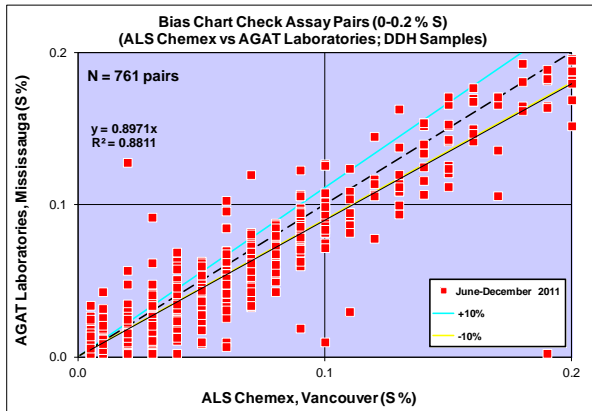
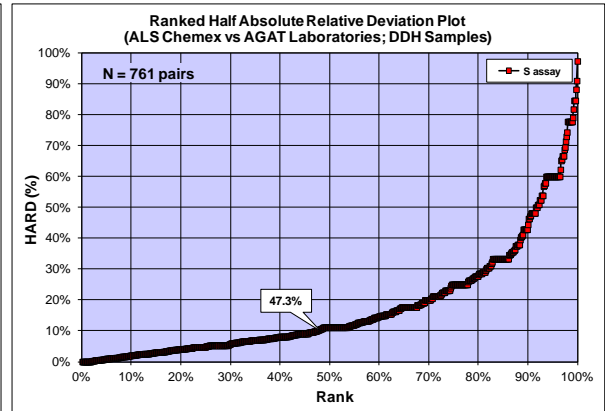
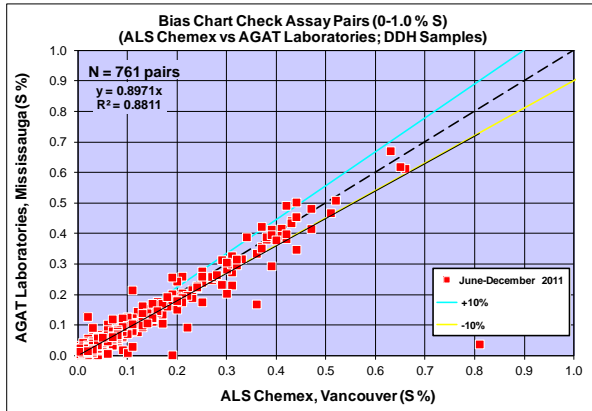


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Sulphur (June-December 2011)

srk consulting

Project Dumont
Data Series June-December 2011
Data Type DDH Samples
Commodity S in %
Analytical Method Aqua Regia Digest & ICP-AES Finish
Detection Limit 0.01% vs 0.005 %
Original Dataset ALS Chemex, Vancouver
Paired Dataset AGAT Laboratories, Mississauga

Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	0.005	0.003
Maximum Value	0.810	0.671
Mean	0.082	0.074
Median	0.050	0.039
Standard Error	0.004	0.003
Standard Deviation	0.101	0.096
Correlation Coefficient	0.9387	
Pairs ≤ 10% HARD	47.3%	

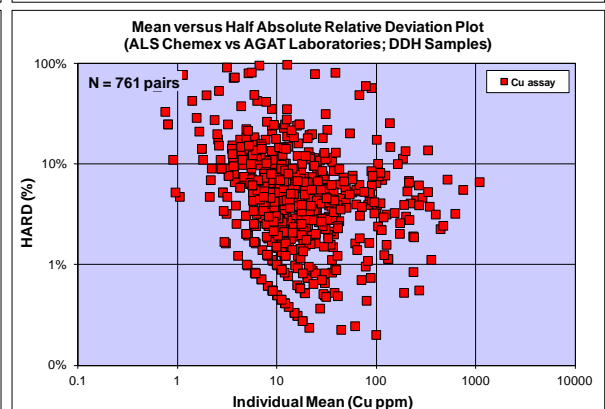
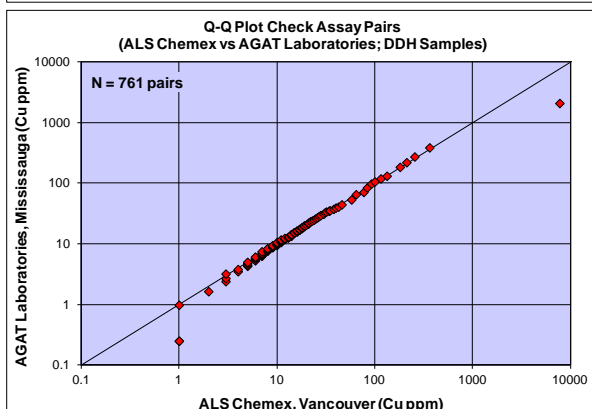
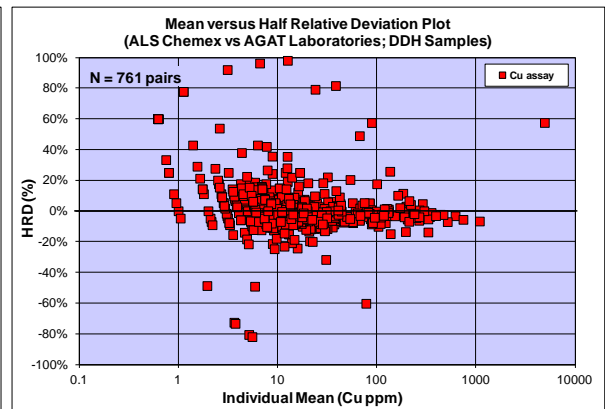
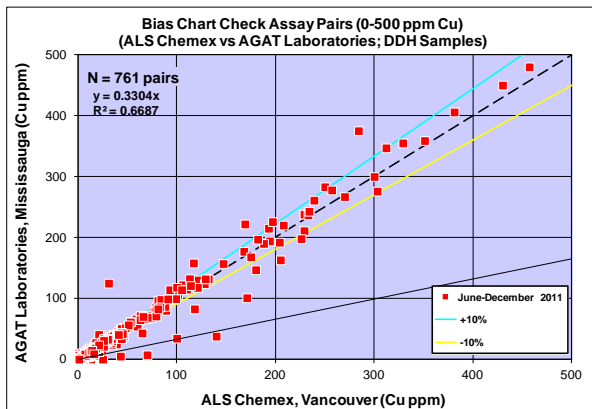
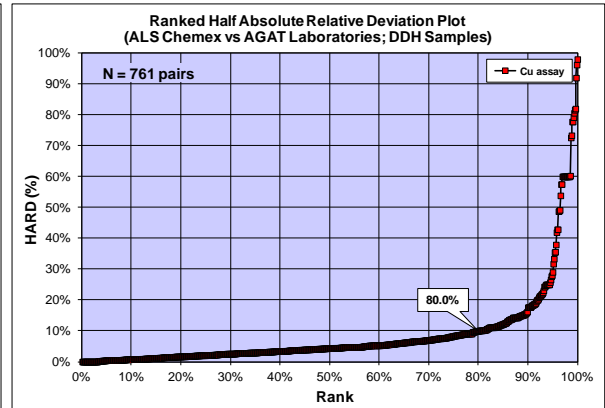
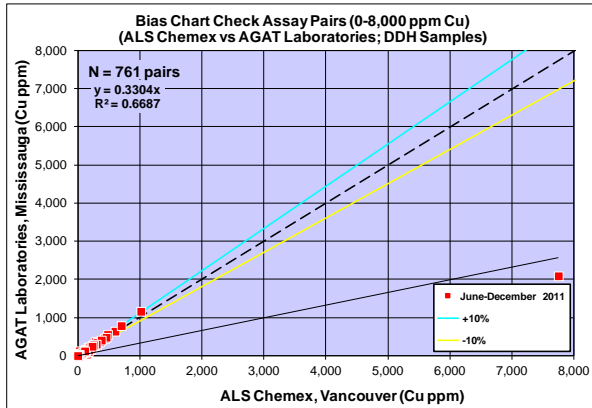


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) –Copper (June-December 2011)

srk consulting

Project Dumont
Data Series June-December 2011
Data Type DDH Samples
Commodity Cu in ppm
Analytical Method Aqua Regia Digest & ICP-AES Finish
Detection Limit 1 ppm vs 0.5 ppm
Original Dataset ALS Chemex, Vancouver
Paired Dataset AGAT Laboratories, Mississauga

Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	1.00	0.25
Maximum Value	7,750.00	2,090.00
Mean	43.30	36.97
Median	13.00	12.60
Standard Error	10.48	3.96
Standard Deviation	289.20	109.14
Correlation Coefficient	0.8443	
Pairs ≤ 10% HARD	80.0%	

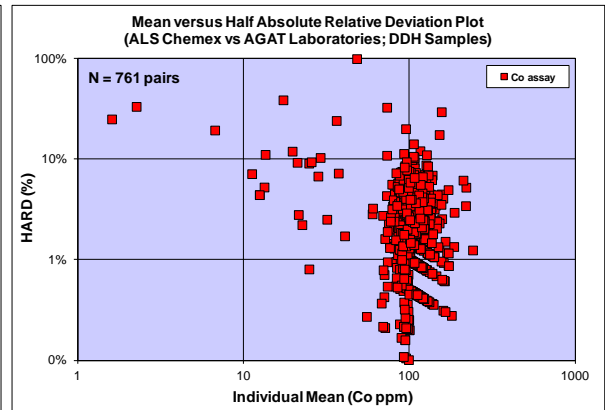
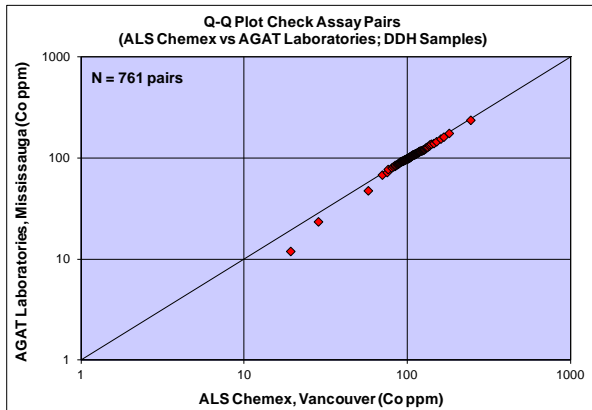
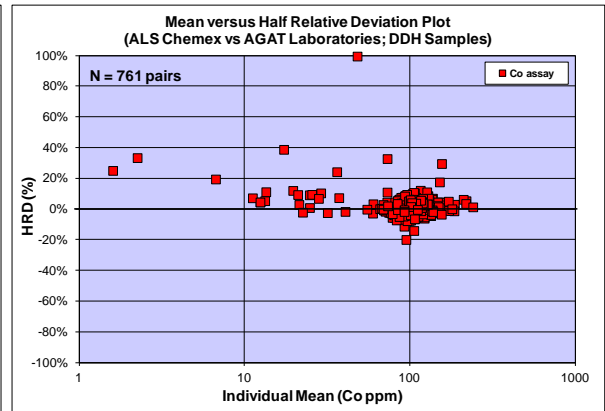
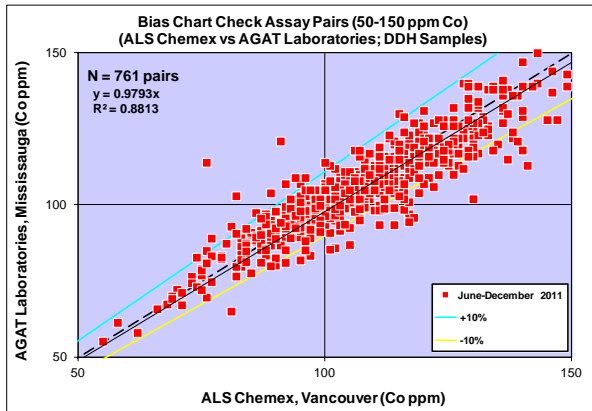
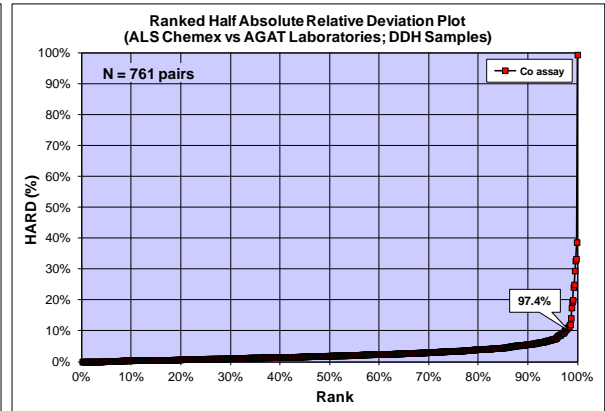
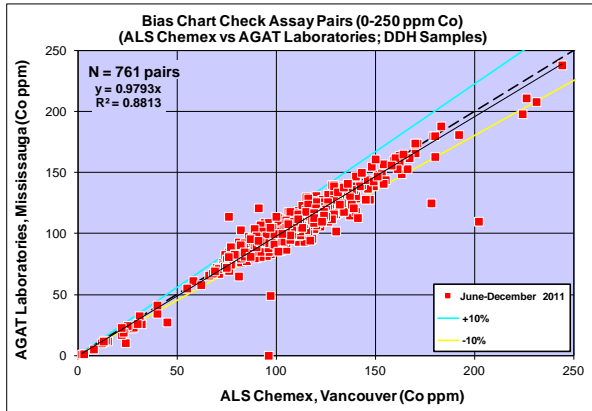


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Cobalt (June-December 2011)

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Project Dumont
Data Series June-December 2011
Data Type DDH Samples
Commodity Co in ppm
Analytical Method Aqua Regia Digest & ICP-AES Finish
Detection Limit 1 ppm vs 0.5 ppm
Original Dataset ALS Chemex, Vancouver
Paired Dataset AGAT Laboratories, Mississauga

Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	2.00	0.25
Maximum Value	244.00	238.00
Mean	106.61	104.84
Median	105.00	104.00
Standard Error	0.94	0.90
Standard Deviation	25.80	24.89
Correlation Coefficient	0.9418	
Pairs ≤ 10% HARD	97.4%	

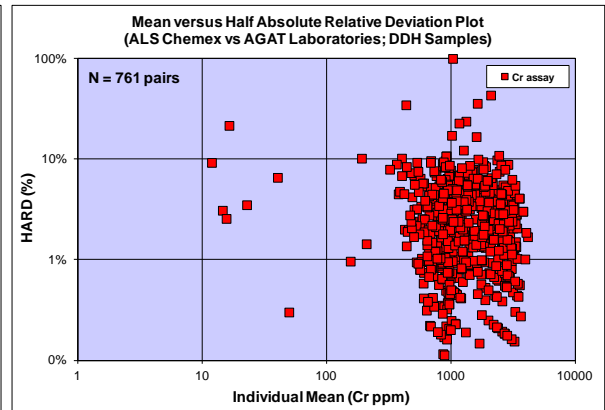
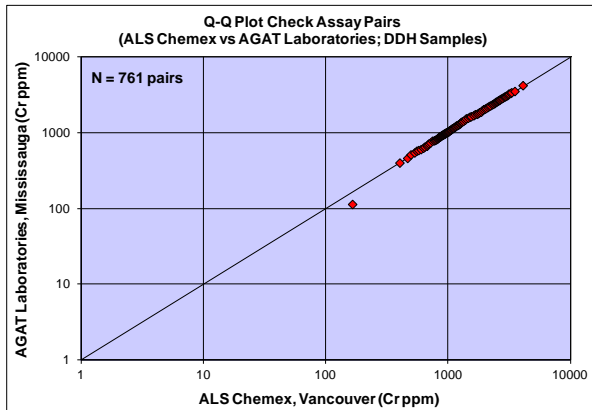
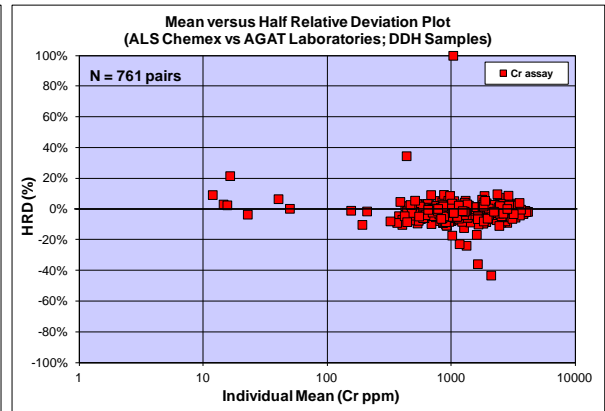
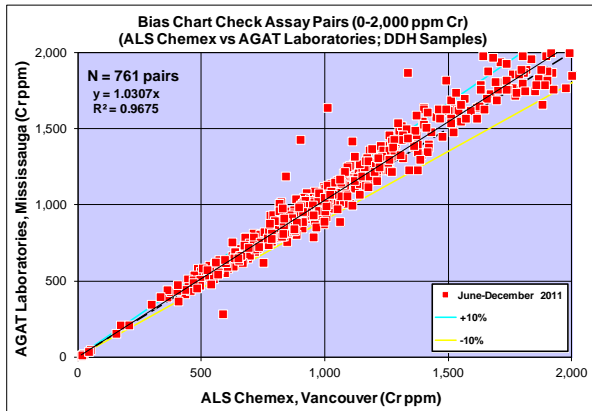
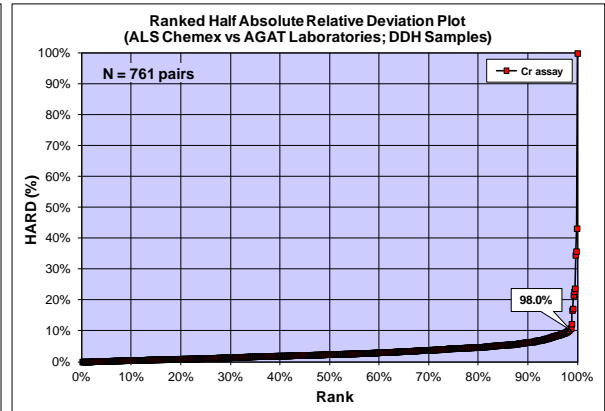
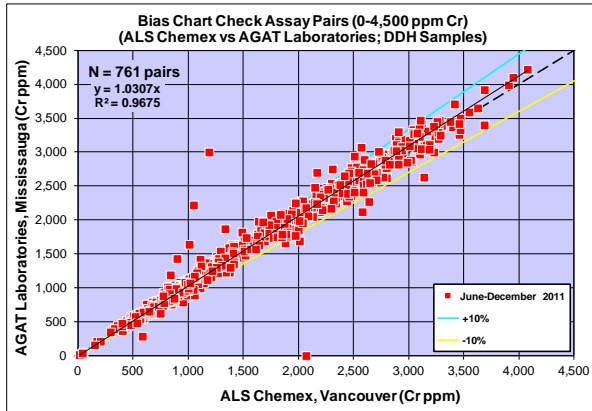


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Chromium (June-December 2011)

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Project Dumont
Data Series June-December 2011
Data Type DDH Samples
Commodity Cr in ppm
Analytical Method Aqua Regia Digest & ICP-AES Finish
Detection Limit 1 ppm vs 0.5 ppm
Original Dataset ALS Chemex, Vancouver
Paired Dataset AGAT Laboratories, Mississauga

Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	13.00	0.25
Maximum Value	4,080.00	4,220.00
Mean	1,463.81	1,517.59
Median	1,120.00	1,180.00
Standard Error	30.26	31.13
Standard Deviation	834.80	858.76
Correlation Coefficient	0.9838	
Pairs ≤ 10% HARD	98.0%	

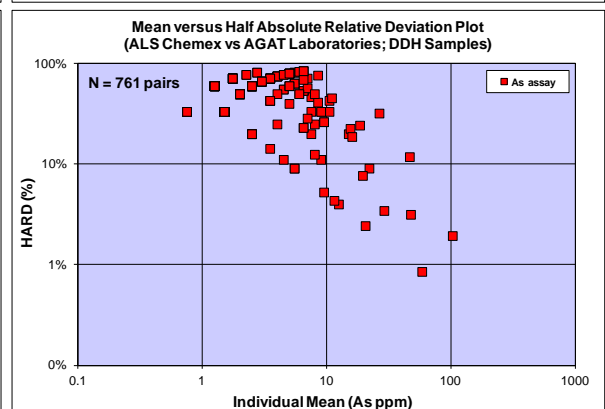
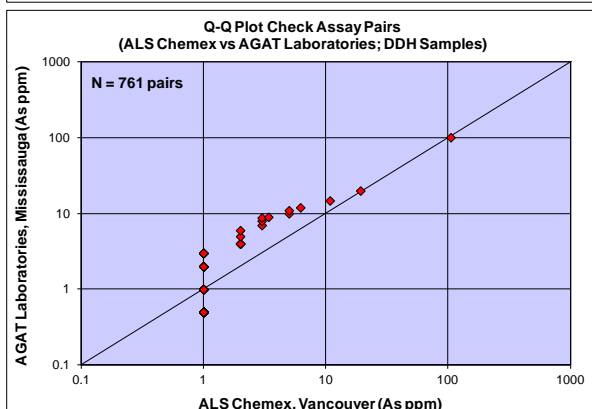
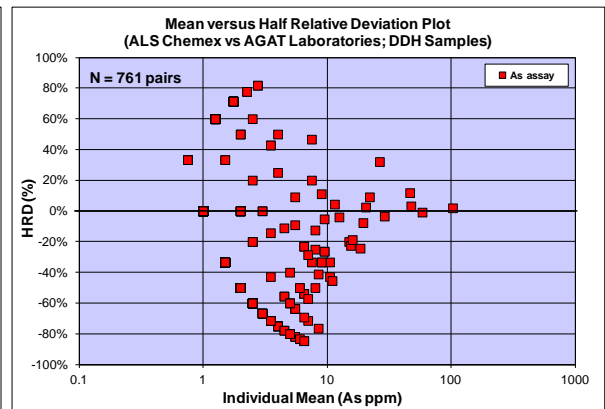
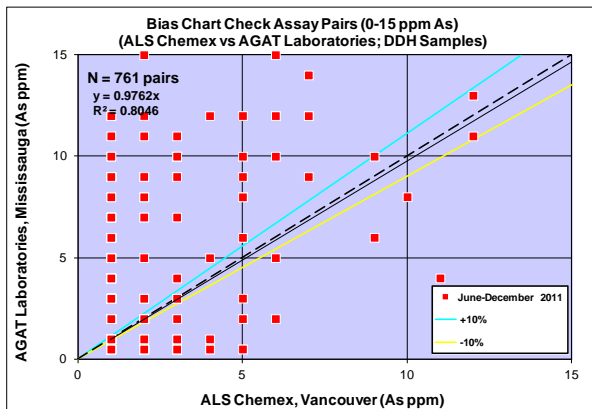
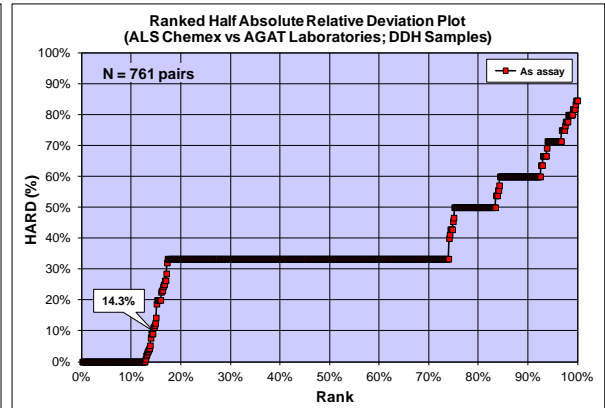
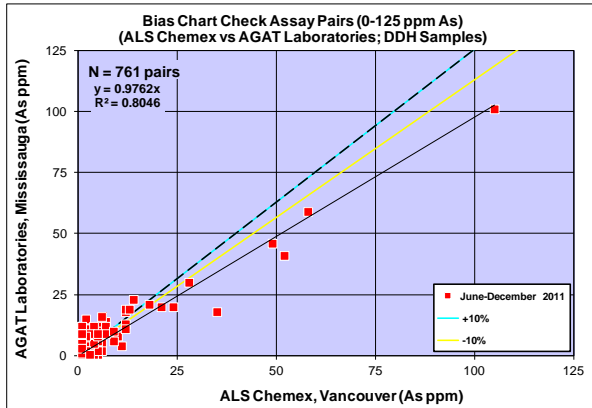


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Arsenic (June-December 2011)


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Project Dumont
Data Series June-December 2011
Data Type DDH Samples
Commodity As in ppm
Analytical Method Aqua Regia Digest & ICP-AES Finish
Detection Limit 2 ppm vs 1 ppm
Original Dataset ALS Chemex, Vancouver
Paired Dataset AGAT Laboratories, Mississauga

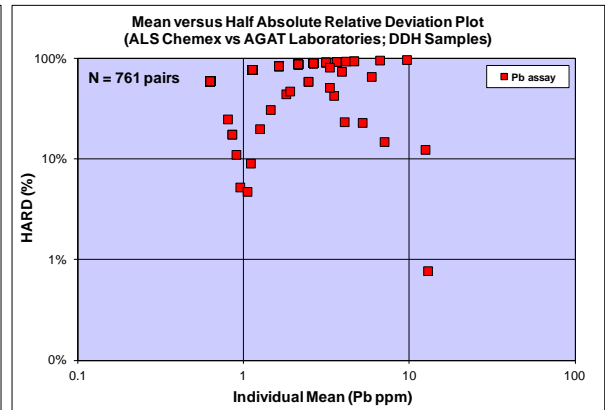
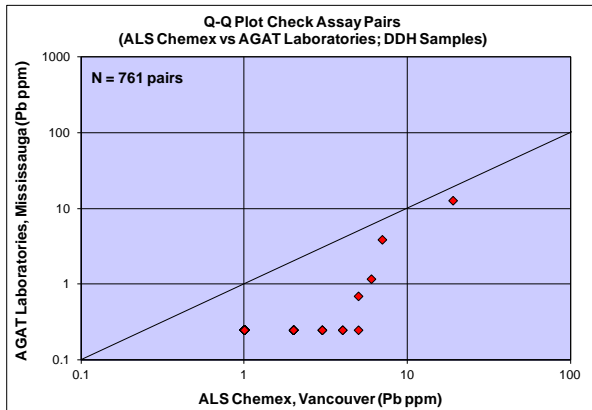
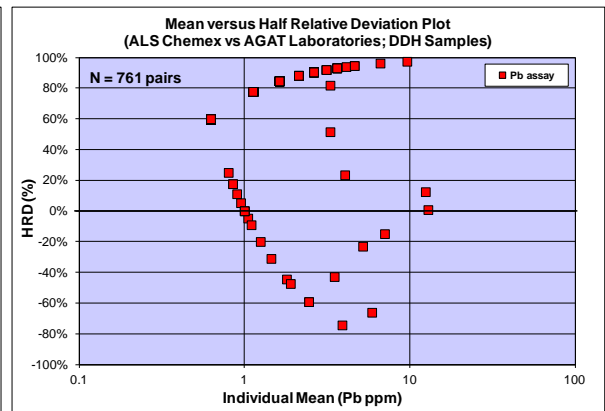
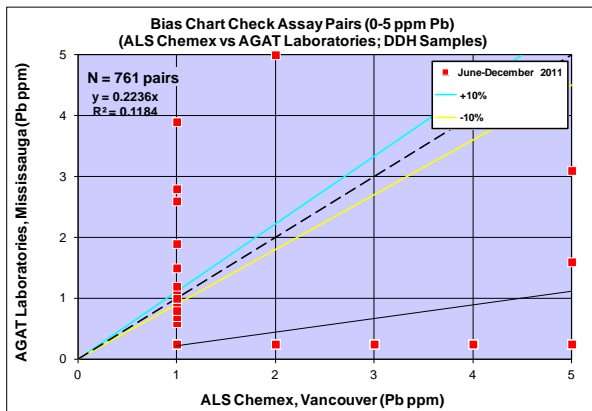
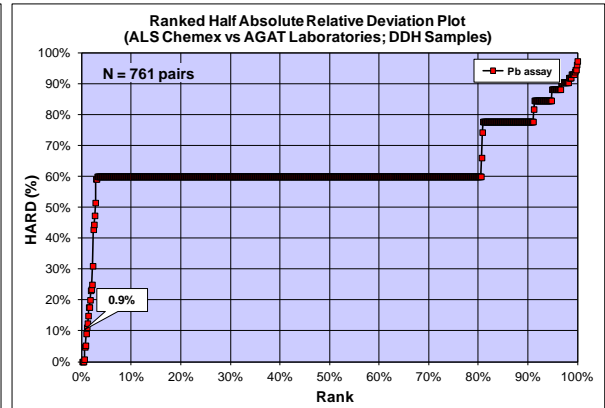
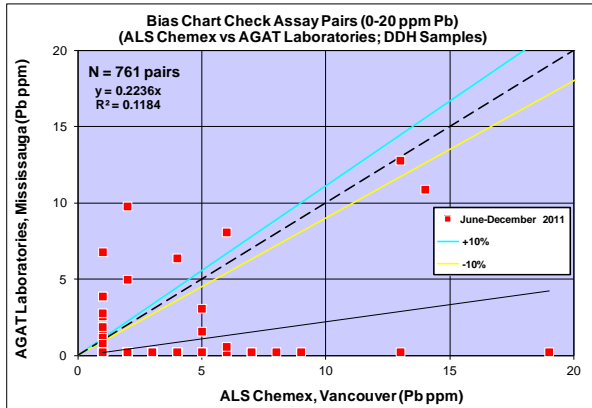
Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	1.0	0.5
Maximum Value	105.0	101.0
Mean	1.9	2.5
Median	1.0	0.5
Standard Error	0.2	0.2
Standard Deviation	5.5	5.7
Correlation Coefficient	0.9047	
Pairs ≤ 10% HARD	14.3%	



Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Lead (June-December 2011)

	
Project	Dumont
Data Series	June-December 2011
Data Type	DDH Samples
Commodity	Pb in ppm
Analytical Method	Aqua Regia Digest & ICP-AES Finish
Detection Limit	2 ppm vs 0.5 ppm
Original Dataset	ALS Chemex, Vancouver
Paired Dataset	AGAT Laboratories, Mississauga

Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	1.00	0.25
Maximum Value	19.0	12.8
Mean	1.49	0.36
Median	1.00	0.25
Standard Error	0.05	0.03
Standard Deviation	1.47	0.87
Correlation Coefficient	0.3470	
Pairs ≤ 10% HARD	0.9%	

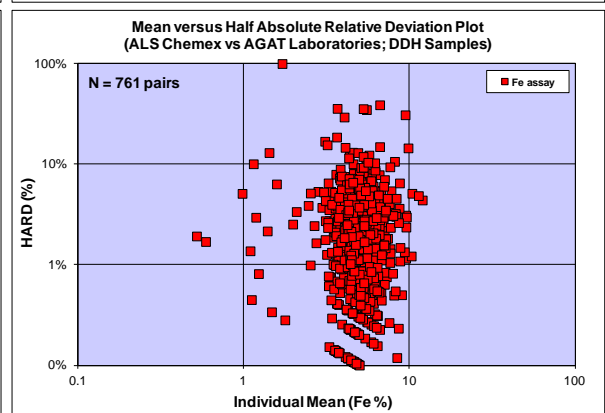
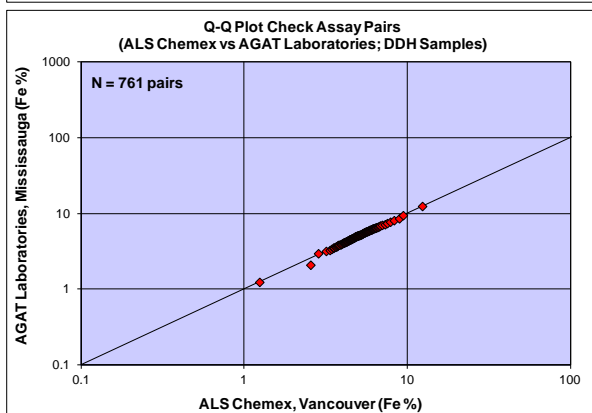
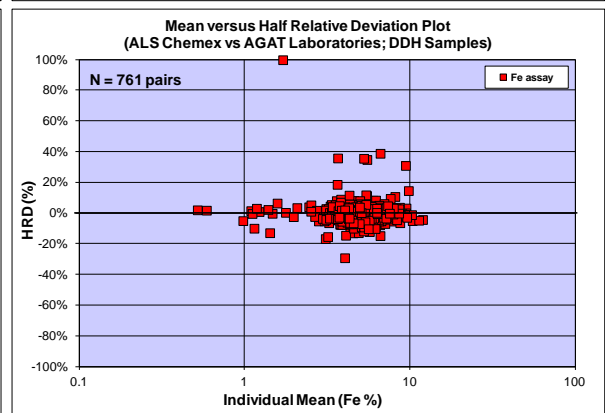
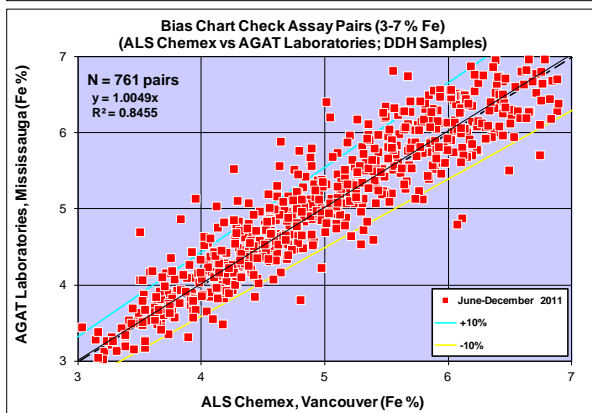
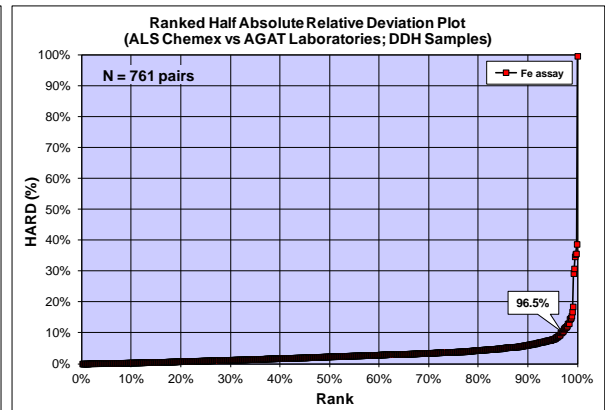
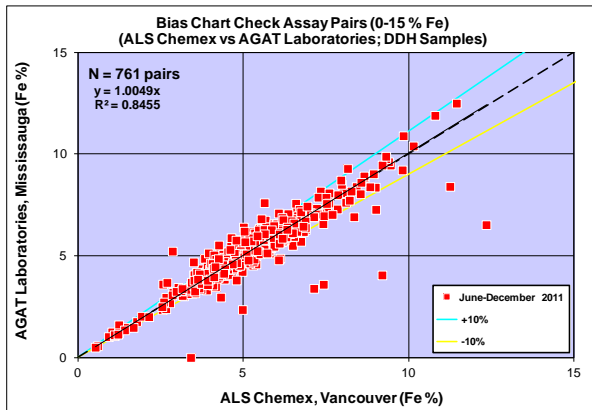


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Iron (June-December 2011)

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Project Dumont
Data Series June-December 2011
Data Type DDH Samples
Commodity Fe in %
Analytical Method Aqua Regia Digest & ICP-AES Finish
Detection Limit 0.01%
Original Dataset ALS Chemex, Vancouver
Paired Dataset AGAT Laboratories, Mississauga

Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	0.530	0.005
Maximum Value	12.350	12.500
Mean	5.113	5.169
Median	4.940	5.070
Standard Error	0.051	0.052
Standard Deviation	1.417	1.421
Correlation Coefficient	0.9231	
Pairs ≤ 10% HARD	96.5%	

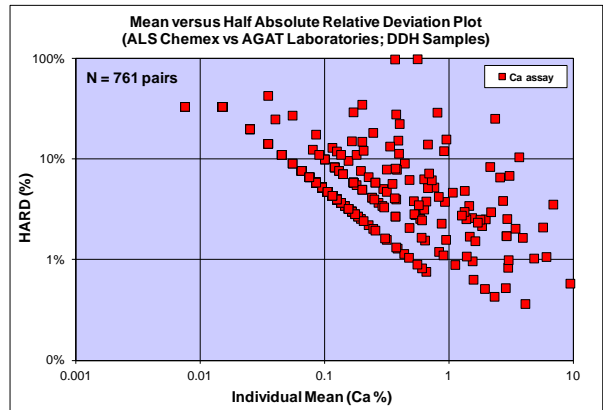
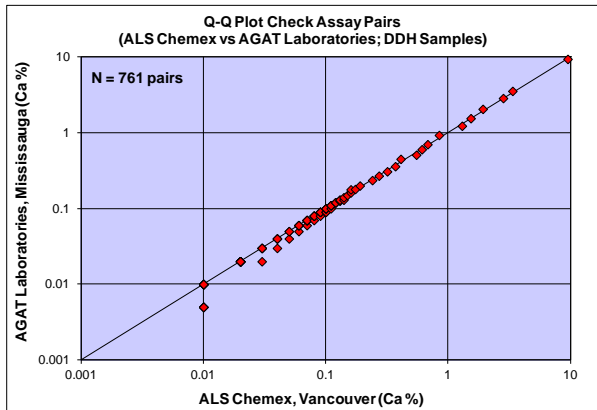
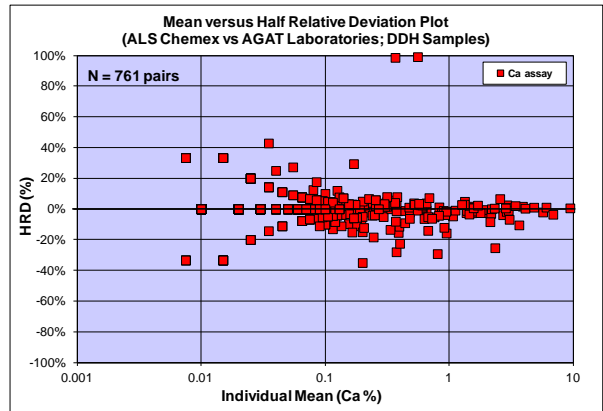
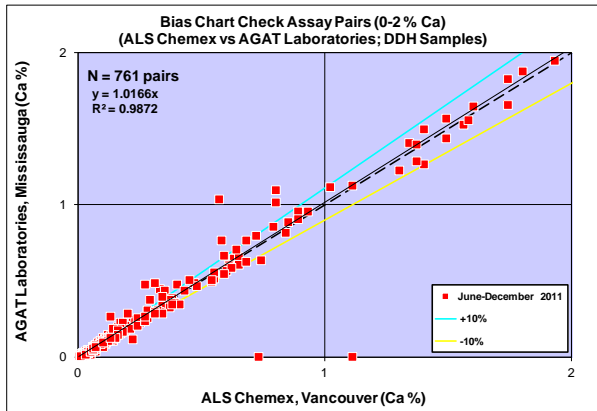
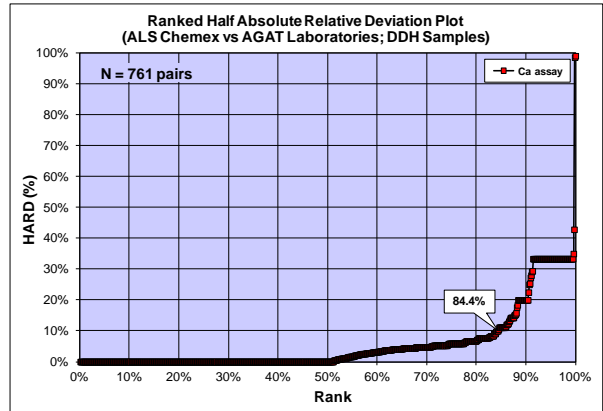
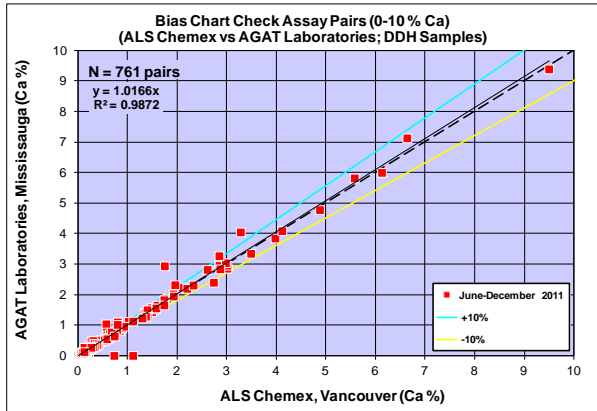


Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Calcium (June-December 2011)


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Project Dumont
Data Series June-December 2011
Data Type DDH Samples
Commodity Ca in %
Analytical Method Aqua Regia Digest & ICP-AES Finish
Detection Limit 0.01%
Original Dataset ALS Chemex, Vancouver
Paired Dataset AGAT Laboratories, Mississauga

