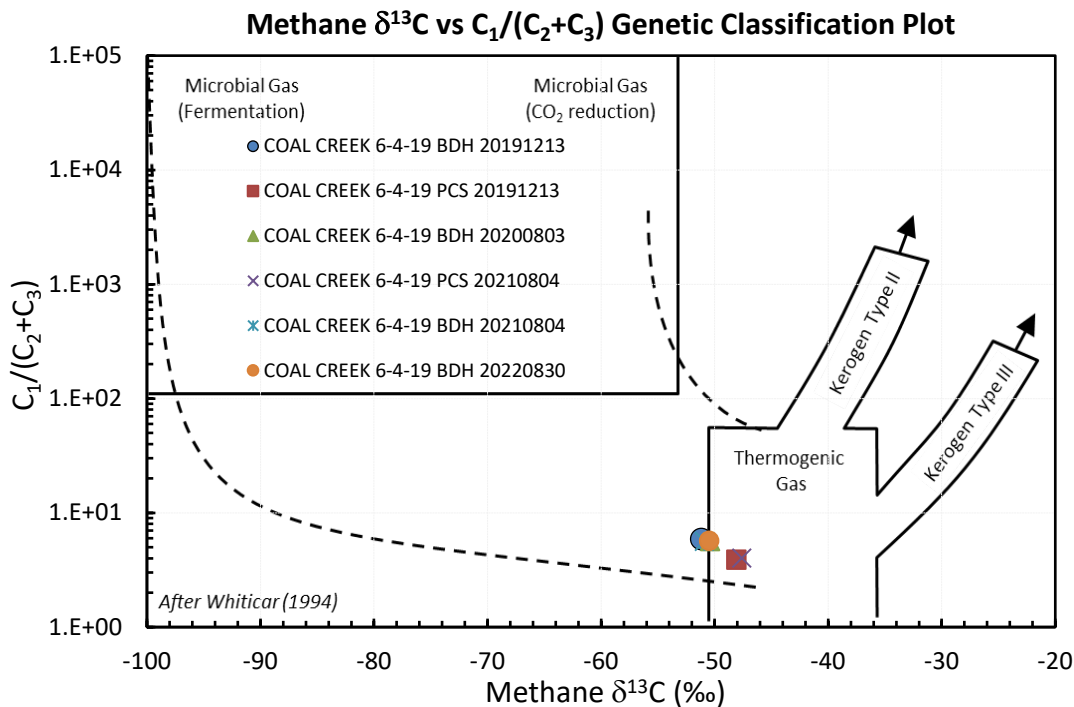
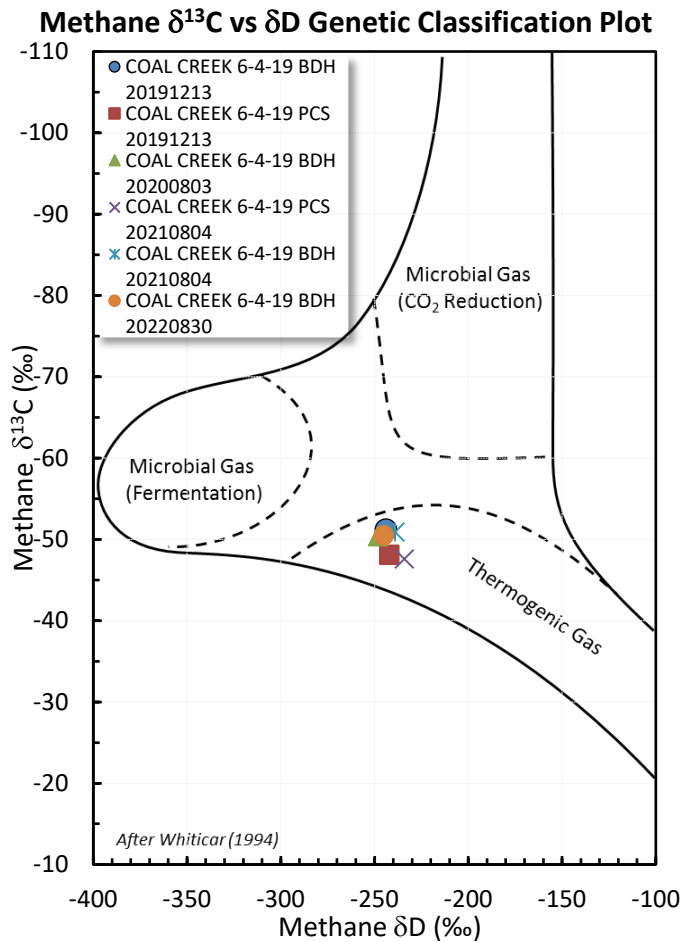
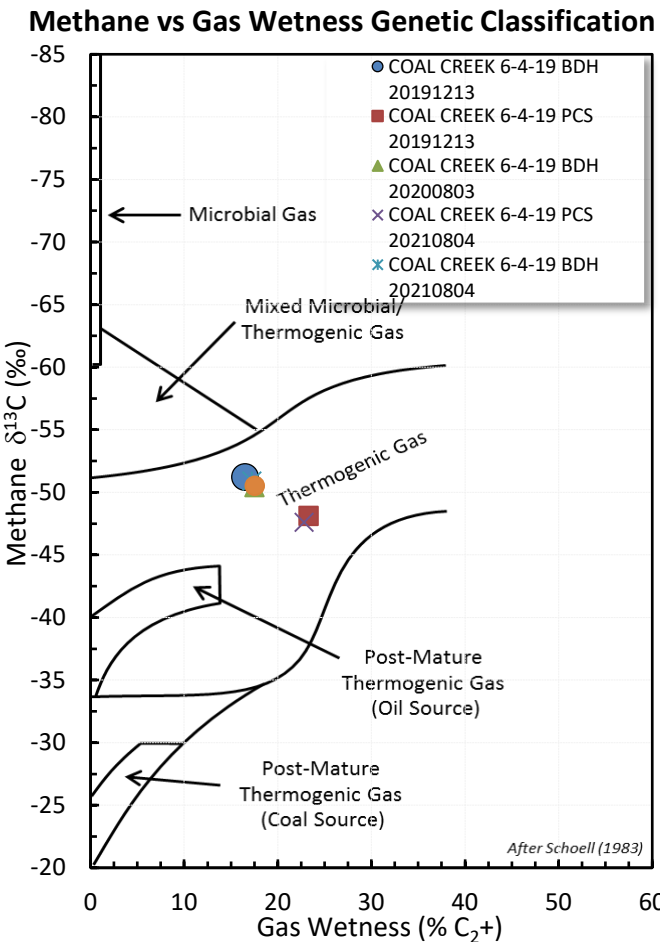
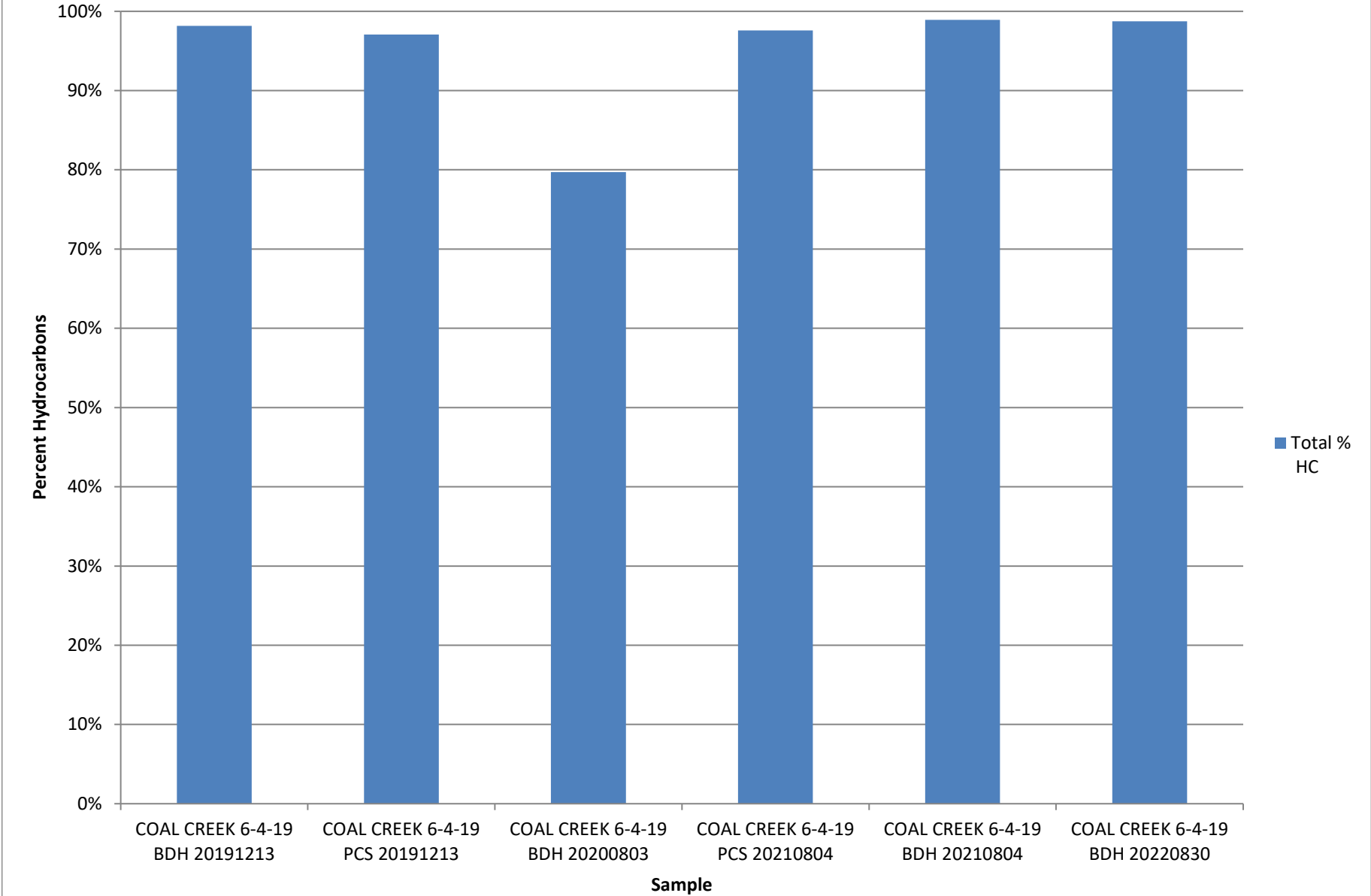


# Stable Isotope Interpretive Plots



Total Percent Hydrocarbons



