

APPENDIX E

LABORATORY DATA

Data from this study are provided below in summary tables for the two primary chemicals of concern, uranium and radium-226. Table E-1 presents the analytical results from the reconnaissance Survey, Table E-2 the analytical results used to evaluate primary project objectives, and Tables E-3 and E-4 leachability analytical results. Laboratory reports from Eagle Engineering follow the data summary tables. Because of the number of pages (11,000) and file size (262 MB), Pace Analytical reports are available by request from the USEPA TOCOR.

Table E-1. Pace Analytical Results for Chemicals of Concern from Reconnaissance Survey

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Actinium-228	Total	0.7	0.5		0.2		0.2	pCi/g
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Actinium-228	Total	1.2	0.9		0.2		0.2	pCi/g
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Actinium-228	Total	0.4	0.5		0.2		0.2	pCi/g
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Actinium-228	Total	0.8	0.8		0.2		0.2	pCi/g
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Antimony	Total	1			0.214		1	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Antimony	Total	1			0.214		1	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Antimony	Total	1			0.214		1	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Antimony	Total	1			0.214		1	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Arsenic	Total	2.2			0.528		1.5	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Arsenic	Total	2.3			0.528		1.5	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Arsenic	Total	3.1			0.528		1.5	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Arsenic	Total	2.4			0.528		1.5	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Barium	Total	165			0.0399		1	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Barium	Total	265			0.0399		1	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Barium	Total	271			0.0399		1	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Barium	Total	77			0.0399		1	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Beryllium	Total	0.5			0.0176		0.5	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Beryllium	Total	0.6			0.0176		0.5	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Beryllium	Total	0.5			0.0176		0.5	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Beryllium	Total	0.5			0.0176		0.5	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Cadmium	Total	1.1			0.0375		1.1	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Cadmium	Total	1.1			0.0375		1.1	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Cadmium	Total	1.1			0.0375		1.1	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Cadmium	Total	1.1			0.0375		1.1	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Chromium	Total	32			1.74		5	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Chromium	Total	20			1.74		5	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Chromium	Total	18			1.74		5	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Chromium	Total	39			1.74		5	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Cobalt	Total	5			0.00986		5	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Cobalt	Total	5			0.00986		5	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Cobalt	Total	5			0.00986		5	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Cobalt	Total	5			0.00986		5	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Copper	Total	7			0.318		1	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Copper	Total	6			0.318		1	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Copper	Total	5			0.318		1	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Copper	Total	6			0.318		1	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Lead	Total	6			0.0279		1	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Lead	Total	7			0.0279		1	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Lead	Total	7			0.0279		1	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Lead	Total	6			0.0279		1	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Manganese	Total	156			0.216		1	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Manganese	Total	358			0.216		1	mg/Kg

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Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Manganese	Total	341			0.216		1	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Manganese	Total	150			0.216		1	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Molybdenum	Total	5			0.079		5	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Molybdenum	Total	5			0.079		5	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Molybdenum	Total	5			0.079		5	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Molybdenum	Total	6			0.079		5	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Nickel	Total	23			0.513		5	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Nickel	Total	16			0.513		5	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Nickel	Total	14			0.513		5	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Nickel	Total	27			0.513		5	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Radium-226	Total	11.4	0.8		0.2		0.2	pCi/g
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Radium-226	Total	92.6	2.4		0.2		0.2	pCi/g
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Radium-226	Total	11.9	1		0.2		0.2	pCi/g
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Radium-226	Total	64.5	2.1		0.2		0.2	pCi/g
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Selenium	Total	42			0.505		5	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Selenium	Total	5			0.505		5	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Selenium	Total	5			0.505		5	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Selenium	Total	18			0.505		5	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Silver	Total	1			0.034		1	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Silver	Total	1			0.034		1	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Silver	Total	1			0.034		1	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Silver	Total	1			0.034		1	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Thallium	Total	10			0.0557		10	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Thallium	Total	10			0.0557		10	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Thallium	Total	10			0.0557		10	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Thallium	Total	10			0.0557		10	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Uranium	Total	204			0.00311		1	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Uranium	Total	43			0.00311		1	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Uranium	Total	52			0.00311		1	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Uranium	Total	75			0.00311		1	mg/Kg
CR-M-T-SL-01	Soil	S2205389	5/17/2022	Vanadium	Total	72			1.1		5	mg/Kg
CTS-M-T-SL-01	Soil	S2205389	5/17/2022	Vanadium	Total	174			1.1		5	mg/Kg
CTS-M-T-SL-02	Soil	S2205389	5/17/2022	Vanadium	Total	188			1.1		5	mg/Kg
QV-M-T-SL-01	Soil	S2205389	5/17/2022	Vanadium	Total	48			1.1		5	mg/Kg
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Aluminum	Total	0.1		U	0.0917		0.1	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Aluminum	Total	0.1		U	0.0917		0.1	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Aluminum	Total	0.1		U	0.0917		0.1	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Antimony	Total	0.00075		J	0.000145		0.005	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Antimony	Total	0.0003		J	0.000145		0.005	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Antimony	Total	0.00058		J	0.000145		0.005	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Arsenic	Total	0.0021		J	0.000209		0.005	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Arsenic	Total	0.005			0.000209		0.005	mg/L

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Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Arsenic	Total	0.00269		J	0.000209		0.005	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Barium	Total	0.064			0.000424		0.005	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Barium	Total	0.136			0.000424		0.005	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Barium	Total	0.051			0.000424		0.005	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Beryllium	Total	0.001		U	0.000338		0.001	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Beryllium	Total	0.001		U	0.000338		0.001	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Beryllium	Total	0.001		U	0.000338		0.001	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Cadmium	Total	0.002		U	0.0000474		0.002	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Cadmium	Total	0.002		U	0.0000474		0.002	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Cadmium	Total	7.3E-05		J	0.0000474		0.002	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Calcium	Total	52.4			0.0932		0.2	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Calcium	Total	62.1			0.0932		0.2	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Calcium	Total	51.1			0.0932		0.2	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Chromium	Total	0.00112		J	0.0011		0.005	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Chromium	Total	0.005		U	0.0011		0.005	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Chromium	Total	0.005		U	0.0011		0.005	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Cobalt	Total	0.01		U	0.00178		0.01	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Cobalt	Total	0.01		U	0.00178		0.01	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Cobalt	Total	0.01		U	0.00178		0.01	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Copper	Total	0.02			0.00103		0.01	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Copper	Total	0.01			0.00103		0.01	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Copper	Total	0.01			0.00103		0.01	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Iron	Total	0.0186		J	0.00462		0.05	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Iron	Total	0.05		U	0.00462		0.05	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Iron	Total	0.0114		J	0.00462		0.05	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Lead	Total	0.0005		J	0.000158		0.001	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Lead	Total	0.001		U	0.000158		0.001	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Lead	Total	0.00019		J	0.000158		0.001	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Magnesium	Total	18			0.167		2	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Magnesium	Total	19			0.167		2	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Magnesium	Total	20			0.167		2	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Manganese	Total	0.00406		J	0.00116		0.005	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Manganese	Total	0.005		U	0.00116		0.005	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Manganese	Total	0.00147		J	0.00116		0.005	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Molybdenum	Total	0.03			0.000706		0.02	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Molybdenum	Total	0.00652		J	0.000706		0.02	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Molybdenum	Total	0.0168		J	0.000706		0.02	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Nickel	Total	0.01		U	0.00252		0.01	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Nickel	Total	0.01		U	0.00252		0.01	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Nickel	Total	0.01		U	0.00252		0.01	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Radium-226 (Dissolved)	Total	22.5	0.6		0.2	0.3	0.2	pCi/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Radium-226 (Dissolved)	Total	6	0.4		0.2	0.2	0.2	pCi/L

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Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limt	Minimum Detectable Concentration	Reporting Limit	Result Units
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Radium-226 (Dissolved)	Total	16.5	0.5		0.2	0.2	0.2	pCi/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Selenium	Total	0.013			0.0000896		0.005	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Selenium	Total	0.0047		J	0.0000896		0.005	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Selenium	Total	0.012			0.0000896		0.005	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Silver	Total	0.003		U	0.000206		0.003	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Silver	Total	0.003		U	0.000206		0.003	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Silver	Total	0.003		U	0.000206		0.003	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Sodium	Total	68			1.99		2	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Sodium	Total	64			1.99		2	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Sodium	Total	68			1.99		2	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Thallium	Total	0.001		U	0.000223		0.001	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Thallium	Total	0.001		U	0.000223		0.001	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Thallium	Total	0.001		U	0.000223		0.001	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Thorium	Total	0.1		U	0.0268		0.1	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Thorium	Total	0.1		U	0.0268		0.1	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Thorium	Total	0.1		U	0.0268		0.1	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Uranium	Total	1.01			0.0000117		0.001	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Uranium	Total	0.099			0.0000117		0.001	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Uranium	Total	0.596			0.0000117		0.001	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Vanadium	Total	0.02			0.000322		0.02	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Vanadium	Total	1.32			0.000322		0.02	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Vanadium	Total	0.0133		J	0.000322		0.02	mg/L
CR-M-T-WT-PR-01	Water	S2207028	6/30/2022	Zinc	Total	0.02		U	0.0134		0.02	mg/L
CTS-M-T-WT-PR-01	Water	S2207028	6/30/2022	Zinc	Total	0.02		U	0.0134		0.02	mg/L
QV-M-T-WT-PR-01	Water	S2207028	6/30/2022	Zinc	Total	0.02		U	0.0134		0.02	mg/L

Notes:

Laboratory quality assurance and quality control samples are not presented. These data are available in laboratory data reports.

- J Estimated result
- mg/kg Milligram per kilogram
- mg/L Milligram per liter
- pCi/g Picocurie per gram
- pCi/L Picocurie per liter
- U Nondetected result

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-H-0-KY	Soil	S2211015	8/24/2022	Radium-226	Total	77.2	2.3		0.20	0.214	0.20	pCi/g
CR-H-0-SL-01	Soil	S2210147	8/23/2022	Radium-226	Total	228	3.7		0.20	0.220	0.20	pCi/g
CR-H-0-SL-01 +100/+140/+200/+270 Composite	Soil	S2210485	9/19/2022	Radium-226	Total	94.8	2.9		0.20	0.291	0.20	pCi/g
CR-H-0-SL-01 +25	Soil	S2210485	9/19/2022	Radium-226	Total	86.7	3.5		0.20	0.470	0.20	pCi/g
CR-H-0-SL-01 +50	Soil	S2210485	9/19/2022	Radium-226	Total	40.4	1.8		0.20	0.279	0.20	pCi/g
CR-H-0-SL-01 -270	Soil	S2210485	9/19/2022	Radium-226	Total	1280	14.3		0.20	0.549	0.20	pCi/g
CR-H-30-SY +100/+140/+200/+270 Composite	Soil	S2211015	9/19/2022	Radium-226	Total	22.1	1.5		0.20	0.309	0.20	pCi/g
CR-H-30-SY +25/+50 Composite	Soil	S2211015	9/19/2022	Radium-226	Total	15.3	1		0.20	0.238	0.20	pCi/g
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	1010	9.7		0.20	0.349	0.50	pCi/g
CR-H-4-SY +100/+140/+200/+270 Composite	Soil	S2210485	9/15/2022	Radium-226	Total	43	2		0.20	0.302	0.20	pCi/g
CR-H-4-SY +25	Soil	S2210485	9/15/2022	Radium-226	Total	36.1	2.2		0.20	0.468	0.20	pCi/g
CR-H-4-SY +50	Soil	S2210485	9/15/2022	Radium-226	Total	20.3	1.2		0.20	0.225	0.20	pCi/g
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	1200	11.7		0.20	0.413	0.50	pCi/g
CR-H-8-SY +100/+140/+200/+270 Composite	Soil	S2211015	9/17/2022	Radium-226	Total	36.6	1.9		0.20	0.317	0.20	pCi/g
CR-H-8-SY +25	Soil	S2211015	9/17/2022	Radium-226	Total	24.5	1.8		0.20	0.414	0.20	pCi/g
CR-H-8-SY +50-01	Soil	S2211015	9/17/2022	Radium-226	Total	21.5	1.9		0.20	0.474	0.20	pCi/g
CR-H-8-SY +50-02	Soil	S2211015	9/17/2022	Radium-226	Total	22.1	1.9		0.20	0.473	0.20	pCi/g
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	1140	10.9		0.20	0.380	0.50	pCi/g
CR-L-0-SL-01	Soil	S2210147	8/23/2022	Radium-226	Total	19.7	1.2		0.20	0.240	0.20	pCi/g
CR-L-0-SL-01 +140/+200/+270 Composite	Soil	S2210485	9/9/2022	Radium-226	Total	9.6	0.9		0.20	0.310	0.20	pCi/g
CR-L-0-SL-01 +25/+50/+100 Composite	Soil	S2210485	9/9/2022	Radium-226	Total	11	1.1		0.20	0.370	0.20	pCi/g
CR-L-0-SL-01 -270	Soil	S2210485	9/9/2022	Radium-226	Total	62.3	3.1		0.20	0.508	0.20	pCi/g
CR-L-30-SY +140/+200/+270 Composite	Soil	S2210485	9/8/2022	Radium-226	Total	5.3	0.8		0.20	0.351	0.20	pCi/g
CR-L-30-SY +25/+50/+100 Composite	Soil	S2210485	9/8/2022	Radium-226	Total	6.2	0.9		0.20	0.399	0.20	pCi/g
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	62.6	2.6		0.20	0.351	0.20	pCi/g
CR-L-4-SY +140/+200/+270 Composite	Soil	S2210485	9/6/2022	Radium-226	Total	9.8	1		0.20	0.383	0.20	pCi/g
CR-L-4-SY +25/+50/+100-01/+100-02 Composite	Soil	S2210485	9/6/2022	Radium-226	Total	9.7	1.1		0.20	0.396	0.20	pCi/g
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	73.3	2.6		0.20	0.325	0.20	pCi/g
CR-L-8-SY +140/+200/+270 Composite	Soil	S2210485	9/7/2022	Radium-226	Total	6.6	0.8		0.20	0.351	0.20	pCi/g
CR-L-8-SY +25/+50/+100 Composite	Soil	S2210485	9/7/2022	Radium-226	Total	9	1		0.20	0.371	0.20	pCi/g
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	63.1	2.4		0.20	0.305	0.20	pCi/g
CR-M-0-SL-01	Soil	S2210147	8/23/2022	Radium-226	Total	104	2.6		0.20	0.220	0.20	pCi/g
CR-M-0-SL-01 +140/+200/+270 Composite	Soil	S2210485	9/14/2022	Radium-226	Total	76.8	4		0.20	0.678	0.20	pCi/g
CR-M-0-SL-01 +25/+50/+100.01/+100-02 Composite	Soil	S2210485	9/14/2022	Radium-226	Total	32	1.4		0.20	0.198	0.20	pCi/g
CR-M-0-SL-01 -270	Soil	S2210485	9/14/2022	Radium-226	Total	430	9.4		0.20	0.696	0.20	pCi/g
CR-M-30-SY +140/+200/+270 Composite	Soil	S2210485	9/13/2022	Radium-226	Total	23.6	2.2		0.20	0.716	0.20	pCi/g
CR-M-30-SY +25/+50/+100.01/+100.02 Composite	Soil	S2210485	9/13/2022	Radium-226	Total	10.9	0.8		0.20	0.188	0.20	pCi/g
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	358	6		0.20	0.350	0.20	pCi/g
CR-M-4-SY +140/+200/+270 Composite	Soil	S2210485	9/9/2022	Radium-226	Total	51.3	3.4		0.20	0.764	0.20	pCi/g
CR-M-4-SY +25/+50/+100 Composite	Soil	S2210485	9/9/2022	Radium-226	Total	16.8	1		0.20	0.195	0.20	pCi/g
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	407	7.1		0.20	0.411	0.20	pCi/g
CR-M-8-SY +140/+200/+270 Composite	Soil	S2210485	9/12/2022	Radium-226	Total	39.8	3		0.20	0.700	0.20	pCi/g

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-M-8-SY +25/+50/+100 Composite	Soil	S2210485	9/12/2022	Radium-226	Total	15.5	0.9		0.20	0.175	0.20	pCi/g
CR-M-8-SY -270 Concentrate	Soil	S2210480	10/24/2022	Radium-226	Total	366	6		0.20	0.342	0.20	pCi/g
CTS-H-0-+1/4 inch Bulk Assay	Soil	S2210485	8/30/2022	Radium-226	Total	129	3.1		0.20	0.245	0.20	pCi/g
CTS-H-0-SL-01	Soil	S2210147	8/30/2022	Radium-226	Total	15	1		0.20	0.240	0.20	pCi/g
CTS-H-0-SL-01 +200/+270 Composite	Soil	S2211026	10/12/2022	Radium-226	Total	7.2	0.9		0.20	0.399	0.20	pCi/g
CTS-H-0-SL-01 +25/+50/+100/+140 Composite	Soil	S2211026	10/12/2022	Radium-226	Total	20.1	1.6		0.20	0.428	0.20	pCi/g
CTS-H-0-SL-01 -270	Soil	S2211026	10/12/2022	Radium-226	Total	19.9	1.2		0.20	0.239	0.20	pCi/g
CTS-H-30-SY +200/+270 Composite	Soil	S2211026	10/17/2022	Radium-226	Total	5	1		0.20	0.547	0.20	pCi/g
CTS-H-30-SY +25/+50/+100-01/+100-02/+140 Composite	Soil	S2211026	10/17/2022	Radium-226	Total	8.8	1.3		0.20	0.552	0.20	pCi/g
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Radium-226	Total	23.1	1.5		0.20	0.309	0.20	pCi/g
CTS-H-4-SY +200/+270 Composite	Soil	S2211026	10/13/2022	Radium-226	Total	6.3	1.1		0.20	0.530	0.20	pCi/g
CTS-H-4-SY +25/+50/+100-01/+100-02/+140 Composite	Soil	S2211026	10/13/2022	Radium-226	Total	15.2	1.5		0.20	0.526	0.20	pCi/g
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Radium-226	Total	28.3	1.7		0.20	0.360	0.20	pCi/g
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Radium-226	Total	25.2	1.6		0.20	0.338	0.20	pCi/g
CTS-H-8-SY +200/+270 Composite	Soil	S2211026	10/13/2022	Radium-226	Total	6.9	1		0.20	0.470	0.20	pCi/g
CTS-H-8-SY +25/+50/+100/+140 Composite	Soil	S2211026	10/13/2022	Radium-226	Total	11.3	1.3		0.20	0.473	0.20	pCi/g
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Radium-226	Total	26.2	1.6		0.20	0.309	0.20	pCi/g
CTS-L-0-+1/4-inch	Soil	S2210485	8/30/2022	Radium-226	Total	2.2	0.5	J	0.20	0.266	0.20	pCi/g
CTS-L-0-SL-01	Soil	S2210147	8/30/2022	Radium-226	Total	1.6	0.3		0.20	0.240	0.20	pCi/g
CTS-L-0-SL-01 +200/+270 Composite	Soil	S2211026	10/4/2022	Radium-226	Total	1.3	0.4		0.20	0.457	0.20	pCi/g
CTS-L-0-SL-01 +25/+50/+100/+140 Compsite	Soil	S2211026	10/4/2022	Radium-226	Total	1	0.4		0.20	0.475	0.20	pCi/g
CTS-L-0-SL-01 -270	Soil	S2211026	10/4/2022	Radium-226	Total	2	0.5		0.20	0.266	0.20	pCi/g
CTS-L-30-SY +200/+270 Composite	Soil	S2211026	10/6/2022	Radium-226	Total	0.8	0.5		0.20	0.587	0.20	pCi/g
CTS-L-30-SY +25/+50/+100-01/+100-02/+140 Compsite	Soil	S2211026	10/6/2022	Radium-226	Total	0.9	0.6		0.20	0.760	0.20	pCi/g
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Radium-226	Total	2.9	0.5		0.20	0.300	0.50	pCi/g
CTS-L-4-SY +200/+270 Composite	Soil	S2211026	10/5/2022	Radium-226	Total	0.7	0.4		0.20	0.513	0.20	pCi/g
CTS-L-4-SY +25/+50/+100/+140 Composite	Soil	S2211026	10/5/2022	Radium-226	Total	1.1	0.4		0.20	0.387	0.20	pCi/g
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Radium-226	Total	2.9	0.6		0.20	0.349	0.50	pCi/g
CTS-L-8-SY +200/+270 Composite	Soil	S2211026	10/6/2022	Radium-226	Total	1.1	0.5		0.20	0.548	0.20	pCi/g
CTS-L-8-SY +25/+50/+100/+140 Composite	Soil	S2211026	10/6/2022	Radium-226	Total	1.1	0.4		0.20	0.379	0.20	pCi/g
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Radium-226	Total	2.7	0.5		0.20	0.307	0.50	pCi/g
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Radium-226	Total	2.8	0.5		0.20	0.325	0.50	pCi/g
CTS-M-0-+1/4-inch	Soil	S2210485	8/30/2022	Radium-226	Total	102	2.6	J	0.20	0.219	0.20	pCi/g
CTS-M-0-SL-01	Soil	S2210147	8/30/2022	Radium-226	Total	12.7	0.9		0.20	0.230	0.20	pCi/g
CTS-M-0-SL-01 +200/+270 Composite	Soil	S2211026	10/11/2022	Radium-226	Total	7.5	1.1		0.20	0.500	0.20	pCi/g
CTS-M-0-SL-01 +25/+50/+100/+140 Compisite	Soil	S2211026	10/11/2022	Radium-226	Total	14.6	1.3		0.20	0.396	0.20	pCi/g
CTS-M-0-SL-01 -270	Soil	S2211026	10/11/2022	Radium-226	Total	15.3	1.1		0.20	0.251	0.20	pCi/g
CTS-M-30-SY +200/+270 Composite	Soil	S2211026	10/13/2022	Radium-226	Total	4.7	1		0.20	0.635	0.20	pCi/g
CTS-M-30-SY +25/+50/+100/+140 Composite	Soil	S2211026	10/13/2022	Radium-226	Total	7	1		0.20	0.526	0.20	pCi/g
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Radium-226	Total	22.4	1.5		0.20	0.339	0.50	pCi/g
CTS-M-4-SY +200/+270 Composite	Soil	S2211026	10/11/2022	Radium-226	Total	6.2	1.2		0.20	0.619	0.20	pCi/g
CTS-M-4-SY +25/+50/+100/+140 Composite	Soil	S2211026	10/11/2022	Radium-226	Total	9.8	1.2		0.20	0.453	0.20	pCi/g