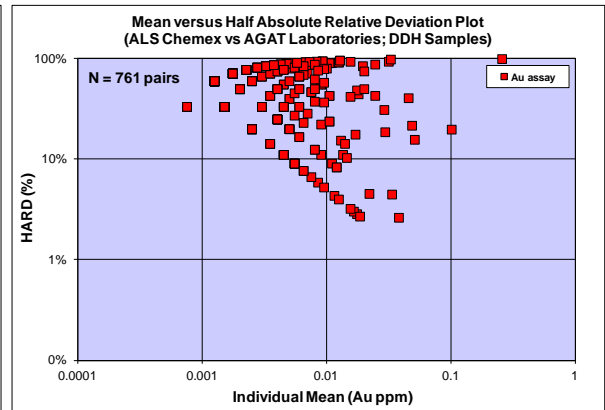
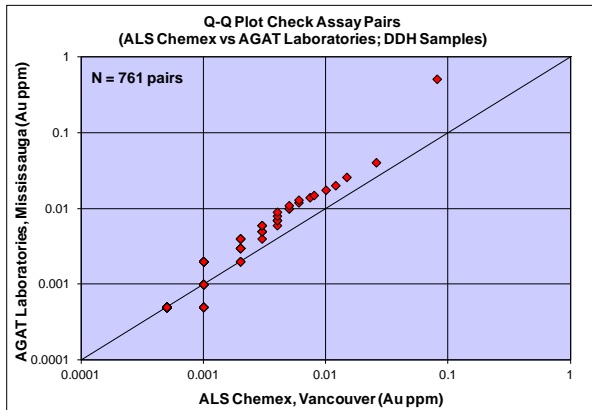
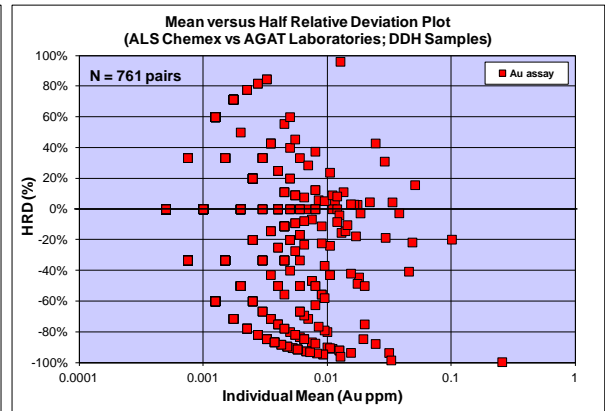
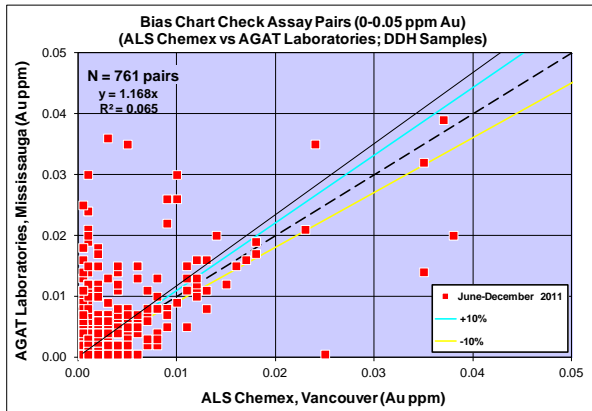
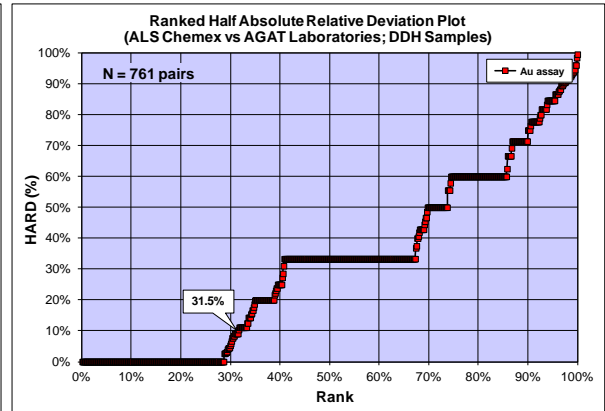
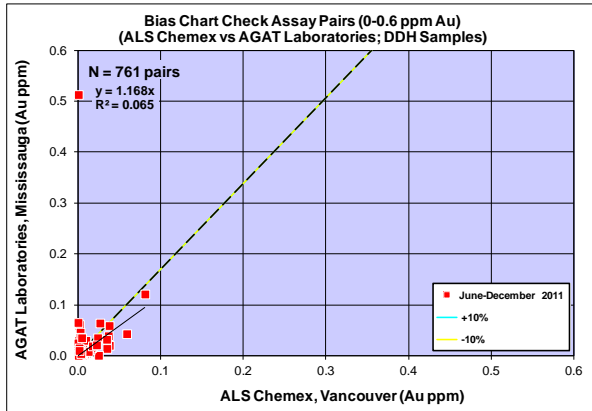
Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	0.005	0.005
Maximum Value	9.500	9.390
Mean	0.247	0.251
Median	0.070	0.070
Standard Error	0.026	0.027
Standard Deviation	0.724	0.740
Correlation Coefficient	0.9936	
Pairs ≤ 10% HARD	84.4%	




Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Gold (June-December 2011)

	
Project	Dumont
Data Series	June-December 2011
Data Type	DDH Samples
Commodity	Au in ppm
Analytical Method	Fire Assay & ICP-AES Finish
Detection Limit	0.001 ppm
Original Dataset	ALS Chemex, Vancouver
Paired Dataset	AGAT Laboratories, Mississauga

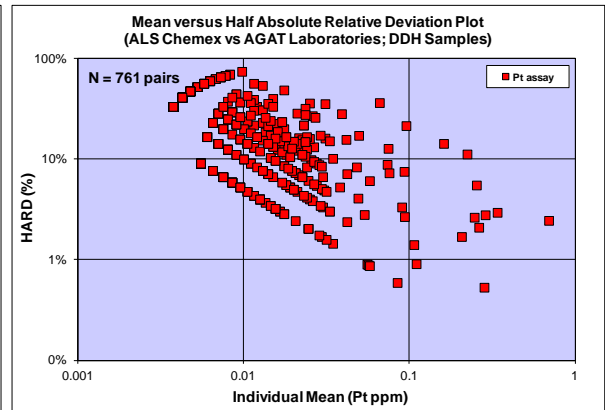
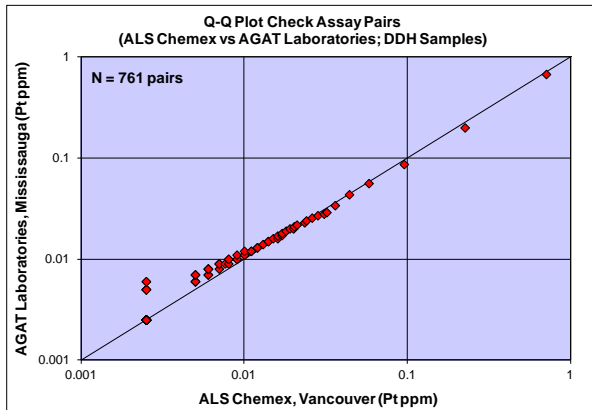
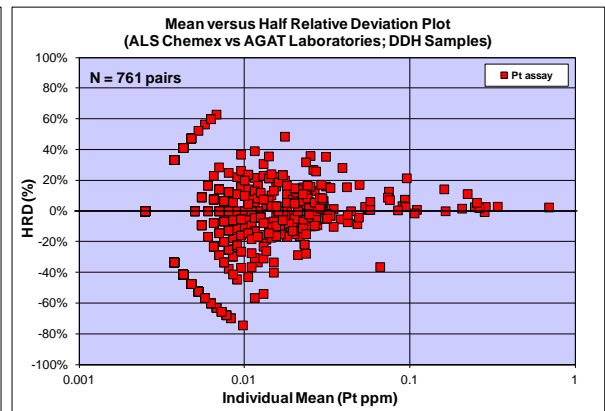
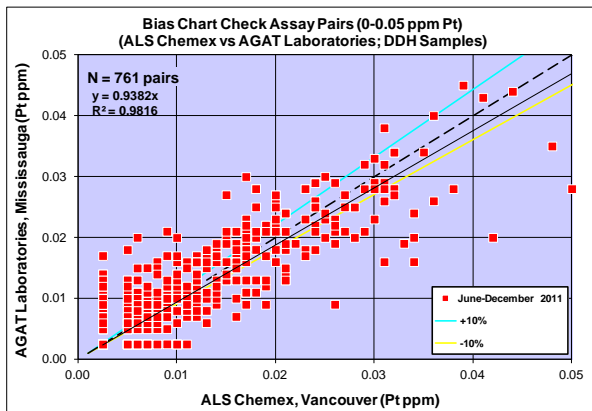
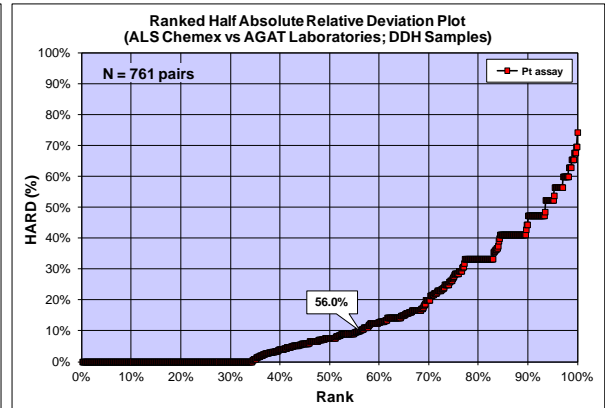
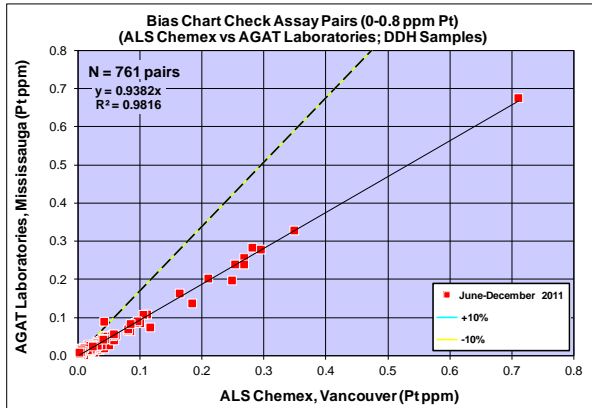
Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	0.001	0.001
Maximum Value	0.081	0.513
Mean	0.002	0.005
Median	0.001	0.001
Standard Error	0.000	0.001
Standard Deviation	0.005	0.020
Correlation Coefficient	0.2722	
Pairs ≤ 10% HARD	31.5%	




Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Platinum (June-December 2011)

	
Project	Dumont
Data Series	June-December 2011
Data Type	DDH Samples
Commodity	Pt in ppm
Analytical Method	Fire Assay & ICP-AES Finish
Detection Limit	0.005 ppm
Original Dataset	ALS Chemex, Vancouver
Paired Dataset	AGAT Laboratories, Mississauga

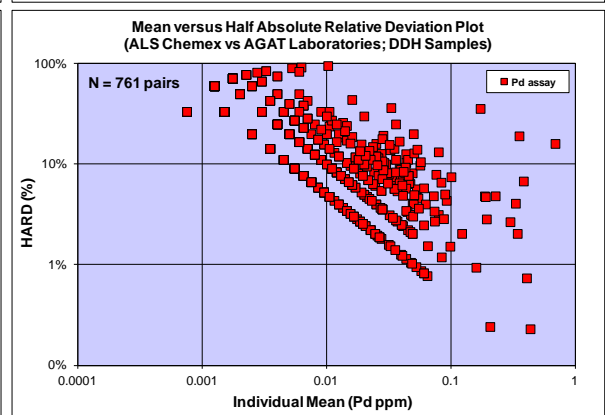
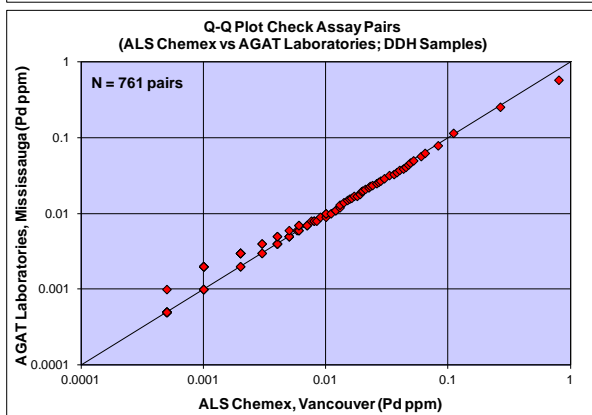
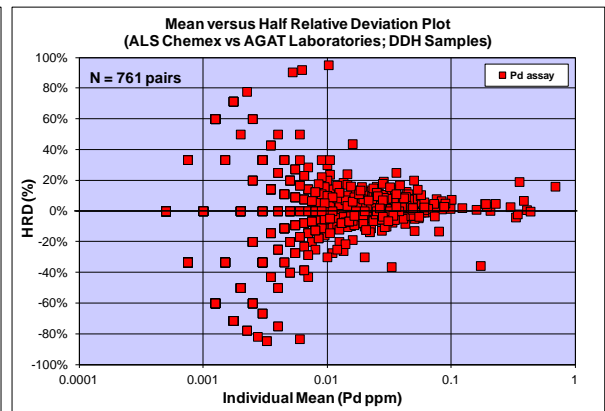
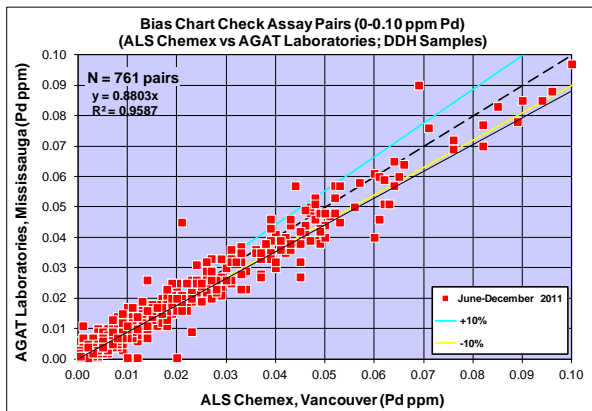
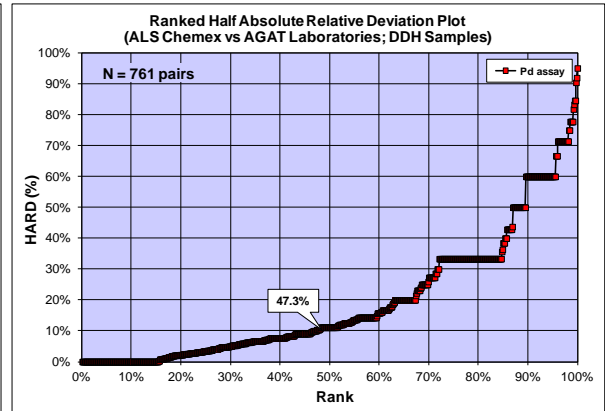
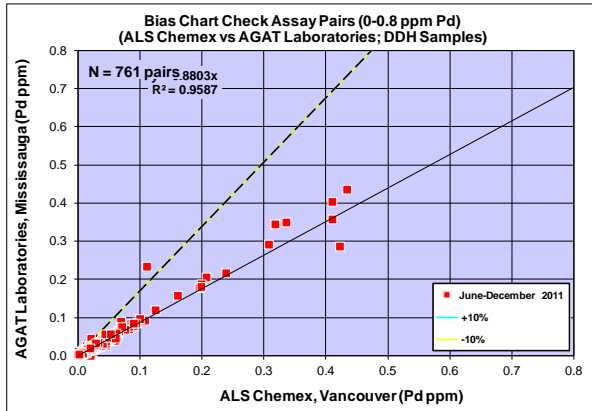
Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	0.003	0.003
Maximum Value	0.710	0.676
Mean	0.014	0.014
Median	0.006	0.007
Standard Error	0.001	0.001
Standard Deviation	0.040	0.038
Correlation Coefficient	0.9912	
Pairs ≤ 10% HARD	56.0%	