**GAS COMPOSITION**

**GAS COMPOSITION (MOL %)**

**Parameter**

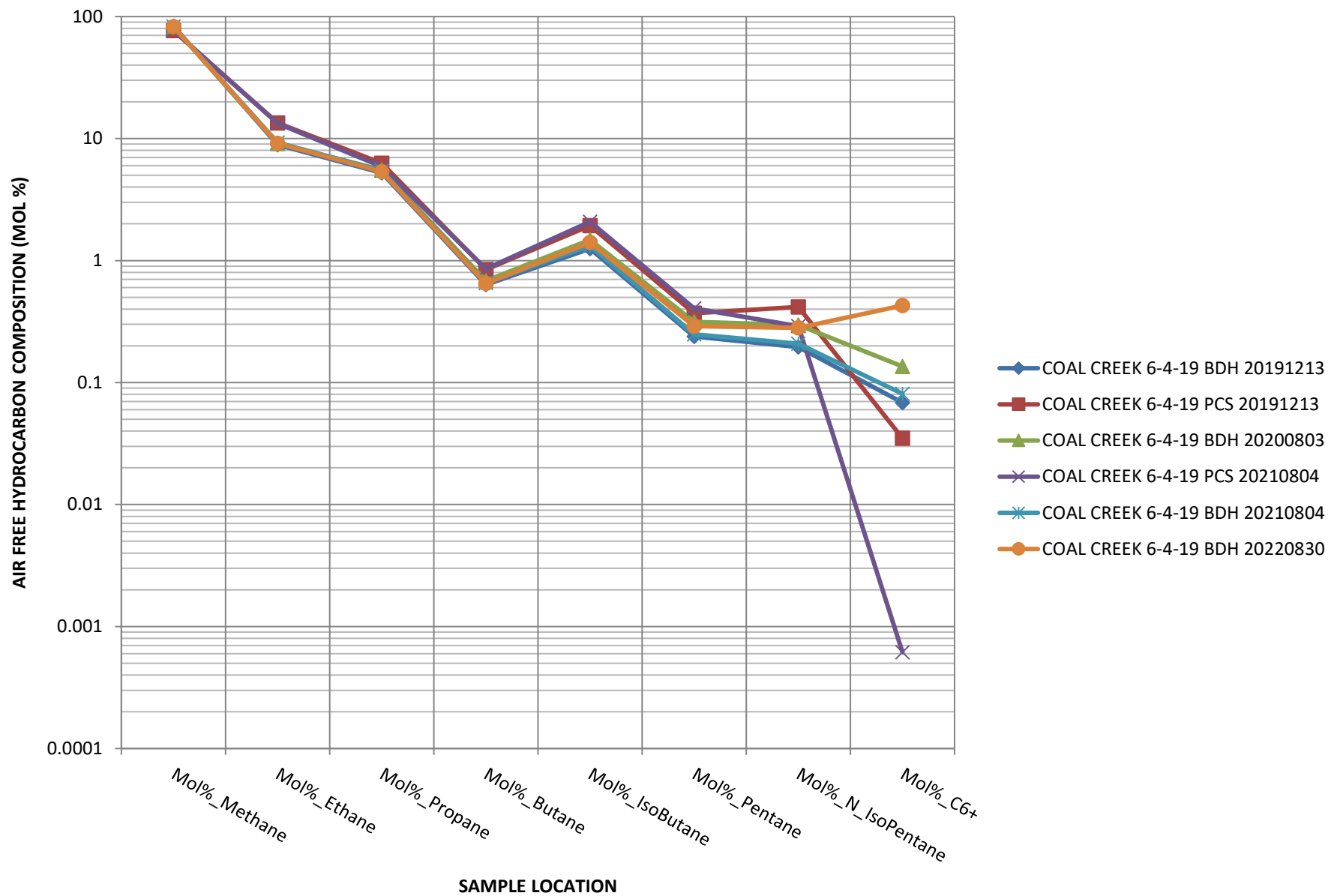
Legend:

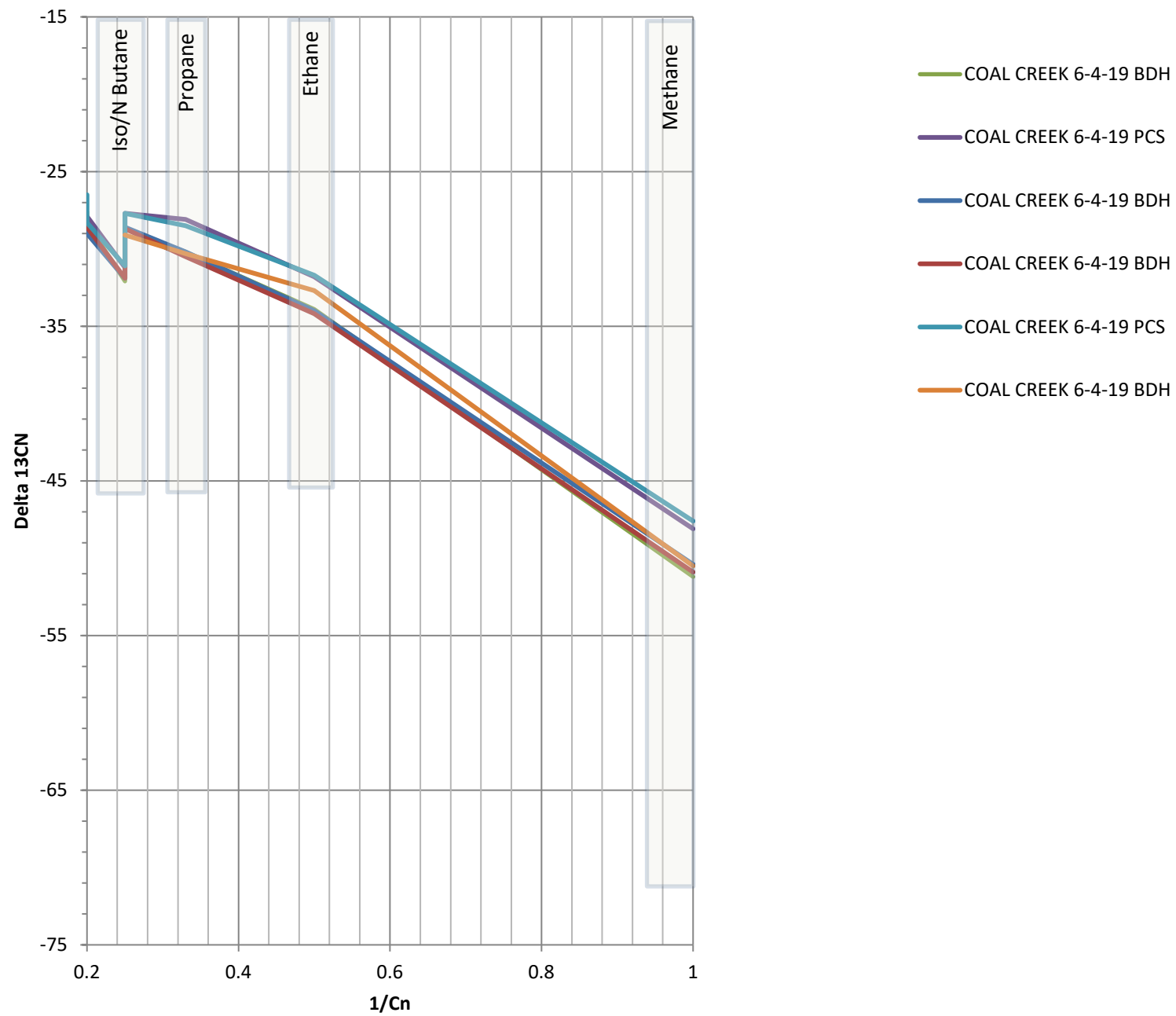
- COAL CREEK 6-4-19 BDH 20191213
- COAL CREEK 6-4-19 PCS 20191213
- COAL CREEK 6-4-19 BDH 20200803
