

Serial Number: 57854 Model: Niton XL3t 950 Software: 8.4G Date of Q.C.: 10.9.2018
Resolution: 167.61 155.69 Escalate: 7.43 7.43 Source: Tube Inspector: TP

180 second analysis time, 45 seconds per filter, all 4 filters switched on, no He running (toggle off)

SiO2 180-615	Certified	Low	High	Measured	Err	
Ba	0	0	0.1	0	0.003	<LOD
Sb	0	0	0.1	0.001	0.001	<LOD
Sn	0	0	0.1	0.000	0.001	<LOD
Cd	0	0	0.1	0.000	0.001	<LOD
Pd	0	0	0.1	0.000	0.001	<LOD
Ag	0	0	0.1	0.000	0.001	<LOD
Bal	53.26	40	66	60.609	0.129	OK
Mo	0	0	0.1	0.001	0.000	OK
Nb	0	0	0.1	0.000	0.001	<LOD
Zr	0	0	0.1	0.000	0.001	<LOD
Sr	0	0	0.1	0.000	0.001	<LOD
Rb	0	0	0.1	0.000	0.001	<LOD
Bi	0	0	0.1	0.000	0.001	<LOD
Se	0	0	0.1	0.000	0.001	<LOD
As	0	0	0.1	0.000	0.001	<LOD
Au	0	0	0.1	0.000	0.001	<LOD
Pb	0	0	0.1	0.000	0.001	<LOD
W	0	0	0.1	0.000	0.002	<LOD
Zn	0	0	0.1	0.001	0.001	<LOD
Cu	0	0	0.1	0.000	0.001	<LOD
Ni	0	0	0.1	0.000	0.002	<LOD
Co	0	0	0.1	0.000	0.001	<LOD
Fe	0	0	0.1	0.000	0.003	<LOD
Mn	0	0	0.1	0.000	0.005	<LOD
Cr	0	0	0.1	0.000	0.001	<LOD
V	0	0	0.1	0.002	0.001	OK
Ti	0	0	0.1	0.000	0.001	<LOD
Ca	0	0	0.2	0.000	0.001	<LOD
K	0	0	0.1	0.000	0.003	<LOD
Cl	0	0	0.1	0.004	0.002	OK
S	0	0	0.1	0.000	0.004	<LOD
P	0	0	0.5	0.000	0.018	<LOD
Si	46.74	35	53	39.198	0.148	OK
Al	0	0	0.5	0.000	0.034	<LOD
Mg	0	0	1	0.186	0.140	<LOD

BS103 180-628	Certified	Low	High	Measured	Err	
Ba		0	0.05	0.028	0.007	
Sb		0	0.03	0.002	0.002	<LOD
Sn		0	0.03	0.004	0.002	OK
Cd		0	0.03	0.000	0.001	<LOD
Pd		0	0.03	0.000	0.001	<LOD
Ag		0	0.03	0.002	0.001	OK
Bal	35.39	26	44	30.965	0.607	OK
Mo		0	0.03	0.000	0.001	<LOD
Nb		0	0.03	0.001	0.001	<LOD
Zr		0	0.03	0.000	0.001	<LOD
Sr		0	0.03	0.004	0.001	OK
Rb		0	0.03	0.001	0.001	<LOD
Bi		0	0.03	0.000	0.002	<LOD
Se		0	0.03	0.000	0.001	<LOD
As		0	0.03	0.002	0.002	<LOD
Au		0	0.03	0.000	0.002	<LOD
Pb		0	0.09	0.008	0.003	OK
W		0	0.09	0.000	0.013	<LOD
Zn		0	0.05	0.024	0.003	OK
Cu		0	0.03	0.000	0.006	<LOD
Ni		0	0.05	0.000	0.009	<LOD
Co		0	0.15	0.000	0.040	<LOD
Fe	59.41	55	70	61.021	0.550	OK
Mn	0.47	0.4	1.0	0.600	0.019	OK
Cr		0	0.10	0.036	0.006	OK
V		0	0.05	0.013	0.007	OK
Ti	0.024	0	0.1	0.023	0.010	OK
Ca	0.91	0.5	2.0	1.439	0.073	OK
K		0	0.2	0.110	0.020	OK
Cl		0	0.5	0.089	0.004	OK
S	0.065	0	0.5	0.171	0.009	OK
P	0.058	0	0.5	0.078	0.012	OK
Si	3.80	2.8	4.8	4.310	0.069	OK
Al	0.51	0	1.5	1.069	0.136	OK
Mg	0.21	0	1.2	0.000	0.814	<LOD

NIST25d 180-627	Certified	Low	High	Measured	Err	
Ba		0	0.5	0.24	0.009	OK
Sb		0	0.05	0	0.002	<LOD
Sn		0	0.05	0.027	0.002	OK
Cd		0	0.05	0.000	0.002	<LOD
Pd		0	0.05	0.000	0.001	<LOD
Ag		0	0.05	0.001	0.001	<LOD
Bal	35.5	24.5	36.5	31.621	0.496	OK
Mo		0	0.05	0.001	0.001	<LOD
Nb		0	0.05	0.000	0.001	<LOD
Zr		0	0.05	0.005	0.001	OK
Sr		0	0.05	0.011	0.001	OK
Rb		0	0.05	0.001	0.001	<LOD
Bi		0	0.05	0.000	0.001	<LOD
Se		0	0.05	0.000	0.001	<LOD
As		0	0.05	0.005	0.001	OK
Au		0	0.05	0.000	0.001	<LOD
Pb		0	0.05	0.004	0.002	OK
W		0	0.10	0.000	0.010	<LOD
Zn		0	0.10	0.072	0.004	OK
Cu		0	0.10	0.042	0.005	OK
Ni		0	0.10	0.044	0.007	OK
Co		0	0.15	0.107	0.017	OK
Fe	2.74	2	4	3.290	0.048	OK
Mn	51.78	50	70	56.763	0.401	OK
Cr		0	0.10	0.000	0.012	<LOD
V		0	0.10	0.014	0.010	<LOD
Ti	0.078	0.06	0.2	0.096	0.016	OK
Ca		0	0.2	0.063	0.027	OK
K	0.77	0	1	0.723	0.038	OK
Cl		0	0.2	0.047	0.004	OK
S		0	0.2	0.131	0.010	OK
P	0.109	0.05	0.16	0.151	0.014	OK
Si	1.18	0.5	2	1.360	0.047	OK
Al	2.81	1.0	5.2	4.359	0.228	OK
Mg		0	2.0	0.822	0.769	<LOD

BCS355 180-629	Certified	Low	High	Measured	Err	
Ba		0	0.1	0	0.036	<LOD
Sb		0	0.1	0	0.006	<LOD
Sn	31.42	26.7	36.1	33.684	0.613	OK
Cd		0	0.1	0.031	0.005	OK
Pd		0	0.02	0	0.001	<LOD
Ag		0	0.02	0	0.003	<LOD
Bal	36.5	20	40	33.358	0.953	OK
Mo		0	0.02	0	0.001	<LOD
Nb		0	0.02	0.005	0.001	OK
Zr	0.059	0	0.1	0.003	0.001	OK
Sr		0	0.05	0.002	0.001	OK
Rb		0	0.05	0.001	0.001	<LOD
Bi	0.015	0	0.025	0.007	0.002	OK
Se		0	0.05	0.003	0.002	OK
As	0.14	0.05	0.25	0.132	0.005	OK
Au		0	0.05	0	0.006	<LOD
Pb	0.012	0	0.05	0	0.003	<LOD
W	0.35	0.28	0.42	0.312	0.025	OK
Zn	0.06	0.02	0.1	0.058	0.006	OK
Cu	0.085	0.04	0.14	0.059	0.007	OK
Ni		0	0.05	0	0.012	<LOD
Co		0	0.20	0	0.035	<LOD
Fe	17.08	14	20	18.903	0.265	OK
Mn		0.1	0.5	0.208	0.025	OK
Cr		0	0.05	0.015	0.004	OK
V		0	0.05	0	0.01	<LOD
Ti	0.37	0.29	0.5	0.346	0.015	OK
Ca	2.63	1.6	6	2.407	0.093	OK
K		0	1.5	0.249	0.03	OK
Cl		0	0.3	0	0.003	<LOD
S	0.5	0.3	0.7	0.512	0.012	OK
P		0	0.3	0.063	0.012	OK
Si	7.14	5.2	8.6	5.665	0.064	OK
Al	4.12	2.1	6.3	3.975	0.171	OK
Mg		0	1.0	0	0.589	<LOD