Bias Charts, Quantile-Quantile and Precision Plots for Check Assays (ALS Chemex versus AGAT Laboratories) – Palladium (June-December 2011)

	
Project	Dumont
Data Series	June-December 2011
Data Type	DDH Samples
Commodity	Pd in ppm
Analytical Method	Fire Assay & ICP-AES Finish
Detection Limit	0.001 ppm
Original Dataset	ALS Chemex, Vancouver
Paired Dataset	AGAT Laboratories, Mississauga

Statistics	ALS Chemex	AGAT Labs
Sample Count	761	761
Minimum Value	0.001	0.001
Maximum Value	0.801	0.580
Mean	0.019	0.018
Median	0.006	0.006
Standard Error	0.002	0.002
Standard Deviation	0.051	0.045
Correlation Coefficient	0.9798	
Pairs ≤ 10% HARD	47.3%	

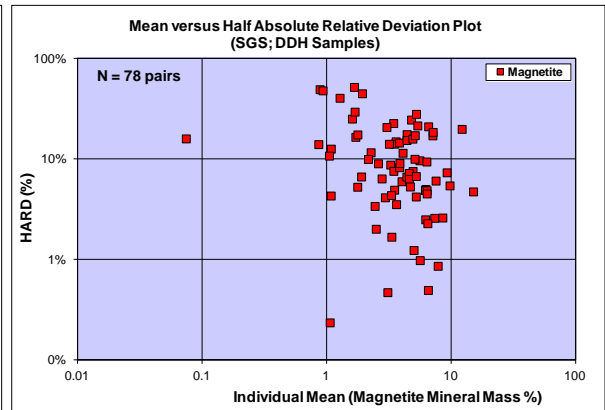
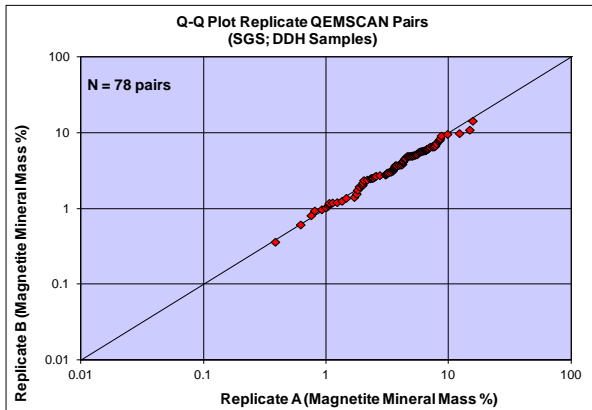
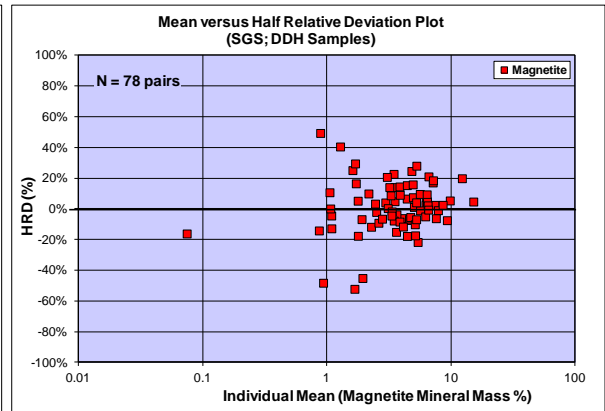
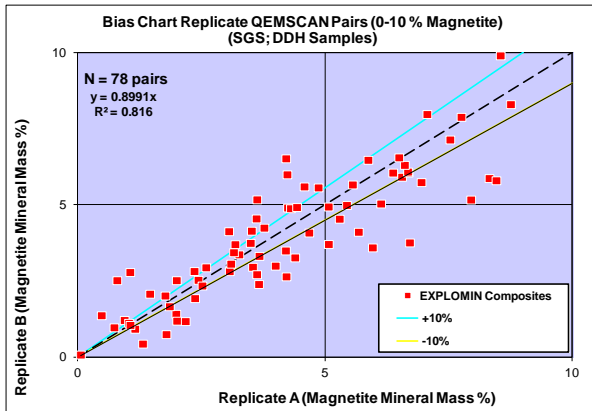
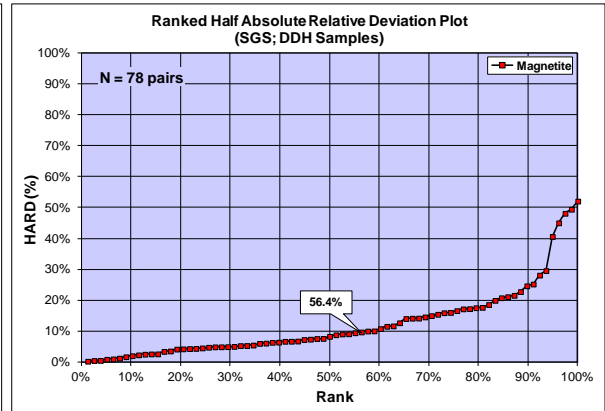
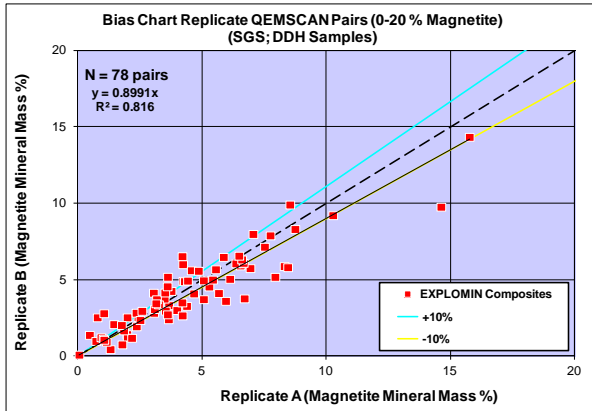


Bias Charts, Quantile-Quantile and Precision Plots for EXPLOMIN™ Replicate Analyses (SGS) – Magnetite

srk consulting

Project Dumont
Data Series EXPLOMIN Composites
Data Type DDH Samples
Commodity Magnetite in Mineral Mass %
Analytical Method QEMSCAN
Detection Limit 0.05%
Original Dataset Replicate A
Paired Dataset Replicate B

Statistics	Replicate A	Replicate B
Sample Count	78	78
Minimum Value	0.0622	0.0859
Maximum Value	15.771	14.336
Mean	4.460	4.204
Median	4.103	3.760
Standard Error	0.327	0.284
Standard Deviation	2.888	2.507
Correlation Coefficient	0.9147	
Pairs ≤ 10% HARD	56.4%	

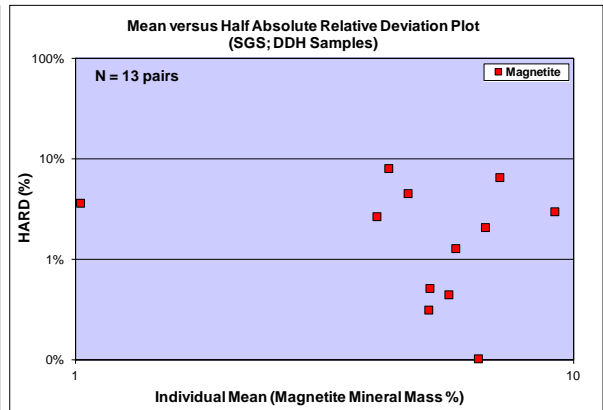
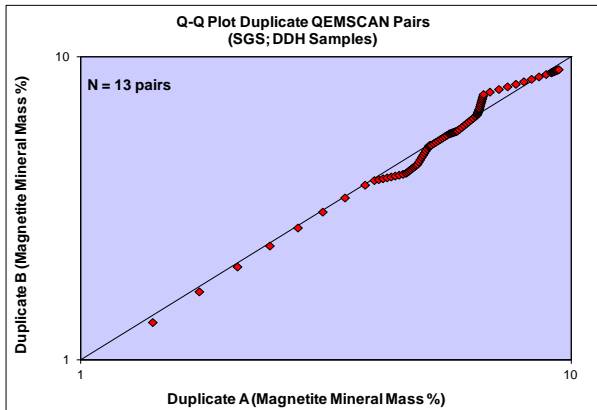
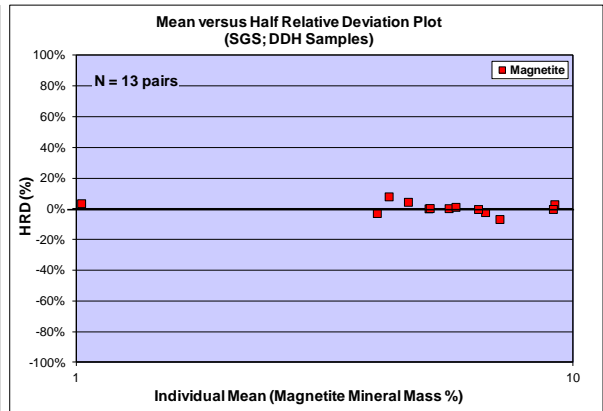
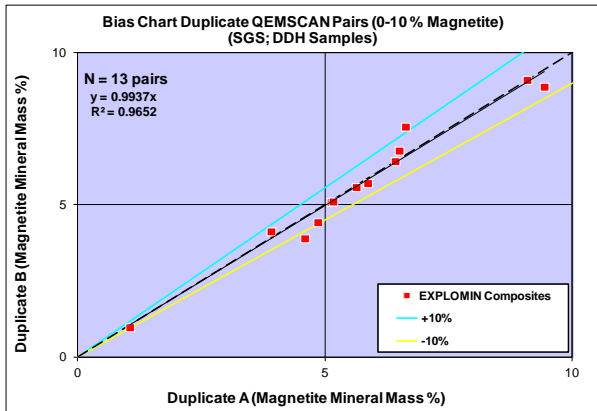
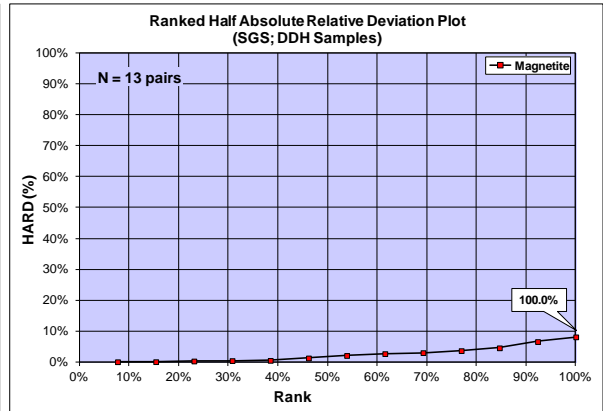
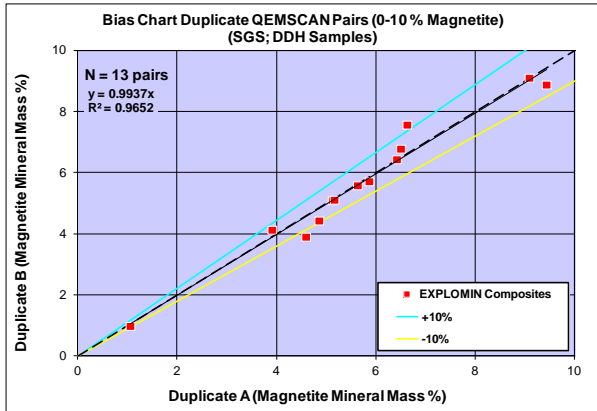