- COAL CREEK 6-4-19 PCS 20210804
- COAL CREEK 6-4-19 BDH 20210804
- COAL CREEK 6-4-19 BDH 20210804

Parameter	COAL CREEK 6-4-19 BDH 20191213	COAL CREEK 6-4-19 PCS 20191213	COAL CREEK 6-4-19 BDH 20200803	COAL CREEK 6-4-19 PCS 20210804	COAL CREEK 6-4-19 BDH 20210804	COAL CREEK 6-4-19 BDH 20210804
Mol%_Nitrogen	1.5	0.8	15	0.4	1.0	1.2
Mol%_Oxygen	0.2	0.15	4.5	0.04	0.05	0.05
Mol%_Argon	0.013	0.001	0.2	0.001	0.001	0.001
Mol%_O2+AR	0.001	0.001	0.001	1.8	0.001	0.001
Mol%_CarbonDiOxide	0.001	0.001	0.001	0.001	0.001	0.001
Mol%_CarbonMonoxide	0.001	0.001	0.001	0.001	0.001	0.001
Mol%_Helium	0.03	0.001	0.025	0.001	0.03	0.025
Mol%_hydrogen	80	70	65	75	80	80
Mol%_Methane	8.5	12	7.5	12	9.5	9.5
Mol%_Ethane	5.5	6.5	4.5	6.5	5.5	5.5
Mol%_Propane	0.6	0.8	0.6	0.8	0.6	0.6
Mol%_Butane	1.2	1.8	1.1	1.8	1.2	1.2
Mol%_IsoButane	0.25	0.4	0.25	0.4	0.25	0.25
Mol%_N_Pentane	0.18	0.45	0.25	0.3	0.2	0.2
Mol%_IsoPentane	0.07	0.035	0.11	0.001	0.08	0.08
