



dig
Dolan Integration Group

Geochemistry for Energy

11 025 Dover Street Unit 800
Westminster, CO 80021
ph 303.531.2050

**Hydrocarbon Gas Composition and Stable Isotopes
Data and Interpretation**

Job #: 23059879
Lab #: DIG-032091
Client: Olsson
Well Name: SCMW 052423
API #:

The analytical results, opinions, or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. The analytical results, opinions, or interpretations expressed represent the best judgment of Dolan Integration Group based on its experience, but any interpretation of test or other data, and any recommendation(s) based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions which are not infallible, and with respect to which professional engineers and analysts may differ. Accordingly, Dolan Integration Group makes no warranty or representation, expressed or implied, of any type, and expressly disclaims same as to the productivity, proper operations, or profitability of any oil, gas, coal, or other mineral, property, well, or sand in connection with which such report is used or relied upon for any reason whatsoever. This report shall not be reproduced, in whole or in part, without the written approval of Dolan Integration Group.

Dolan Integration Group shall use commercially reasonable efforts to maintain the Samples it receives from Customer in the condition in which same were initially received, and shall store, free of charge, any portion(s) of the Sample(s) not consumed or altered in the course of testing and analysis for a period of 60 days after their initial receipt, after which time the Samples will be destroyed. At Customer's written request and expense, Dolan Integration Group shall return unused Samples to Customer. At Customer's written request, Dolan Integration Group will also store and maintain Customer's Samples beyond the Free Storage Period for a monthly fee in accordance with Dolan Integration Group's the current storage rates. If Customer fails to timely pay any applicable storage charges, Dolan Integration Group shall



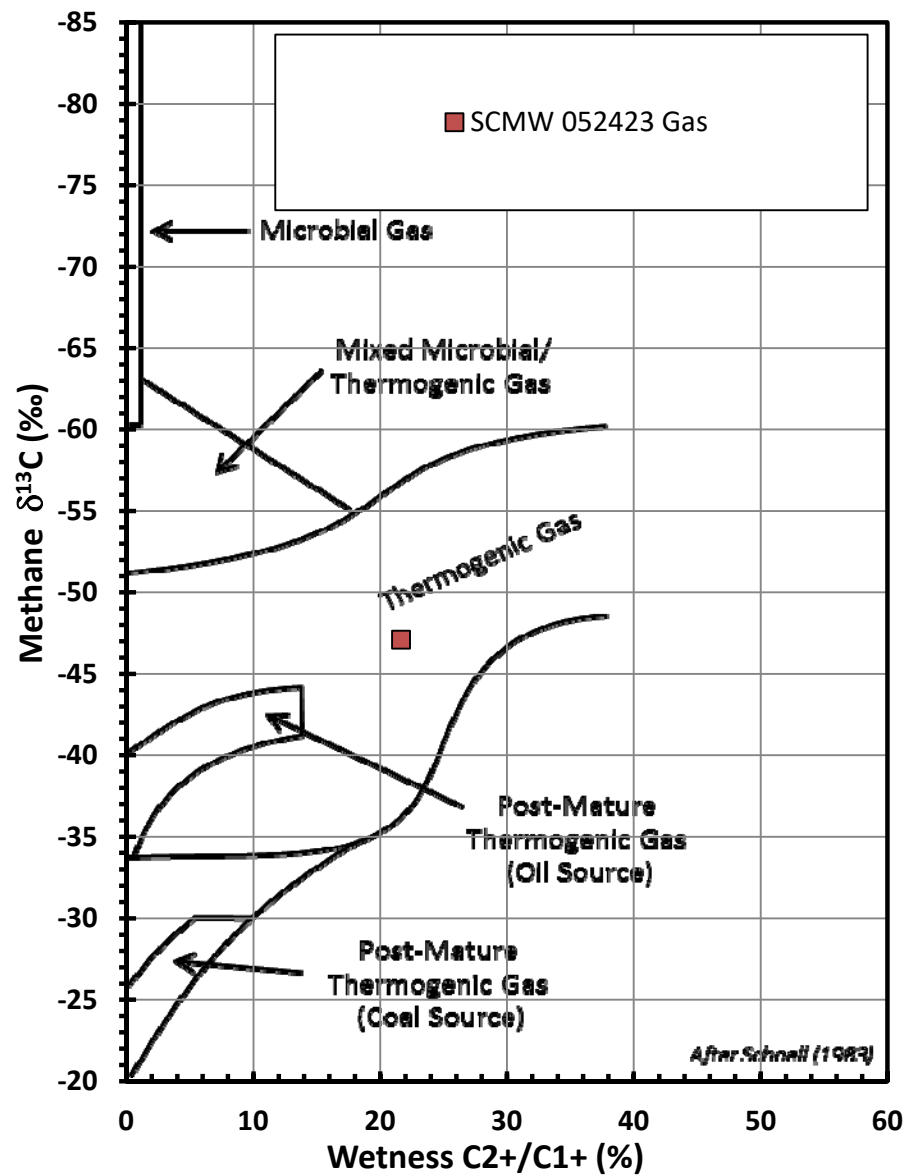
Client/Well Name: Olsson / SCMW 052423
Job #: 23059879
Lab #: DNG-032091

SAMPLE INFORMATION						COMPLETE GAS ANALYSIS														HYDROCARBON GAS ANALYSIS (normalized to total HC content)										BTU CONTENT*		
Job	Lab	Well	Sample	Sample	Sample	GC	N ₂	O ₂ + Ar	CO ₂	C ₁	C ₂	C ₃	IC ₄	nC ₄	IC ₅	nC ₅	C ₆ +	C ₂ H ₆	He	H ₂	H ₂	C ₁	C ₂	C ₃	IC ₄	nC ₄	IC ₅	nC ₅	C ₆ +	Total Gas		
Number	Number	Name	Type	Date	Time	Date	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	mol%	mol%	mol%	mol%	mol%	mol%	mol%	mol%	mol%	mol%	BTU/Hr
23059879	DIG-032091	SCMW 052423 Gas	Gas	05/24/23	11:10	5/25/2023	622543	175136	520	158928	25720	11240	1491	3017	657	940	175					78.3	13.01	5.68	0.75	1.53	0.33	0.27		0.09	252	