Bias Charts, Quantile-Quantile and Precision Plots for EXPLOMIN™ Duplicate Analyses (SGS) – Magnetite

srk consulting

Project Dumont
Data Series EXPLOMIN Composites
Data Type DDH Samples
Commodity Magnetite in Mineral Mass %
Analytical Method QEMSCAN
Detection Limit 0.05%
Original Dataset Duplicate A
Paired Dataset Duplicate B

Statistics	Duplicate A	Duplicate B
Sample Count	13	13
Minimum Value	1.058	0.983
Maximum Value	9.433	9.103
Mean	5.715	5.671
Median	5.634	5.584
Standard Error	0.592	0.605
Standard Deviation	2.136	2.183
Correlation Coefficient	0.9825	
Pairs ≤ 10% HARD	100.0%	

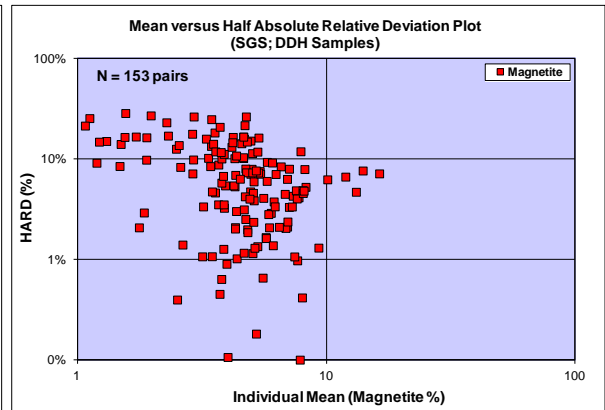
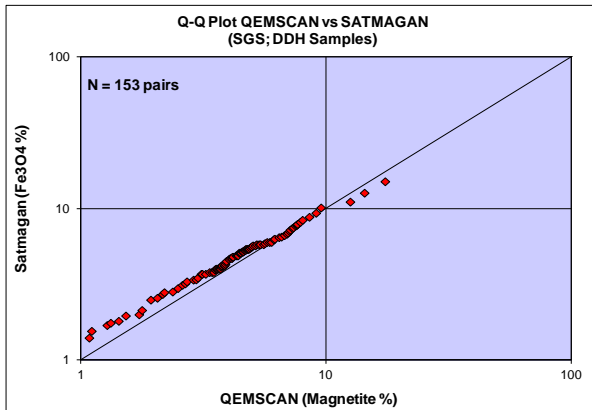
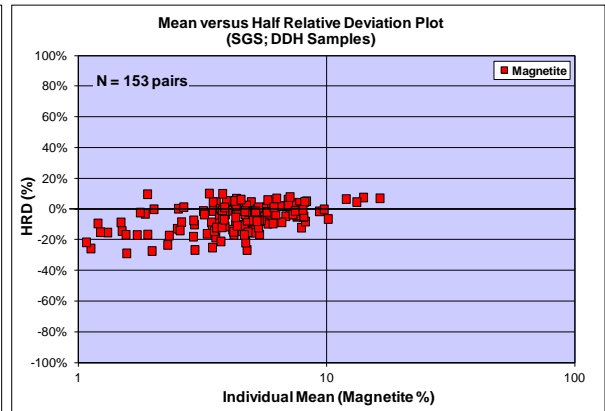
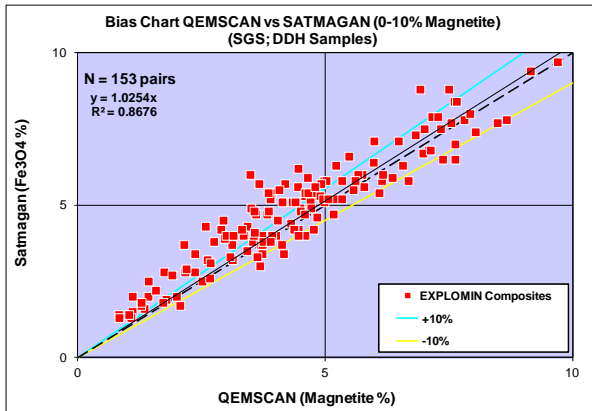
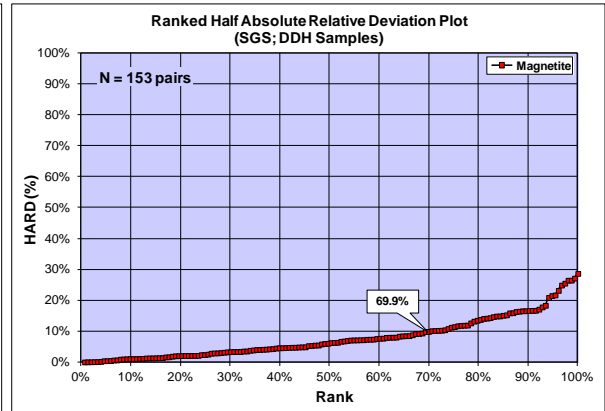
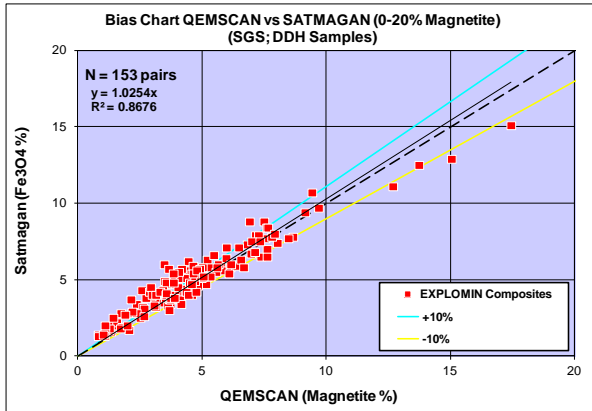


Bias Charts, Quantile-Quantile and Precision Plots for EXPLOMIN™ Samples (QEMSCAN versus Satmagan) (SGS) – Magnetite

srk consulting

Project Dumont
Data Series EXPLOMIN Composites
Data Type DDH Samples
Commodity Magnetite in %
Analytical Method QEMSCAN and SATMAGAN
Detection Limit 0.05% (QEMSCAN)
Original Dataset QEMSCAN (Magnetite %)
Paired Dataset Satmagan (Fe3O4 %)

Statistics	QEMSCAN	Satmagan
Sample Count	153	153
Minimum Value	0.83	1.30
Maximum Value	17.44	15.10
Mean	4.73	5.09
Median	4.38	4.90
Standard Error	0.21	0.18
Standard Deviation	2.55	2.27
Correlation Coefficient	0.9580	
Pairs ≤ 10% HARD	69.9%	



APPENDIX H

Certificate of Analysis for SRK Verification Samples

**CLIENT NAME: SRK CONSULTING (CANADA)
2200-1066 W. HASTINGS ST.
VANCOUVER, BC V6E3X2**

ATTENTION TO: Sebastien Bernier

PROJECT NO:

AGAT WORK ORDER: 11U496467

SOLID ANALYSIS REVIEWED BY: Patricia Horan, Operations Manager

DATE REPORTED: Jun 09, 2011

PAGES (INCLUDING COVER): 11

Should you require any information regarding this analysis please contact your client services representative at (905) 501 9998, or at 1-800-856-6261

***NOTES**

All samples are stored at no charge for 90 days. Please contact the lab if you require additional sample storage time.



Certificate of Analysis

AGAT WORK ORDER: 11U496467
PROJECT NO:

8633 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N6
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FAX: (905) 501-0889
http://www.agatlab.com

CLIENT NAME: SRK CONSULTING (CANADA)

ATTENTION TO: Sebastien Bernier

4 Acid Digest - Metals Package, ICP-OES finish (201070)

DATE SAMPLED: May 27, 2011	DATE RECEIVED: May 27, 2011								DATE REPORTED: Jun 09, 2011				SAMPLE TYPE: Rock			
Sample Description	Analyte Unit	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	
RDL:		0.5	0.01	1	1	0.5	1	0.01	0.5	1	0.5	0.5	0.5	0.01	5	
11-RN-213		<0.5	0.09	9	19	<0.5	<1	0.53	<0.5	10	147	447	23.5	4.65	<5	
11-RN-217		<0.5	0.15	6	2	<0.5	<1	0.88	<0.5	11	129	657	104	5.16	<5	
11-RN-218		0.9	0.10	7	<1	<0.5	<1	0.78	<0.5	10	141	575	71.5	4.85	<5	
11-RN-219		<0.5	0.10	7	2	<0.5	<1	1.26	<0.5	9	123	634	441	4.52	<5	
11-RN-220		1.9	0.13	6	2	<0.5	<1	1.44	<0.5	11	83.4	759	995	4.97	<5	
11-RN-221		<0.5	0.15	4	1	<0.5	<1	0.73	<0.5	11	120	633	60.9	5.11	<5	
11-RN-222		<0.5	0.15	3	3	<0.5	<1	0.14	<0.5	11	119	611	20.0	5.29	<5	
11-RN-223-1		<0.5	0.09	5	4	<0.5	<1	0.56	<0.5	10	87.7	657	4.2	4.94	<5	
11-RN-223-2		<0.5	0.09	4	3	<0.5	<1	0.15	<0.5	9	121	591	8.9	4.79	<5	
11-RN-227		<0.5	0.08	2	2	<0.5	<1	0.27	<0.5	11	124	634	5.6	5.39	<5	
11-RN-228		<0.5	0.08	3	4	<0.5	<1	0.18	<0.5	11	122	570	5.8	5.20	<5	
11-RN-229		2.3	0.09	4	2	<0.5	<1	0.53	<0.5	9	113	634	3.0	4.91	<5	
11-RN-230		<0.5	0.10	3	<1	<0.5	<1	0.10	<0.5	10	107	585	6.4	5.17	<5	
11-RN-231		0.6	0.14	3	4	<0.5	<1	0.16	<0.5	10	105	650	12.6	5.06	<5	
11-RN-232		<0.5	0.08	3	<1	<0.5	<1	0.19	<0.5	9	111	631	2.6	4.99	<5	
11-RN-234		<0.5	0.07	5	<1	<0.5	<1	0.55	<0.5	11	114	769	5.8	5.48	<5	
11-RN-235		<0.5	0.07	5	14	<0.5	<1	0.74	<0.5	12	92.9	678	6.4	5.83	<5	
11-RN-236		0.6	0.09	1	9	<0.5	<1	0.37	<0.5	8	95.3	670	2.6	4.22	<5	

Certified By: 



Certificate of Analysis

AGAT WORK ORDER: 11U496467
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http://www.agatlab.com

CLIENT NAME: SRK CONSULTING (CANADA)

ATTENTION TO: Sebastien Bernier

4 Acid Digest - Metals Package, ICP-OES finish (201070)

DATE SAMPLED: May 27, 2011	DATE RECEIVED: May 27, 2011				DATE REPORTED: Jun 09, 2011				SAMPLE TYPE: Rock					
Analyte:	In	K	La	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Rb	S	Se
Unit:	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
Sample Description	RDL	1	2	1	0.01	1	0.5	0.01	0.5	10	1	10	0.005	1
11-RN-213	2	<0.01	<2	<1	18.0	964	2.3	<0.01	7910	23	<1	<10	0.957	31
11-RN-217	<1	<0.01	2	<1	20.2	759	3.5	<0.01	5260	41	<1	<10	0.391	23
11-RN-218	<1	<0.01	2	<1	22.1	906	3.0	<0.01	5180	21	<1	<10	0.283	23
11-RN-219	1	<0.01	2	<1	19.8	949	3.2	<0.01	4570	41	<1	<10	0.251	20
11-RN-220	4	<0.01	2	<1	16.8	856	3.6	<0.01	3470	48	<1	<10	0.230	17
11-RN-221	1	<0.01	3	<1	21.8	1110	3.7	<0.01	3900	26	<1	<10	0.207	20
11-RN-222	<1	<0.01	2	<1	21.3	1080	3.9	<0.01	3950	14	<1	<10	0.229	21
11-RN-223-1	<1	<0.01	2	<1	21.4	1070	3.8	<0.01	2630	24	<1	<10	0.096	16
11-RN-223-2	<1	<0.01	2	<1	21.1	1250	3.1	<0.01	3540	10	<1	<10	0.131	18
11-RN-227	2	<0.01	3	1	24.2	1230	4.3	<0.01	3490	<10	<1	<10	0.122	20
11-RN-228	2	<0.01	3	<1	23.8	1320	3.5	<0.01	3400	<10	<1	<10	0.108	20
11-RN-229	2	<0.01	2	<1	20.8	975	3.8	<0.01	3350	18	<1	<10	0.148	17
11-RN-230	<1	<0.01	2	<1	19.9	1040	4.1	<0.01	2880	<10	<1	<10	0.096	16
11-RN-231	4	<0.01	3	<1	22.7	960	4.0	<0.01	2830	<10	6	<10	0.111	17
11-RN-232	5	<0.01	3	<1	21.8	1040	3.8	<0.01	2830	<10	<1	<10	0.085	17
11-RN-234	<1	<0.01	3	<1	23.9	1190	4.0	<0.01	2530	22	<1	<10	0.084	16
11-RN-235	<1	<0.01	3	<1	25.4	876	4.8	<0.01	2360	19	<1	<10	0.111	17
11-RN-236	<1	<0.01	3	<1	22.1	845	3.2	<0.01	2480	10	<1	<10	0.091	16

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Certificate of Analysis

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CLIENT NAME: SRK CONSULTING (CANADA)