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Radium-226	Total	23.4	1.5		0.20	0.337	0.50	pCi/g
CTS-M-8-SY +200/+270 Composite	Soil	S2211026	10/11/2022	Radium-226	Total	5.5	1.1		0.20	0.629	0.20	pCi/g
CTS-M-8-SY +25/+50/+100-02/+100-02/+140 Composite	Soil	S2211026	10/11/2022	Radium-226	Total	9.3	1.2		0.20	0.510	0.20	pCi/g
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Radium-226	Total	21.8	1.4		0.20	0.322	0.50	pCi/g
QV-H-0-SL-01	Soil	S2210147	8/27/2022	Radium-226	Total	121	2.8		0.20	0.240	0.20	pCi/g
QV-H-0-SL-01 +100/+140/+200/+270 Composite-01	Soil	S2211015	10/4/2022	Radium-226	Total	35.3	2.7		0.20	0.558	0.20	pCi/g
QV-H-0-SL-01 +100/+140/+200/+270 Composite-02	Soil	S2211015	10/4/2022	Radium-226	Total	39.3	2.9		0.20	0.564	0.20	pCi/g
QV-H-0-SL-01 +25	Soil	S2211015	10/4/2022	Radium-226	Total	40.6	3.2		0.20	0.685	0.20	pCi/g
QV-H-0-SL-01 +50	Soil	S2211015	10/4/2022	Radium-226	Total	18.6	1.5		0.20	0.355	0.20	pCi/g
QV-H-0-SL-01 -270	Soil	S2211015	10/4/2022	Radium-226	Total	567	10.4		0.20	0.543	0.20	pCi/g
QV-H-30-SY +25	Soil	S2211015	10/3/2022	Radium-226	Total	10.8	1.6		0.20	0.637	0.20	pCi/g
QV-H-30-SY +50-01	Soil	S2211015	10/3/2022	Radium-226	Total	7.2	1.2		0.20	0.483	0.20	pCi/g
QV-H-30-SY +50-02	Soil	S2211015	10/3/2022	Radium-226	Total	6	1.1		0.20	0.465	0.20	pCi/g
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	493	7.1		0.20	0.356	0.20	pCi/g
QV-H-30-SY+100-01/+100-02/+140/+200/+270 Composite	Soil	S2211015	10/3/2022	Radium-226	Total	8.1	0.8		0.20	0.214	0.20	pCi/g
QV-H-4-SY +100/+140/+200/+270 Composite	Soil	S2211015	10/2/2022	Radium-226	Total	11.5	0.9		0.20	0.200	0.20	pCi/g
QV-H-4-SY +25	Soil	S2211015	10/2/2022	Radium-226	Total	16.5	1.5		0.20	0.385	0.20	pCi/g
QV-H-4-SY +50-01	Soil	S2211015	10/2/2022	Radium-226	Total	10.6	1.1		0.20	0.256	0.20	pCi/g
QV-H-4-SY +50-02	Soil	S2211015	10/2/2022	Radium-226	Total	11.8	1.2		0.20	0.344	0.20	pCi/g
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	547	7.1		0.20	0.324	0.20	pCi/g
QV-H-8-SY +100/+140/+200/+270 Composite	Soil	S2211015	10/3/2022	Radium-226	Total	10.4	0.8		0.20	0.195	0.20	pCi/g
QV-H-8-SY +25	Soil	S2211015	10/3/2022	Radium-226	Total	11.5	1.4		0.20	0.461	0.20	pCi/g
QV-H-8-SY +50	Soil	S2211015	10/3/2022	Radium-226	Total	6.9	0.7		0.20	0.179	0.20	pCi/g
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	510	6.9		0.20	0.308	0.20	pCi/g
QV-L-0-SL-01	Soil	S2210147	8/26/2022	Radium-226	Total	31.8	1.4		0.20	0.220	0.20	pCi/g
QV-L-0-SL-01 +100/+140/+200/+270 Composite	Soil	S2211015	9/29/2022	Radium-226	Total	7.1	0.8		0.20	0.254	0.20	pCi/g
QV-L-0-SL-01 +25/+50 Composite	Soil	S2211015	9/29/2022	Radium-226	Total	7.5	0.9		0.20	0.276	0.20	pCi/g
QV-L-0-SL-01 -270	Soil	S2211015	9/29/2022	Radium-226	Total	141	4.9		0.20	0.576	0.20	pCi/g
QV-L-30-SY +100/+140/+200/+270 Composite	Soil	S2211015	9/29/2022	Radium-226	Total	3.9	0.5		0.20	0.229	0.20	pCi/g
QV-L-30-SY +25/+50 Composite	Soil	S2211015	9/29/2022	Radium-226	Total	4.2	0.6		0.20	0.289	0.20	pCi/g
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	95.5	3		0.20	0.319	0.20	pCi/g
QV-L-4-SY +100/+140/+200/+270 Composite	Soil	S2211015	9/20/2022	Radium-226	Total	5.4	0.8		0.20	0.306	0.20	pCi/g
QV-L-4-SY +25/+50-01/+50-02 Composite	Soil	S2211015	9/20/2022	Radium-226	Total	4.8	0.8		0.20	0.365	0.20	pCi/g
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	112	3.6		0.20	0.385	0.20	pCi/g
QV-L-8-SY +100/+140/+200/+270 Composite	Soil	S2211015	9/28/2022	Radium-226	Total	3.9	0.6		0.20	0.228	0.20	pCi/g
QV-L-8-SY +25/+50 Composite	Soil	S2211015	9/28/2022	Radium-226	Total	5.3	0.6		0.20	0.250	0.20	pCi/g
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	120	3.5		0.20	0.343	0.20	pCi/g
QV-M-0-SL-01	Soil	S2210147	8/27/2022	Radium-226	Total	91.9	2.4		0.20	0.230	0.20	pCi/g
QV-M-0-SL-01 +100/+140/+200/+270 Composite-01	Soil	S2211015	10/2/2022	Radium-226	Total	24	2.2		0.20	0.594	0.20	pCi/g
QV-M-0-SL-01 +100/+140/+200/+270 Composite-02	Soil	S2211015	10/2/2022	Radium-226	Total	28	2.3		0.20	0.611	0.20	pCi/g
QV-M-0-SL-01 +25	Soil	S2211015	10/2/2022	Radium-226	Total	29.9	2.6		0.20	0.700	0.20	pCi/g
QV-M-0-SL-01 +50	Soil	S2211015	10/2/2022	Radium-226	Total	12.9	1.2		0.20	0.338	0.20	pCi/g

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
QV-M-0-SL-01 -270	Soil	S2211015	10/2/2022	Radium-226	Total	374	8		0.20	0.524	0.20	pCi/g
QV-M-30-SY +100/+140/+200/+270 Composite	Soil	S2211015	10/1/2022	Radium-226	Total	6.6	0.8		0.20	0.270	0.20	pCi/g
QV-M-30-SY +25/+50 Composite	Soil	S2211015	10/1/2022	Radium-226	Total	4.9	0.6		0.20	0.229	0.20	pCi/g
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	328	5.5		0.20	0.321	0.20	pCi/g
QV-M-4-SY +100-01/+100-02/+140/+200/+270 Composite	Soil	S2211015	9/30/2022	Radium-226	Total	7.1	0.8		0.20	0.280	0.20	pCi/g
QV-M-4-SY +25	Soil	S2211015	9/30/2022	Radium-226	Total	12.1	1.3		0.20	0.484	0.20	pCi/g
QV-M-4-SY +50	Soil	S2211015	9/30/2022	Radium-226	Total	6.6	0.8		0.20	0.263	0.20	pCi/g
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	372	5.8		0.20	0.320	0.20	pCi/g
QV-M-8-SY +100/+140/+200/+270 Composite	Soil	S2211015	9/30/2022	Radium-226	Total	9.2	1		0.20	0.281	0.20	pCi/g
QV-M-8-SY +25	Soil	S2211015	9/30/2022	Radium-226	Total	11.1	1.5		0.20	0.608	0.20	pCi/g
QV-M-8-SY +50	Soil	S2211015	9/30/2022	Radium-226	Total	6.1	0.7		0.20	0.247	0.20	pCi/g
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Radium-226	Total	357	6.1		0.20	0.352	0.20	pCi/g
CR-H-0-KY	Soil	S2211015	8/24/2022	Uranium	Total	220			0.03		10.00	mg/Kg
CR-H-0-SL-01	Soil	S2210147	8/23/2022	Uranium	Total	940			0.03		10.00	mg/Kg
CR-H-0-SL-01 +100	Soil	S2210485	9/19/2022	Uranium	Total	160			0.03		10.00	mg/Kg
CR-H-0-SL-01 +140	Soil	S2210485	9/19/2022	Uranium	Total	190			0.03		10.00	mg/Kg
CR-H-0-SL-01 +200	Soil	S2210485	9/19/2022	Uranium	Total	420			0.03		10.00	mg/Kg
CR-H-0-SL-01 +25	Soil	S2210485	9/19/2022	Uranium	Total	170			0.03		10.00	mg/Kg
CR-H-0-SL-01 +270	Soil	S2210485	9/19/2022	Uranium	Total	460			0.03		10.00	mg/Kg
CR-H-0-SL-01 +50	Soil	S2210485	9/19/2022	Uranium	Total	90			0.03		10.00	mg/Kg
CR-H-0-SL-01 -270	Soil	S2210485	9/19/2022	Uranium	Total	4820			0.03		10.00	mg/Kg
CR-H-30-SY +100	Soil	S2211015	9/19/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-H-30-SY +140	Soil	S2211015	9/19/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CR-H-30-SY +200	Soil	S2211015	9/19/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-H-30-SY +25	Soil	S2211015	9/19/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-H-30-SY +270	Soil	S2211015	9/19/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-H-30-SY +50	Soil	S2211015	9/19/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	3320			0.03		10.00	mg/Kg
CR-H-4-SY +100	Soil	S2210485	9/15/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-H-4-SY +140	Soil	S2210485	9/15/2022	Uranium	Total	60			0.03		10.00	mg/Kg
CR-H-4-SY +200	Soil	S2210485	9/15/2022	Uranium	Total	90			0.03		10.00	mg/Kg
CR-H-4-SY +25	Soil	S2210485	9/15/2022	Uranium	Total	60			0.03		10.00	mg/Kg
CR-H-4-SY +270	Soil	S2210485	9/15/2022	Uranium	Total	110			0.03		10.00	mg/Kg
CR-H-4-SY +50	Soil	S2210485	9/15/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	4380			0.03		10.00	mg/Kg
CR-H-8-SY +100	Soil	S2211015	9/17/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CR-H-8-SY +140	Soil	S2211015	9/17/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CR-H-8-SY +200	Soil	S2211015	9/17/2022	Uranium	Total	60			0.03		10.00	mg/Kg
CR-H-8-SY +25	Soil	S2211015	9/17/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-H-8-SY +270	Soil	S2211015	9/17/2022	Uranium	Total	80			0.03		10.00	mg/Kg
CR-H-8-SY +50-01	Soil	S2211015	9/17/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-H-8-SY +50-02	Soil	S2211015	9/17/2022	Uranium	Total	20			0.03		10.00	mg/Kg

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	4210			0.03		10.00	mg/Kg
CR-L-0-SL-01	Soil	S2210147	8/23/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-L-0-SL-01 +100	Soil	S2210485	9/9/2022	Uranium	Total	7.72		J	0.03		10.00	mg/Kg
CR-L-0-SL-01 +140	Soil	S2210485	9/9/2022	Uranium	Total	4.75		J	0.03		10.00	mg/Kg
CR-L-0-SL-01 +200	Soil	S2210485	9/9/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-L-0-SL-01 +25	Soil	S2210485	9/9/2022	Uranium	Total	70			0.03		10.00	mg/Kg
CR-L-0-SL-01 +270	Soil	S2210485	9/9/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-L-0-SL-01 +50	Soil	S2210485	9/9/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-L-0-SL-01 -270	Soil	S2210485	9/9/2022	Uranium	Total	150			0.03		10.00	mg/Kg
CR-L-30-SY +100	Soil	S2210485	9/8/2022	Uranium	Total	5.59		J	0.03		10.00	mg/Kg
CR-L-30-SY +140	Soil	S2210485	9/8/2022	Uranium	Total	3.08		J	0.03		10.00	mg/Kg
CR-L-30-SY +200	Soil	S2210485	9/8/2022	Uranium	Total	4.44		J	0.03		10.00	mg/Kg
CR-L-30-SY +25	Soil	S2210485	9/8/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-L-30-SY +270	Soil	S2210485	9/8/2022	Uranium	Total	8.46		J	0.03		10.00	mg/Kg
CR-L-30-SY +50	Soil	S2210485	9/8/2022	Uranium	Total	7.76		J	0.03		10.00	mg/Kg
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	140			0.03		10.00	mg/Kg
CR-L-4-SY +100-01	Soil	S2210485	9/6/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-L-4-SY +100-02	Soil	S2210485	9/6/2022	Uranium	Total	6.61		J	0.03		10.00	mg/Kg
CR-L-4-SY +140	Soil	S2210485	9/6/2022	Uranium	Total	5.2		J	0.03		10.00	mg/Kg
CR-L-4-SY +200	Soil	S2210485	9/6/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-L-4-SY +25	Soil	S2210485	9/6/2022	Uranium	Total	60			0.03		10.00	mg/Kg
CR-L-4-SY +270	Soil	S2210485	9/6/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-L-4-SY +50	Soil	S2210485	9/6/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	160			0.03		10.00	mg/Kg
CR-L-8-SY +100	Soil	S2210485	9/7/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-L-8-SY +140	Soil	S2210485	9/7/2022	Uranium	Total	9.04		J	0.03		10.00	mg/Kg
CR-L-8-SY +200	Soil	S2210485	9/7/2022	Uranium	Total	7.48		J	0.03		10.00	mg/Kg
CR-L-8-SY +25	Soil	S2210485	9/7/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CR-L-8-SY +270	Soil	S2210485	9/7/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-L-8-SY +50	Soil	S2210485	9/7/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	150			0.03		10.00	mg/Kg
CR-M-0-SL-01	Soil	S2210147	8/23/2022	Uranium	Total	260			0.03		10.00	mg/Kg
CR-M-0-SL-01 +100-01	Soil	S2210485	9/14/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-M-0-SL-01 +100-02	Soil	S2210485	9/14/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-M-0-SL-01 +140	Soil	S2210485	9/14/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-M-0-SL-01 +200	Soil	S2210485	9/14/2022	Uranium	Total	70			0.03		10.00	mg/Kg
CR-M-0-SL-01 +25	Soil	S2210485	9/14/2022	Uranium	Total	100			0.03		10.00	mg/Kg
CR-M-0-SL-01 +270	Soil	S2210485	9/14/2022	Uranium	Total	100			0.03		10.00	mg/Kg
CR-M-0-SL-01 +50	Soil	S2210485	9/14/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-M-0-SL-01 -270	Soil	S2210485	9/14/2022	Uranium	Total	1200			0.03		10.00	mg/Kg
CR-M-30-SY +100.01	Soil	S2210485	9/13/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-M-30-SY +100.02	Soil	S2210485	9/13/2022	Uranium	Total	9.27		J	0.03		10.00	mg/Kg

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-M-30-SY +140	Soil	S2210485	9/13/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-M-30-SY +200	Soil	S2210485	9/13/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-M-30-SY +25	Soil	S2210485	9/13/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CR-M-30-SY +270	Soil	S2210485	9/13/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-M-30-SY +50	Soil	S2210485	9/13/2022	Uranium	Total	9.82		J	0.03		10.00	mg/Kg
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	860			0.03		10.00	mg/Kg
CR-M-4-SY +100	Soil	S2210485	9/9/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-M-4-SY +140	Soil	S2210485	9/9/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-M-4-SY +200	Soil	S2210485	9/9/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CR-M-4-SY +25	Soil	S2210485	9/9/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CR-M-4-SY +270	Soil	S2210485	9/9/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CR-M-4-SY +50	Soil	S2210485	9/9/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	1050			0.03		10.00	mg/Kg
CR-M-8-SY +100	Soil	S2210485	9/12/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-M-8-SY +140	Soil	S2210485	9/12/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-M-8-SY +200	Soil	S2210485	9/12/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CR-M-8-SY +25	Soil	S2210485	9/12/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CR-M-8-SY +270	Soil	S2210485	9/12/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CR-M-8-SY +50	Soil	S2210485	9/12/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	1010			0.03		10.00	mg/Kg
CR-M-8-SY Combined +25/+270	Soil	S2210147	9/12/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-H-0-+1/4 inch Bulk Assay	Soil	S2210485	8/30/2022	Uranium	Total	610			0.03		10.00	mg/Kg
CTS-H-0-SL-01	Soil	S2210147	8/30/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CTS-H-0-SL-01 +100	Soil	S2211026	10/12/2022	Uranium	Total	60			0.03		10.00	mg/Kg
CTS-H-0-SL-01 +140	Soil	S2211026	10/12/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CTS-H-0-SL-01 +200	Soil	S2211026	10/12/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-H-0-SL-01 +25	Soil	S2211026	10/12/2022	Uranium	Total	660			0.03		10.00	mg/Kg
CTS-H-0-SL-01 +270	Soil	S2211026	10/12/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-H-0-SL-01 +50	Soil	S2211026	10/12/2022	Uranium	Total	120			0.03		10.00	mg/Kg
CTS-H-0-SL-01 -270	Soil	S2211026	10/12/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CTS-H-30-SY +100-01	Soil	S2211026	10/17/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CTS-H-30-SY +100-02	Soil	S2211026	10/17/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CTS-H-30-SY +140	Soil	S2211026	10/17/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CTS-H-30-SY +200	Soil	S2211026	10/17/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-H-30-SY +25	Soil	S2211026	10/17/2022	Uranium	Total	100			0.03		10.00	mg/Kg
CTS-H-30-SY +270	Soil	S2211026	10/17/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-H-30-SY +50	Soil	S2211026	10/17/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Uranium	Total	80			0.03		10.00	mg/Kg
CTS-H-4-SY +100-01	Soil	S2211026	10/13/2022	Uranium	Total	60			0.03		10.00	mg/Kg
CTS-H-4-SY +100-02	Soil	S2211026	10/13/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CTS-H-4-SY +140	Soil	S2211026	10/13/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CTS-H-4-SY +200	Soil	S2211026	10/13/2022	Uranium	Total	20			0.03		10.00	mg/Kg

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS-H-4-SY +25	Soil	S2211026	10/13/2022	Uranium	Total	850			0.03		10.00	mg/Kg
CTS-H-4-SY +270	Soil	S2211026	10/13/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-H-4-SY +50	Soil	S2211026	10/13/2022	Uranium	Total	190			0.03		10.00	mg/Kg
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Uranium	Total	70			0.03		10.00	mg/Kg
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Uranium	Total	70			0.03		10.00	mg/Kg
CTS-H-8-SY +100	Soil	S2211026	10/13/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CTS-H-8-SY +140	Soil	S2211026	10/13/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CTS-H-8-SY +200	Soil	S2211026	10/13/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-H-8-SY +25	Soil	S2211026	10/13/2022	Uranium	Total	360			0.03		10.00	mg/Kg
CTS-H-8-SY +270	Soil	S2211026	10/13/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-H-8-SY +50	Soil	S2211026	10/13/2022	Uranium	Total	110			0.03		10.00	mg/Kg
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Uranium	Total	80			0.03		10.00	mg/Kg
CTS-L-0-+1/4-inch	Soil	S2210485	8/30/2022	Uranium	Total	2.92		J	0.03		10.00	mg/Kg
CTS-L-0-SL-01	Soil	S2210147	8/30/2022	Uranium	Total	4.52		J	0.03		10.00	mg/Kg
CTS-L-0-SL-01 +100	Soil	S2211026	10/4/2022	Uranium	Total	1.58		J	0.03		10.00	mg/Kg
CTS-L-0-SL-01 +140	Soil	S2211026	10/4/2022	Uranium	Total	1			0.00		1.00	mg/Kg
CTS-L-0-SL-01 +200	Soil	S2211026	10/4/2022	Uranium	Total	1.14		J	0.03		10.00	mg/Kg
CTS-L-0-SL-01 +25	Soil	S2211026	10/4/2022	Uranium	Total	4.87		J	0.03		10.00	mg/Kg
CTS-L-0-SL-01 +270	Soil	S2211026	10/4/2022	Uranium	Total	1.29		J	0.03		10.00	mg/Kg
CTS-L-0-SL-01 +50	Soil	S2211026	10/4/2022	Uranium	Total	5.2		J	0.03		10.00	mg/Kg
CTS-L-0-SL-01 -270	Soil	S2211026	10/4/2022	Uranium	Total	3.06		J	0.03		10.00	mg/Kg
CTS-L-30-SY +100-01	Soil	S2211026	10/6/2022	Uranium	Total	1.36		J	0.03		10.00	mg/Kg
CTS-L-30-SY +100-02	Soil	S2211026	10/6/2022	Uranium	Total	0.841		J	0.03		10.00	mg/Kg
CTS-L-30-SY +140	Soil	S2211026	10/6/2022	Uranium	Total	0.745		J	0.03		10.00	mg/Kg
CTS-L-30-SY +200	Soil	S2211026	10/6/2022	Uranium	Total	0.554		J	0.03		10.00	mg/Kg
CTS-L-30-SY +25	Soil	S2211026	10/6/2022	Uranium	Total	7.2		J	0.03		10.00	mg/Kg
CTS-L-30-SY +270	Soil	S2211026	10/6/2022	Uranium	Total	0.808		J	0.03		10.00	mg/Kg
CTS-L-30-SY +50	Soil	S2211026	10/6/2022	Uranium	Total	2.24		J	0.03		10.00	mg/Kg
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-L-4-SY +100	Soil	S2211026	10/5/2022	Uranium	Total	2.05		J	0.03		10.00	mg/Kg
CTS-L-4-SY +140	Soil	S2211026	10/5/2022	Uranium	Total	1.21		J	0.03		10.00	mg/Kg
CTS-L-4-SY +200	Soil	S2211026	10/5/2022	Uranium	Total	0.704		J	0.03		10.00	mg/Kg
CTS-L-4-SY +25	Soil	S2211026	10/5/2022	Uranium	Total	3.17		J	0.03		10.00	mg/Kg
CTS-L-4-SY +270	Soil	S2211026	10/5/2022	Uranium	Total	1.14		J	0.03		10.00	mg/Kg
CTS-L-4-SY +50	Soil	S2211026	10/5/2022	Uranium	Total	4.41		J	0.03		10.00	mg/Kg
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-L-8-SY +100	Soil	S2211026	10/6/2022	Uranium	Total	1.11		J	0.03		10.00	mg/Kg
CTS-L-8-SY +140	Soil	S2211026	10/6/2022	Uranium	Total	0.898		J	0.03		10.00	mg/Kg
CTS-L-8-SY +200	Soil	S2211026	10/6/2022	Uranium	Total	1.49		J	0.03		10.00	mg/Kg
CTS-L-8-SY +25	Soil	S2211026	10/6/2022	Uranium	Total	4.19		J	0.03		10.00	mg/Kg
CTS-L-8-SY +270	Soil	S2211026	10/6/2022	Uranium	Total	1.2		J	0.03		10.00	mg/Kg
CTS-L-8-SY +50	Soil	S2211026	10/6/2022	Uranium	Total	2.14		J	0.03		10.00	mg/Kg

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-M-0-+1/4-inch	Soil	S2210485	8/30/2022	Uranium	Total	610			0.03		10.00	mg/Kg
CTS-M-0-SL-01	Soil	S2210147	8/30/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CTS-M-0-SL-01 +100	Soil	S2211026	10/11/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CTS-M-0-SL-01 +140	Soil	S2211026	10/11/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CTS-M-0-SL-01 +200	Soil	S2211026	10/11/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CTS-M-0-SL-01 +25	Soil	S2211026	10/11/2022	Uranium	Total	290			0.03		10.00	mg/Kg
CTS-M-0-SL-01 +270	Soil	S2211026	10/11/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-M-0-SL-01 +50	Soil	S2211026	10/11/2022	Uranium	Total	110			0.03		10.00	mg/Kg
CTS-M-0-SL-01 -270	Soil	S2211026	10/11/2022	Uranium	Total	50			0.03		10.00	mg/Kg
CTS-M-30-SY +100	Soil	S2211026	10/13/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CTS-M-30-SY +140	Soil	S2211026	10/13/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-M-30-SY +200	Soil	S2211026	10/13/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-M-30-SY +25	Soil	S2211026	10/13/2022	Uranium	Total	180			0.03		10.00	mg/Kg
CTS-M-30-SY +270	Soil	S2211026	10/13/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-M-30-SY +50	Soil	S2211026	10/13/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Uranium	Total	70			0.03		10.00	mg/Kg
CTS-M-4-SY +100	Soil	S2211026	10/11/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CTS-M-4-SY +140	Soil	S2211026	10/11/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CTS-M-4-SY +200	Soil	S2211026	10/11/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-M-4-SY +25	Soil	S2211026	10/11/2022	Uranium	Total	170			0.03		10.00	mg/Kg
CTS-M-4-SY +270	Soil	S2211026	10/11/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-M-4-SY +50	Soil	S2211026	10/11/2022	Uranium	Total	100			0.03		10.00	mg/Kg
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Uranium	Total	60			0.03		10.00	mg/Kg
CTS-M-8-SY +100-01	Soil	S2211026	10/11/2022	Uranium	Total	40			0.03		10.00	mg/Kg
CTS-M-8-SY +100-02	Soil	S2211026	10/11/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CTS-M-8-SY +140	Soil	S2211026	10/11/2022	Uranium	Total	30			0.03		10.00	mg/Kg
CTS-M-8-SY +200	Soil	S2211026	10/11/2022	Uranium	Total	20			0.03		10.00	mg/Kg
CTS-M-8-SY +25	Soil	S2211026	10/11/2022	Uranium	Total	190			0.03		10.00	mg/Kg
CTS-M-8-SY +270	Soil	S2211026	10/11/2022	Uranium	Total	10			0.03		10.00	mg/Kg
CTS-M-8-SY +50	Soil	S2211026	10/11/2022	Uranium	Total	60			0.03		10.00	mg/Kg
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Uranium	Total	70			0.03		10.00	mg/Kg
QV-H-0-SL-01	Soil	S2210147	8/27/2022	Uranium	Total	400			0.03		10.00	mg/Kg
QV-H-0-SL-01 +100	Soil	S2211015	10/4/2022	Uranium	Total	60			0.03		10.00	mg/Kg
QV-H-0-SL-01 +140	Soil	S2211015	10/4/2022	Uranium	Total	80			0.03		10.00	mg/Kg
QV-H-0-SL-01 +200	Soil	S2211015	10/4/2022	Uranium	Total	140			0.03		10.00	mg/Kg
QV-H-0-SL-01 +25	Soil	S2211015	10/4/2022	Uranium	Total	90			0.03		10.00	mg/Kg
QV-H-0-SL-01 +270	Soil	S2211015	10/4/2022	Uranium	Total	180			0.03		10.00	mg/Kg
QV-H-0-SL-01 +50	Soil	S2211015	10/4/2022	Uranium	Total	50			0.03		10.00	mg/Kg
QV-H-0-SL-01 -270	Soil	S2211015	10/4/2022	Uranium	Total	1370			0.03		10.00	mg/Kg
QV-H-30-SY +100-01	Soil	S2211015	10/3/2022	Uranium	Total	10			0.03		10.00	mg/Kg

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
QV-H-30-SY +100-02	Soil	S2211015	10/3/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-H-30-SY +140	Soil	S2211015	10/3/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-H-30-SY +200	Soil	S2211015	10/3/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-H-30-SY +25	Soil	S2211015	10/3/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-H-30-SY +270	Soil	S2211015	10/3/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-H-30-SY +50	Soil	S2211015	10/3/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	1090			0.03		10.00	mg/Kg
QV-H-4-SY +100	Soil	S2211015	10/2/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-H-4-SY +140	Soil	S2211015	10/2/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-H-4-SY +200	Soil	S2211015	10/2/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-H-4-SY +25	Soil	S2211015	10/2/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-H-4-SY +270	Soil	S2211015	10/2/2022	Uranium	Total	50			0.03		10.00	mg/Kg
QV-H-4-SY +50-01	Soil	S2211015	10/2/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	1310			0.03		10.00	mg/Kg
QV-H-8-SY +100	Soil	S2211015	10/3/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-H-8-SY +140	Soil	S2211015	10/3/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-H-8-SY +200	Soil	S2211015	10/3/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-H-8-SY +25	Soil	S2211015	10/3/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-H-8-SY +270	Soil	S2211015	10/3/2022	Uranium	Total	50			0.03		10.00	mg/Kg
QV-H-8-SY +50	Soil	S2211015	10/3/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	1170			0.03		10.00	mg/Kg
QV-L-0-SL-01	Soil	S2210147	8/26/2022	Uranium	Total	110			0.03		10.00	mg/Kg
QV-L-0-SL-01 +100	Soil	S2211015	9/29/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-L-0-SL-01 +140	Soil	S2211015	9/29/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-L-0-SL-01 +200	Soil	S2211015	9/29/2022	Uranium	Total	70			0.03		10.00	mg/Kg
QV-L-0-SL-01 +25	Soil	S2211015	9/29/2022	Uranium	Total	90			0.03		10.00	mg/Kg
QV-L-0-SL-01 +270	Soil	S2211015	9/29/2022	Uranium	Total	100			0.03		10.00	mg/Kg
QV-L-0-SL-01 +50	Soil	S2211015	9/29/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-L-0-SL-01 -270	Soil	S2211015	9/29/2022	Uranium	Total	240			0.03		10.00	mg/Kg
QV-L-30-SY +100	Soil	S2211015	9/29/2022	Uranium	Total	6.71		J	0.03		10.00	mg/Kg
QV-L-30-SY +140	Soil	S2211015	9/29/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-L-30-SY +200	Soil	S2211015	9/29/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-L-30-SY +25	Soil	S2211015	9/29/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-L-30-SY +270	Soil	S2211015	9/29/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-L-30-SY +50	Soil	S2211015	9/29/2022	Uranium	Total	5.99		J	0.03		10.00	mg/Kg
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	210			0.03		10.00	mg/Kg
QV-L-4-SY +100	Soil	S2211015	9/20/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-L-4-SY +140	Soil	S2211015	9/20/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-L-4-SY +200	Soil	S2211015	9/20/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-L-4-SY +25	Soil	S2211015	9/20/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-L-4-SY +270	Soil	S2211015	9/20/2022	Uranium	Total	60			0.03		10.00	mg/Kg
QV-L-4-SY +50-01	Soil	S2211015	9/20/2022	Uranium	Total	10			0.03		10.00	mg/Kg

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
QV-L-4-SY +50-02	Soil	S2211015	9/20/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	230			0.03		10.00	mg/Kg
QV-L-8-SY +100	Soil	S2211015	9/28/2022	Uranium	Total	9.66		J	0.03		10.00	mg/Kg
QV-L-8-SY +140	Soil	S2211015	9/28/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-L-8-SY +200	Soil	S2211015	9/28/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-L-8-SY +25	Soil	S2211015	9/28/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-L-8-SY +270	Soil	S2211015	9/28/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-L-8-SY +50	Soil	S2211015	9/28/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	230			0.03		10.00	mg/Kg
QV-M-0-SL-01	Soil	S2210147	8/27/2022	Uranium	Total	230			0.03		10.00	mg/Kg
QV-M-0-SL-01 +100	Soil	S2211015	10/2/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-M-0-SL-01 +140	Soil	S2211015	10/2/2022	Uranium	Total	50			0.03		10.00	mg/Kg
QV-M-0-SL-01 +200	Soil	S2211015	10/2/2022	Uranium	Total	120			0.03		10.00	mg/Kg
QV-M-0-SL-01 +25	Soil	S2211015	10/2/2022	Uranium	Total	110			0.03		10.00	mg/Kg
QV-M-0-SL-01 +270	Soil	S2211015	10/2/2022	Uranium	Total	190			0.03		10.00	mg/Kg
QV-M-0-SL-01 +50	Soil	S2211015	10/2/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-M-0-SL-01 -270	Soil	S2211015	10/2/2022	Uranium	Total	840			0.03		10.00	mg/Kg
QV-M-30-SY +100-01	Soil	S2211015	10/1/2022	Uranium	Total	6.95		J	0.03		10.00	mg/Kg
QV-M-30-SY +100-02	Soil	S2211015	10/1/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-M-30-SY +140	Soil	S2211015	10/1/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-M-30-SY +200	Soil	S2211015	10/1/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-M-30-SY +25	Soil	S2211015	10/1/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-M-30-SY +270	Soil	S2211015	10/1/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-M-30-SY +50	Soil	S2211015	10/1/2022	Uranium	Total	6.55		J	0.03		10.00	mg/Kg
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	640			0.03		10.00	mg/Kg
QV-M-4-SY +100-01	Soil	S2211015	9/30/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-M-4-SY +100-02	Soil	S2211015	9/30/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-M-4-SY +140	Soil	S2211015	9/30/2022	Uranium	Total	10		U	0.03		10.00	mg/Kg
QV-M-4-SY +200	Soil	S2211015	9/30/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-M-4-SY +25	Soil	S2211015	9/30/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-M-4-SY +270	Soil	S2211015	9/30/2022	Uranium	Total	40			0.03		10.00	mg/Kg
QV-M-4-SY +50	Soil	S2211015	9/30/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	770			0.03		10.00	mg/Kg
QV-M-8-SY +100	Soil	S2211015	9/30/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-M-8-SY +140	Soil	S2211015	9/30/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-M-8-SY +200	Soil	S2211015	9/30/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-M-8-SY +25	Soil	S2211015	9/30/2022	Uranium	Total	20			0.03		10.00	mg/Kg
QV-M-8-SY +270	Soil	S2211015	9/30/2022	Uranium	Total	30			0.03		10.00	mg/Kg
QV-M-8-SY +50	Soil	S2211015	9/30/2022	Uranium	Total	10			0.03		10.00	mg/Kg
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Uranium	Total	710			0.03		10.00	mg/Kg
CR-MU-WT-01	Water	S2208484	8/24/2022	Aluminum	Dissolved	0.1		U	0.0515		0.1	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Aluminum	Dissolved	0.1		U	0.0515		0.1	mg/L

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-MU-WT-01	Water	S2208484	8/24/2022	Antimony	Dissolved	0.00018		J	0.000131		0.005	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Antimony	Dissolved	0.00023		J	0.000131		0.005	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Arsenic	Dissolved	0.00097		J	0.000619		0.005	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Arsenic	Dissolved	0.00098		J	0.000619		0.005	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Barium	Dissolved	0.0181		J	0.000228		0.1	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Barium	Dissolved	0.0182		J	0.000228		0.1	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Beryllium	Dissolved	0.001		U	0.000389		0.001	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Beryllium	Dissolved	0.001		U	0.000389		0.001	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Cadmium	Dissolved	0.002		U	0.0000771		0.002	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Cadmium	Dissolved	0.002		U	0.0000771		0.002	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Calcium	Dissolved	3			0.0934		0.5	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Calcium	Dissolved	3			0.0934		0.5	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Chromium	Dissolved	0.01		U	0.000964		0.01	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Chromium	Dissolved	0.01		U	0.000964		0.01	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Cobalt	Dissolved	0.01		U	0.00169		0.01	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Cobalt	Dissolved	0.01		U	0.00169		0.01	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Copper	Dissolved	0.00164		J	0.00113		0.01	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Copper	Dissolved	0.00169		J	0.00113		0.01	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Iron	Dissolved	0.05		U	0.0326		0.05	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Iron	Dissolved	0.05		U	0.0326		0.05	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Lead	Dissolved	0.00027		J	0.000155		0.001	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Lead	Dissolved	0.00028		J	0.000155		0.001	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Magnesium	Dissolved	0.5			0.0952		0.5	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Magnesium	Dissolved	0.5			0.0952		0.5	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Manganese	Dissolved	0.00508		J	0.0019		0.01	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Manganese	Dissolved	0.00529		J	0.0019		0.01	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Molybdenum	Dissolved	0.02		U	0.00568		0.02	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Molybdenum	Dissolved	0.02		U	0.00568		0.02	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Nickel	Dissolved	0.00096		J	0.0009		0.01	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Nickel	Dissolved	0.00092		J	0.0009		0.01	mg/L
CR Fractionation Water	Water	S2210450	10/13/2022	Radium-226 (Dissolved)	Dissolved	21.4	0.5		0.20	0.200	0.20	pCi/L
CR-H-30-WT	Water	S2209316	9/19/2022	Radium-226 (Dissolved)	Dissolved	38	0.7		0.20	0.200	0.20	pCi/L
CR-H-4-WT	Water	S2209316	9/15/2022	Radium-226 (Dissolved)	Dissolved	56.6	0.9		0.20	0.200	0.20	pCi/L
CR-H-8-WT	Water	S2209316	9/17/2022	Radium-226 (Dissolved)	Dissolved	60.2	0.9		0.20	0.200	0.20	pCi/L
CR-L-30-WT	Water	S2209244	9/8/2022	Radium-226 (Dissolved)	Dissolved	3.6	0.2		0.20	0.200	0.30	pCi/L
CR-L-4-WT	Water	S2209244	9/7/2022	Radium-226 (Dissolved)	Dissolved	2.3	0.2		0.20	0.200	0.20	pCi/L
CR-L-8-WT	Water	S2209244	9/7/2022	Radium-226 (Dissolved)	Dissolved	2.8	0.2		0.20	0.200	0.20	pCi/L
CR-M-30-WT	Water	S2209316	9/19/2022	Radium-226 (Dissolved)	Dissolved	38	0.7		0.20	0.200	0.20	pCi/L
CR-M-4-WT	Water	S2209244	9/9/2022	Radium-226 (Dissolved)	Dissolved	36.8	0.9		0.20	0.900	1.00	pCi/L
CR-M-8-WT	Water	S2209244	9/12/2022	Radium-226 (Dissolved)	Dissolved	37.3	0.7		0.20	0.200	0.20	pCi/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Radium-226 (Dissolved)	Dissolved	1.5	0.1		0.2	0.3	0.2	pCi/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Radium-226 (Dissolved)	Dissolved	1.6	0.1		0.2	0.2	0.2	pCi/L

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS Fractionation Water	Water	S2210450	10/18/2022	Radium-226 (Dissolved)	Dissolved	6	0.3		0.20	0.200	0.20	pCi/L
CTS-H-30-WT	Water	S2210327	10/17/2022	Radium-226 (Dissolved)	Dissolved	4.3	0.3		0.20	0.200	0.20	pCi/L
CTS-H-4-WT	Water	S2210225	10/13/2022	Radium-226 (Dissolved)	Dissolved	3.9	0.2		0.20	0.200	0.20	pCi/L
CTS-H-8-WT	Water	S2210327	10/13/2022	Radium-226 (Dissolved)	Dissolved	4.4	0.3		0.20	0.200	0.20	pCi/L
CTS-L-30-WT	Water	S2210167	10/6/2022	Radium-226 (Dissolved)	Dissolved	2	0.2		0.20	0.200	0.20	pCi/L
CTS-L-4-WT	Water	S2210167	10/5/2022	Radium-226 (Dissolved)	Dissolved	5.4	0.3		0.20	0.200	0.20	pCi/L
CTS-L-8-WT	Water	S2210167	10/5/2022	Radium-226 (Dissolved)	Dissolved	9.4	0.4		0.20	0.200	0.20	pCi/L
CTS-M-30-WT	Water	S2210225	10/13/2022	Radium-226 (Dissolved)	Dissolved	3.4	0.2		0.20	0.200	0.20	pCi/L
CTS-M-4-WT	Water	S2210225	10/11/2022	Radium-226 (Dissolved)	Dissolved	3.6	0.2		0.20	0.200	0.20	pCi/L
CTS-M-8-WT	Water	S2210225	10/12/2022	Radium-226 (Dissolved)	Dissolved	4.4	0.2		0.20	0.200	0.20	pCi/L
QV Fractionation Water	Water	S2210450	10/11/2022	Radium-226 (Dissolved)	Dissolved	19	0.5		0.20	0.200	0.20	pCi/L
QV-H-30-WT	Water	S2210090	10/3/2022	Radium-226 (Dissolved)	Dissolved	21.4	0.7		0.20	0.200	0.20	pCi/L
QV-H-4-WT	Water	S2210090	10/2/2022	Radium-226 (Dissolved)	Dissolved	23.1	0.5		0.20	0.200	0.20	pCi/L
QV-H-8-WT	Water	S2210090	10/2/2022	Radium-226 (Dissolved)	Dissolved	18	0.5		0.20	0.200	0.20	pCi/L
QV-L-30-WT	Water	S2209316	9/21/2022	Radium-226 (Dissolved)	Dissolved	8.5	0.3		0.20	0.200	0.20	pCi/L
QV-L-4-WT	Water	S2209316	9/20/2022	Radium-226 (Dissolved)	Dissolved	11.1	0.4		0.20	0.200	0.30	pCi/L
QV-L-8-WT	Water	S2209316	9/20/2022	Radium-226 (Dissolved)	Dissolved	8.7	0.3		0.20	0.200	0.30	pCi/L
QV-M-30-WT	Water	S2210090	10/1/2022	Radium-226 (Dissolved)	Dissolved	12.3	0.4		0.20	0.200	0.20	pCi/L
QV-M-4-WT	Water	S2210090	9/30/2022	Radium-226 (Dissolved)	Dissolved	11.3	0.4		0.20	0.200	0.20	pCi/L
QV-M-8-WT	Water	S2210090	9/29/2022	Radium-226 (Dissolved)	Dissolved	10.3	0.4		0.20	0.200	0.20	pCi/L
SW-WT-01	Water	S2210140	10/5/2022	Radium-226 (Dissolved)	Dissolved	1.9	0.2		0.20	0.300	0.20	pCi/L
SW-WT-02	Water	S2210140	10/5/2022	Radium-226 (Dissolved)	Dissolved	0.8	0.1		0.20	0.300	0.20	pCi/L
CR Fractionation Water	Water	S2210450	10/13/2022	Radium-226 (Suspended)	Total	2.5	0.2		0.20	0.200	0.20	pCi/L
CR-H-30-WT	Water	S2209316	9/19/2022	Radium-226 (Suspended)	Total	164	1.4		0.20	0.200	0.20	pCi/L
CR-H-4-WT	Water	S2209316	9/15/2022	Radium-226 (Suspended)	Total	128	1.2		0.20	0.200	0.20	pCi/L
CR-H-8-WT	Water	S2209316	9/17/2022	Radium-226 (Suspended)	Total	190	1.5		0.20	0.200	0.20	pCi/L
CR-L-30-WT	Water	S2209244	9/8/2022	Radium-226 (Suspended)	Total	190	1.5		0.20	0.200	0.20	pCi/L
CR-L-4-WT	Water	S2209244	9/7/2022	Radium-226 (Suspended)	Total	27.3	0.6		0.20	0.200	0.20	pCi/L
CR-L-8-WT	Water	S2209244	9/7/2022	Radium-226 (Suspended)	Total	175	1.4		0.20	0.200	0.20	pCi/L
CR-M-30-WT	Water	S2209316	9/19/2022	Radium-226 (Suspended)	Total	164	1.4		0.20	0.200	0.20	pCi/L
CR-M-4-WT	Water	S2209244	9/9/2022	Radium-226 (Suspended)	Total	376	2.1		0.20	0.200	0.20	pCi/L
CR-M-8-WT	Water	S2209244	9/12/2022	Radium-226 (Suspended)	Total	365	2.1		0.20	0.200	0.20	pCi/L
CTS Fractionation Water	Water	S2210450	10/18/2022	Radium-226 (Suspended)	Total	2.2	0.2		0.20	0.200	0.20	pCi/L
CTS-H-30-WT	Water	S2210327	10/17/2022	Radium-226 (Suspended)	Total	2.7	0.2		0.20	0.200	0.20	pCi/L
CTS-H-4-WT	Water	S2210225	10/13/2022	Radium-226 (Suspended)	Total	6.4	0.3		0.20	0.200	0.20	pCi/L
CTS-H-8-WT	Water	S2210327	10/13/2022	Radium-226 (Suspended)	Total	4.1	0.3		0.20	0.300	0.20	pCi/L
CTS-L-30-WT	Water	S2210167	10/6/2022	Radium-226 (Suspended)	Total	1.8	0.1		0.20	0.200	0.20	pCi/L
CTS-L-4-WT	Water	S2210167	10/5/2022	Radium-226 (Suspended)	Total	1.5	0.1		0.20	0.200	0.20	pCi/L
CTS-L-8-WT	Water	S2210167	10/5/2022	Radium-226 (Suspended)	Total	3.7	0.2		0.20	0.200	0.20	pCi/L
CTS-M-30-WT	Water	S2210225	10/13/2022	Radium-226 (Suspended)	Total	3.1	0.2		0.20	0.200	0.20	pCi/L
CTS-M-4-WT	Water	S2210225	10/11/2022	Radium-226 (Suspended)	Total	1.9	0.2		0.20	0.200	0.20	pCi/L
CTS-M-8-WT	Water	S2210225	10/12/2022	Radium-226 (Suspended)	Total	2.8	0.2		0.20	0.200	0.20	pCi/L

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
QV Fractionation Water	Water	S2210450	10/11/2022	Radium-226 (Suspended)	Total	1.2	0.1		0.20	0.200	0.20	pCi/L
QV-H-30-WT	Water	S2210090	10/3/2022	Radium-226 (Suspended)	Total	123	1.3		0.20	0.200	0.20	pCi/L
QV-H-4-WT	Water	S2210090	10/2/2022	Radium-226 (Suspended)	Total	41.6	0.7		0.20	0.200	0.20	pCi/L
QV-H-8-WT	Water	S2210090	10/2/2022	Radium-226 (Suspended)	Total	53.1	0.8		0.20	0.200	0.20	pCi/L
QV-L-30-WT	Water	S2209316	9/21/2022	Radium-226 (Suspended)	Total	9.9	0.3		0.20	0.200	0.20	pCi/L
QV-L-4-WT	Water	S2209316	9/20/2022	Radium-226 (Suspended)	Total	13.5	0.4		0.20	0.200	0.20	pCi/L
QV-L-8-WT	Water	S2209316	9/20/2022	Radium-226 (Suspended)	Total	8.7	0.3		0.20	0.200	0.20	pCi/L
QV-M-30-WT	Water	S2210090	10/1/2022	Radium-226 (Suspended)	Total	92.9	1.1		0.20	0.200	0.20	pCi/L
QV-M-4-WT	Water	S2210090	9/30/2022	Radium-226 (Suspended)	Total	73.9	1		0.20	0.200	0.20	pCi/L
QV-M-8-WT	Water	S2210090	9/29/2022	Radium-226 (Suspended)	Total	70.1	1		0.20	0.200	0.20	pCi/L
SW-WT-01	Water	S2210140	10/5/2022	Radium-226 (Suspended)	Total	0.1	0.05	U	0.20	0.400	0.20	pCi/L
SW-WT-02	Water	S2210140	10/5/2022	Radium-226 (Suspended)	Total	0.13	0.05	U	0.20	0.300	0.20	pCi/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Radium-228 (Dissolved)	Total	0.4	1.9	U	0.6	2.3	1	pCi/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Radium-228 (Dissolved)	Total	-1.3	2	U	0.6	2.2	1	pCi/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Selenium	Dissolved	0.005		U	0.000165		0.005	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Selenium	Dissolved	0.0002		J	0.000165		0.005	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Silver	Dissolved	0.003		U	0.0000761		0.003	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Silver	Dissolved	0.003		U	0.0000761		0.003	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Sodium	Dissolved	339			0.953		1	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Sodium	Dissolved	338			0.953		1	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Thallium	Dissolved	0.001		U	0.000253		0.001	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Thallium	Dissolved	0.001		U	0.000253		0.001	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Thorium	Dissolved	0.1		U	0.0322		0.1	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Thorium	Dissolved	0.1		U	0.0322		0.1	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Total Dissolved Solids	Total	900			10		10	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Total Dissolved Solids	Total	900			10		10	mg/L
CR Fractionation Water	Water	S2210450	10/13/2022	Total Radium-226	Total	23.9	0.2		0.20	0.200	0.20	pCi/L
CR-H-30-WT	Water	S2209316	9/19/2022	Total Radium-226	Total	202	0.7		0.20	0.200	0.20	pCi/L
CR-H-4-WT	Water	S2209316	9/15/2022	Total Radium-226	Total	184.6	0.9		0.20	0.200	0.20	pCi/L
CR-H-8-WT	Water	S2209316	9/17/2022	Total Radium-226	Total	250.2	0.9		0.20	0.200	0.20	pCi/L
CR-L-30-WT	Water	S2209244	9/8/2022	Total Radium-226	Total	193.6	1.5		0.20	0.200	0.20	pCi/L
CR-L-4-WT	Water	S2209244	9/7/2022	Total Radium-226	Total	29.6	0.6		0.20	0.200	0.20	pCi/L
CR-L-8-WT	Water	S2209244	9/7/2022	Total Radium-226	Total	177.8	1.4		0.20	0.200	0.20	pCi/L
CR-M-30-WT	Water	S2209316	9/19/2022	Total Radium-226	Total	202	0.7		0.20	0.200	0.20	pCi/L
CR-M-4-WT	Water	S2209244	9/9/2022	Total Radium-226	Total	412.8	2.1		0.20	0.200	0.20	pCi/L
CR-M-8-WT	Water	S2209244	9/12/2022	Total Radium-226	Total	402.3	2.1		0.20	0.200	0.20	pCi/L
CTS Fractionation Water	Water	S2210450	10/18/2022	Total Radium-226	Total	8.2	0.2		0.20	0.200	0.20	pCi/L
CTS-H-30-WT	Water	S2210327	10/17/2022	Total Radium-226	Total	7	0.2		0.20	0.200	0.20	pCi/L
CTS-H-4-WT	Water	S2210225	10/13/2022	Total Radium-226	Total	10.3	0.3		0.20	0.200	0.20	pCi/L
CTS-H-8-WT	Water	S2210327	10/13/2022	Total Radium-226	Total	8.5	0.3		0.20	0.300	0.20	pCi/L
CTS-L-30-WT	Water	S2210167	10/6/2022	Total Radium-226	Total	3.8	0.2		0.20	0.200	0.20	pCi/L
CTS-L-4-WT	Water	S2210167	10/5/2022	Total Radium-226	Total	6.9	0.3		0.20	0.200	0.20	pCi/L

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS-L-8-WT	Water	S2210167	10/5/2022	Total Radium-226	Total	13.1	0.4		0.20	0.200	0.20	pCi/L
CTS-M-30-WT	Water	S2210225	10/13/2022	Total Radium-226	Total	6.5	0.2		0.20	0.200	0.20	pCi/L
CTS-M-4-WT	Water	S2210225	10/11/2022	Total Radium-226	Total	5.5	0.2		0.20	0.200	0.20	pCi/L
CTS-M-8-WT	Water	S2210225	10/12/2022	Total Radium-226	Total	7.2	0.2		0.20	0.200	0.20	pCi/L
QV Fractionation Water	Water	S2210450	10/11/2022	Total Radium-226	Total	20.2	0.1		0.20	0.200	0.20	pCi/L
QV-H-30-WT	Water	S2210090	10/3/2022	Total Radium-226	Total	144.4	1.3		0.20	0.200	0.20	pCi/L
QV-H-4-WT	Water	S2210090	10/2/2022	Total Radium-226	Total	64.7	0.7		0.20	0.200	0.20	pCi/L
QV-H-8-WT	Water	S2210090	10/2/2022	Total Radium-226	Total	71.1	0.8		0.20	0.200	0.20	pCi/L
QV-L-30-WT	Water	S2209316	9/21/2022	Total Radium-226	Total	18.4	0.3		0.20	0.200	0.20	pCi/L
QV-L-4-WT	Water	S2209316	9/20/2022	Total Radium-226	Total	24.6	0.4		0.20	0.200	0.30	pCi/L
QV-L-8-WT	Water	S2209316	9/20/2022	Total Radium-226	Total	17.4	0.3		0.20	0.200	0.30	pCi/L
QV-M-30-WT	Water	S2210090	10/1/2022	Total Radium-226	Total	105.2	1.1		0.20	0.200	0.20	pCi/L
QV-M-4-WT	Water	S2210090	9/30/2022	Total Radium-226	Total	85.2	1		0.20	0.200	0.20	pCi/L
QV-M-8-WT	Water	S2210090	9/29/2022	Total Radium-226	Total	80.4	1		0.20	0.200	0.20	pCi/L
SW-WT-01	Water	S2210140	10/5/2022	Total Radium-226	Total	1.9			0.20		0.20	pCi/L
SW-WT-02	Water	S2210140	10/5/2022	Total Radium-226	Total	0.8			0.20		0.20	pCi/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Total Suspended Solids	Total	5		U	1		5	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Total Suspended Solids	Total	5		U	1		5	mg/L
CR Fractionation Water	Water	S2210450	10/13/2022	Uranium	Total	0.456			0.00		0.00	mg/L
CR-H-30-WT	Water	S2209316	9/19/2022	Uranium	Dissolved	4.31			0.00		0.00	mg/L
CR-H-30-WT	Water	S2209316	9/19/2022	Uranium	Total	4.81			0.00		0.00	mg/L
CR-H-4-WT	Water	S2209316	9/15/2022	Uranium	Total	4.65			0.00		0.00	mg/L
CR-H-8-WT	Water	S2209316	9/17/2022	Uranium	Total	4.85			0.00		0.00	mg/L
CR-L-30-WT	Water	S2209244	9/8/2022	Uranium	Dissolved	0.181			0.00		0.00	mg/L
CR-L-30-WT	Water	S2209244	9/8/2022	Uranium	Total	0.459			0.00		0.00	mg/L
CR-L-4-WT	Water	S2209244	9/7/2022	Uranium	Total	0.205			0.00		0.00	mg/L
CR-L-8-WT	Water	S2209244	9/7/2022	Uranium	Total	0.305			0.00		0.00	mg/L
CR-M-0-SL-0.45 Filtrate Post-Rec	Water	S2209316	9/19/2022	Uranium	Dissolved	0.111			0.00		0.00	mg/L
CR-M-0-SL-0.45 Filtrate Pre-Rec	Water	S2209316	9/16/2022	Uranium	Dissolved	0.103			0.00		0.00	mg/L
CR-M-30-WT	Water	S2209316	9/19/2022	Uranium	Dissolved	4.31			0.00		0.00	mg/L
CR-M-30-WT	Water	S2209316	9/19/2022	Uranium	Total	4.81			0.00		0.00	mg/L
CR-M-4-WT	Water	S2209244	9/9/2022	Uranium	Dissolved	1.04			0.00		0.00	mg/L
CR-M-4-WT	Water	S2209244	9/9/2022	Uranium	Total	1.94			0.00		0.00	mg/L
CR-M-8-WT	Water	S2209244	9/12/2022	Uranium	Dissolved	1.14			0.00		0.00	mg/L
CR-M-8-WT	Water	S2209244	9/12/2022	Uranium	Total	2.22			0.00		0.00	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Uranium	Dissolved	0.003			0.0000352		0.001	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Uranium	Dissolved	0.003			0.0000352		0.001	mg/L
CTS Fractionation Water	Water	S2210450	10/18/2022	Uranium	Total	0.039			0.00		0.00	mg/L
CTS-H-30-WT	Water	S2210327	10/17/2022	Uranium	Dissolved	0.539			0.00		0.00	mg/L
CTS-H-30-WT	Water	S2210327	10/17/2022	Uranium	Total	0.65			0.00		0.00	mg/L
CTS-H-4-WT	Water	S2210225	10/13/2022	Uranium	Total	0.619			0.00		0.00	mg/L
CTS-H-8-WT	Water	S2210327	10/13/2022	Uranium	Dissolved	0.497			0.00		0.00	mg/L

Table E-2. Pace Analytical Results for Chemicals of Concern Used to Evaluate Primary Project Objectives

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS-H-8-WT	Water	S2210327	10/13/2022	Uranium	Total	0.525			0.00		0.00	mg/L
CTS-L-30-WT	Water	S2210167	10/6/2022	Uranium	Dissolved	0.001		U	0.00		0.00	mg/L
CTS-L-30-WT	Water	S2210167	10/6/2022	Uranium	Total	0.063			0.00		0.00	mg/L
CTS-L-4-WT	Water	S2210167	10/5/2022	Uranium	Total	0.078			0.00		0.00	mg/L
CTS-L-8-WT	Water	S2210167	10/5/2022	Uranium	Total	0.087			0.00		0.00	mg/L
CTS-M-30-WT	Water	S2210225	10/13/2022	Uranium	Dissolved	0.445			0.00		0.00	mg/L
CTS-M-30-WT	Water	S2210225	10/13/2022	Uranium	Total	0.469			0.00		0.00	mg/L
CTS-M-4-WT	Water	S2210225	10/11/2022	Uranium	Total	0.342			0.00		0.00	mg/L
CTS-M-8-WT	Water	S2210225	10/12/2022	Uranium	Total	0.398			0.00		0.00	mg/L
QV Fractionation Water	Water	S2210450	10/11/2022	Uranium	Total	0.726			0.00		0.00	mg/L
QV-H-30-WT	Water	S2210090	10/3/2022	Uranium	Dissolved	3.58			0.00		0.00	mg/L
QV-H-30-WT	Water	S2210090	10/3/2022	Uranium	Total	3.7			0.00		0.00	mg/L
QV-H-4-WT	Water	S2210090	10/2/2022	Uranium	Total	5.27			0.00		0.00	mg/L
QV-H-8-WT	Water	S2210090	10/2/2022	Uranium	Total	5.17			0.00		0.00	mg/L
QV-L-30-WT	Water	S2209316	9/21/2022	Uranium	Dissolved	3.45			0.00		0.00	mg/L
QV-L-30-WT	Water	S2209316	9/21/2022	Uranium	Total	3.38			0.00		0.00	mg/L
QV-L-4-WT	Water	S2209316	9/20/2022	Uranium	Total	3.61			0.00		0.00	mg/L
QV-L-8-WT	Water	S2209316	9/20/2022	Uranium	Total	3.71			0.00		0.00	mg/L
QV-M-30-WT	Water	S2210090	10/1/2022	Uranium	Dissolved	1.95			0.00		0.00	mg/L
QV-M-30-WT	Water	S2210090	10/1/2022	Uranium	Total	2.15			0.00		0.00	mg/L
QV-M-4-WT	Water	S2210090	9/30/2022	Uranium	Total	3.87			0.00		0.00	mg/L
QV-M-8-WT	Water	S2210090	9/29/2022	Uranium	Total	3.65			0.00		0.00	mg/L
SW-WT-01	Water	S2210140	10/5/2022	Uranium	Total	0.008			0.00		0.00	mg/L
SW-WT-02	Water	S2210140	10/5/2022	Uranium	Total	0.007			0.00		0.00	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Vanadium	Dissolved	0.0162		J	0.000421		0.02	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Vanadium	Dissolved	0.0167		J	0.000421		0.02	mg/L
CR-MU-WT-01	Water	S2208484	8/24/2022	Zinc	Dissolved	0.0192		J	0.0113		0.05	mg/L
CR-MU-WT-02	Water	S2208484	8/24/2022	Zinc	Dissolved	0.0224		J	0.0113		0.05	mg/L

Notes:

The primary chemicals of concern are uranium and radium-226. Not all metals analytes are presented on this table.

Laboratory quality assurance and quality control samples are not presented. These data are available in laboratory data reports.

µg/L Microgram per liter

J Estimated result

mg/kg Milligram per kilogram

mg/L Milligram per liter

pCi/g Picocurie per gram

pCi/L Picocurie per liter

U Nondetected result

Table E-3. Pace Analytical Results for Chemicals of Concern In Synthetic Precipitation Leaching Procedure Extract

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-H-0-SL-01	Soil	S2210147	8/23/2022	Dissolved Radium-226	Dissolved	83.6	1		0.2	0.2	0.3	pCi/L
CR-H-30-SY Combined +25/+270	Soil	S2210162	9/19/2022	Dissolved Radium-226	Dissolved	5.6	0.3		0.2	0.2	0.2	pCi/L
CR-H-4-SY Combined +25/+270	Soil	S2210162	9/15/2022	Dissolved Radium-226	Dissolved	12.7	0.4		0.2	0.2	0.2	pCi/L
CR-H-8-SY Combined +25/+270-01	Soil	S2210162	9/17/2022	Dissolved Radium-226	Dissolved	9.7	0.4		0.2	0.2	0.2	pCi/L
CR-H-8-SY Combined +25/+270-02	Soil	S2210162	9/17/2022	Dissolved Radium-226	Dissolved	11.6	0.4		0.2	0.2	0.2	pCi/L
CR-L-0-SL-01	Soil	S2210147	8/23/2022	Dissolved Radium-226	Dissolved	3	0.2		0.2	0.2	0.3	pCi/L
CR-L-30-SY Combined +25/+270	Soil	S2210147	9/8/2022	Dissolved Radium-226	Dissolved	0.8	0.1		0.2	0.2	0.3	pCi/L
CR-L-4-SY Combined +25/+270	Soil	S2210147	9/6/2022	Dissolved Radium-226	Dissolved	1.5	0.1		0.2	0.2	0.3	pCi/L
CR-L-8-SY Combined +25/+270	Soil	S2210147	9/7/2022	Dissolved Radium-226	Dissolved	1.4	0.1		0.2	0.2	0.3	pCi/L
CR-M-0-SL-01	Soil	S2210147	8/23/2022	Dissolved Radium-226	Dissolved	25.4	0.6		0.2	0.2	0.3	pCi/L
CR-M-30-SY Combined +25/+270	Soil	S2210162	9/13/2022	Dissolved Radium-226	Dissolved	3.7	0.2		0.2	0.2	0.2	pCi/L
CR-M-4-SY Combined +25/+270	Soil	S2210147	9/9/2022	Dissolved Radium-226	Dissolved	5.9	0.3		0.2	0.2	0.3	pCi/L
CR-M-8-SY Combined +25/+270	Soil	S2210147	9/12/2022	Dissolved Radium-226	Dissolved	5.3	0.3		0.2	0.2	0.3	pCi/L
CTS-H-0-SL-01	Soil	S2210147	8/30/2022	Dissolved Radium-226	Dissolved	2.3	0.2		0.2	0.2	0.3	pCi/L
CTS-H-30-SY Combined +25/270	Soil	S2210474	10/17/2022	Dissolved Radium-226	Dissolved	0.6	0.1		0.2	0.2	0.2	pCi/L
CTS-H-4-SY Combined +25/270	Soil	S2210474	10/13/2022	Dissolved Radium-226	Dissolved	2.1	0.2		0.2	0.2	0.2	pCi/L
CTS-H-8-SY Combined +25/270	Soil	S2210474	10/13/2022	Dissolved Radium-226	Dissolved	1.2	0.1		0.2	0.2	0.2	pCi/L
CTS-L-0-SL-01	Soil	S2210147	8/30/2022	Dissolved Radium-226	Dissolved	4.3	0.2		0.2	0.2	0.3	pCi/L
CTS-L-30-SY Combined +25/270	Soil	S2210474	10/6/2022	Dissolved Radium-226	Dissolved	0.6	0.1		0.2	0.2	0.2	pCi/L
CTS-L-4-SY Combined +25/270	Soil	S2210474	10/5/2022	Dissolved Radium-226	Dissolved	0.7	0.1		0.2	0.2	0.2	pCi/L
CTS-L-8-SY Combined +25/270	Soil	S2210474	10/6/2022	Dissolved Radium-226	Dissolved	0.6	0.1		0.2	0.2	0.2	pCi/L
CTS-M-0-SL-01	Soil	S2210147	8/30/2022	Dissolved Radium-226	Dissolved	2.5	0.2		0.2	0.2	0.3	pCi/L
CTS-M-30-SY Combined +25/270	Soil	S2210474	10/13/2022	Dissolved Radium-226	Dissolved	0.6	0.1		0.2	0.2	0.2	pCi/L
CTS-M-4-SY Combined +25/270	Soil	S2210474	10/11/2022	Dissolved Radium-226	Dissolved	1.3	0.1		0.2	0.2	0.2	pCi/L
CTS-M-8-SY Combined +25/270	Soil	S2210474	10/11/2022	Dissolved Radium-226	Dissolved	1.3	0.1		0.2	0.2	0.2	pCi/L
QV-H-0-SL-01	Soil	S2210147	8/27/2022	Dissolved Radium-226	Dissolved	42.9	0.7		0.2	0.2	0.3	pCi/L
QV-H-30-SY Combined +25/270-01	Soil	S2210474	10/3/2022	Dissolved Radium-226	Dissolved	4.2	0.2		0.2	0.2	0.2	pCi/L
QV-H-30-SY Combined +25/270-02	Soil	S2210474	10/3/2022	Dissolved Radium-226	Dissolved	4.4	0.2		0.2	0.2	0.2	pCi/L
QV-H-4-SY Combined +25/+270	Soil	S2210162	10/2/2022	Dissolved Radium-226	Dissolved	7.8	0.3		0.2	0.2	0.2	pCi/L
QV-H-8-SY Combined +25/270	Soil	S2210474	10/3/2022	Dissolved Radium-226	Dissolved	5.8	0.3		0.2	0.2	0.2	pCi/L
QV-L-0-SL-01	Soil	S2210147	8/26/2022	Dissolved Radium-226	Dissolved	10.6	0.4		0.2	0.2	0.3	pCi/L
QV-L-30-SY Combined +25/+270	Soil	S2210162	9/29/2022	Dissolved Radium-226	Dissolved	1.4	0.1		0.2	0.2	0.2	pCi/L
QV-L-4-SY Combined +25/+270	Soil	S2210162	9/20/2022	Dissolved Radium-226	Dissolved	2.8	0.2		0.2	0.2	0.2	pCi/L
QV-L-8-SY Combined +25/+270	Soil	S2210162	9/28/2022	Dissolved Radium-226	Dissolved	3.3	0.2		0.2	0.2	0.2	pCi/L
QV-M-0-SL-01	Soil	S2210147	8/27/2022	Dissolved Radium-226	Dissolved	30.9	0.6		0.2	0.2	0.3	pCi/L
QV-M-30-SY Combined +25/+270	Soil	S2210162	10/1/2022	Dissolved Radium-226	Dissolved	2.4	0.2		0.2	0.2	0.2	pCi/L
QV-M-4-SY Combined +25/+270	Soil	S2210162	9/30/2022	Dissolved Radium-226	Dissolved	5.9	0.3		0.2	0.2	0.2	pCi/L
QV-M-8-SY Combined +25/+270	Soil	S2210162	9/30/2022	Dissolved Radium-226	Dissolved	4.7	0.2		0.2	0.2	0.2	pCi/L
CR-H-0-SL-01	Soil	S2210147	8/23/2022	Uranium	Total	0.22			0.0241		0.05	mg/L
CR-H-30-SY Combined +25/+270	Soil	S2210162	9/19/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CR-H-4-SY Combined +25/+270	Soil	S2210162	9/15/2022	Uranium	Total	0.06			0.0241		0.05	mg/L

Table E-3. Pace Analytical Results for Chemicals of Concern In Synthetic Precipitation Leaching Procedure Extract

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limt	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-H-8-SY Combined +25/+270-01	Soil	S2210162	9/17/2022	Uranium	Total	0.03		J	0.0241		0.05	mg/L
CR-H-8-SY Combined +25/+270-02	Soil	S2210162	9/17/2022	Uranium	Total	0.033		J	0.0241		0.05	mg/L
CR-L-0-SL-01	Soil	S2210147	8/23/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CR-L-30-SY Combined +25/+270	Soil	S2210147	9/8/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CR-L-4-SY Combined +25/+270	Soil	S2210147	9/6/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CR-L-8-SY Combined +25/+270	Soil	S2210147	9/7/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CR-M-0-SL-01	Soil	S2210147	8/23/2022	Uranium	Total	0.23			0.0241		0.05	mg/L
CR-M-30-SY Combined +25/+270	Soil	S2210162	9/13/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CR-M-4-SY Combined +25/+270	Soil	S2210147	9/9/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CR-M-8-SY Combined +25/+270	Soil	S2210147	9/12/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CTS-H-0-SL-01	Soil	S2210147	8/30/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CTS-H-30-SY Combined +25/270	Soil	S2210474	10/17/2022	Uranium	Total	50			24.1		50	µg/L
CTS-H-4-SY Combined +25/270	Soil	S2210474	10/13/2022	Uranium	Total	50			24.1		50	µg/L
CTS-H-8-SY Combined +25/270	Soil	S2210474	10/13/2022	Uranium	Total	50			24.1		50	µg/L
CTS-L-0-SL-01	Soil	S2210147	8/30/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CTS-L-30-SY Combined +25/270	Soil	S2210474	10/6/2022	Uranium	Total	50			24.1		50	µg/L
CTS-L-4-SY Combined +25/270	Soil	S2210474	10/5/2022	Uranium	Total	50			24.1		50	µg/L
CTS-L-8-SY Combined +25/270	Soil	S2210474	10/6/2022	Uranium	Total	50			24.1		50	µg/L
CTS-M-0-SL-01	Soil	S2210147	8/30/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
CTS-M-30-SY Combined +25/270	Soil	S2210474	10/13/2022	Uranium	Total	50			24.1		50	µg/L
CTS-M-4-SY Combined +25/270	Soil	S2210474	10/11/2022	Uranium	Total	50			24.1		50	µg/L
CTS-M-8-SY Combined +25/270	Soil	S2210474	10/11/2022	Uranium	Total	50			24.1		50	µg/L
QV-H-0-SL-01	Soil	S2210147	8/27/2022	Uranium	Total	0.38			0.0241		0.05	mg/L
QV-H-30-SY Combined +25/270-01	Soil	S2210474	10/3/2022	Uranium	Total	50			24.1		50	µg/L
QV-H-30-SY Combined +25/270-02	Soil	S2210474	10/3/2022	Uranium	Total	50			24.1		50	µg/L
QV-H-4-SY Combined +25/+270	Soil	S2210162	10/2/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
QV-H-8-SY Combined +25/270	Soil	S2210474	10/3/2022	Uranium	Total	50			24.1		50	µg/L
QV-L-0-SL-01	Soil	S2210147	8/26/2022	Uranium	Total	0.26			0.0241		0.05	mg/L
QV-L-30-SY Combined +25/+270	Soil	S2210162	9/29/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
QV-L-4-SY Combined +25/+270	Soil	S2210162	9/20/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
QV-L-8-SY Combined +25/+270	Soil	S2210162	9/28/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
QV-M-0-SL-01	Soil	S2210147	8/27/2022	Uranium	Total	0.63			0.0241		0.05	mg/L
QV-M-30-SY Combined +25/+270	Soil	S2210162	10/1/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L
QV-M-4-SY Combined +25/+270	Soil	S2210162	9/30/2022	Uranium	Total	0.029		J	0.0241		0.05	mg/L
QV-M-8-SY Combined +25/+270	Soil	S2210162	9/30/2022	Uranium	Total	0.05		U	0.0241		0.05	mg/L

Notes:

The primary chemicals of concern are uranium and radium-226. Not all metals analytes are presented on this table.

Laboratory quality assurance and quality control samples are not presented. These data are available in laboratory data reports.