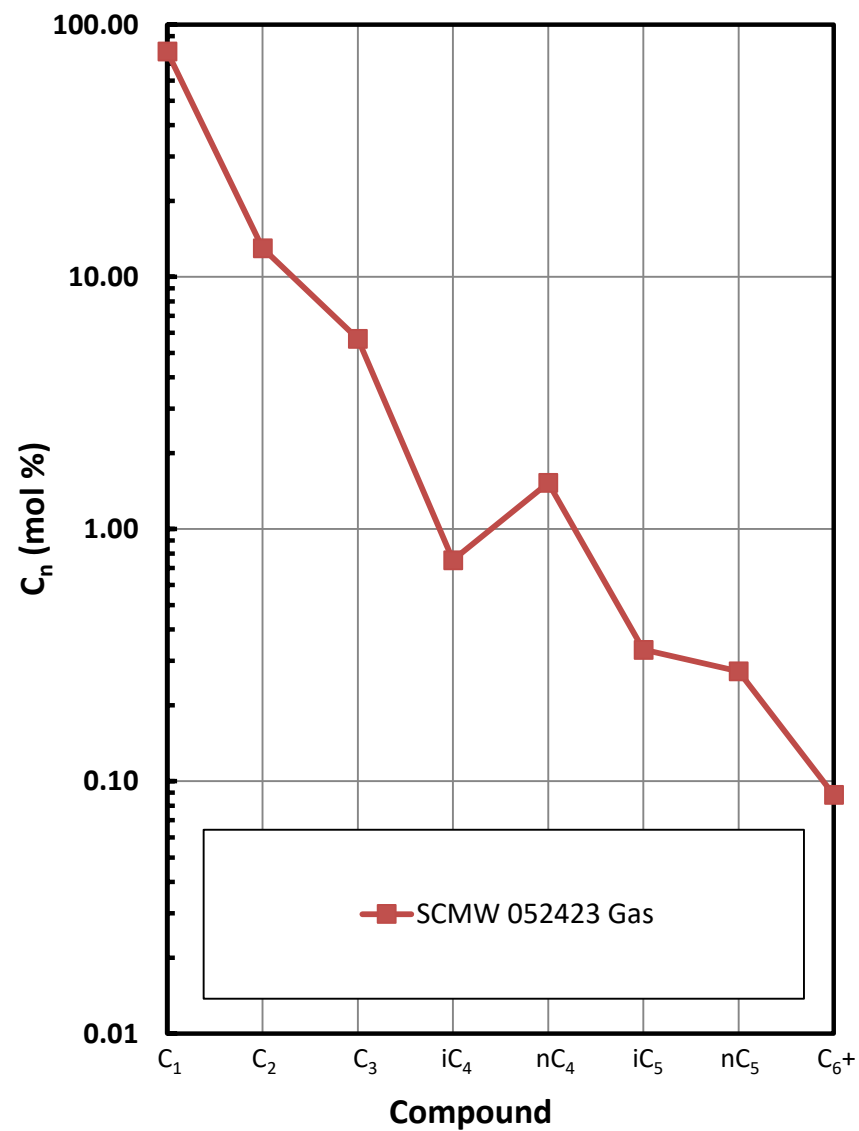
SAMPLE INFORMATION						HYDROCARBON RATIOS					STABLE ISOTOPE ANALYSIS										SPECIFIC GRAVITY*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Job	Lab	Well	Sample	Sample	Sample	Total HC	Weight%	C ₂ /C ₁ +C ₃	Balance Ratio		Mass Spec	δ ¹³ C ₁	δ ¹³ C ₂	δ ¹³ C ₃	δ ¹³ C ₄	δ ¹³ C ₅	δ ¹³ C ₆	δ ¹³ C ₇	δ ¹³ C ₈	δ ¹³ C ₉	δ ¹³ C ₁₀	δ ¹³ C ₁₁	δ ¹³ C ₁₂	δ ¹³ C ₁₃	δ ¹³ C ₁₄	δ ¹³ C ₁₅	δ ¹³ C ₁₆	δ ¹³ C ₁₇	δ ¹³ C ₁₈	δ ¹³ C ₁₉	δ ¹³ C ₂₀	δ ¹³ C ₂₁	δ ¹³ C ₂₂	δ ¹³ C ₂₃	δ ¹³ C ₂₄	δ ¹³ C ₂₅	δ ¹³ C ₂₆	δ ¹³ C ₂₇	δ ¹³ C ₂₈	δ ¹³ C ₂₉	δ ¹³ C ₃₀	δ ¹³ C ₃₁	δ ¹³ C ₃₂	δ ¹³ C ₃₃	δ ¹³ C ₃₄	δ ¹³ C ₃₅	δ ¹³ C ₃₆	δ ¹³ C ₃₇	δ ¹³ C ₃₈	δ ¹³ C ₃₉	δ ¹³ C ₄₀	δ ¹³ C ₄₁	δ ¹³ C ₄₂	δ ¹³ C ₄₃	δ ¹³ C ₄₄	δ ¹³ C ₄₅	δ ¹³ C ₄₆	δ ¹³ C ₄₇	δ ¹³ C ₄₈	δ ¹³ C ₄₉	δ ¹³ C ₅₀	δ ¹³ C ₅₁	δ ¹³ C ₅₂	δ ¹³ C ₅₃	δ ¹³ C ₅₄	δ ¹³ C ₅₅	δ ¹³ C ₅₆	δ ¹³ C ₅₇	δ ¹³ C ₅₈	δ ¹³ C ₅₉	δ ¹³ C ₆₀	δ ¹³ C ₆₁	δ ¹³ C ₆₂	δ ¹³ C ₆₃	δ ¹³ C ₆₄	δ ¹³ C ₆₅	δ ¹³ C ₆₆	δ ¹³ C ₆₇	δ ¹³ C ₆₈	δ ¹³ C ₆₉	δ ¹³ C ₇₀	δ ¹³ C ₇₁	δ ¹³ C ₇₂	δ ¹³ C ₇₃	δ ¹³ C ₇₄	δ ¹³ C ₇₅	δ ¹³ C ₇₆	δ ¹³ C ₇₇	δ ¹³ C ₇₈	δ ¹³ C ₇₉	δ ¹³ C ₈₀	δ ¹³ C ₈₁	δ ¹³ C ₈₂	δ ¹³ C ₈₃	δ ¹³ C ₈₄	δ ¹³ C ₈₅	δ ¹³ C ₈₆	δ ¹³ C ₈₇	δ ¹³ C ₈₈	δ ¹³ C ₈₉	δ ¹³ C ₉₀	δ ¹³ C ₉₁	δ ¹³ C ₉₂	δ ¹³ C ₉₃	δ ¹³ C ₉₄	δ ¹³ C ₉₅	δ ¹³ C ₉₆	δ ¹³ C ₉₇	δ ¹³ C ₉₈	δ ¹³ C ₉₉	δ ¹³ C ₁₀₀	δ ¹³ C ₁₀₁	δ ¹³ C ₁₀₂	δ ¹³ C ₁₀₃	δ ¹³ C ₁₀₄	δ ¹³ C ₁₀₅	δ ¹³ C ₁₀₆	δ ¹³ C ₁₀₇	δ ¹³ C ₁₀₈	δ ¹³ C ₁₀₉	δ ¹³ C ₁₁₀	δ ¹³ C ₁₁₁	δ ¹³ C ₁₁₂	δ ¹³ C ₁₁₃	δ ¹³ C ₁₁₄	δ ¹³ C ₁₁₅	δ ¹³ C ₁₁₆	δ ¹³ C ₁₁₇	δ ¹³ C ₁₁₈	δ ¹³ C ₁₁₉	δ ¹³ C ₁₂₀	δ ¹³ C ₁₂₁	δ ¹³ C ₁₂₂	δ ¹³ C ₁₂₃	δ ¹³ C ₁₂₄	δ ¹³ C ₁₂₅	δ ¹³ C ₁₂₆	δ ¹³ C ₁₂₇	δ ¹³ C ₁₂₈	δ ¹³ C ₁₂₉	δ ¹³ C ₁₃₀	δ ¹³ C ₁₃₁	δ ¹³ C ₁₃₂	δ ¹³ C ₁₃₃	δ ¹³ C ₁₃₄	δ ¹³ C ₁₃₅	δ ¹³ C ₁₃₆	δ ¹³ C ₁₃₇	δ ¹³ C ₁₃₈	δ ¹³ C ₁₃₉	δ ¹³ C ₁₄₀	δ ¹³ C ₁₄₁	δ ¹³ C ₁₄₂	δ ¹³ C ₁₄₃	δ ¹³ C ₁₄₄	δ ¹³ C ₁₄₅	δ ¹³ C ₁₄₆	δ ¹³ C ₁₄₇	δ ¹³ C ₁₄₈	δ ¹³ C ₁₄₉	δ ¹³ C ₁₅₀	δ ¹³ C ₁₅₁	δ ¹³ C ₁₅₂	δ ¹³ C ₁₅₃	δ ¹³ C ₁₅₄	δ ¹³ C ₁₅₅	δ ¹³ C ₁₅₆	δ ¹³ C ₁₅₇	δ ¹³ C ₁₅₈	δ ¹³ C ₁₅₉	δ ¹³ C ₁₆₀	δ ¹³ C ₁₆₁	δ ¹³ C ₁₆₂	δ ¹³ C ₁₆₃	δ ¹³ C ₁₆₄	δ ¹³ C ₁₆₅	δ ¹³ C ₁₆₆	δ ¹³ C ₁₆₇	δ ¹³ C ₁₆₈	δ ¹³ C ₁₆₉	δ ¹³ C ₁₇₀	δ ¹³ C ₁₇₁	δ ¹³ C ₁₇₂	δ ¹³ C ₁₇₃	δ ¹³ C ₁₇₄	δ ¹³ C ₁₇₅	δ ¹³ C ₁₇₆	δ ¹³ C ₁₇₇	δ ¹³ C ₁₇₈	δ ¹³ C ₁₇₉	δ ¹³ C ₁₈₀	δ ¹³ C ₁₈₁	δ ¹³ C ₁₈₂	δ ¹³ C ₁₈₃	δ ¹³ C ₁₈₄	δ ¹³ C ₁₈₅	δ ¹³ C ₁₈₆	δ ¹³ C ₁₈₇	δ ¹³ C ₁₈₈	δ ¹³ C ₁₈₉	δ ¹³ C ₁₉₀	δ ¹³ C ₁₉₁	δ ¹³ C ₁₉₂	δ ¹³ C ₁₉₃	δ ¹³ C ₁₉₄	δ ¹³ C ₁₉₅	δ ¹³ C ₁₉₆	δ ¹³ C ₁₉₇	δ ¹³ C ₁₉₈	δ ¹³ C ₁₉₉	δ ¹³ C ₂₀₀	δ ¹³ C ₂₀₁	δ ¹³ C ₂₀₂	δ ¹³ C ₂₀₃	δ ¹³ C ₂₀₄	δ ¹³ C ₂₀₅	δ ¹³ C ₂₀₆	δ ¹³ C ₂₀₇	δ ¹³ C ₂₀₈	δ ¹³ C ₂₀₉	δ ¹³ C ₂₁₀	δ ¹³ C ₂₁₁	δ ¹³ C ₂₁₂	δ ¹³ C ₂₁₃	δ ¹³ C ₂₁₄	δ ¹³ C ₂₁₅	δ ¹³ C ₂₁₆	δ ¹³ C ₂₁₇	δ ¹³ C ₂₁₈	δ ¹³ C ₂₁₉	δ ¹³ C ₂₂₀	δ ¹³ C ₂₂₁	δ ¹³ C ₂₂₂	δ ¹³ C ₂₂₃	δ ¹³ C ₂₂₄	δ ¹³ C ₂₂₅	δ ¹³ C ₂₂₆	δ ¹³ C ₂₂₇	δ ¹³ C ₂₂₈	δ ¹³ C ₂₂₉	δ ¹³ C ₂₃₀	δ ¹³ C ₂₃₁	δ ¹³ C ₂₃₂	δ ¹³ C ₂₃₃	δ ¹³ C ₂₃₄	δ ¹³ C ₂₃₅	δ ¹³ C ₂₃₆	δ ¹³ C ₂₃₇	δ ¹³ C ₂₃₈	δ ¹³ C ₂₃₉	δ ¹³ C ₂₄₀	δ ¹³ C ₂₄₁	δ ¹³ C ₂₄₂	δ ¹³ C ₂₄₃	δ ¹³ C ₂₄₄	δ ¹³ C ₂₄₅	δ ¹³ C ₂₄₆	δ ¹³ C ₂₄₇	δ ¹³ C ₂₄₈	δ ¹³ C ₂₄₉	δ ¹³ C ₂₅₀	δ ¹³ C ₂₅₁	δ ¹³ C ₂₅₂	δ ¹³ C ₂₅₃	δ ¹³ C ₂₅₄	δ ¹³ C ₂₅₅	δ ¹³ C ₂₅₆	δ ¹³ C ₂₅₇	δ ¹³ C ₂₅₈	δ ¹³ C ₂₅₉	δ ¹³ C ₂₆₀	δ ¹³ C ₂₆₁	δ ¹³ C ₂₆₂	δ ¹³ C ₂₆₃	δ ¹³ C ₂₆₄	δ ¹³ C ₂₆₅	δ ¹³ C ₂₆₆	δ ¹³ C ₂₆₇	δ ¹³ C ₂₆₈	δ ¹³ C ₂₆₉	δ ¹³ C ₂₇₀	δ ¹³ C ₂₇₁	δ ¹³ C ₂₇₂	δ ¹³ C ₂₇₃	δ ¹³ C ₂₇₄	δ ¹³ C ₂₇₅	δ ¹³ C ₂₇₆	δ ¹³ C ₂₇₇	δ ¹³ C ₂₇₈	δ ¹³ C ₂₇₉	δ ¹³ C ₂₈₀	δ ¹³ C ₂₈₁	δ ¹³ C ₂₈₂	δ ¹³ C ₂₈₃	δ ¹³ C ₂₈₄	δ ¹³ C ₂₈₅	δ ¹³ C ₂₈₆	δ ¹³ C ₂₈₇	δ ¹³ C ₂₈₈	δ ¹³ C ₂₈₉	δ ¹³ C ₂₉₀	δ ¹³ C ₂₉₁	δ ¹³ C ₂₉₂	δ ¹³ C ₂₉₃	δ ¹³ C ₂₉₄	δ ¹³ C ₂₉₅	δ ¹³ C ₂₉₆	δ ¹³ C ₂₉₇	δ ¹³ C ₂₉₈	δ ¹³ C ₂₉₉	δ ¹³ C ₃₀₀	δ ¹³ C ₃₀₁	δ ¹³ C ₃₀₂	δ ¹³ C ₃₀₃	δ ¹³ C ₃₀₄	δ ¹³ C ₃₀₅	δ ¹³ C ₃₀₆	δ ¹³ C ₃₀₇	δ ¹³ C ₃₀₈	δ ¹³ C ₃₀₉	δ ¹³ C ₃₁₀	δ ¹³ C ₃₁₁	δ ¹³ C ₃₁₂	δ ¹³ C ₃₁₃	δ ¹³ C ₃₁₄	δ ¹³ C ₃₁₅	δ ¹³ C ₃₁₆	δ ¹³ C ₃₁₇	δ ¹³ C ₃₁₈	δ ¹³ C ₃₁₉	δ ¹³ C ₃₂₀	δ ¹³ C ₃₂₁	δ ¹³ C ₃₂₂	δ ¹³ C ₃₂₃	δ ¹³ C ₃₂₄	δ ¹³ C ₃₂₅	δ ¹³ C ₃₂₆	δ ¹³ C ₃₂₇	δ ¹³ C ₃₂₈	δ ¹³ C ₃₂₉	δ ¹³ C ₃₃₀	δ ¹³ C ₃₃₁	δ ¹³ C ₃₃₂	δ ¹³ C ₃₃₃	δ ¹³ C ₃₃₄	δ ¹³ C ₃₃₅	δ ¹³ C ₃₃₆	δ ¹³ C ₃₃₇	δ ¹³ C ₃₃₈	δ ¹³ C ₃₃₉	δ ¹³ C ₃₄₀	δ ¹³ C ₃₄₁	δ ¹³ C ₃₄₂	δ ¹³ C ₃₄₃	δ ¹³ C ₃₄₄	δ ¹³ C ₃₄₅	δ ¹³ C ₃₄₆	δ ¹³ C ₃₄₇	δ ¹³ C ₃₄₈	δ ¹³ C ₃₄₉	δ ¹³ C ₃₅₀	δ ¹³ C ₃₅₁	δ ¹³ C ₃₅₂	δ ¹³ C ₃₅₃	δ ¹³ C ₃₅₄	δ ¹³ C ₃₅₅	δ ¹³ C ₃₅₆	δ ¹³ C ₃₅₇	δ ¹³ C ₃₅₈	δ ¹³ C ₃₅₉	δ ¹³ C ₃₆₀	δ ¹³ C ₃₆₁	δ ¹³ C ₃₆₂	δ ¹³ C ₃₆₃	δ ¹³ C ₃₆₄	δ ¹³ C ₃₆₅	δ ¹³ C ₃₆₆	δ ¹³ C ₃₆₇	δ ¹³ C ₃₆₈	δ ¹³ C ₃₆₉	δ ¹³ C ₃₇₀	δ ¹³ C ₃₇₁	δ ¹³ C ₃₇₂	δ ¹³ C ₃₇₃	δ ¹³ C ₃₇₄	δ ¹³ C ₃₇₅	δ ¹³ C ₃₇₆	δ ¹³ C ₃₇₇	δ ¹³ C ₃₇₈	δ ¹³ C ₃₇₉	δ ¹³ C ₃₈₀	δ ¹³ C ₃₈₁	δ ¹³ C ₃₈₂	δ ¹³ C ₃₈₃	δ ¹³ C ₃₈₄	δ ¹³ C ₃₈₅	δ ¹³ C ₃₈₆	δ ¹³ C ₃₈₇	δ ¹³ C ₃₈₈	δ ¹³ C ₃₈₉	δ ¹³ C ₃₉₀	δ ¹³ C ₃₉₁	δ ¹³ C ₃₉₂	δ ¹³ C ₃₉₃	δ ¹³ C ₃₉₄	δ ¹³ C ₃₉₅	δ ¹³ C ₃₉₆	δ ¹³ C ₃₉₇	δ ¹³ C ₃₉₈	δ ¹³ C ₃₉₉	δ ¹³ C ₄₀₀	δ ¹³ C ₄₀₁	δ ¹³ C ₄₀₂	δ ¹³ C ₄₀₃	δ ¹³ C ₄₀₄	δ ¹³ C ₄₀₅	δ ¹³ C ₄₀₆	δ ¹³ C ₄₀₇	δ ¹³ C ₄₀₈	δ ¹³ C ₄₀₉	δ ¹³ C ₄₁₀	δ ¹³ C ₄₁₁	δ ¹³ C ₄₁₂	δ ¹³ C ₄₁₃	δ ¹³ C ₄₁₄	δ ¹³ C ₄₁₅	δ ¹³ C ₄₁₆	δ ¹³ C ₄₁₇	δ ¹³ C ₄₁₈	δ ¹³ C ₄₁₉	δ ¹³ C ₄₂₀	δ ¹³ C ₄₂₁	δ ¹³ C ₄₂₂	δ ¹³ C ₄₂₃	δ ¹³ C ₄₂₄	δ ¹³ C ₄₂₅	δ ¹³ C ₄₂₆	δ ¹³ C ₄₂₇	δ ¹³ C ₄₂₈	δ ¹³ C ₄₂₉	δ ¹³ C ₄₃₀	δ ¹³ C ₄₃₁	δ ¹³ C ₄₃₂	δ ¹³ C ₄₃₃	δ ¹³ C ₄₃₄	δ ¹³ C ₄₃₅	δ ¹³ C ₄₃₆	δ ¹³ C ₄₃₇	δ ¹³ C ₄₃₈	δ ¹³ C ₄₃₉	δ ¹³ C ₄₄₀	δ ¹³ C ₄₄₁	δ ¹³ C ₄₄₂	δ ¹³ C ₄₄₃	δ ¹³ C ₄₄₄	δ ¹³ C ₄₄₅	δ ¹³ C ₄₄₆	δ ¹³ C ₄₄₇	δ ¹³ C ₄₄₈	δ ¹³ C ₄₄₉	δ ¹³ C ₄₅₀	δ ¹³ C ₄₅₁	δ ¹³ C ₄₅₂	δ ¹³ C ₄₅₃	δ ¹³ C ₄₅₄	δ ¹³ C ₄₅₅	δ ¹³ C ₄₅₆	δ ¹³ C ₄₅₇	δ ¹³ C ₄₅₈	δ ¹³ C ₄₅₉	δ ¹³ C ₄₆₀	δ ¹³ C ₄₆₁	δ ¹³ C ₄₆₂	δ ¹³ C ₄₆₃	δ ¹³ C ₄₆₄	δ ¹³ C ₄₆₅	δ ¹³ C ₄₆₆	δ ¹³ C ₄₆₇	δ ¹³ C ₄₆₈	δ ¹³ C ₄₆₉	δ ¹³ C ₄₇₀	δ ¹³ C ₄₇₁	δ ¹³ C ₄₇₂	δ ¹³ C ₄₇₃	δ ¹³ C ₄₇₄	δ ¹³ C ₄₇₅	δ ¹³ C ₄₇₆	δ ¹³ C ₄₇₇	δ ¹³ C ₄₇₈	δ ¹³ C ₄₇₉	δ ¹³ C ₄₈₀	δ ¹³ C ₄₈₁	δ ¹³ C ₄₈₂	δ ¹³ C ₄₈₃	δ ¹³ C ₄₈₄	δ ¹³ C ₄₈₅	δ ¹³ C ₄₈₆	δ ¹³ C ₄₈₇	δ ¹³ C ₄₈₈	δ ¹³ C ₄₈₉	δ ¹³ C ₄₉₀	δ ¹³ C ₄₉₁	δ ¹³ C ₄₉₂	δ ¹³ C ₄₉₃	δ ¹³ C ₄₉₄	δ ¹³ C ₄₉₅	δ ¹³ C ₄₉₆	δ ¹³ C ₄₉₇	δ ¹³ C ₄₉₈	δ ¹³ C ₄₉₉	δ ¹³ C ₅₀₀	δ ¹³ C ₅₀₁	δ ¹³ C ₅₀₂	δ ¹³ C ₅₀₃	δ ¹³ C ₅₀₄	δ ¹³ C ₅₀₅	δ ¹³ C ₅₀₆	δ ¹³ C ₅₀₇	δ ¹³ C ₅₀₈	δ ¹³ C ₅₀₉	δ ¹³ C ₅₁₀	δ ¹³ C ₅₁₁	δ ¹³ C ₅₁₂	δ ¹³ C ₅₁₃	δ ¹³ C ₅₁₄	δ ¹³ C ₅₁₅	δ ¹³ C ₅₁₆	δ ¹³ C ₅₁₇	δ ¹³ C ₅₁₈	δ ¹³ C ₅₁₉	δ ¹³ C ₅₂₀