ATTENTION TO: Sebastien Bernier

4 Acid Digest - Metals Package, ICP-OES finish (201070)

DATE SAMPLED: May 27, 2011		DATE RECEIVED: May 27, 2011					DATE REPORTED: Jun 09, 2011					SAMPLE TYPE: Rock				
Analyte:	Unit:	Sc	Ge	Sn	Sr	Ta	Ta	Th	Ti	Tl	U	V	W	Y	Zn	
Sample Description	RDL	1	10	5	1	10	10	5	0.01	5	5	0.5	1	1	0.5	
11-RN-213		2	<10	<5	8	<10	<10	<5	<0.01	12	<5	10.6	<1	<1	30.9	
11-RN-217		3	<10	<5	8	<10	<10	<5	<0.01	13	<5	13.2	<1	<1	24.6	
11-RN-218		3	<10	<5	5	<10	<10	<5	<0.01	12	<5	9.8	<1	<1	38.1	
11-RN-219		3	<10	<5	6	<10	<10	<5	<0.01	12	<5	11.7	<1	<1	41.6	
11-RN-220		3	<10	<5	12	<10	<10	<5	<0.01	13	<5	11.2	<1	<1	45.5	
11-RN-221		4	<10	<5	13	<10	<10	<5	<0.01	13	<5	13.6	<1	<1	35.9	
11-RN-222		3	<10	<5	12	<10	<10	<5	<0.01	13	<5	13.5	<1	<1	34.1	
11-RN-223-1		4	<10	<5	12	<10	<10	<5	<0.01	13	<5	11.5	<1	<1	35.2	
11-RN-223-2		4	<10	<5	10	<10	<10	<5	<0.01	11	6	11.4	<1	<1	44.2	
11-RN-227		4	<10	<5	8	<10	<10	<5	<0.01	13	<5	10.3	<1	<1	47.4	
11-RN-228		4	<10	<5	10	<10	<10	<5	<0.01	12	<5	11.8	<1	<1	45.0	
11-RN-229		3	<10	<5	8	<10	<10	<5	<0.01	12	<5	12.5	<1	<1	38.1	
11-RN-230		4	<10	<5	3	<10	<10	<5	<0.01	14	5	11.4	<1	<1	38.1	
11-RN-231		4	<10	<5	6	<10	<10	<5	<0.01	12	<5	12.3	<1	<1	132	
11-RN-232		4	<10	<5	4	<10	<10	<5	<0.01	12	<5	10.6	<1	<1	40.1	
11-RN-234		4	<10	<5	7	<10	<10	<5	<0.01	13	<5	10.9	<1	<1	47.5	
11-RN-235		4	<10	<5	8	<10	<10	<5	<0.01	15	<5	10.4	<1	<1	41.6	
11-RN-236		3	<10	<5	5	<10	<10	<5	<0.01	10	<5	10.6	<1	<1	43.9	

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Certificate of Analysis

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8633 McADAM ROAD
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http://www.agatlab.com

CLIENT NAME: SRK CONSULTING (CANADA)

ATTENTION TO: Sebastien Bernier

4 Acid Digest - Metals Package, ICP-OES finish (201070)

DATE SAMPLED: May 27, 2011

DATE RECEIVED: May 27, 2011

DATE REPORTED: Jun 09, 2011

SAMPLE TYPE: Rock

Sample Description	Analyte: Unit: RDL:	Zr ppm 5
11-RN-213		<5
11-RN-217		<5
11-RN-218		<5
11-RN-219		<5
11-RN-220		<5
11-RN-221		<5
11-RN-222		<5
11-RN-223-1		<5
11-RN-223-2		<5
11-RN-227		<5
11-RN-228		<5
11-RN-229		<5
11-RN-230		<5
11-RN-231		<5
11-RN-232		<5
11-RN-234		<5
11-RN-235		<5
11-RN-236		<5

Comments: RDL - Reported Detection Limit

Certified By: _____



Certificate of Analysis

AGAT WORK ORDER: 11U496467
PROJECT NO:

8633 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N6
TEL: (905) 501-0888
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http://www.agatlab.com

CLIENT NAME: SRK CONSULTING (CANADA)

ATTENTION TO: Sebastien Bernier

Fire Assay - Au, Pt, Pd Trace Levels, ICP-OES finish (202065)

DATE SAMPLED: May 27, 2011	DATE RECEIVED: May 27, 2011	DATE REPORTED: Jun 09, 2011	SAMPLE TYPE: Rock
Analyte:	Au	Pd	Pt
Unit:	ppm	ppm	ppm
Sample Description	RDL:	0.001	0.005
11-RN-213	0.001	0.068	0.045
11-RN-217	0.003	0.077	0.044
11-RN-218	0.001	0.063	0.049
11-RN-219	0.001	0.064	0.034
11-RN-220	0.001	0.059	0.039
11-RN-221	0.005	0.053	0.029
11-RN-222	0.003	0.053	0.035
11-RN-223-1	0.001	0.011	0.009
11-RN-223-2	<0.001	0.037	0.023
11-RN-227	<0.001	0.037	0.015
11-RN-228	0.004	0.025	0.013
11-RN-229	0.019	0.020	0.006
11-RN-230	0.001	0.015	0.011
11-RN-231	0.001	0.017	0.044
11-RN-232	<0.001	0.022	0.013
11-RN-234	0.002	0.009	0.007
11-RN-235	0.002	0.012	0.009
11-RN-236	0.005	0.012	0.010

Comments: RDL - Reported Detection Limit

Certified By: _____



Certificate of Analysis

AGAT WORK ORDER: 11U496467
PROJECT NO:

8633 McADAM ROAD
MISSISSAUGA, ONTARIO
CANADA L4Z 1N6
TEL: (905) 501-0888
FAX: (905) 501-0889
http://www.agatlbs.com

CLIENT NAME: SRK CONSULTING (CANADA)

ATTENTION TO: Sebastien Bernier

Miscellaneous Techniques - Specific Gravity (201049)

DATE SAMPLED: May 27, 2011

DATE RECEIVED: May 27, 2011

DATE REPORTED: Jun 09, 2011

SAMPLE TYPE: Rock

Sample Description	Analyte: Unit: RDL:	Sample Login Weight kg 0.01	Specific Gravity g/cm ³ 0.01
11-RN-213		1.78	2.66
11-RN-217		1.03	2.67
11-RN-218		1.43	2.63
11-RN-219		1.33	2.67
11-RN-220		0.90	2.57
11-RN-221		1.44	2.40
11-RN-222		1.23	2.64
11-RN-223-1		1.22	2.62
11-RN-223-2		1.68	2.74
11-RN-227		1.81	2.64
11-RN-228		1.91	2.51
11-RN-229		1.31	2.67
11-RN-230		1.78	2.74
11-RN-231		1.65	2.69
11-RN-232		1.75	2.65
11-RN-234		1.81	2.42
11-RN-235		1.44	2.80
11-RN-236		1.27	2.65

Comments: RDL - Reported Detection Limit

Certified By: _____



Quality Assurance

CLIENT NAME: SRK CONSULTING (CANADA)
PROJECT NO:

AGAT WORK ORDER: 11U496467
ATTENTION TO: Sebastien Bernier

Solid Analysis

RPT Date: Jun 09, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL					
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits		
											Lower	Upper
4 Acid Digest - Metals Package, ICP-OES finish (201070)												
Ag	1	2433440	0.6	0.9		< 0.5	37	35	105%	80%	120%	
Al	1	2433440	0.06	0.06	0.0%	< 0.01				80%	120%	
As	1	2433440	1	1	0.0%	< 1	18	16	112%	80%	120%	
Ba	1	2433440	9	9	0.0%	< 1	287	330	87%	80%	120%	
Be	1	2433440	< 0.5	< 0.5	0.0%	< 0.5				80%	120%	
Bi	1	2433440	< 1	< 1	0.0%	< 1				80%	120%	
Ca	1	2433440	0.37	0.40	7.8%	< 0.01	1.17	1.29	91%	80%	120%	
Cd	1	2433440	< 0.5	< 0.5	0.0%	< 0.5	2.4	2	120%	80%	120%	
Ce	1	2433440	8	10	22.2%	< 1				80%	120%	
Co	1	2433440	95.3	98.9	3.7%	< 0.5	9	11	81%	80%	120%	
Cr	1	2433440	870	878	0.9%	< 0.5	30	33	90%	80%	120%	
Cu	1	2433440	2.58	2.51	2.8%	< 0.5	33	31	106%	80%	120%	
Fe	1	2433440	4.22	4.55	7.5%	< 0.01	2.7	2.8	95%	80%	120%	
Ge	1	2433440	< 5	< 5	0.0%	< 5				80%	120%	
In	1	2433440	< 1	< 1	0.0%	< 1				80%	120%	
K	1	2433440	< 0.01	< 0.01	0.0%	< 0.01	0.63	0.66	96%	80%	120%	
La	1	2433440	3	3	0.0%	< 2				80%	120%	
Li	1	2433440	< 1	< 1	0.0%	< 1	12	12	100%	80%	120%	
Mg	1	2433440	22.1	22.4	1.3%	< 0.01	0.48	0.54	89%	80%	120%	
Mn	1	2433440	845	858	1.5%	< 1	520	500	104%	80%	120%	
Mo	1	2433440	3.21	3.50	8.8%	< 0.5	442	400	110%	80%	120%	
Na	1	2433440	< 0.01	< 0.01	0.0%	< 0.01	0.54	0.52	104%	80%	120%	
Ni	1	2433440	2480	2600	4.7%	< 0.5	33	31	106%	80%	120%	
P	1	2433440	10	12	18.2%	< 10	1453	1300	113%	80%	120%	
Pb	1	2433440	< 1	< 1	0.0%	< 1	91	91	100%	80%	120%	
Rb	1	2433440	< 10	< 10	0.0%	< 10				80%	120%	
S	1	2433440	0.091	0.103	12.4%	< 0.005	0.95	0.99	96%	80%	120%	
Sb	1	2433440	10	12	18.2%	< 1				80%	120%	
Sc	1	2433440	3	3	0.0%	< 1	6	7	87%	80%	120%	
Se	1	2433440	< 10	< 10	0.0%	< 10				80%	120%	
Sn	1	2433440	< 5	< 5	0.0%	< 5				80%	120%	
Sr	1	2433440	5	8	18.2%	< 1	95	110	87%	80%	120%	
Ta	1	2433440	< 10	< 10	0.0%	< 10				80%	120%	
Tb	1	2433440	< 10	< 10	0.0%	< 10				80%	120%	
Th	1	2433440	< 5	< 5	0.0%	< 5	6	5.1	117%	80%	120%	
Ti	1	2433440	< 0.01	< 0.01	0.0%	< 0.01				80%	120%	
Tl	1	2433440	10	13	26.1%	< 5				80%	120%	
U	1	2433440	< 5	< 5	0.0%	< 5	27.4	31	88%	80%	120%	
V	1	2433440	10.8	10.0	7.7%	< 0.5	50	49	103%	80%	120%	
W	1	2433440	< 1	< 1	0.0%	< 1				80%	120%	
Y	1	2433440	< 1	< 1	0.0%	< 1	19	23	83%	80%	120%	
Zn	1	2433440	43.9	43.1	1.8%	2.0	193	194	100%	80%	120%	
Zr	1	2433440	< 5	< 5	0.0%	< 5				80%	120%	



Quality Assurance

CLIENT NAME: SRK CONSULTING (CANADA)
PROJECT NO:

AGAT WORK ORDER: 11U496467
ATTENTION TO: Sebastien Bernier

Solid Analysis (Continued)

RPT Date: Jun 09, 2011		REPLICATE				Method Blank	REFERENCE MATERIAL				
PARAMETER	Batch	Sample Id	Original	Rep #1	RPD		Result Value	Expect Value	Recovery	Acceptable Limits	
									Lower	Upper	
Fire Assay - Au, Pt, Pd Trace Levels, ICP-OES finish (202055)											
Au	1	2433428	0.019	< 0.001		< 0.001	0.328	0.321	102%	80%	120%
Pd	1	2433428	0.020	0.021	4.9%	< 0.001	0.036	0.037	96%	80%	120%
Pt	1	2433428	0.009	0.009	0.0%	< 0.005	0.066	0.050	96%	80%	120%
Miscellaneous Techniques - Specific Gravity (201049)											
Specific Gravity	1	2433416	2.67	2.48	7.4%	<				80%	120%

Certified By: _____

Method Summary

CLIENT NAME: SRK CONSULTING (CANADA)

AGAT WORK ORDER: 11U496467

PROJECT NO:

ATTENTION TO: Sebastien Bernier

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Solid Analysis			
Ag	MIN-200-12002/12020		ICP/OES
Al	MIN-200-12002/12020		ICP/OES
As	MIN-200-12002/12020		ICP/OES
Ba	MIN-200-12002/12020		ICP/OES
Be	MIN-200-12002/12020		ICP/OES
Bi	MIN-200-12002/12020		ICP/OES
Ca	MIN-200-12002/12020		ICP/OES
Cd	MIN-200-12002/12020		ICP/OES
Ce	MIN-200-12002/12020		ICP/OES
Co	MIN-200-12002/12020		ICP/OES
Cr	MIN-200-12002/12020		ICP/OES
Cu	MIN-200-12002/12020		ICP/OES
Fe	MIN-200-12002/12020		ICP/OES
Ga	MIN-200-12002/12020		ICP/OES
In	MIN-200-12002/12020		ICP/OES
K	MIN-200-12002/12020		ICP/OES
La	MIN-200-12002/12020		ICP/OES
Li	MIN-200-12002/12020		ICP/OES
Mg	MIN-200-12002/12020		ICP/OES
Mn	MIN-200-12002/12020		ICP/OES
Mo	MIN-200-12002/12020		ICP/OES
Na	MIN-200-12002/12020		ICP/OES
Ni	MIN-200-12002/12020		ICP/OES
P	MIN-200-12002/12020		ICP/OES
Pb	MIN-200-12002/12020		ICP/OES
Rb	MIN-200-12002/12020		ICP/OES
S	MIN-200-12002/12020		ICP/OES
Sb	MIN-200-12002/12020		ICP/OES
Sc	MIN-200-12002/12020		ICP/OES
Se	MIN-200-12002/12020		ICP/OES
Sn	MIN-200-12002/12020		ICP/OES
Sr	MIN-200-12002/12020		ICP/OES
Ta	MIN-200-12002/12020		ICP/OES
Te	MIN-200-12002/12020		ICP/OES
Th	MIN-200-12002/12020		ICP/OES
Ti	MIN-200-12002/12020		ICP/OES
Tl	MIN-200-12002/12020		ICP/OES
U	MIN-200-12002/12020		ICP/OES
V	MIN-200-12002/12020		ICP/OES
W	MIN-200-12002/12020		ICP/OES
Y	MIN-200-12002/12020		ICP/OES
Zn	MIN-200-12002/12020		ICP/OES
Zr	MIN-200-12002/12020		ICP/OES
Au	MIN-200-12006	BUGBEE, E: A Textbook of Fire Assaying	ICP/OES
Pd	MIN-200-12006	BUGBEE, E: A Textbook of Fire Assaying	ICP/OES
Pt	MIN-200-12006	BUGBEE, E: A Textbook of Fire Assaying	ICP/OES
Sample Login Weight			BALANCE