µg/L Microgram per liter

pCi/L Picocurie per liter

J Estimated result

U Nondetected result

mg/L Milligram per liter

Table E-4. Pace Analytical Results for Metals In Toxicity Characteristic Leaching Procedure Extract

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Arsenic	Total	0.2		H	0.0079		0.2	mg/L
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Arsenic	Total	0.2			0.0079		0.2	mg/L
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1.2			0.00024		0.5	mg/L
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1.2			0.00024		0.5	mg/L
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1.2			0.00024		0.5	mg/L
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1.1			0.00024		0.5	mg/L
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Barium	Total	2.3			0.00024		0.5	mg/L
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Barium	Total	2.3			0.00024		0.5	mg/L
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Barium	Total	2.3			0.00024		0.5	mg/L

Table E-4. Pace Analytical Results for Metals In Toxicity Characteristic Leaching Procedure Extract

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Barium	Total	2.3			0.00024		0.5	mg/L
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Barium	Total	2.6			0.00024		0.5	mg/L
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Barium	Total	2.1		H	0.00024		0.5	mg/L
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Barium	Total	2.5			0.00024		0.5	mg/L
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Barium	Total	2.5			0.00024		0.5	mg/L
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Barium	Total	2.1			0.00024		0.5	mg/L
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Barium	Total	2.1			0.00024		0.5	mg/L
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Barium	Total	2.1			0.00024		0.5	mg/L
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1.3			0.00024		0.5	mg/L
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1.3			0.00024		0.5	mg/L
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1.3			0.00024		0.5	mg/L
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1.1			0.00024		0.5	mg/L
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Barium	Total	1			0.00024		0.5	mg/L
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Cadmium	Total	0.05		H	0.000848		0.05	mg/L
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L

Table E-4. Pace Analytical Results for Metals In Toxicity Characteristic Leaching Procedure Extract

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Cadmium	Total	0.05			0.000848		0.05	mg/L
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.02			0.0011		0.01	mg/L
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.02			0.0011		0.01	mg/L
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.02			0.0011		0.01	mg/L
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Chromium	Total	0.01		H	0.0011		0.01	mg/L
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Chromium	Total	0.01			0.0011		0.01	mg/L
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L

Table E-4. Pace Analytical Results for Metals In Toxicity Characteristic Leaching Procedure Extract

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Lead	Total	0.2		H	0.00951		0.2	mg/L
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Lead	Total	0.2			0.00951		0.2	mg/L
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Mercury	Total	0.005		H	0.0000304		0.005	mg/L
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L

Table E-4. Pace Analytical Results for Metals In Toxicity Characteristic Leaching Procedure Extract

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limit	Minimum Detectable Concentration	Reporting Limit	Result Units
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Mercury	Total	0.005			0.0000304		0.005	mg/L
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Selenium	Total	0.2		H	0.0126		0.2	mg/L
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Selenium	Total	0.2			0.0126		0.2	mg/L
CR-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CR-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L

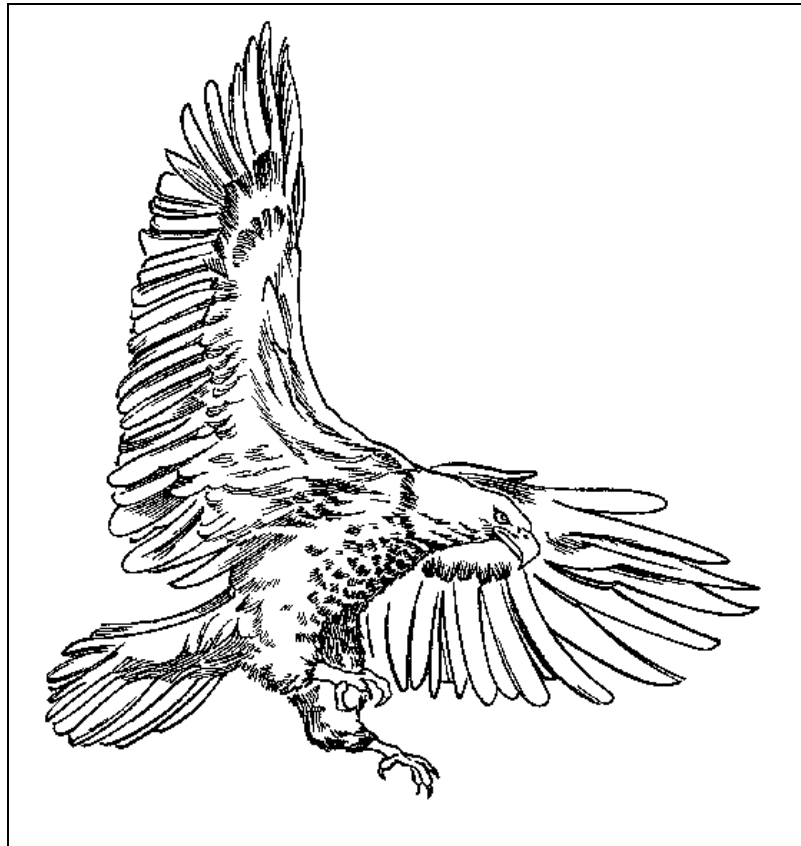
Table E-4. Pace Analytical Results for Metals In Toxicity Characteristic Leaching Procedure Extract

Sample Number	Matrix	Sample Delivery Group	Date Collected	Analyte	Total or Dissolved	Lab Result	Measurement Uncertainty	Qualifier	Method Detection Limt	Minimum Detectable Concentration	Reporting Limit	Result Units
CR-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CR-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CR-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CR-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CR-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CR-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CR-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-H-30-SY -270	Soil	S2210480	10/17/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-H-4-SY -270-01	Soil	S2210480	10/13/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-H-4-SY -270-02	Soil	S2210480	10/13/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-H-8-SY -270	Soil	S2210480	10/13/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-L-30-SY -270	Soil	S2210480	10/6/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-L-4-SY -270	Soil	S2210480	10/5/2022	Silver	Total	0.05		H	0.0142		0.05	mg/L
CTS-L-8-SY -270-01	Soil	S2210480	10/6/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-L-8-SY -270-02	Soil	S2210480	10/6/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-M-30-SY -270	Soil	S2210480	10/13/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-M-4-SY -270	Soil	S2210480	10/11/2022	Silver	Total	0.05			0.0142		0.05	mg/L
CTS-M-8-SY -270	Soil	S2210480	10/11/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-H-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-H-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-H-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-L-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-L-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-L-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-M-30-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-M-4-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L
QV-M-8-SY -270 Concetrate	Soil	S2210480	10/24/2022	Silver	Total	0.05			0.0142		0.05	mg/L

Note:
Laboratory quality assurance and quality control samples are not presented. These data are available in laboratory data reports.
mg/L Milligram per liter

AMICS ANALYSIS

DISAUSA



Eagle Engineering

February 5, 2023

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AMICS ANALYSIS

Prepared for: Andrew Halverson, Process Engineer, DISAUSA

Project: EPA Uranium Samples

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By

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February 5, 2023

EXECUTIVE SUMMARY

Twenty seven (27) samples were received for AMICS analysis. The scope of work was determine overall mineralogy for all samples. Secondly, a rare element search was conducted on samples which did not identify any uranium containing particles. After identification, backscatter images of uranium containing carnotite particles were placed into report along with mineral association and estimated size.

Modal mineralogy was performed on samples CTS-L-0-SL-01, CTS-M-0-SL-01, and CTS-H-0-SL-01. According to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Minor phases include Hornblende, calcite, and dolomite. Uranium containing carnotite was also identified.

Modal mineralogy was performed on samples CR-L-0-SL-01, CR-L-4-SY -25/+270, CR-L-8-SY -25/+270, and CR-L-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified.

Modal mineralogy was performed on samples CR-M-0-SL-01, CR-M-4-SY -25/+270, CR-M-8-SY -25/+270, and CR-M-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified.

Modal mineralogy was performed on samples CR-H-0-SL-01, CR-H-4-SY -25/+270, CR-H-8-SY -25/+270, and CR-H-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified.

Modal mineralogy was performed on samples QV-L-0-SL-01, QV-L-4-SY -25/+270, QV-L-8-SY -25/+270, and QV-L-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified.

Modal mineralogy was performed on samples QV-M-0-SL-01, QV-M-4-SY -25/+270, QV-M-8-SY -25/+270, and QV-M-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified.

Modal mineralogy was performed on samples QV-H-0-SL-01, QV-H-4-SY -25/+270, QV-H-8-SY -25/+270, and QV-H-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified.

For sample CTS-L-0-SL-01, one carnotite particle was observed with orthoclase association. This particle is leachable, but not floatable.

For CTS-M-SL-01 sample, three carnotite particles were identified. According to the data, one free carnotite particle was identified at approximately 20 microns in size while the other carnotite particles are encapsulated by orthoclase at approximately 5 microns in size. The free particle is both floatable and leachable. For the other two encapsulated carnotite particles, they are not leachable nor floatable.

For CTS-H-SL-01 sample, one carnotite particle was identified. According to the data, the carnotite particle is approximately 5 microns with orthoclase encapsulation. This particle is not leachable or floatable.

For CR-L-SL-01 sample, several carnotite particles were identified. According to the data, one free particle was identified at approximately 40 microns in size. This particle is both floatable and leachable. Other carnotite particles appear to be 5 microns in size with quartz and albite association. Since the particles are near the edge, they are leachable, however, not floatable.

For CR-L-4-SY -25/+270 sample, two carnotite particles were identified. According to the data, the carnotite particles appear to be approximately 5 microns in size with quartz and illite encapsulation. One particle is leachable, however, the other particle is not leachable.

For CR-L-8-SY -25/+270 sample, one carnotite particle was observed with albite association. According to the image, this particle is leachable but not floatable.

For CR-L-30-SY -25/+270 sample, two carnotite particles were identified. According to the data, the carnotite particles appear to be approximately 10 microns in size with quartz association. These particles are not floatable but leachable.

For CR-M-SL-01 sample, several carnotite particles were identified. According to the data, the particles are approximately 10 microns in size with albite encapsulation and quartz association. Because of the encapsulation, these particles are not floatable nor leachable, except in figure 22. This particle is leachable only.

For CR-M-4-SY -25/+270 sample, one carnotite particles were identified. According to the data, the particle is leachable but not floatable with albite association.

For CR-M-8-SY -25/+270 sample, one carnotite particle was identified. According to the data, the carnotite particle appear to be approximately 10 microns in size with quartz encapsulation. This particle is not floatable or leachable.

For CR-M-30-SY -25/+270 sample, one carnotite particle was identified. According to the data, the carnotite particle appear to be approximately 5 microns in size with quartz association. This particle is not floatable but is leachable.

For CR-H-SL-01 sample, several carnotite particles were identified. According to the data, the carnotite particles are approximately 5 to 20 microns in size with albite and orthoclase association. These particles are not floatable, however, figures two particles are leachable.

For CR-H-4-SY -25/+270 sample, three carnotite particles were identified. According to the data, the carnotite particle appear to be approximately 5 microns in size with orthoclase association. These particles are all leachable but not floatable.

For CR-H-8-SY -25/+270 sample, three carnotite particles were identified. According to the data, the carnotite particles appear to be approximately 5 microns in size with orthoclase, quartz, and albite encapsulation. Observation of the carnotite particles indicates two particles are leachable while one particle is not leachable. All observed particles for this sample is not floatable.

For CR-H-30-SY -25/+270 sample, two carnotite particles were identified. According to the data, the carnotite particles appear to be approximately 5 microns in size with orthoclase and calcite association. These particles are leachable but not floatable.

For QV-L-SL-01 sample, two carnotite particles were identified. According to the data, the carnotite particles are approximately 5 to 20 microns in size with albite and orthoclase association. Since these particles are encapsulated, they are not floatable nor leachable.

For QV-L-4-SY -25/+270 sample, one carnotite particle was identified. According to the data, the carnotite particle appear to be approximately 10 microns in size with quartz association. This particle is leachable but not floatable.

For QV-L-8-SY -25/+270 sample, one carnotite particle was identified. According to the data, the carnotite particle appear to be approximately 5 microns in size with albite encapsulation. This particle is not leachable or floatable.

For QV-L-30-SY -25/+270 sample, one carnotite particle was identified. According to the data, the carnotite particle appear to be approximately 20 microns in size with quartz encapsulation. This particle is not leachable or floatable.

For QV-M-SL-01 sample, several carnotite particles were identified. According to the data, the carnotite particles are approximately 5 to 20 microns in size with albite, quartz, and orthoclase association. Three of these particles are not floatable or leachable, however, one particle is leachable.

For QV-M-4-SY -25/+270 sample, one carnotite particle was identified. According to the data, the carnotite particle appear to be approximately 5 microns in size with quartz encapsulation. This particle is not leachable or floatable.

For QV-M-8-SY -25/+270 sample, two carnotite particles were identified. According to the data, the carnotite particle appear to be approximately 5 microns in size with quartz and orthoclase encapsulation. These particles are not leachable or floatable.

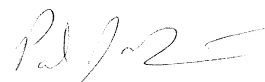
For QV-M-30-SY -25/+270 sample, one carnotite particle was identified. According to the data, the carnotite particle appear to be approximately 20 microns in size with quartz encapsulation. This particle is not leachable or floatable.

For QV-H-SL-01 sample, several carnotite particles were identified. According to the data, the carnotite particles are approximately 5 microns in size with albite and orthoclase association. All of the particles are not floatable, however, two of the four particles are leachable.

For QV-H-4-SY -25/+270 sample, several carnotite particles were identified. According to the data, the carnotite particles appear to be approximately 5 microns in size with albite, quartz and clinocllore encapsulation. One carnotite particle was identified at 40 microns with quartz association. Most particles are not leachable or floatable while one particle was leachable only.

For sample QV-H-8-SY -25/+270, one carnotite particles was identified. According to the image, this particle is associated with quartz. This particle is leachable but not floatable.

For QV-H-30-SY -25/+270 sample, one carnotite particle was identified. According to the data, the carnotite particles appear to be approximately 5 microns in size with orthoclase encapsulation. This particle is not floatable but is leachable.



Paul Miranda, Ph. D
February 5, 2023

Qualifying Statement

This confidential report was prepared for DisaUSA and is based on information available at the time of the report preparation. It is believed the information, estimates, conclusions and recommendations contained herein are reliable under the conditions and subject to the qualifications set forth herein. The information, estimates, conclusions and recommendations herein are based on our experience and data supplied by others, but the actual result of the work is dependent, in part, on factors over which we have no control. This report is intended to be used exclusively by DisaUSA. We disclaim any assumption of responsibility for any reliance on this report by any person other than DisaUSA, or for any purpose other than that for which it was prepared. We disclaim all liability to any other party for all costs, losses, damages, and liabilities that the other party might suffer or incur arising from or relating to the contents of this report, the provision of this report to the other party, or the reliance on this report by the other party.

Scope of Work

Twenty seven (27) samples were received for AMICS analysis. The scope of work was determine overall mineralogy for all samples. Secondly, a rare element search was conducted on samples which did not identify any uranium containing particles. After identification, backscatter images of uranium containing carnotite particles were placed into report along with mineral association and estimated size.

Experimental Work and Results

From received samples, approximately 2 grams were split out using small splitters to produce the sample. The sample was placed into an epoxy cup, labeled, and epoxy was placed onto the ore sample. Next, the sample was placed into a vacuum chamber and vacuumed for approximately 2 minutes in order to remove any residual bubbles entrained within the sample.

The samples were allowed to dry overnight for epoxy curing. Samples were then polished on an automated polisher and allowed to dry. Lastly, the samples were carbon coated for backscatter imaging and AMICS analysis.

During AMICS analysis, a library was produced using energy dispersive x-ray (EDX) of minerals of the sample. From the library, only one uranium containing mineral, carnotite, was identified.

Modal Mineralogy

Modal mineralogy was performed on samples CTS-L-0-SL-01, CTS-M-0-SL-01, and CTS-H-0-SL-01. According to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Minor phases include Hornblende, calcite, and dolomite. Uranium containing carnotite was also identified. Results are shown in table 1.

Table 1. Modal Mineralogy.

Mineral	Chemistry	CTS-L-0-SL-01	CTS-M-0-SL-01	CTS-H-0-SL-01
Albite	$\text{NaAlSi}_3\text{O}_8$	12.96	12.04	14.23
Alunite	$\text{KAl}_3(\text{SO}_4)_2(\text{OH})_6$	0.00	0.00	0.00
Apatite	$\text{Ca}_5(\text{PO}_4)_3(\text{OH})$	0.10	0.04	0.03
Barite	BaSO_4	0.02	0.05	0.00
Biotite	$\text{K}(\text{Mg,Fe})\text{AlSi}_3\text{O}_{10}(\text{OH})_2$	0.21	0.19	0.24
Calcite	CaCO_3	1.93	2.73	2.51
Carnotite	$\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2$	< 0.01	< 0.01	< 0.01
Chlorite	$(\text{Mg,Fe})_5\text{AlSi}_3\text{O}_{10}(\text{OH})_8$	0.24	0.17	0.19
Diopside	$\text{MgCaSi}_2\text{O}_6$	0.13	0.43	0.15
Dolomite	$\text{Ca,Mg}(\text{CO}_3)_2$	0.72	1.77	1.36
Hornblende	$\text{Ca}(\text{Mg,Fe,Al})\text{Si}_8\text{O}_{22}\text{OH}$	4.52	4.86	5.55
Illite	$\text{K}(\text{Mg,Fe,Al})_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	0.10	0.13	0.16
Oligoclase	$(\text{Na,Ca})\text{AlSi}_3\text{O}_8$	0.87	0.68	0.82
Orthoclase	KAlSi_3O_8	20.33	18.65	19.35
Quartz	SiO_2	57.82	58.20	55.40
Zircon	ZrSiO_6	0.05	0.06	0.01

Modal mineralogy was performed on samples CR-L-0-SL-01, CR-L-4-SY -25/+270, CR-L-8-SY -25/+270, and CR-L-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified. Results are shown in table 2.

Table 2. Modal Mineralogy.

Mineral	Chemistry	CR-L-0-SL-01	CR-L-4-SY -25/+270	CR-L-8-SY -25/+270	CR-L-30-SY -25/+270
Albite	NaAlSi ₃ O ₈	12.72	9.39	8.08	7.64
Alunite	KAl ₃ (SO ₄) ₂ (OH) ₆	0.00	0.00	0.00	0.00
Apatite	Ca ₅ (PO ₄) ₃ (OH)	0.09	0.04	0.03	0.04
Barite	BaSO ₄	0.10	0.00	0.01	0.00
Biotite	K(Mg,Fe)AlSi ₃ O ₁₀ (OH) ₂	0.52	0.18	0.15	0.09
Calcite	CaCO ₃	0.60	0.36	0.39	0.29
Carnotite	K ₂ (UO ₂) ₂ (VO ₄) ₂	0.01	< 0.01	< 0.01	< 0.01
Chlorite	(Mg,Fe) ₅ AlSi ₃ O ₁₀ (OH) ₈	0.28	0.18	0.19	0.12
Diopside	MgCaSi ₂ O ₆	0.01	0.01	0.00	0.00
Dolomite	Ca,Mg(CO ₃) ₂	0.51	0.48	0.38	0.37
Hornblende	Ca(Mg,Fe,Al)Si ₈ O ₂₂ OH	4.33	0.50	0.32	0.22
Illite	K(Mg,Fe,Al) ₂ Si ₄ O ₁₀ (OH) ₂	0.02	0.01	0.01	0.00
Oligoclase	(Na,Ca)AlSi ₃ O ₈	0.50	0.28	0.37	0.30
Orthoclase	KAlSi ₃ O ₈	20.60	17.16	14.63	14.47
Quartz	SiO ₂	59.53	71.32	75.45	76.46
Zircon	ZrSiO ₆	0.18	0.10	0.00	0.01

Modal mineralogy was performed on samples CR-M-0-SL-01, CR-M-4-SY -25/+270, CR-M-8-SY -25/+270, and CR-M-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified. Results are shown in table 3.

Table 3. Modal Mineralogy.

Mineral	Chemistry	CR-M-0-SL-01	CR-M-4-SY-25/+270	CR-M-8-SY-25/+270	CR-M-30-SY-25/+270
Albite	NaAlSi ₃ O ₈	13.85	12.58	12.52	16.63
Alunite	KAl ₃ (SO ₄) ₂ (OH) ₆	0.00	0.00	0.00	0.00
Apatite	Ca ₅ (PO ₄) ₃ (OH)	0.01	0.01	0.01	0.07
Barite	BaSO ₄	0.06	0.00	0.00	0.00
Biotite	K(Mg,Fe)AlSi ₃ O ₁₀ (OH) ₂	0.57	0.06	0.05	0.05
Calcite	CaCO ₃	1.13	0.56	0.37	0.43
Carnotite	K ₂ (UO ₂) ₂ (VO ₄) ₂	0.05	< 0.01	< 0.01	< 0.01
Chlorite	(Mg,Fe) ₅ AlSi ₃ O ₁₀ (OH) ₈	0.16	0.05	0.07	0.03
Diopside	MgCaSi ₂ O ₆	0.08	0.03	0.01	0.01
Dolomite	Ca,Mg(CO ₃) ₂	0.26	0.01	0.01	0.06
Hornblende	Ca(Mg,Fe,Al)Si ₈ O ₂₂ OH	4.30	0.32	0.30	0.16
Illite	K(Mg,Fe,Al) ₂ Si ₄ O ₁₀ (OH) ₂	0.03	0.00	0.00	0.00
Oligoclase	(Na,Ca)AlSi ₃ O ₈	0.58	1.54	0.68	0.86
Orthoclase	KAlSi ₃ O ₈	21.80	19.20	19.69	21.12
Quartz	SiO ₂	57.10	65.53	66.29	60.41
Zircon	ZrSiO ₆	0.03	0.11	0.00	0.18

Modal mineralogy was performed on samples CR-H-0-SL-01, CR-H-4-SY -25/+270, CR-H-8-SY -25/+270, and CR-H-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified. Results are shown in table 4.

Table 4. Modal Mineralogy.

Mineral	Chemistry	CR-H-0-SL-01	CR-H-4-SY-25/+270	CR-H-8-SY -25/+270	CR-H-30-SY -25/+270
Albite	$\text{NaAlSi}_3\text{O}_8$	22.61	12.59	11.49	18.61
Alunite	$\text{KAl}_3(\text{SO}_4)_2(\text{OH})_6$	0.00	0.00	0.00	0.00
Apatite	$\text{Ca}_5(\text{PO}_4)_3(\text{OH})$	0.01	0.05	0.00	0.04
Barite	BaSO_4	0.09	0.00	0.05	0.02
Biotite	$\text{K}(\text{Mg,Fe})\text{AlSi}_3\text{O}_{10}(\text{OH})_2$	0.95	0.04	0.04	0.05
Calcite	CaCO_3	0.29	0.17	0.56	0.83
Carnotite	$\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2$	0.18	< 0.01	< 0.01	< 0.01
Chlorite	$(\text{Mg,Fe})_5\text{AlSi}_3\text{O}_{10}(\text{OH})_8$	0.16	0.01	0.01	0.02
Diopside	$\text{MgCaSi}_2\text{O}_6$	0.10	0.00	0.00	0.07
Dolomite	$\text{Ca,Mg}(\text{CO}_3)_2$	0.01	0.00	0.00	0.03
Hornblende	$\text{Ca}(\text{Mg,Fe,Al})\text{Si}_8\text{O}_{22}\text{OH}$	6.36	0.24	0.19	0.19
Illite	$\text{K}(\text{Mg,Fe,Al})_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	0.03	0.00	0.00	0.00
Oligoclase	$(\text{Na,Ca})\text{AlSi}_3\text{O}_8$	1.22	0.44	0.58	1.13
Orthoclase	KAlSi_3O_8	25.65	19.86	17.41	22.41
Quartz	SiO_2	42.32	66.57	69.67	56.34
Zircon	ZrSiO_6	0.02	0.04	0.00	0.26

Modal mineralogy was performed on samples QV-L-0-SL-01, QV-L-4-SY -25/+270, QV-L-8-SY -25/+270, and QV-L-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified. Results are shown in table 5.

Table 5. Modal Mineralogy.