Mol%_C6+	0.001	0.001	0.001	0.001	0.001	0.45

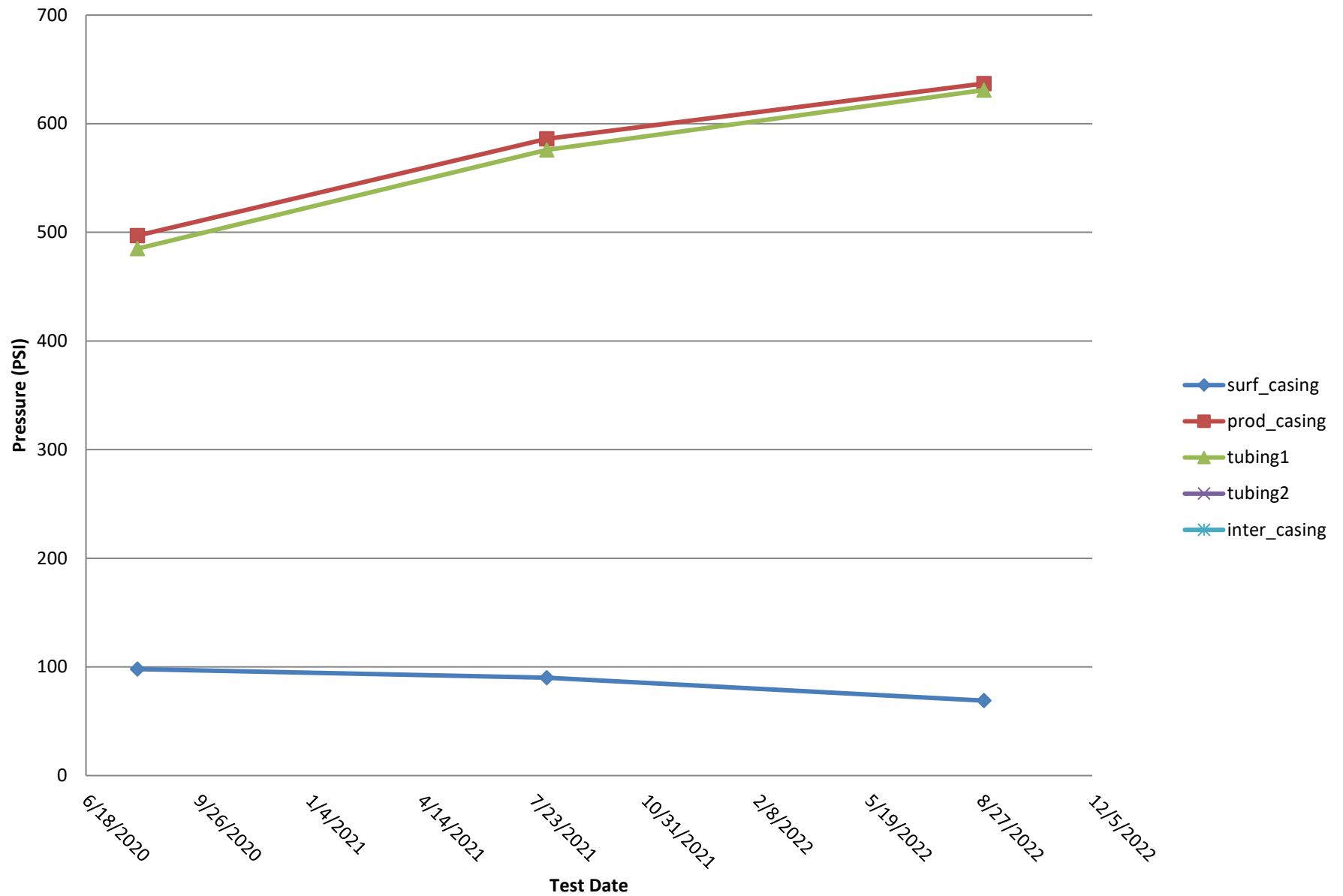
- COAL CREEK 6-4-19 BDH  
20191213
- COAL CREEK 6-4-19 PCS  
20191213
- COAL CREEK 6-4-19 BDH  
20200803
- COAL CREEK 6-4-19 PCS  
20210804
- COAL CREEK 6-4-19 BDH  
