Chemistry**
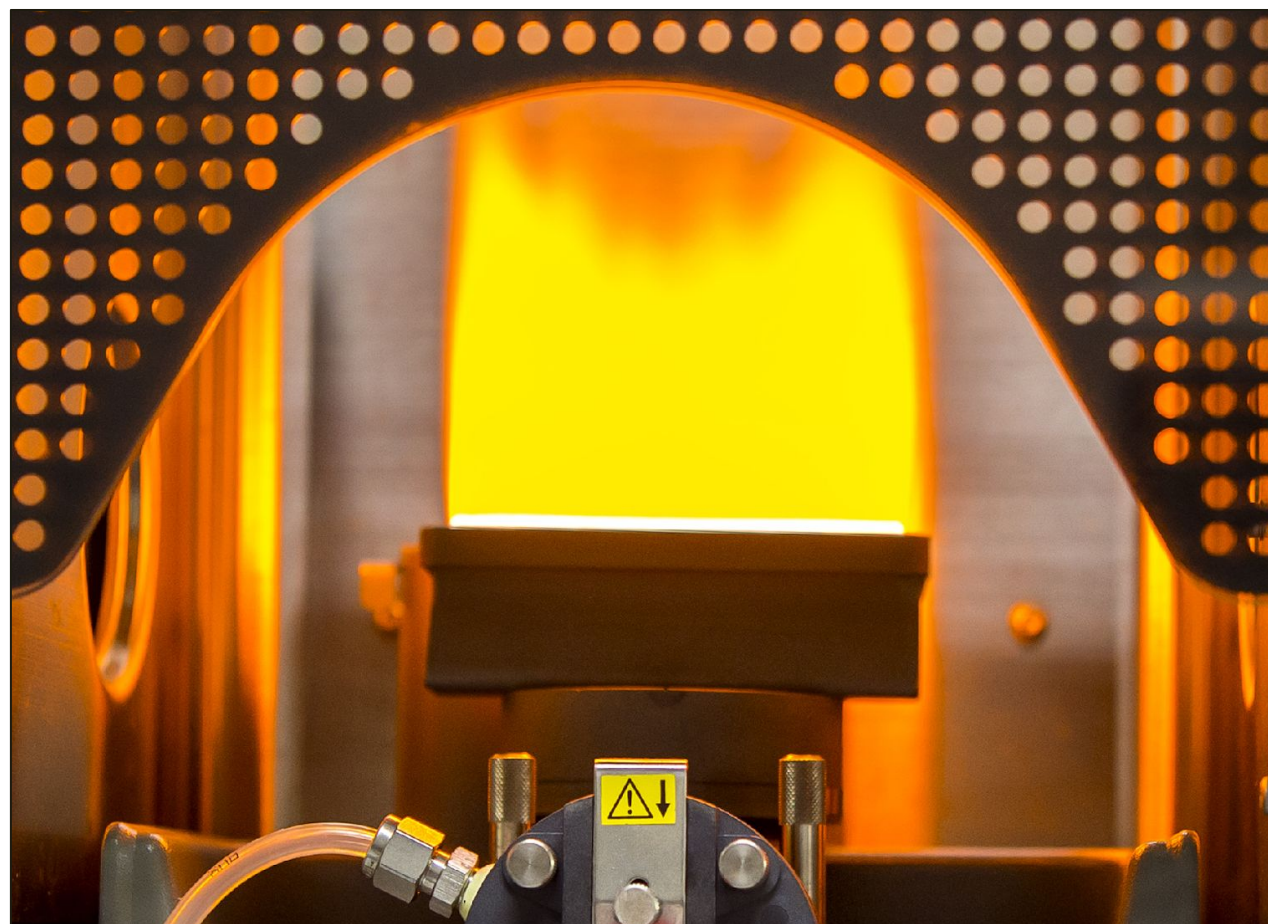
Approaches / Methods…

- Lab Analysis

- XRF

- OES

- (and more…)


		CHEMICAL COMPOSITION																	
Heat #	Test	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Al	Sn	Nb	V	Ti	Ca	B	N	C. E. Pcm 0.25 Max
Heat Analysis																			
111419	3153465	.04	1.08	.010	.002	.190	.150	.050	.040	.010	.020	.010	.031	.004	.011	.0020	.0000	.009	.112 Pcm
111781	3149806	.04	1.11	.014	.001	.200	.140	.050	.060	.010	.030	.010	.036	.004	.009	.0010	.0000	.009	.114 Pcm
Product Analysis																			

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Material Verification:
The Considerations

Yield Strength ≠ Grade

- Sample Yield Strength = 70,400

- Sample Grade = ???

- Unknown vs Tested

	YS min	YS max
Grade A	25400	60000
Grade B	35500	65300
X42	42100	71800
X46	46400	76100
X52	52200	76900
X56	56600	79000
X60	60200	81900
X65	65300	87000
X70	70300	92100
X80	80500	102300
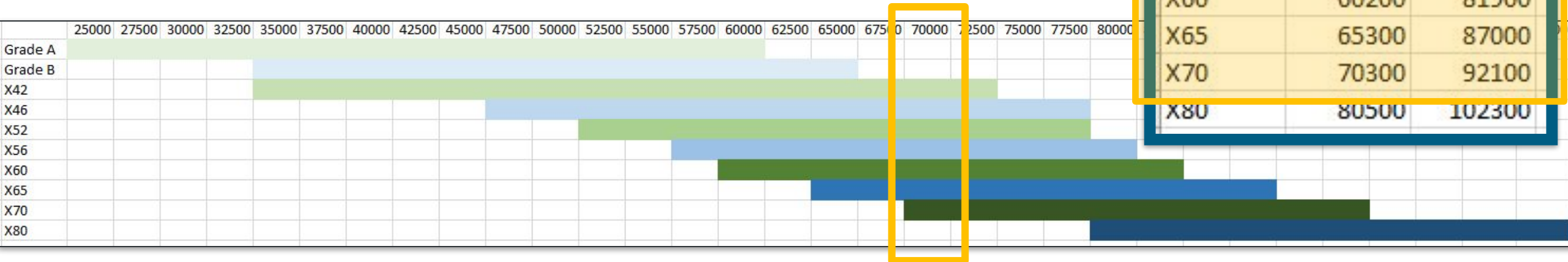
More Considerations

- NDT – How to manage validation data set as proof of "comparable"

- Code and Standard Evolutions
  - Tolerance Variances

- Unconfirmed vs. Confirmed Unexpected Results
  - Consider ISO 17025 and related standards

- Sample and Data Handling

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Thank You!