Mineral	Chemistry	QV-L-0-SL-01	QV-L-4-SY-25/+270	QV-L-8-SY -25/+270	QV-L-30-SY -25/+270
Albite	$\text{NaAlSi}_3\text{O}_8$	17.24	13.51	12.25	8.51
Alunite	$\text{KAl}_3(\text{SO}_4)_2(\text{OH})_6$	0.01	0.00	0.00	0.00
Apatite	$\text{Ca}_5(\text{PO}_4)_3(\text{OH})$	0.07	0.02	0.18	0.00
Barite	BaSO_4	0.00	0.00	0.00	0.00
Biotite	$\text{K}(\text{Mg,Fe})\text{AlSi}_3\text{O}_{10}(\text{OH})_2$	0.71	0.12	0.10	0.03
Calcite	CaCO_3	0.39	0.74	0.53	0.28
Carnotite	$\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2$	0.02	< 0.01	< 0.01	< 0.01
Chlorite	$(\text{Mg,Fe})_5\text{AlSi}_3\text{O}_{10}(\text{OH})_8$	0.22	0.13	0.10	0.02
Diopside	$\text{MgCaSi}_2\text{O}_6$	0.11	0.03	0.08	0.05
Dolomite	$\text{Ca,Mg}(\text{CO}_3)_2$	0.20	0.18	0.19	0.05
Hornblende	$\text{Ca}(\text{Mg,Fe,Al})\text{Si}_8\text{O}_{22}\text{OH}$	8.10	0.50	0.33	0.13
Illite	$\text{K}(\text{Mg,Fe,Al})_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	0.03	0.01	0.00	0.00
Oligoclase	$(\text{Na,Ca})\text{AlSi}_3\text{O}_8$	1.18	0.62	0.86	0.52
Orthoclase	KAlSi_3O_8	26.30	19.36	19.33	15.38
Quartz	SiO_2	45.32	64.72	65.94	74.99
Zircon	ZrSiO_6	0.10	0.07	0.12	0.04

Modal mineralogy was performed on samples QV-M-0-SL-01, QV-M-4-SY -25/+270, QV-M-8-SY -25/+270, and QV-M-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified. Results are shown in table 6.

Table 6. Modal Mineralogy.

Mineral	Chemistry	QV-M-0-SL-01	QV-M-4-SY -5/+270	QV-M-8-SY -25/+270	QV-M-30-SY -25/+270
Albite	$\text{NaAlSi}_3\text{O}_8$	13.89	9.72	10.49	9.32
Alunite	$\text{KAl}_3(\text{SO}_4)_2(\text{OH})_6$	0.00	0.00	0.00	0.00
Apatite	$\text{Ca}_5(\text{PO}_4)_3(\text{OH})$	0.05	0.02	0.06	0.01
Barite	BaSO_4	0.00	0.01	0.05	0.00
Biotite	$\text{K}(\text{Mg,Fe})\text{AlSi}_3\text{O}_{10}(\text{OH})_2$	0.42	0.10	0.11	0.03
Calcite	CaCO_3	0.17	0.82	0.85	0.32
Carnotite	$\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2$	0.04	< 0.01	< 0.01	< 0.01
Chlorite	$(\text{Mg,Fe})_5\text{AlSi}_3\text{O}_{10}(\text{OH})_8$	0.12	0.08	0.08	0.01
Diopside	$\text{MgCaSi}_2\text{O}_6$	0.02	0.00	0.03	0.01
Dolomite	$\text{Ca,Mg}(\text{CO}_3)_2$	0.07	0.08	0.16	0.01
Hornblende	$\text{Ca}(\text{Mg,Fe,Al})\text{Si}_8\text{O}_{22}\text{OH}$	6.79	0.31	0.28	0.14
Illite	$\text{K}(\text{Mg,Fe,Al})_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	0.02	0.00	0.01	0.00
Oligoclase	$(\text{Na,Ca})\text{AlSi}_3\text{O}_8$	0.81	0.52	0.48	0.73
Orthoclase	KAlSi_3O_8	24.04	15.55	15.90	16.10
Quartz	SiO_2	53.57	72.79	71.46	73.32
Zircon	ZrSiO_6	0.00	0.00	0.05	0.00

Modal mineralogy was performed on samples QV-H-0-SL-01, QV-H-4-SY -25/+270, QV-H-8-SY -25/+270, and QV-H-30-SY -25/+270 and according to the data three minerals, albite, orthoclase, and quartz, were identified as the main contributors. Uranium containing carnotite was also identified. Results are shown in table 7.

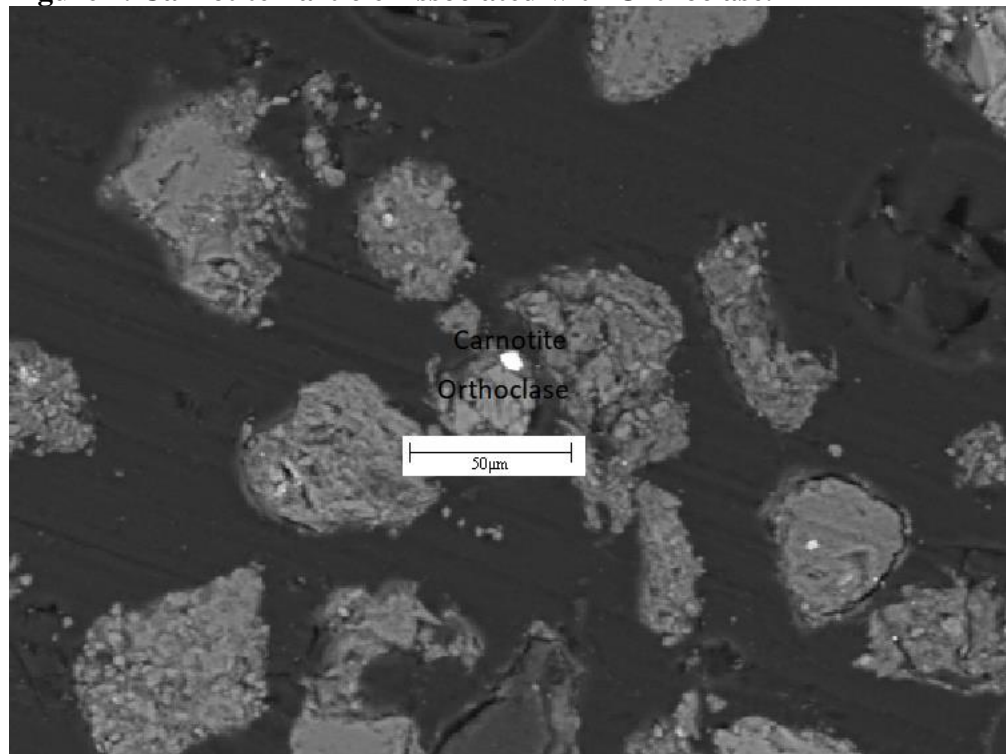
Table 7. Modal Mineralogy.

Mineral	Chemistry	QV-H-0-SL-01	QV-H-4-SY -5/+270	QV-H-8-SY -25/+270	QV-H-30-SY -25/+270
Albite	$\text{NaAlSi}_3\text{O}_8$	13.34	17.91	15.59	13.74
Alunite	$\text{KAl}_3(\text{SO}_4)_2(\text{OH})_6$	0.02	0.00	0.00	0.00
Apatite	$\text{Ca}_5(\text{PO}_4)_3(\text{OH})$	0.02	0.05	0.07	0.02
Barite	BaSO_4	0.03	0.02	0.00	0.00
Biotite	$\text{K}(\text{Mg,Fe})\text{AlSi}_3\text{O}_{10}(\text{OH})_2$	0.46	0.06	0.05	0.03
Calcite	CaCO_3	0.15	0.56	0.66	0.51
Carnotite	$\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2$	0.08	< 0.01	< 0.01	< 0.01
Chlorite	$(\text{Mg,Fe})_5\text{AlSi}_3\text{O}_{10}(\text{OH})_8$	0.08	0.07	0.09	0.05
Diopside	$\text{MgCaSi}_2\text{O}_6$	0.02	0.11	0.08	0.06
Dolomite	$\text{Ca,Mg}(\text{CO}_3)_2$	0.00	0.06	0.07	0.09
Hornblende	$\text{Ca}(\text{Mg,Fe,Al})\text{Si}_8\text{O}_{22}\text{OH}$	5.93	0.33	0.23	0.18
Illite	$\text{K}(\text{Mg,Fe,Al})_2\text{Si}_4\text{O}_{10}(\text{OH})_2$	0.01	0.01	0.00	0.00
Oligoclase	$(\text{Na,Ca})\text{AlSi}_3\text{O}_8$	0.43	1.15	1.01	1.19
Orthoclase	KAlSi_3O_8	21.30	22.53	19.47	20.34
Quartz	SiO_2	58.12	57.04	62.53	63.60
Zircon	ZrSiO_6	0.01	0.11	0.15	0.19

Backscatter Images
CTS-L-0-SL-01

For sample CTS-L-0-SL-01, one carnotite particle was observed with orthoclase association. This particle is leachable, but not floatable. Results are shown in figure 1.

Figure 1. Carnotite Particle Associated with Orthoclase.



CTS-M-0-SL-01

For CTS-M-SL-01 sample, three carnotite particles were identified. Results are shown in figures 2 through 4. According to the data, one free carnotite particle was identified at approximately 20 microns in size while the other carnotite particles are encapsulated by orthoclase at approximately 5 microns in size. The free particle is both floatable and leachable. For the other two encapsulated carnotite particles, they are not leachable nor floatable.

Figure 2. CTS-M-0-SL-01 Carnotite Particle Encapsulated by Orthoclase.

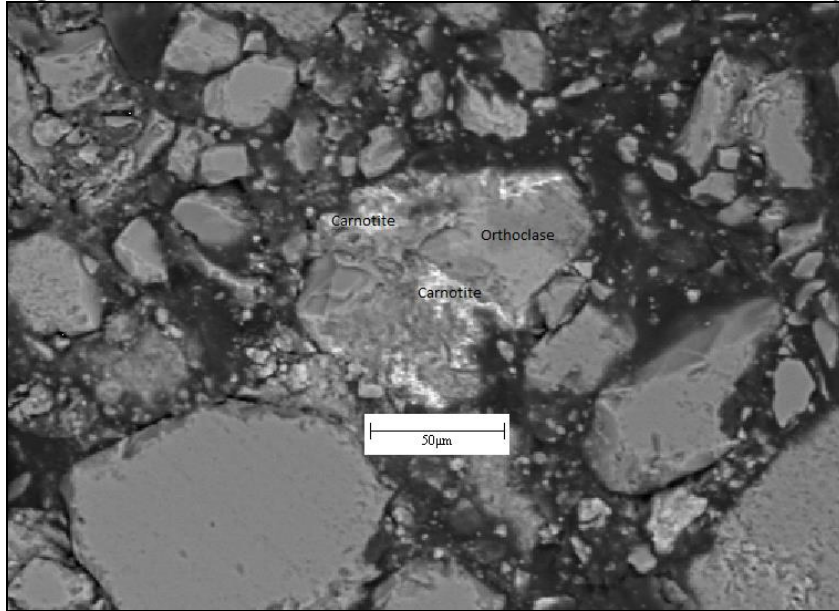


Figure 3. CTS-M-0-SL-01 Liberated Carnotite Particle.

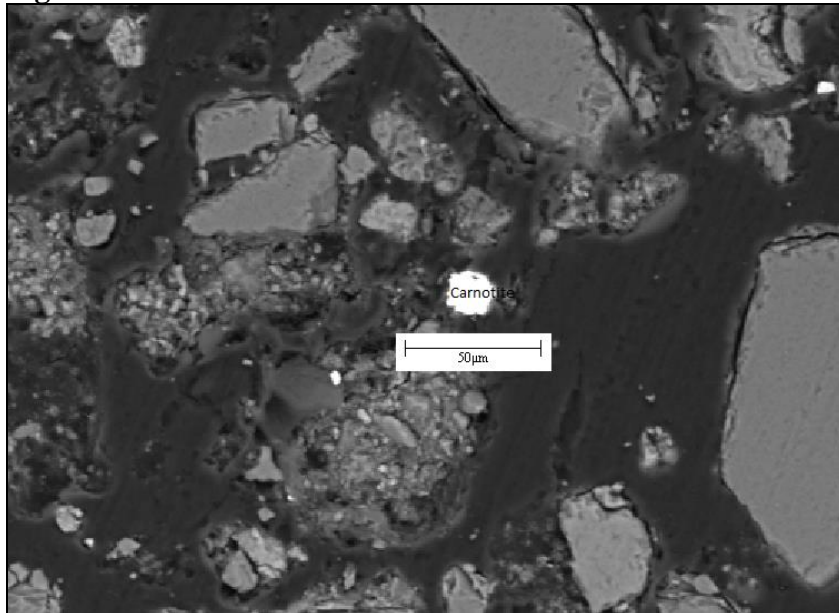
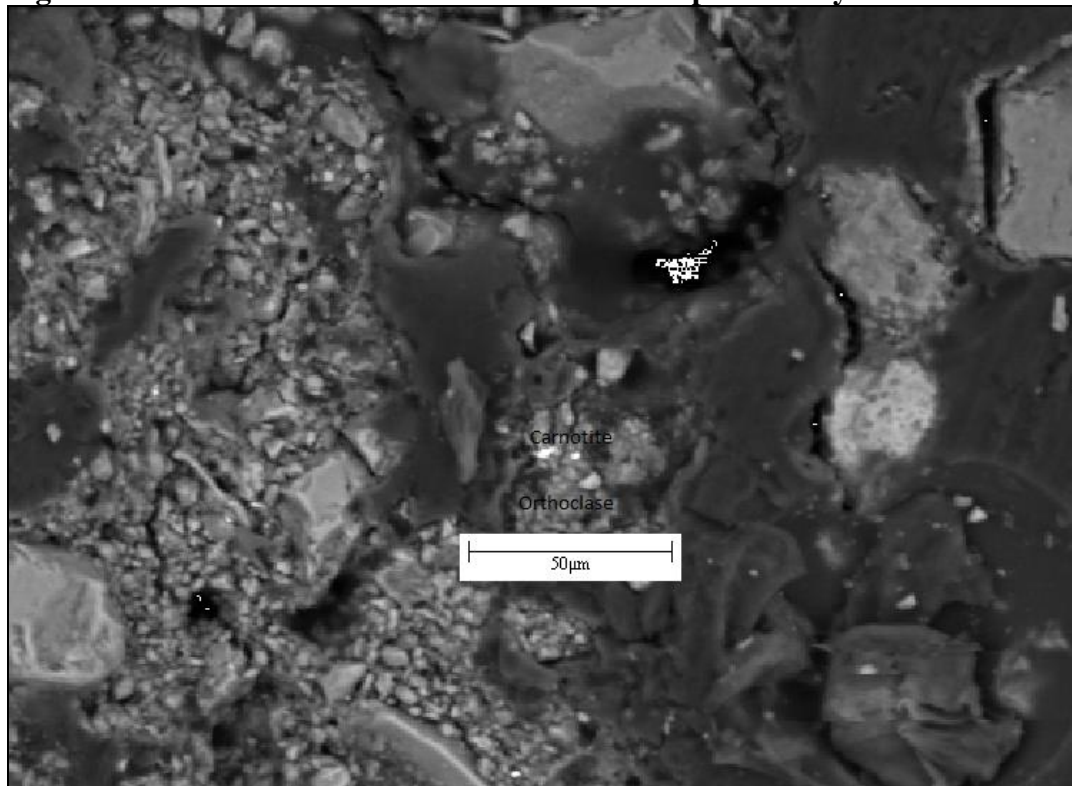


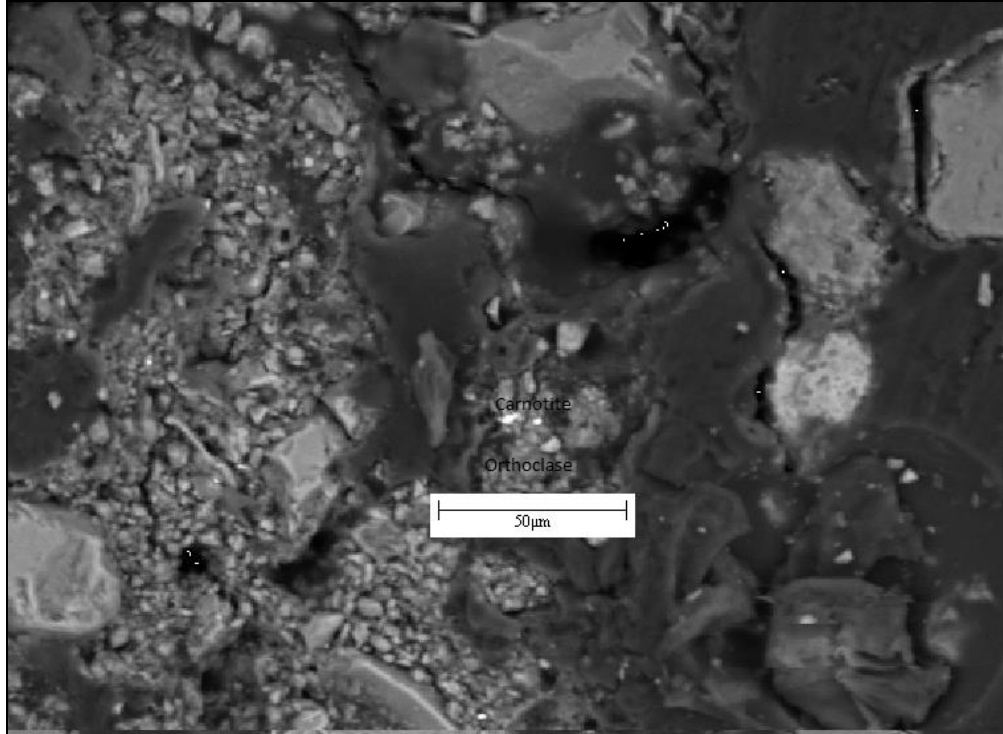
Figure 4. CTS-M-0-SL-01 Carnotite Particle Encapsulated by Orthoclase.



CTS-H-0-SL-01

For CTS-H-SL-01 sample, one carnotite particle was identified. Results are shown in figure 5. According to the data, the carnotite particle is approximately 5 microns with orthoclase encapsulation. This particle is not leachable or flatable.

Figure 5. CTS-H-0-SL-01 Carnotite Particle Encapsulated by Orthoclase.



CR-L-0-SL-01

For CR-L-SL-01 sample, several carnotite particles were identified. Results are shown in figures 6 through 15. According to the data, one free particle was identified at approximately 40 microns in size. This particle is both floatable and leachable. Other carnotite particles appear to be 5 microns in size with quartz, albite, and orthoclase association. Since the particles are near the edge, they are leachable, however, not floatable.

Figure 6. CR-L-0-SL-01 Free Carnotite Particle.

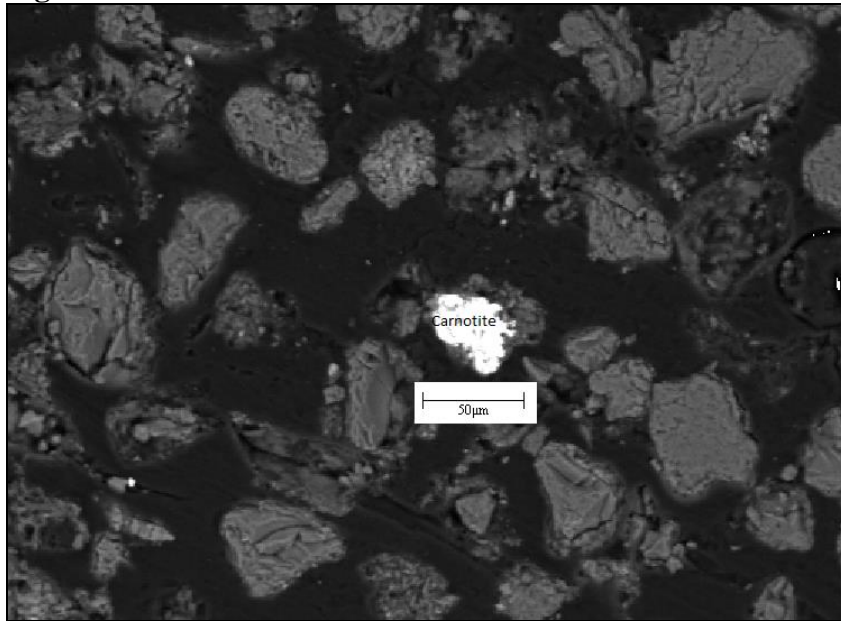


Figure 7. CR-L-0-SL-01 Carnotite Particle Encapsulated by Albite.

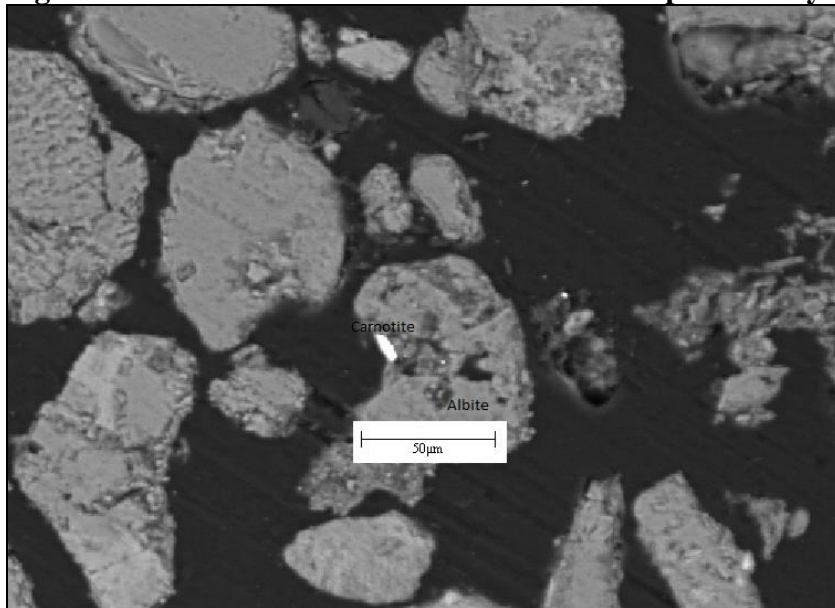


Figure 8. CR-L-0-SL-01 Carnotite Particle Encapsulated by Albite.

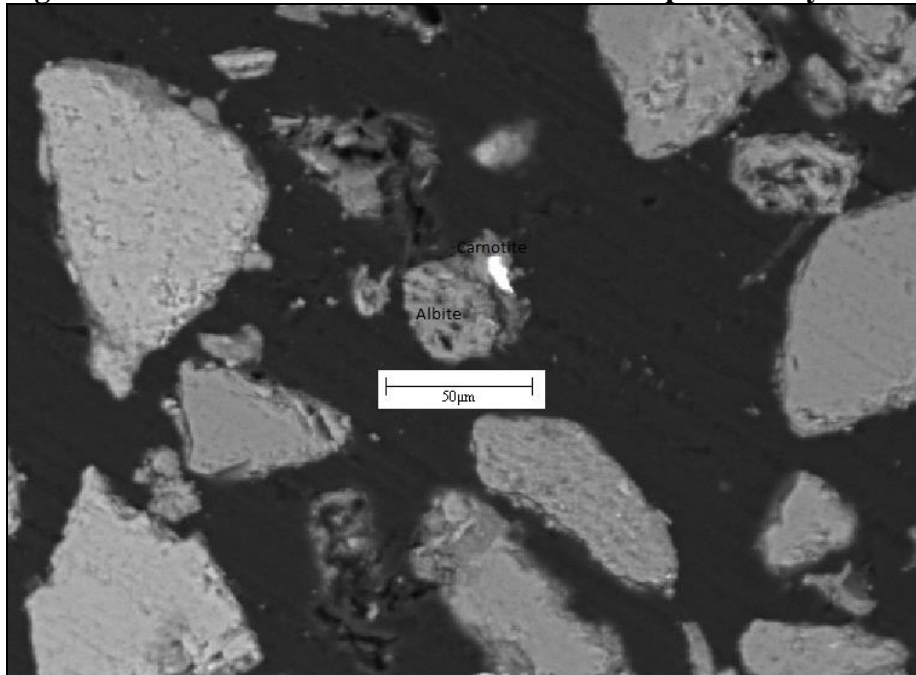


Figure 9. CR-L-0-SL-01 Carnotite Associated with Quartz.