20210804

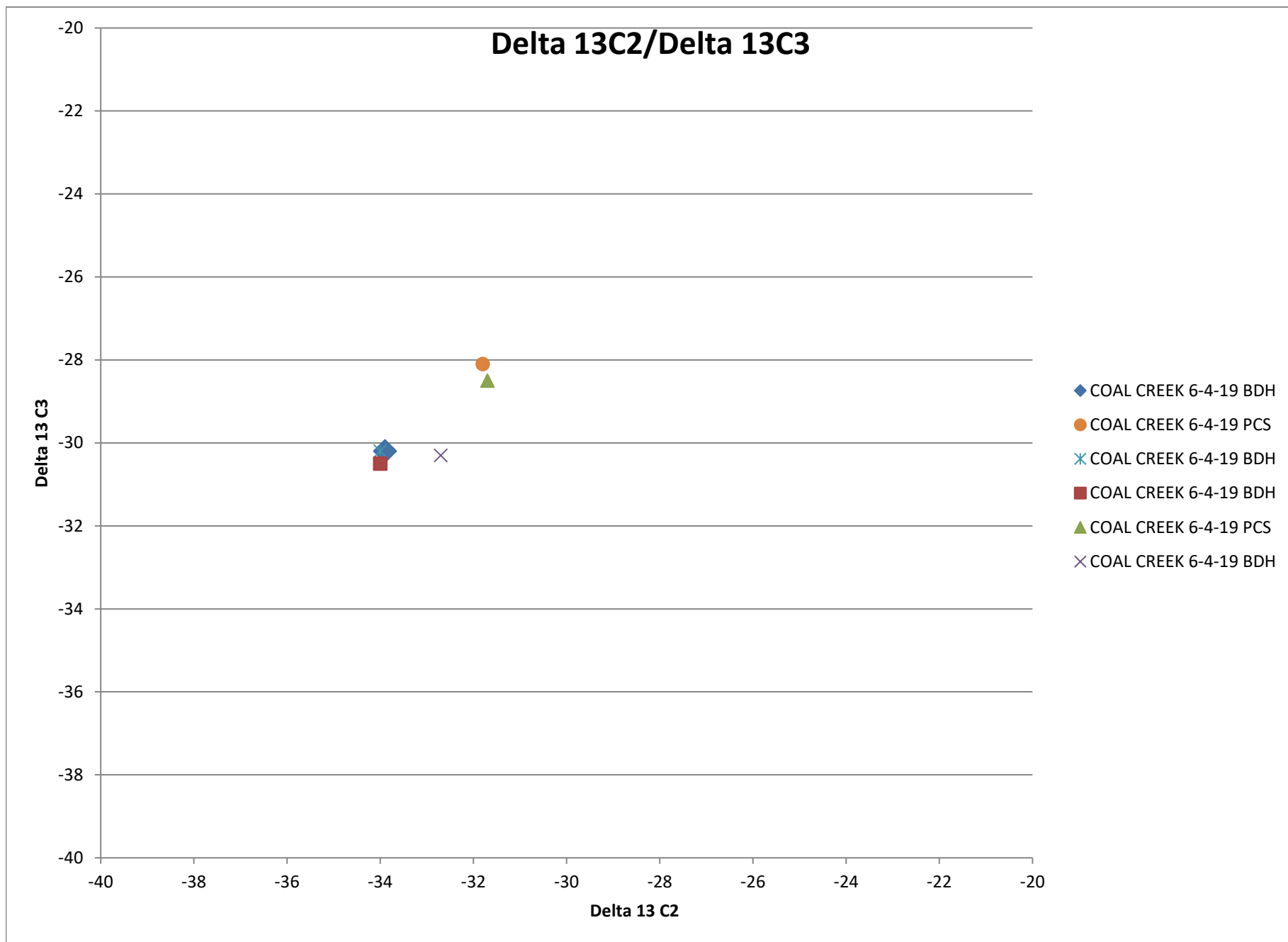
## HYDROCARBON COMPOSITION



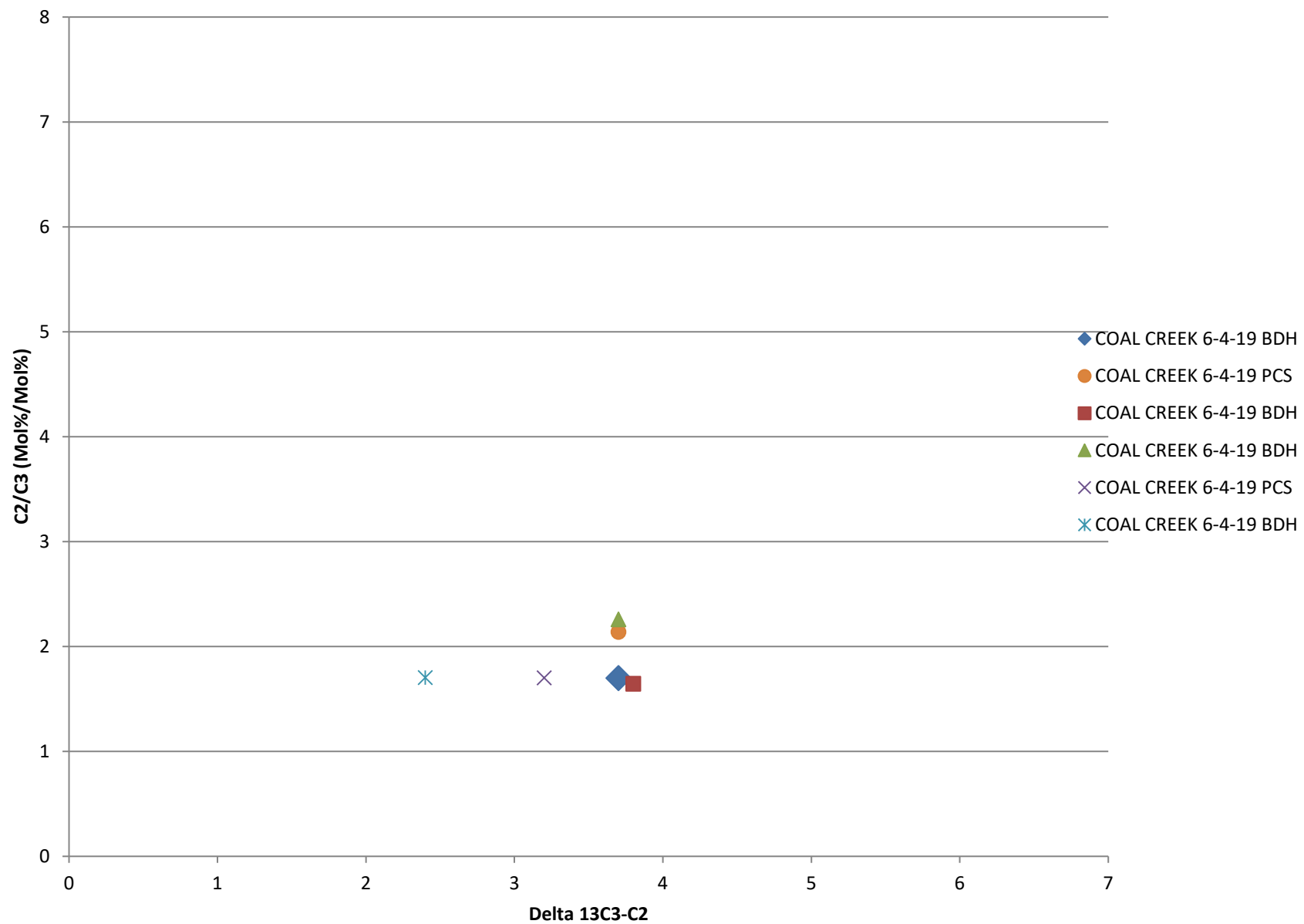


## Bradenhead Test Summary





## Delta13 C2/C3 vs. Delta 13C3-C2





## Delta 13 IC4/ Delta NC4