INTERPRETIVE PLOTS

Methane $\delta^{13}\text{C}$ vs Wetness Genetic Classification Plot

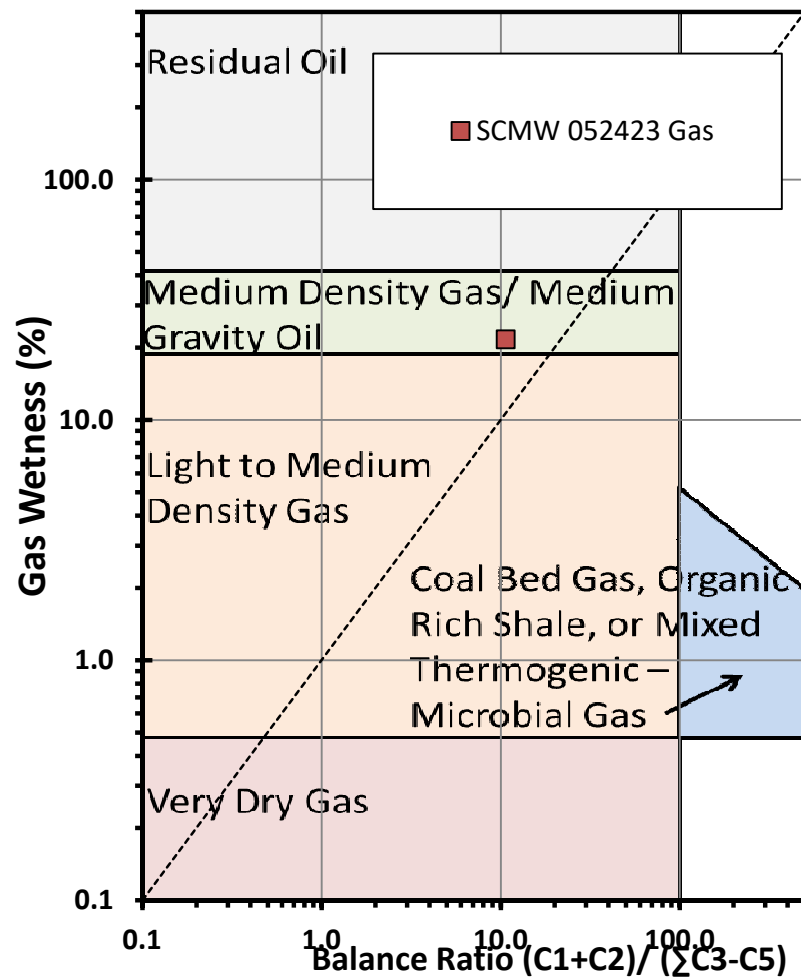


Hydrocarbon Composition Plot

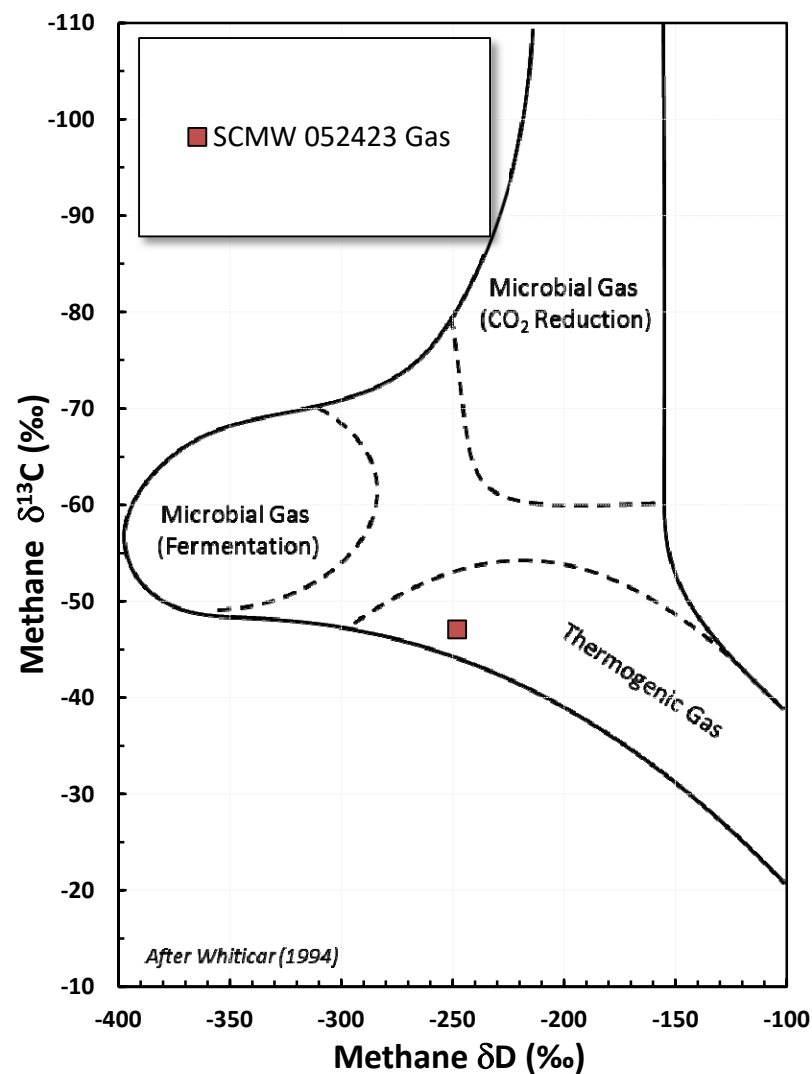


INTERPRETIVE PLOTS

Haworth Ratio Plot - Characterization of Hydrocarbon Type

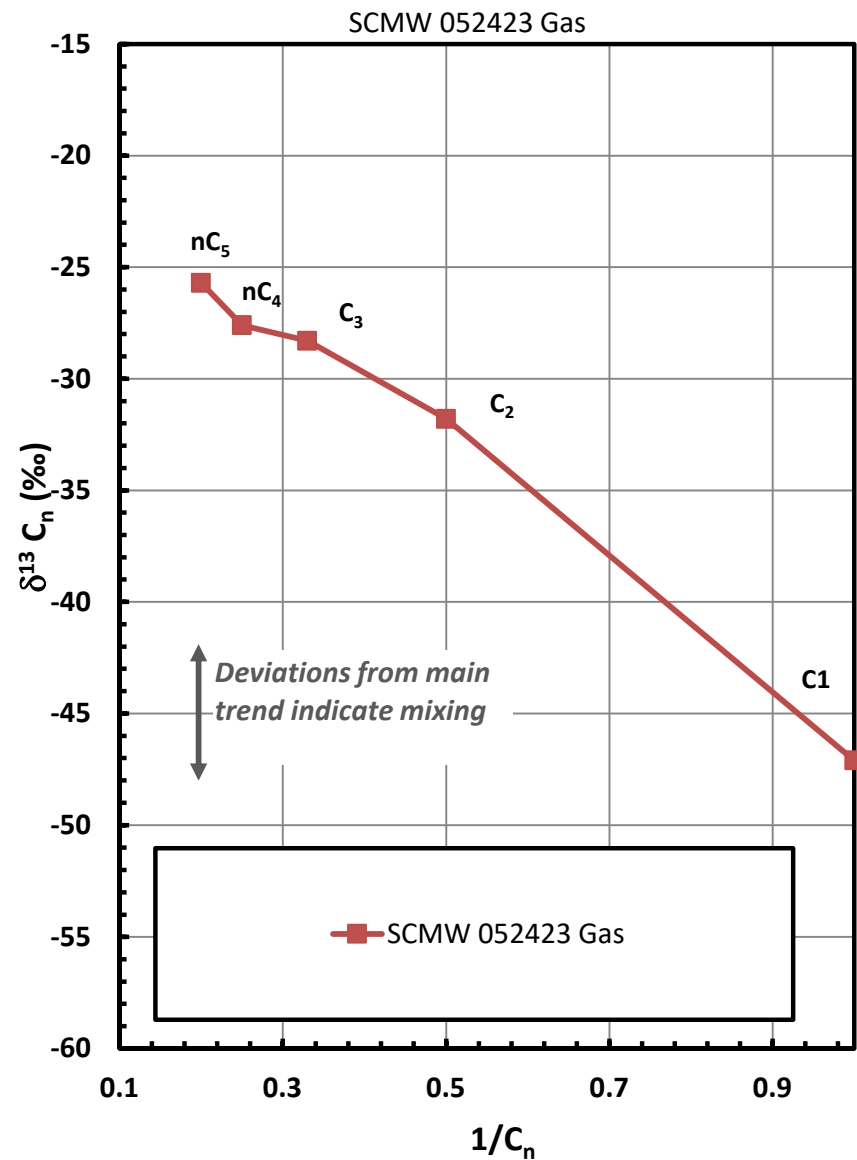


Methane $\delta^{13}C$ vs δD Genetic Classification Plot

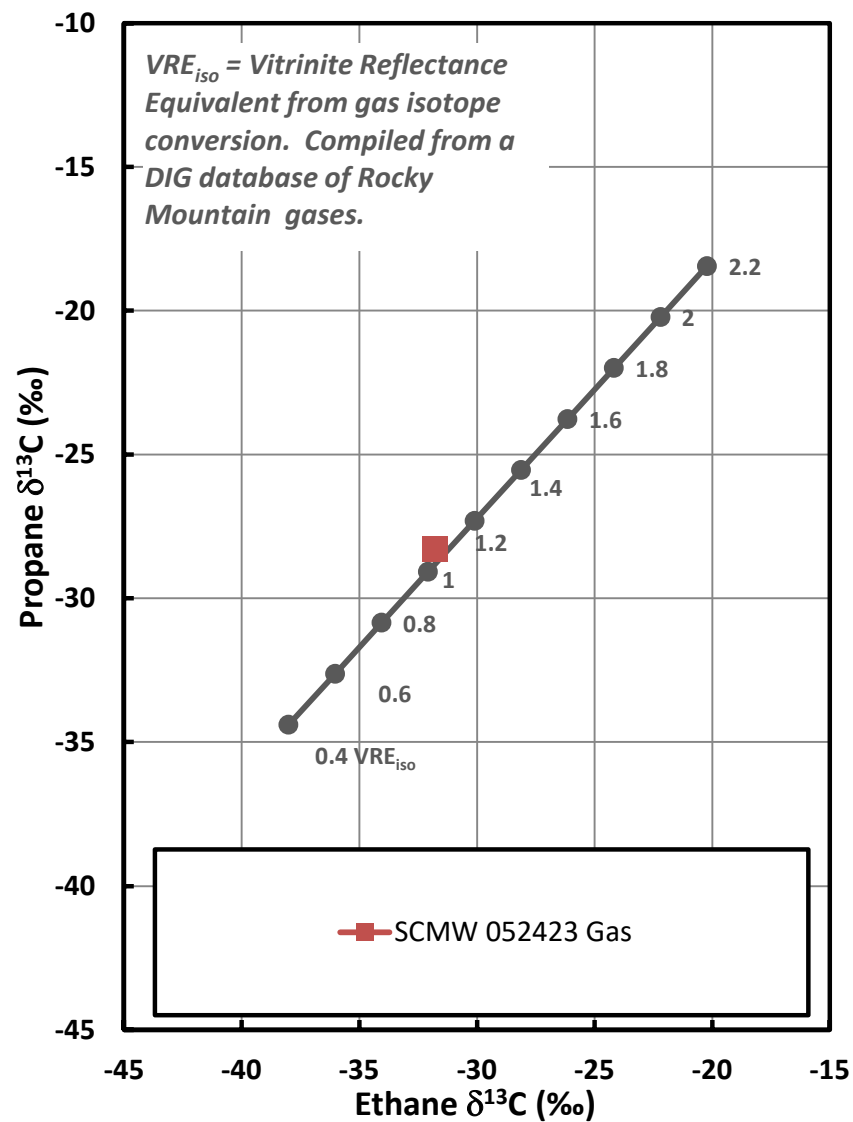


INTERPRETIVE PLOTS

Mixing Plot

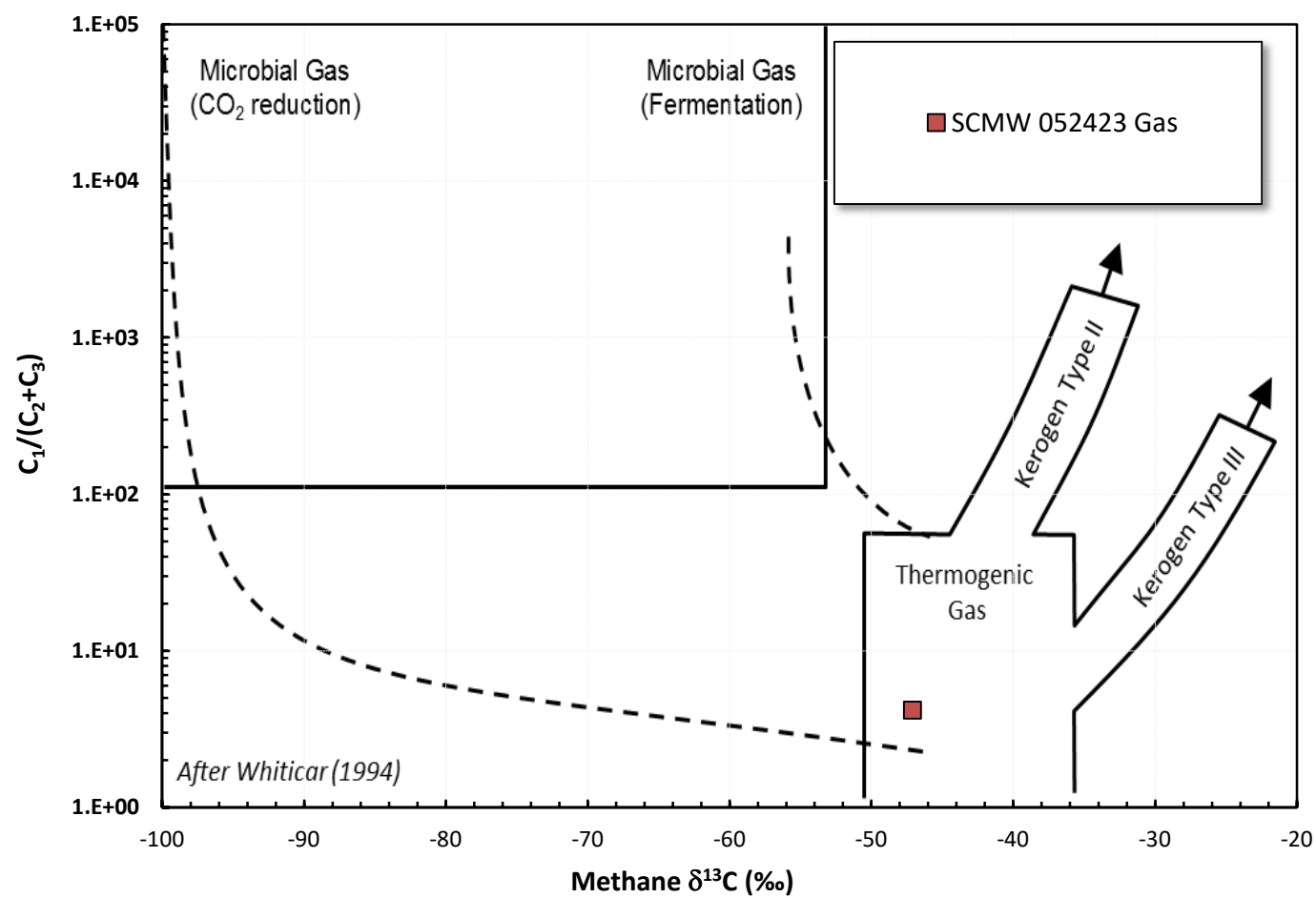


Ethane - Propane Maturity Plot



INTERPRETIVE PLOTS

Methane $\delta^{13}\text{C}$ vs $\text{C}_1/(\text{C}_2+\text{C}_3)$ Genetic Classification Plot



Organization	Reporting Organization	Reporting Organization Name	Order Number	Entity Requesting Analysis	Purpose	Project
Sample	10206 COGCC Facility No.	Dolan Integration Group Sample Date and Time	API #	Olsson LAB Sample ID	GAS	
		5/24/23 11:10		DIG-032091		
Batch	LabID 10206	Lab Batch Identifier	Leach Date	Extract Date and Time	Extract Method	Start Date and Time
Result	CAS Number	Analysis Name	Analytical Method Modifier	Unit	Result Value	Qualifier
	O2+AR	OXYGEN + ARGON	SOP	MOL %	17.585	
	124-38-9	CARBON DIOXIDE	SOP	MOL %	0.052	
	7727-37-9	NITROGEN (N2)	SOP	MOL %	62.506	
	7440-59-7	Helium	SOP	MOL %	0.005	ND
	1333-74-0	HYDROGEN	SOP	MOL %	0.005	ND