NIST70a 180-614	Certified	Low	High	Measured	Err	
Ba	0.018	0	0.05	0.015	0.003	OK
Sb		0	0.01	0	0	OK
Sn		0	0.01	0.00	0.00	<LOD
Cd		0	0.01	0.00	0.00	<LOD
Pd		0	0.01	0.00	0.00	<LOD
Ag		0	0.01	0.00	0.00	<LOD
Bal	49.17	40	60	55.59	0.16	OK
Mo		0	0.01	0.00	0.00	<LOD
Nb		0	0.01	0.00	0.00	<LOD
Zr		0	0.01	0.00	0.00	<LOD
Sr		0	0.01	0.01	0.00	OK
Rb	0.036	0.02	0.05	0.03	0.00	OK
Bi		0	0.01	0.00	0.00	<LOD
Se		0	0.01	0.00	0.00	<LOD
As		0	0.01	0.00	0.00	<LOD
Au		0	0.01	0.00	0.00	<LOD
Pb		0	0.01	0.01	0.00	OK
W		0	0.01	0.00	0.00	<LOD
Zn		0	0.01	0.01	0.00	OK
Cu		0	0.01	0.00	0.00	OK
Ni		0	0.01	0.00	0.00	<LOD
Co		0	0.01	0.00	0.00	<LOD
Fe	0.052	0.03	0.08	0.06	0.00	OK
Mn		0	0.01	0.00	0.01	<LOD
Cr		0	0.01	0.01	0.00	OK
V		0	0.01	0.00	0.00	OK
Ti	0.006	0	0.04	0.01	0.00	OK
Ca	0.079	0.05	0.4	0.11	0.02	OK
K	9.79	6.79	12.79	7.83	0.05	OK
Cl		0	0.01	0.01	0.00	OK
S		0	0.2	0.04	0.01	OK
P		0	0.5	0.00	0.02	<LOD
Si	31.36	26.20	34.60	29.84	0.14	OK
Al	9.47	5.5	11.8	6.45	0.14	OK
Mg		0	1	0	0.264	<LOD

BCS308 180-591	Certified	Low	High	Measured	Err	
Ba		0	0.1	0.023	0.005	OK
Sb		0	0.1	0	0.001	<LOD
Sn		0	0.05	0.000	0.002	<LOD
Cd		0	0.05	0.000	0.001	<LOD
Pd		0	0.05	0.000	0.001	<LOD
Ag		0	0.05	0.001	0.001	<LOD
Bal	37.2	27	50	39.710	0.411	OK
Mo		0	0.01	0.000	0.001	<LOD
Nb		0	0.01	0.000	0.001	<LOD
Zr		0	0.01	0.000	0.001	<LOD
Sr		0	0.01	0.000	0.001	<LOD
Rb		0	0.01	0.000	0.001	<LOD
Bi		0	0.01	0.000	0.001	<LOD
Se		0	0.01	0.001	0.001	<LOD
As		0	0.01	0.001	0.001	<LOD
Au		0	0.01	0.000	0.001	<LOD
Pb		0	0.01	0.000	0.001	<LOD
W		0	0.1	0.000	0.010	<LOD
Zn		0	0.1	0.046	0.002	OK
Cu		0	0.05	0.008	0.002	OK
Ni		0	0.2	0.142	0.007	OK
Co		0	0.1	0.046	0.018	OK
Fe	11.89	10	14	11.364	0.103	OK
Mn	0.108	0.02	0.5	0.200	0.035	OK
Cr	28.39	25.5	31.2	26.992	0.167	OK
V		0	0.2	0.132	0.012	OK
Ti		0	0.1	0.071	0.014	OK
Ca	0.243	0.1	0.35	0.262	0.027	OK
K		0	1	0.046	0.022	OK
Cl		0	0.5	0.159	0.006	OK
		0	0.5	0.097	0.011	OK
P		0.5	0	0.061	0.016	OK
Si	1.99	1.0	5.0	3.592	0.079	OK
Al	10.27	5.9	12.2	9.178	0.336	OK
Mg	9.89	6.9	12.9	7.867	0.933	OK