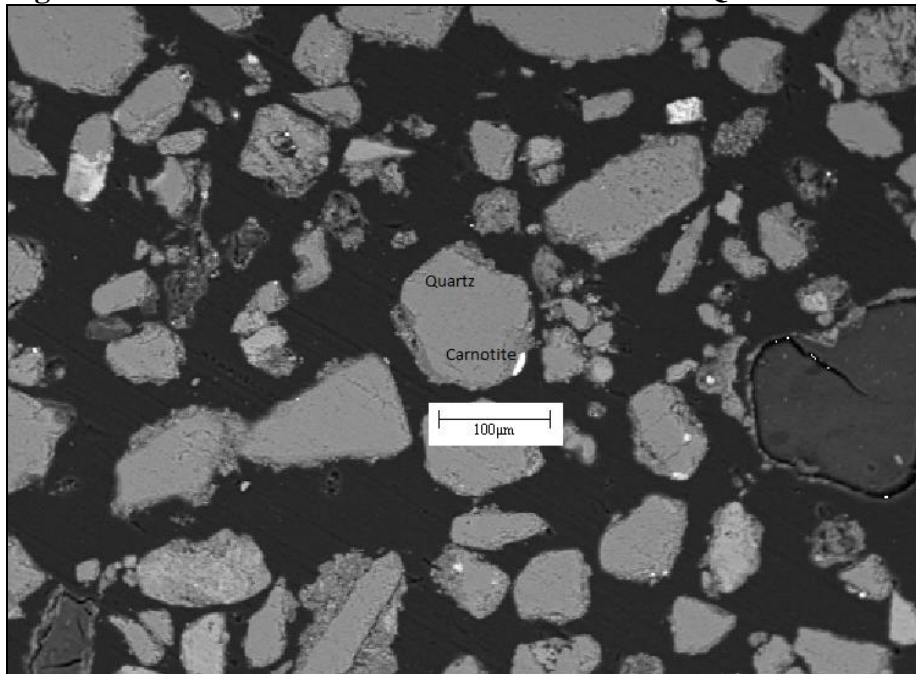


Figure 10. CR-L-0-SL-01 Carnotite Associated with Quartz.

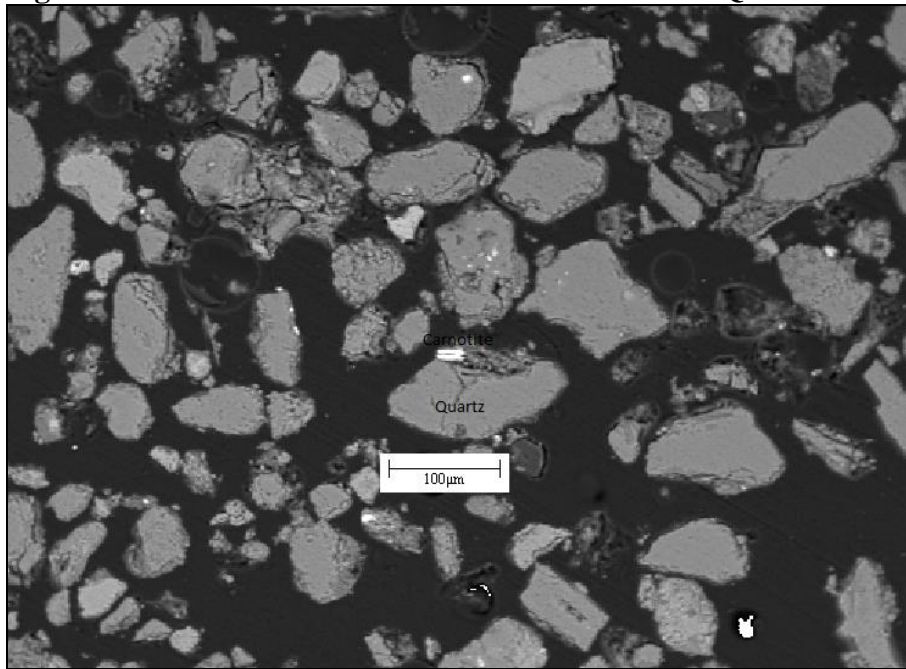


Figure 11. CR-L-0-SL-01 Carnotite Associated with Quartz.

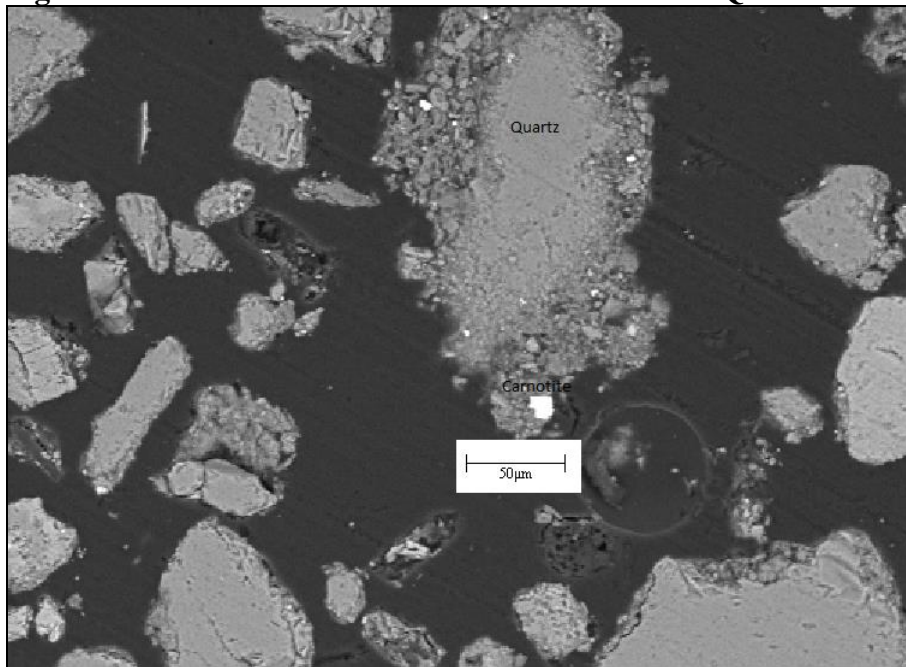


Figure 12. CR-L-0-SL-01 Carnotite Associated with Quartz.

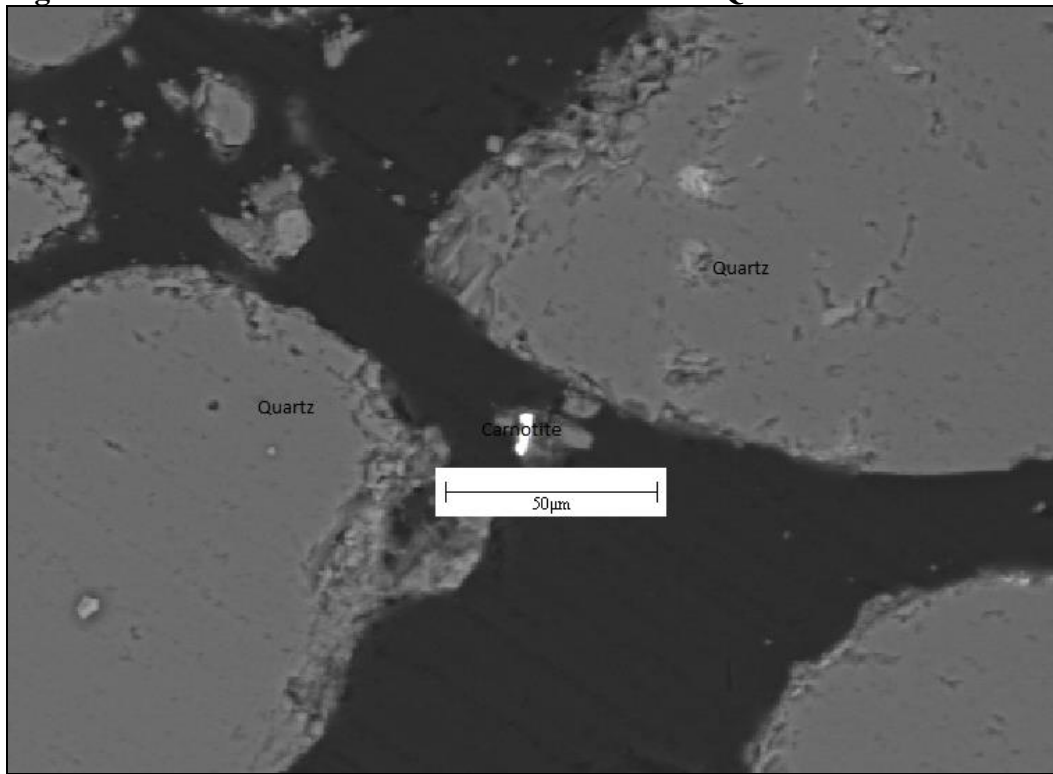


Figure 13. Free Carnotite Particle.

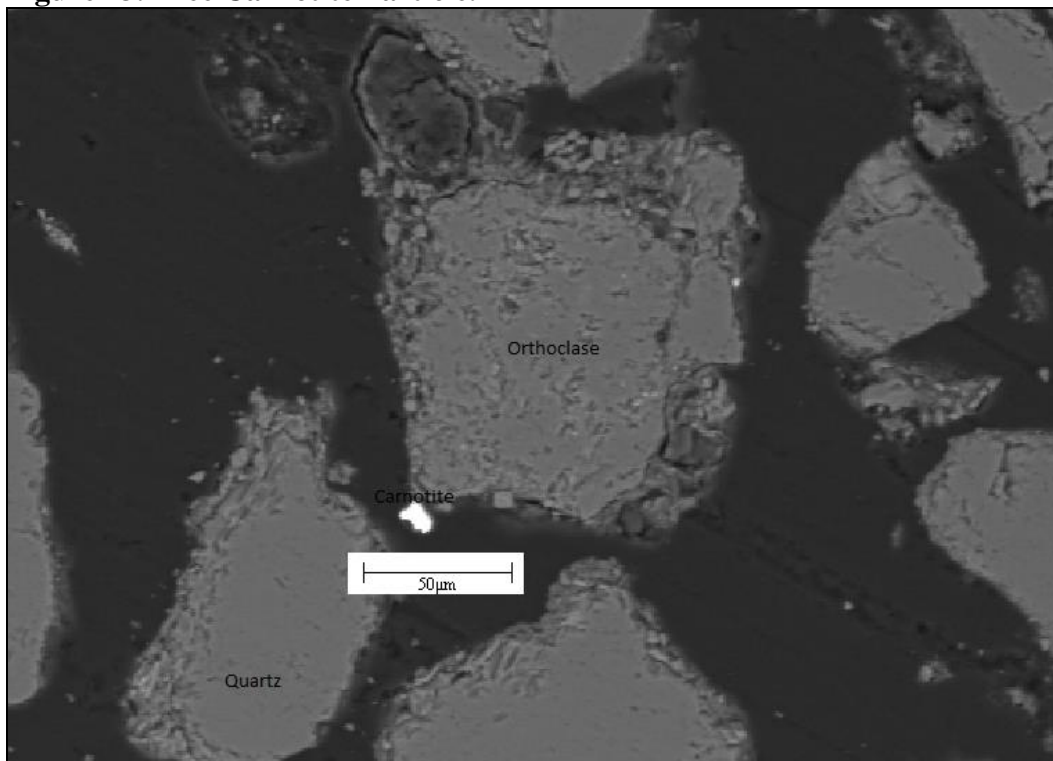


Figure 14. Carnotite Particle with Orthoclase Encapsulation.

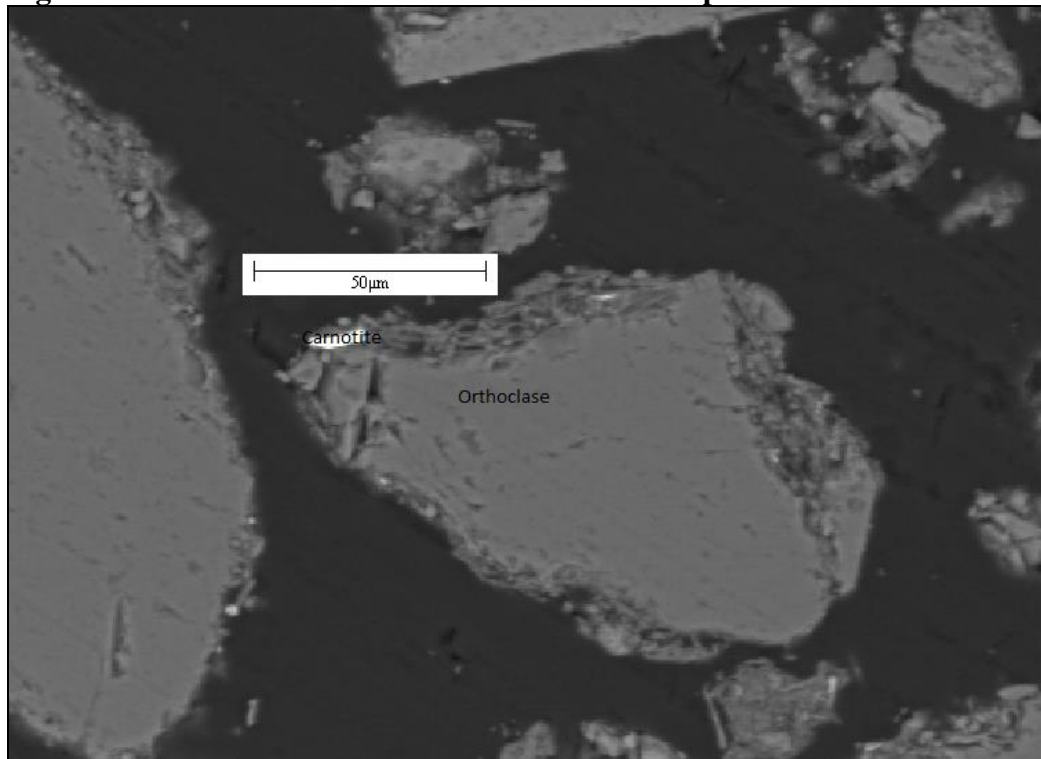
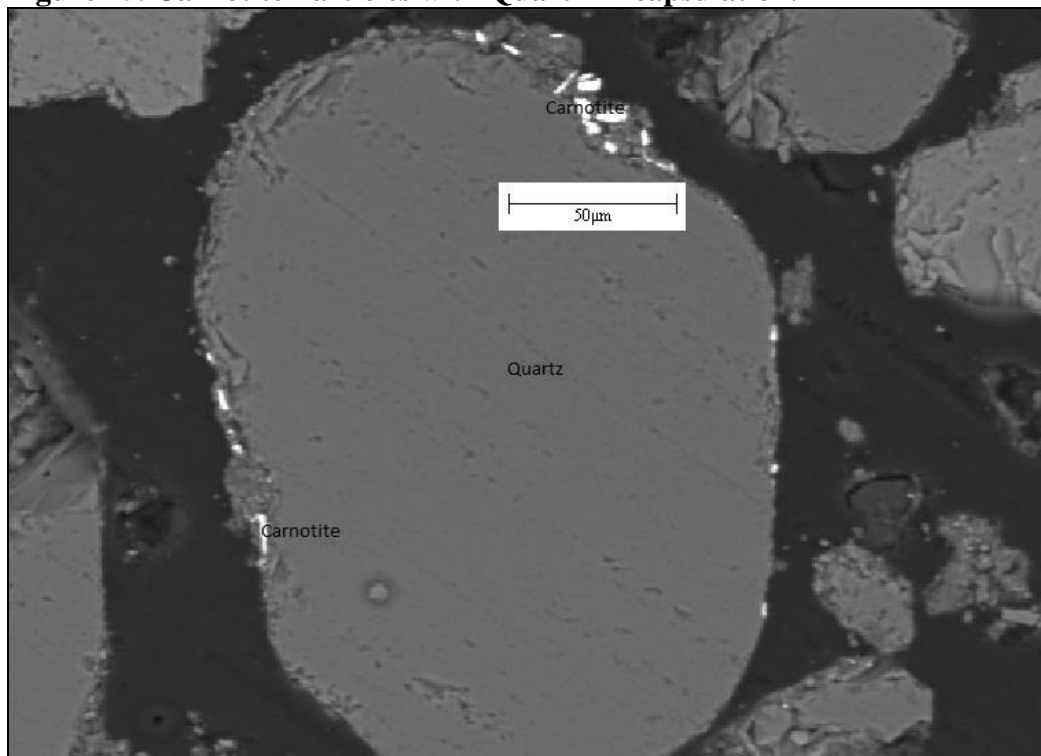


Figure 15. Carnotite Particles with Quartz Encapsulation.



CR-L-4-SY -25/+270

For CR-L-4-SY -25/+270 sample, two carnotite particles were identified. Results are shown in figures 16 and 17. According to the data, the carnotite particles appear to be approximately 5 microns in size with quartz and illite encapsulation. One particle is leachable (Figure 16), however, the other particle is not leachable.

Figure 16. CR-L-4-SY -25/+270 Carnotite Particle Encapsulated by Quartz and Illite

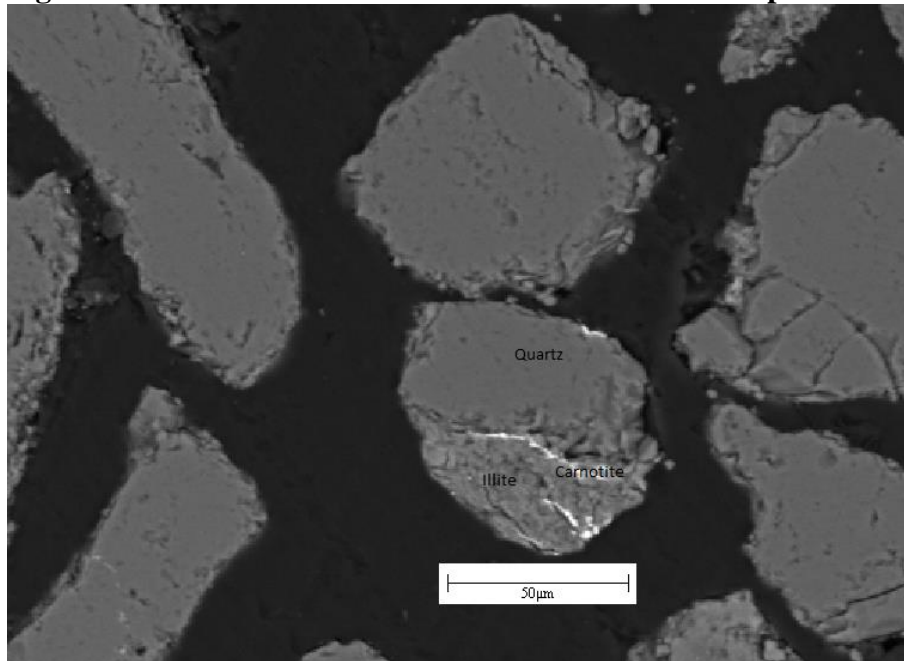
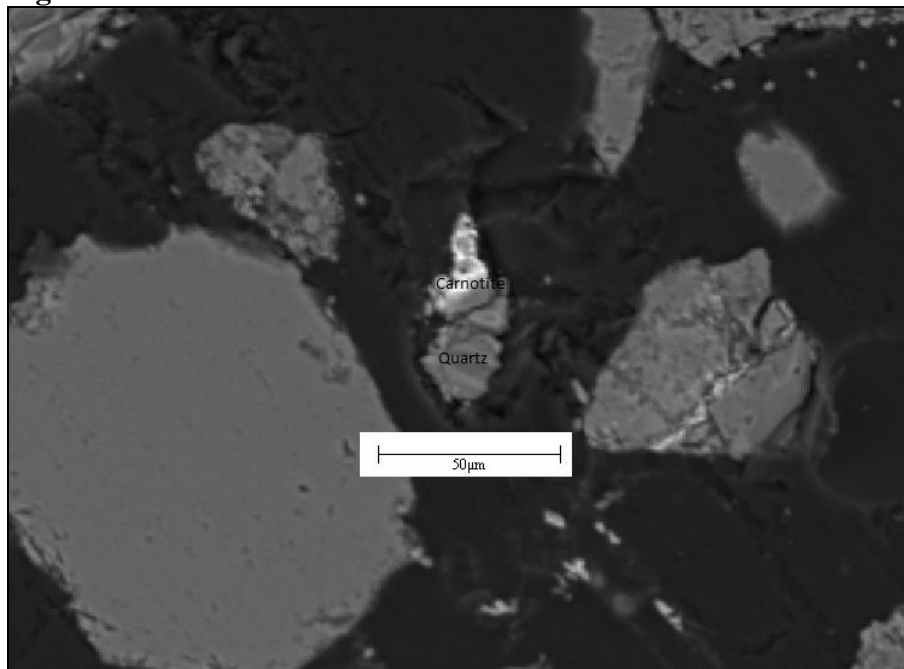


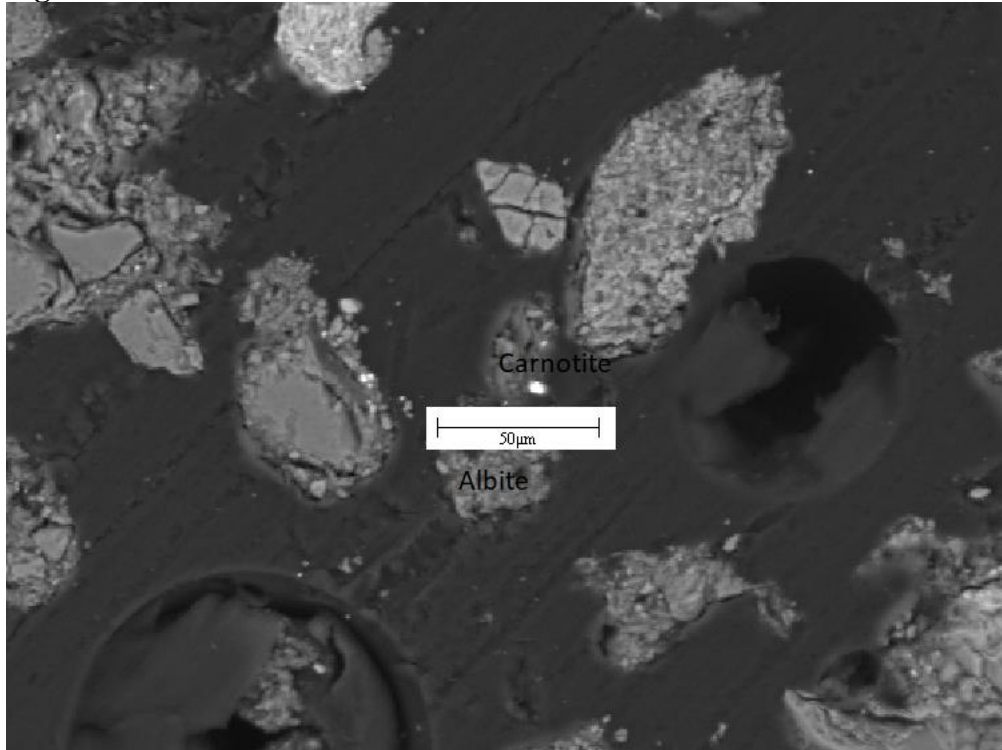
Figure 17. CR-L-4-SY -25/+270 Carnotite Particle Associated with Quartz.



CR-L-8-SY -25/+270

For CR-L-8-SY -25/+270 sample, one carnotite particle was observed with albite association. Results are shown in figure 18. According to the image, this particle is leachable but not floatable.