	74-82-8	METHANE	SOP	MOL %	15.556	
	74-84-0	ETHANE	SOP	MOL %	2.582	
	74-85-1	ETHENE	SOP	MOL %	0.005	ND
	74-98-6	PROPANE	SOP	MOL %	1.129	
	75-28-5	ISOBUTANE	SOP	MOL %	0.150	
	106-97-8	n-BUTANE	SOP	MOL %	0.303	
	ICS	iSOPENTANE	SOP	MOL %	0.066	
	109-66-0	n-PENTANE	SOP	MOL %	0.054	
	92112-69-1+	C6+ (Hexanes +)	SOP	MOL %	0.018	
	deltai3C_C1	DELTA 13C C1	SOP	per mil	-47.1	
	deltaD_C1	DELTA D C1	SOP	per mil	-248	
	deltai3C_C2	DELTA 13C C2	SOP	per mil	-31.8	
	deltai3C_C3	DELTA 13C C3	SOP	per mil	-28.3	
	deltai3C_iC4	DELTA 13C iC4	SOP	per mil	-30.5	
	deltai3C_nC4	DELTA 13C nC4	SOP	per mil	-27.6	
	deltai3C_iC5	DELTA 13C iC5	SOP	per mil	-27.9	
	deltai3C_nC5	DELTA 13C nC5	SOP	per mil	-25.7	
	BTU	BRITISH THERMAL UNITS	SOP	BTU/cuft	252	
	SpGrav	SPECIFIC GRAVITY	SOP	No Unit	0.942	



dig
Dolan Integration Group

Geochemistry
for Energy

main 303.531.2030 • info@digforenergy.com • digforenergy.com

Office and Lab 11025 Dover St • Ste 800 • Westminster, CO 80021

JOB 23059879

PIG-032091

Send Data to:	Send Invoice to (if different):	Additional Information:
Name: Trent Watne	Name:	AFE #:
Company: Olsson	Company:	Project:
Address: 1525 Raleigh Street, Suite 400	Address:	PO #:
City, State: Denver, CO 80203	City, State:	Location:
Phone: 303-503-5140	Phone:	Sampled By:
Email: twatne@olsson.com	Email:	API #:

Turnaround Time**: ☒ Standard (≤ 10 Business days) ☐ Rush (≤ 5 Business days) ☐ Expedited Rush (≤ 3 Business days)

Container Number	Sample Identification	Date Sampled	Time	Sample Type*	Gas Composition	d13C of Methane (C1)	d13C of Ethane (C2)	d13C of Propane+ (C3+)	d13C of Carbon Dioxide (CO2)	DD of Methane (C1)	Whole Oil Gas Chromatography	Isotopes of Water	d18O and dD	RSK 175 Dissolved Gas Quantification
	SCMN 052423	05/24/23	11:00	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Chain of Custody Record

Comments:

Relinquished by Signature	Company	Date	Time	Received by Signature	Company	Date	Time
	Olsson	5/25	10:00		DIG	5-25-23	10:00

*Gas composition vs RSK-175 - Gas composition is a basic analysis of the concentration (ppm) of gases within the headspace of the sample (headspace is created at the lab). RSK-175 is a specific analysis technique combined with calculations to give the total dissolved gas of each species in the water sample (mg/L). Why one or the other? Gas composition gives us a quick, general look at relative concentrations and ratios (e.g., gas wetness). RSK-175 gives us an exact total of gas present in the sample (headspace and dissolved in the water). Questions? Give us a call at 303-531-2030.

** Rush and Expedited Rush turnaround time analysis will incur additional costs at 2x and 3x the standard turnaround time pricing.