Method Summary

CLIENT NAME: SRK CONSULTING (CANADA)

AGAT WORK ORDER: 11U496467

PROJECT NO:


ATTENTION TO: Sebastien Bernier

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Specific Gravity	MIN-200-12024		Pycnometer

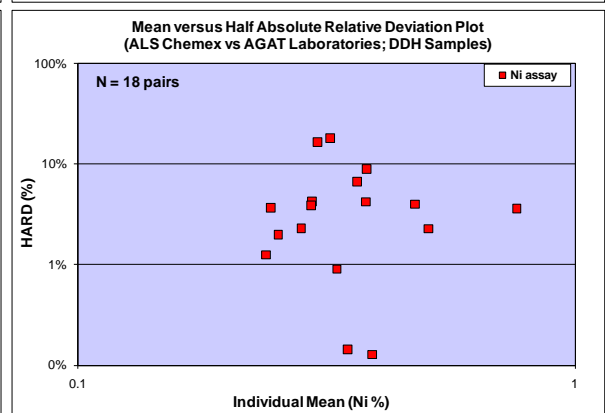
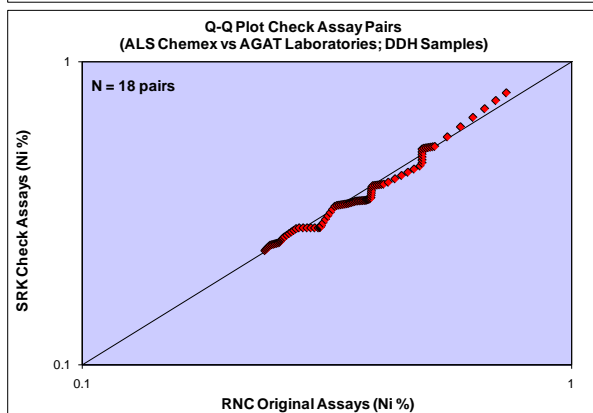
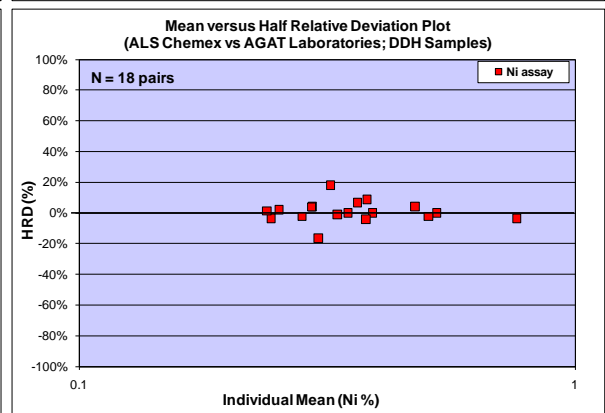
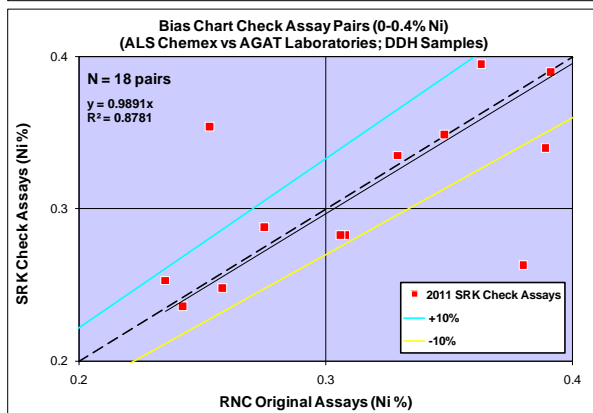
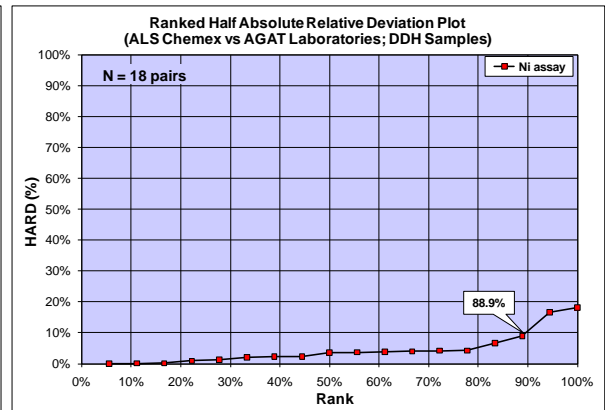
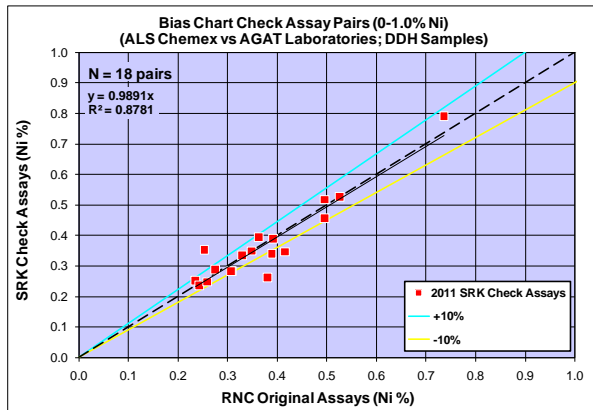
APPENDIX I

**Analytical Results
For SRK Verification Samples**

Bias Charts, Quantile-Quantile and Precision Plots for SRK Verification Samples (ALS Chemex versus AGAT Laboratories) – Nickel

	
Project	Dumont
Data Series	2011 SRK Check Assays
Data Type	DDH Samples
Commodity	Ni in %
Analytical Method	AqR-ICP-AES vs 4 Acid-ICP-OES
Detection Limit	0.0001% (ALS) vs 0.00005% (AGAT)
Original Dataset	RNC Original Assays
Paired Dataset	SRK Check Assays

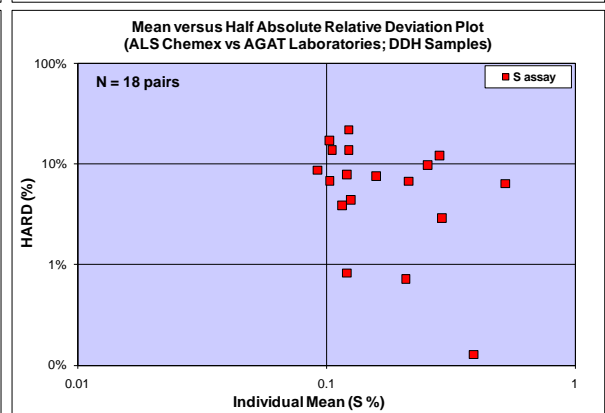
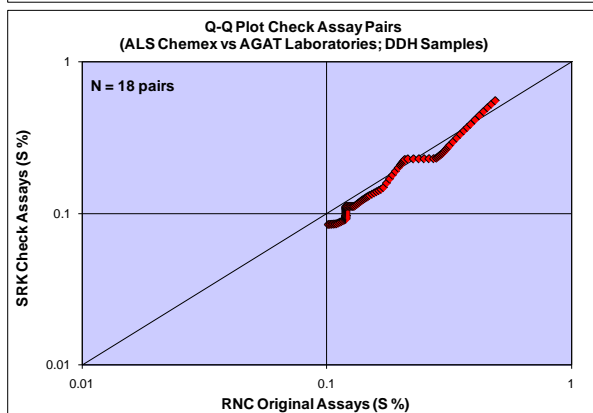
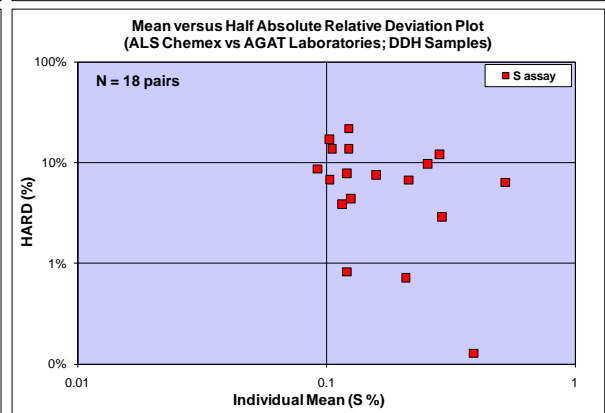
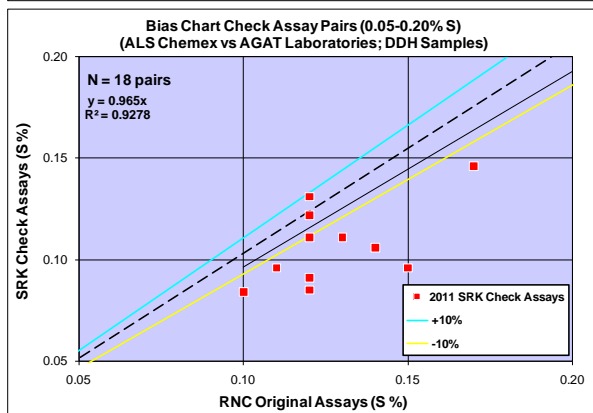
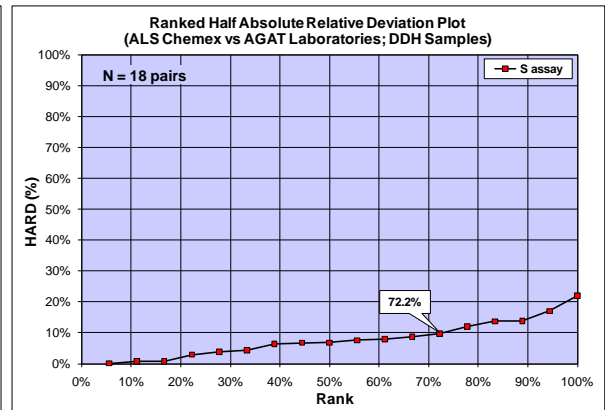
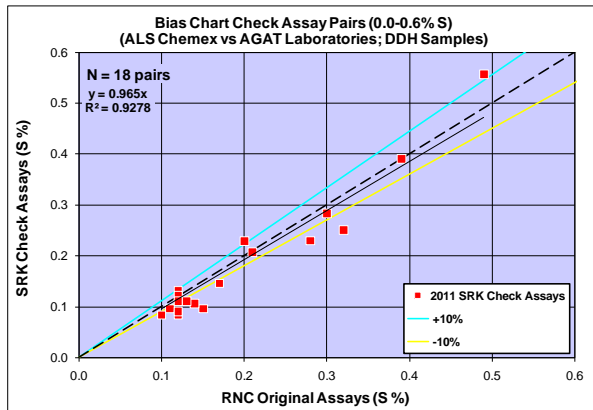
Statistics	RNC	SRK
Sample Count	18	18
Minimum Value	0.235	0.236
Maximum Value	0.736	0.791
Mean	0.375	0.370
Median	0.356	0.344
Standard Error	0.030	0.032
Standard Deviation	0.127	0.136
Correlation Coefficient	0.9373	
Pairs ≤ 10% HARD	88.9%	




Bias Charts, Quantile-Quantile and Precision Plots for SRK Verification Samples (ALS Chemex versus AGAT Laboratories) – Sulphur

Project	Dumont
Data Series	2011 SRK Check Assays
Data Type	DDH Samples
Commodity	S in %
Analytical Method	AqR-ICP-AES vs 4 Acid-ICP-OES
Detection Limit	0.01% (ALS) vs 0.005% (AGAT)
Original Dataset	RNC Original Assays
Paired Dataset	SRK Check Assays

Statistics	RNC	SRK
Sample Count	18	18
Minimum Value	0.100	0.084
Maximum Value	0.490	0.557
Mean	0.199	0.185
Median	0.145	0.127
Standard Error	0.026	0.030
Standard Deviation	0.112	0.126
Correlation Coefficient	0.9719	
Pairs ≤ 10% HARD	72.2%	



Bias Charts, Quantile-Quantile and Precision Plots for SRK Verification Samples (ALS Chemex versus AGAT Laboratories) – Specific Gravity

	
Project	Dumont
Data Series	2011 SRK Check Assays
Data Type	DDH Samples
Commodity	Specific Gravity
Analytical Method	Gravimetric
Detection Limit	0.01
Original Dataset	RNC Original Assays
Paired Dataset	SRK Check Assays

Statistics	RNC	SRK
Sample Count	18	18
Minimum Value	2.62	2.40
Maximum Value	2.83	2.74
Mean	2.73	2.62
Median	2.73	2.64
Standard Error	0.01	0.02
Standard Deviation	0.06	0.09
Correlation Coefficient	0.2133	
Pairs ≤ 10% HARD	100.0%	