Bal	47.9	38	58	47.289	0.202	OK
Mo		0	0.01	0.003	0.001	OK
Nb		0	0.01	0.003	0.001	OK
Zr		0	0.01	0.008	0.001	OK
Sr		0	0.1	0.066	0.001	OK
Rb		0	0.01	0.003	0.001	OK
Bi		0	0.01	0.000	0.001	<LOD
Se		0	0.01	0.002	0.007	<LOD
As		0	0.01	0.000	0.015	<LOD
Au		0	0.01	0.000	0.001	<LOD
Pb		0	0.01	0.002	0.001	OK
W		0	0.01	0.000	0.005	<LOD
Zn	0.15	0.12	0.18	0.144	0.003	OK
Cu		0	0.02	0.011	0.002	OK
Ni		0	0.02	0.017	0.003	OK
Co		0	0.01	0.000	0.005	<LOD
Fe	0.55	0.35	0.75	0.537	0.012	OK
Mn	0.009	0	0.05	0.028	0.007	OK
Cr	0.07	0.04	0.10	0.087	0.003	OK
V	0.31	0.16	0.46	0.179	0.006	OK
Ti		0	0.1	0.060	0.010	OK
Ca	31.16	28	34.3	29.863	0.164	OK
K	0.42	0.22	0.66	0.505	0.016	OK
Cl		0	0.5	0.069	0.005	OK
S		0	2	1.480	0.029	OK
P	13.18	10.2	16.2	12.639	0.084	OK
Si	5.23	3.00	8.00	5.981	0.091	OK
Al	0.95	0.5	2	0.981	0.173	OK
Mg	0.199	0	8	0.000	0.935	<LOD

Bal	6.2	4.9	20	8.498	1.409	OK
Mo		0	0.05	0.000	0.001	<LOD
Nb		0	0.01	0.000	0.000	OK
Zr		0	0.01	0.000	0.001	<LOD
Sr		0	0.01	0.000	0.001	<LOD
Rb		0	0.01	0.000	0.001	<LOD
Bi		0	0.01	0.000	0.009	<LOD
Se		0	0.01	0.000	0.003	<LOD
As		0	0.2	0.122	0.031	OK
Au		0	0.01	0.000	0.010	<LOD
Pb	2.73	2.18	3.3	2.895	0.085	OK
W		0	0.5	0.000	0.229	<LOD
Zn	56.49	45.2	67.8	48.453	0.902	OK
Cu	0.29	0.19	0.39	0.224	0.011	OK
Ni		0	0.05	0.046	0.006	OK
Co		0	0.1	0.060	0.010	OK
Fe	2.08	1.66	2.50	1.839	0.031	OK
Mn		0	0.05	0.019	0.009	OK
Cr		0	0.05	0.022	0.003	OK
V		0	0.05	0.000	0.003	<LOD
Ti		0	0.05	0.000	0.005	<LOD
Ca	0.82	0.5	2	1.076	0.059	OK
K		0	0.5	0.224	0.021	OK
Cl		0	0.5	0.146	0.006	OK
S	30.03	27.0	33.0	32.065	0.324	OK
P		0	1	0.081	0.027	OK
Si		0.0	1.0	0.754	0.043	OK
Al		0.0	1.0	0.516	0.276	OK
Mg	0.45	0.0	5.0	2.138	1.810	<LOD

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications.
 The measurements were found to be within specification limits at the time of manufacture and calibration.

Standards are traceable to National Institute of Standards & Technology (NIST) standards, or other government bodies.
**** - Not Certified**

Signed:



Stephen Elbeery
 Director, Quality