Figure 18. Carnotite Particle Associated with Albite.



CR-L-30-SY -25/+270

For CR-L-30-SY -25/+270 sample, two carnotite particles were identified. Results are shown in figures 19 and 20. According to the data, the carnotite particles appear to be approximately 10 microns in size with quartz association. These particles are not floatable but leachable.

Figure 19. CR-L-30-SY -25/+270 Carnotite Particle Associated with Quartz.

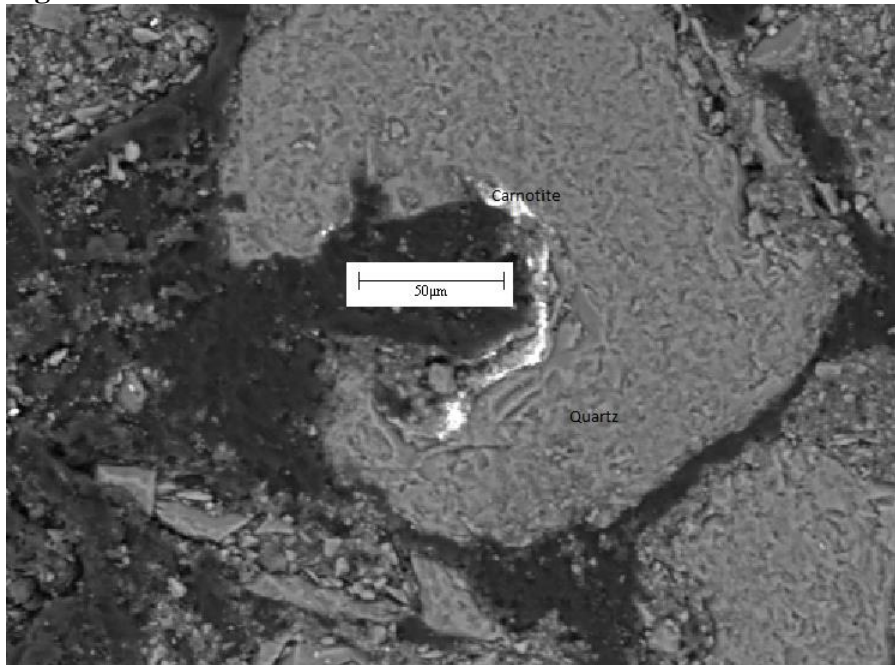
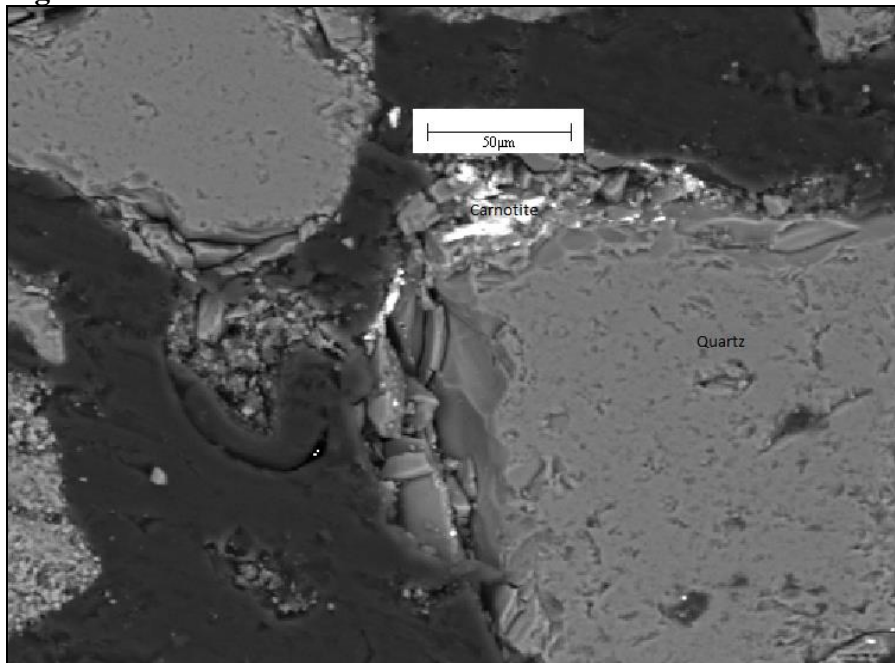


Figure 20. CR-L-30-SY -25/+270 Carnotite Particle Associated with Quartz.



CR-M-0-SL-01

For CR-M-SL-01 sample, several carnotite particles were identified. Results are shown in figures 21 through 32. According to the data, the particles are approximately 10 microns in size with albite and orthoclase encapsulation with quartz association. Because of the encapsulation, these particles are not flatable nor leachable, except in figure 22. This particle is leachable only.

Figure 21. CR-M-0-SL-01 Carnotite Particle Encapsulated by Albite.

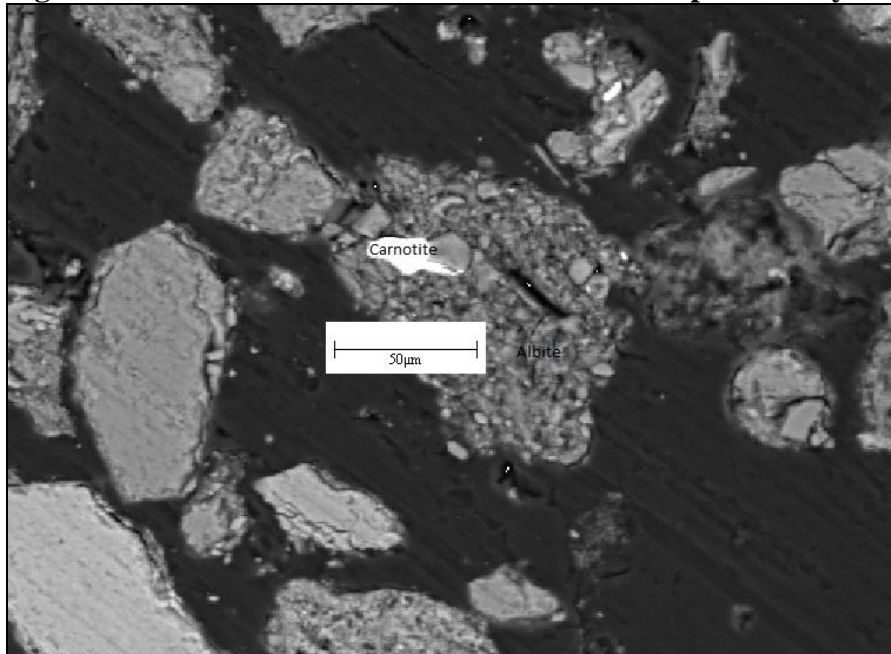


Figure 22. CR-M-0-SL-01 Carnotite Particle Encapsulated by Albite.

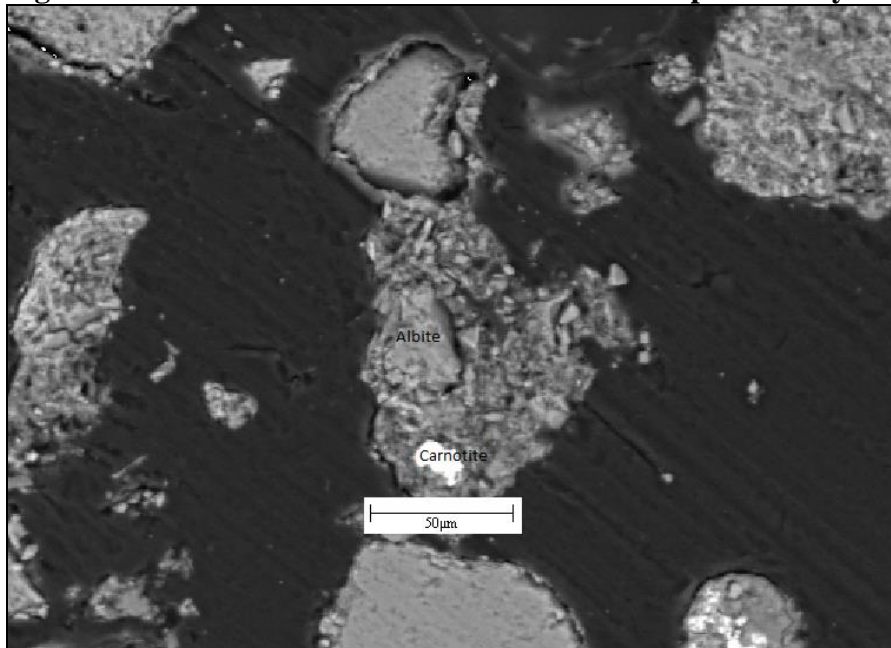


Figure 23. CR-M-0-SL-01 Carnotite Particle Encapsulated by Albite.

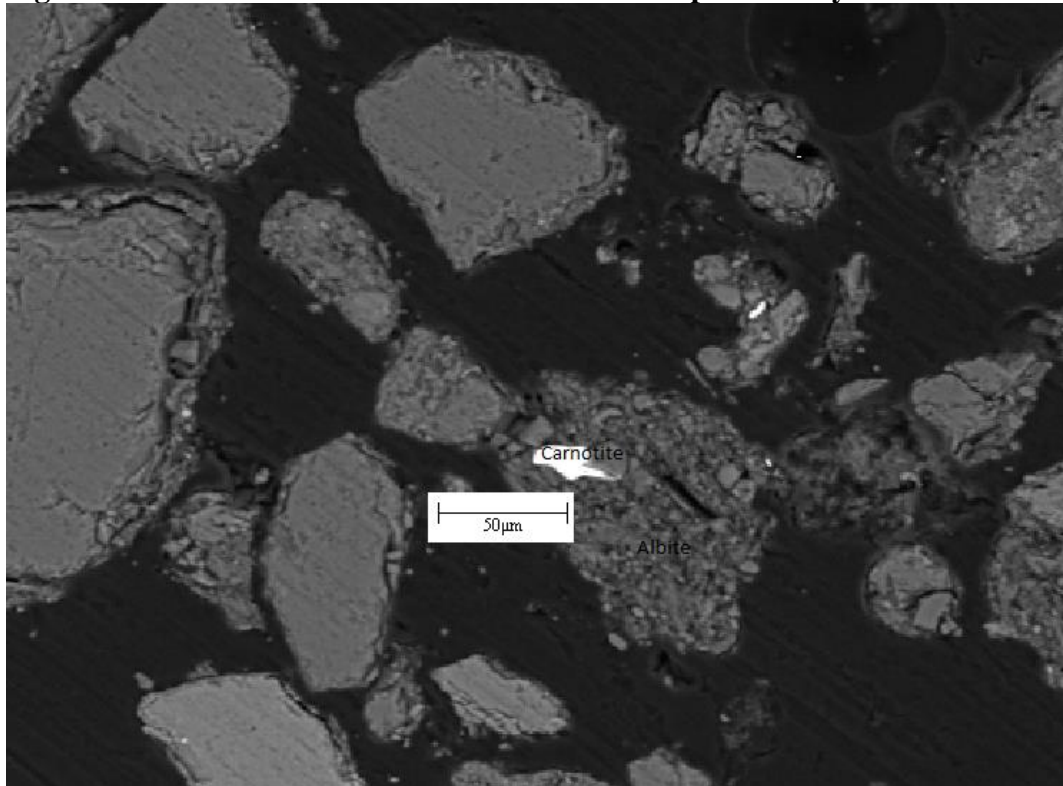


Figure 24. CR-M-0-SL-01 Carnotite Particle Encapsulated by Quartz.

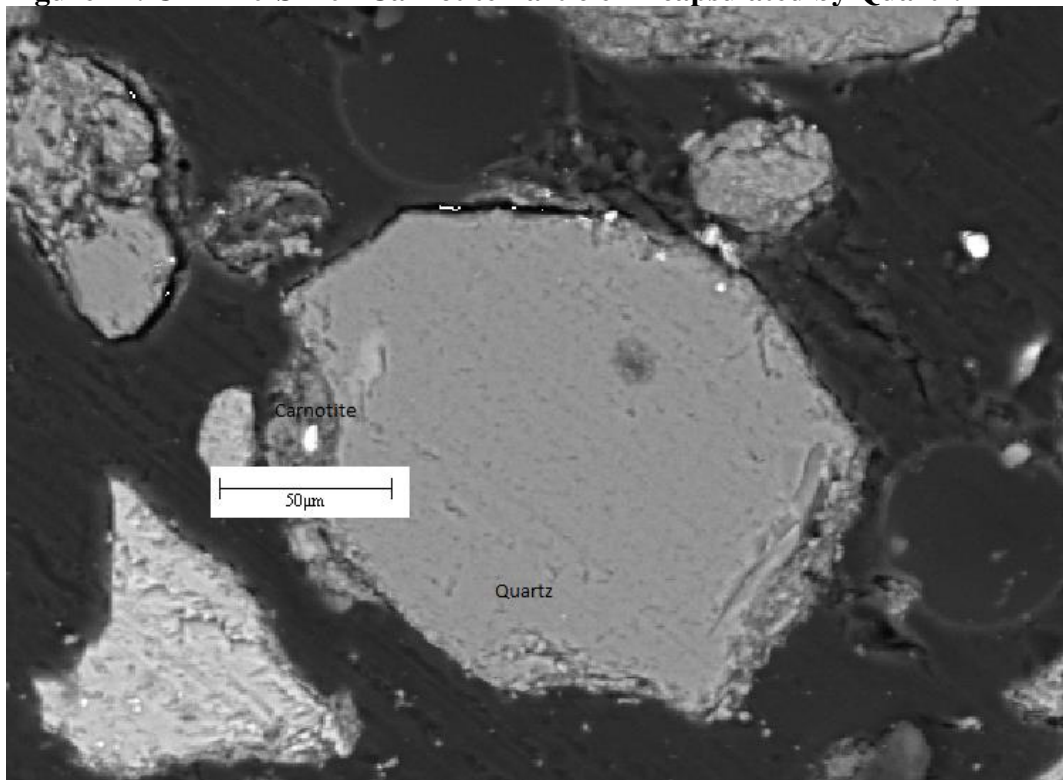


Figure 25. CR-M-0-SL-01 Carnotite Particle Encapsulated by Quartz.

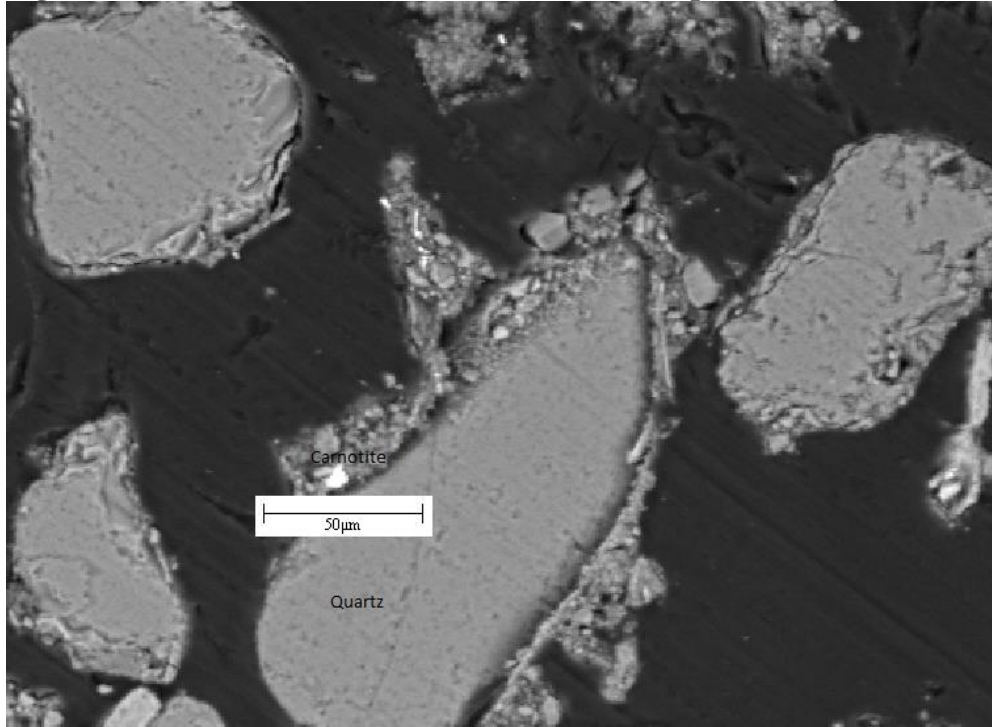


Figure 26. CR-M-0-SL-01 Carnotite Particle Associated with Quartz.

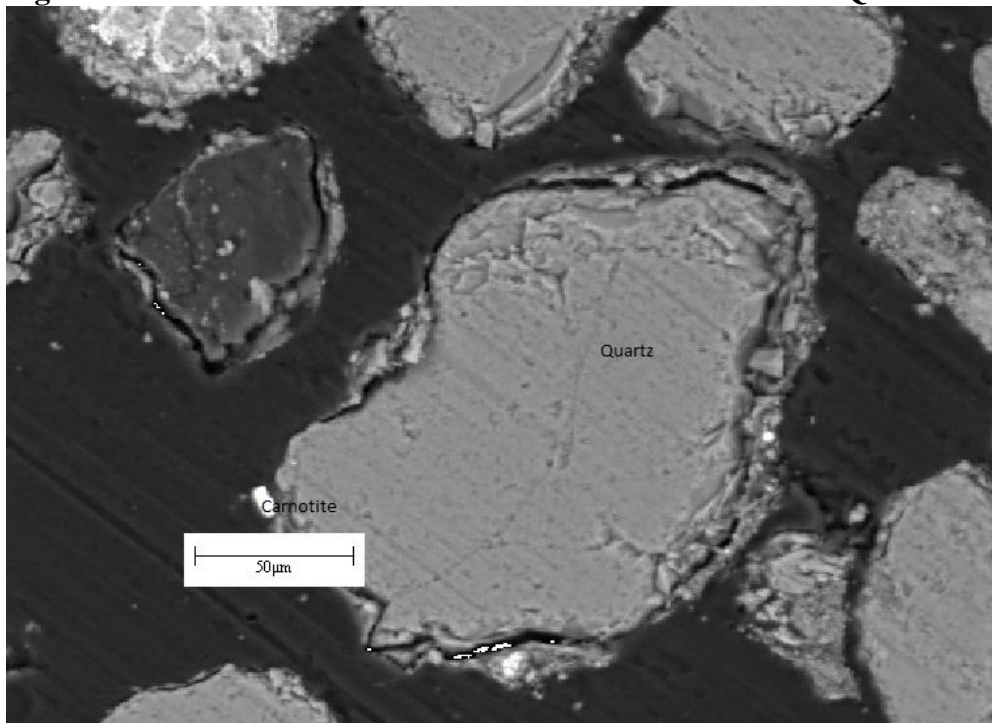


Figure 27. Carnotite Particle Encapsulated by Orthoclase.

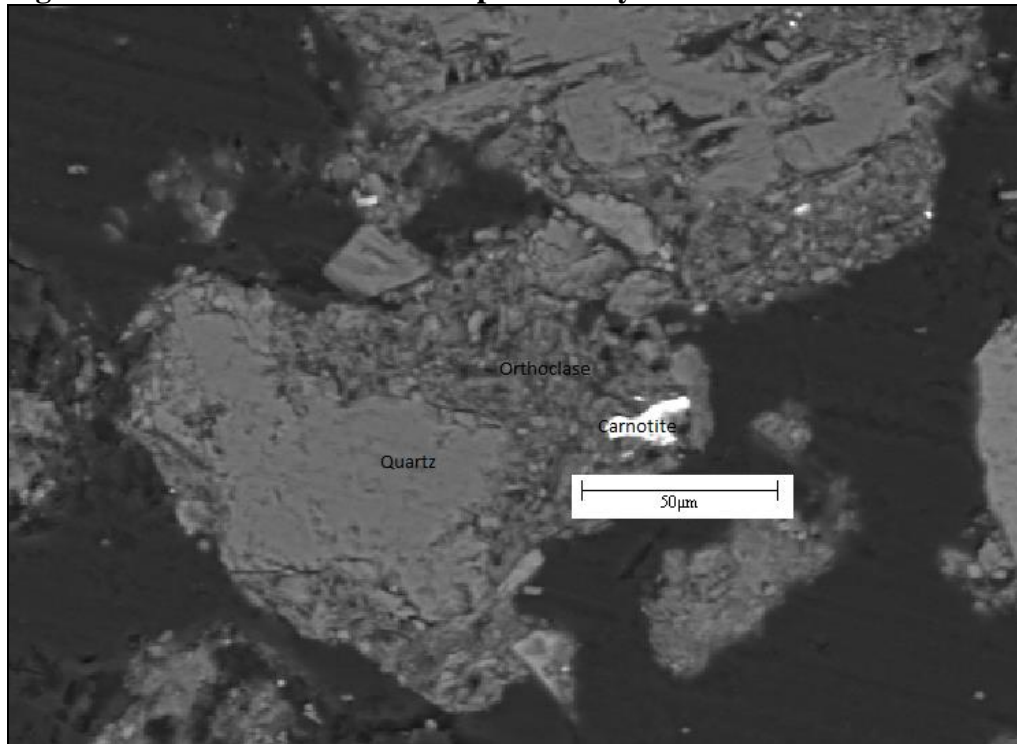


Figure 28. Carnotite Particle Associated with Orthoclase

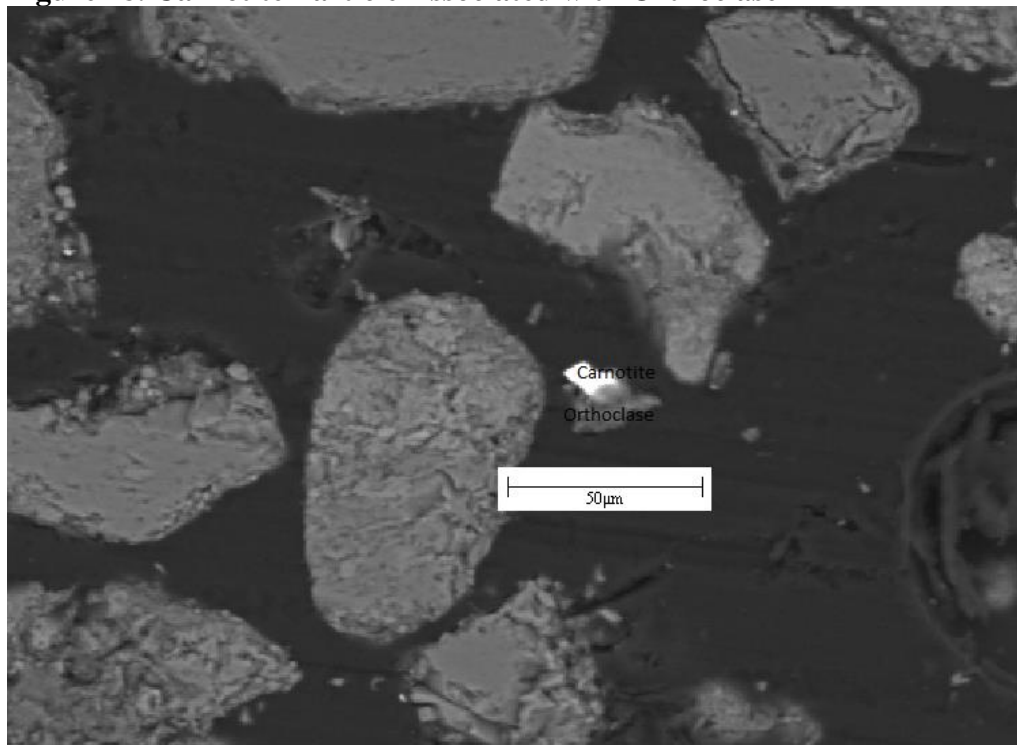


Figure 29. Carnotite Particle Encapsulated by Orthoclase.

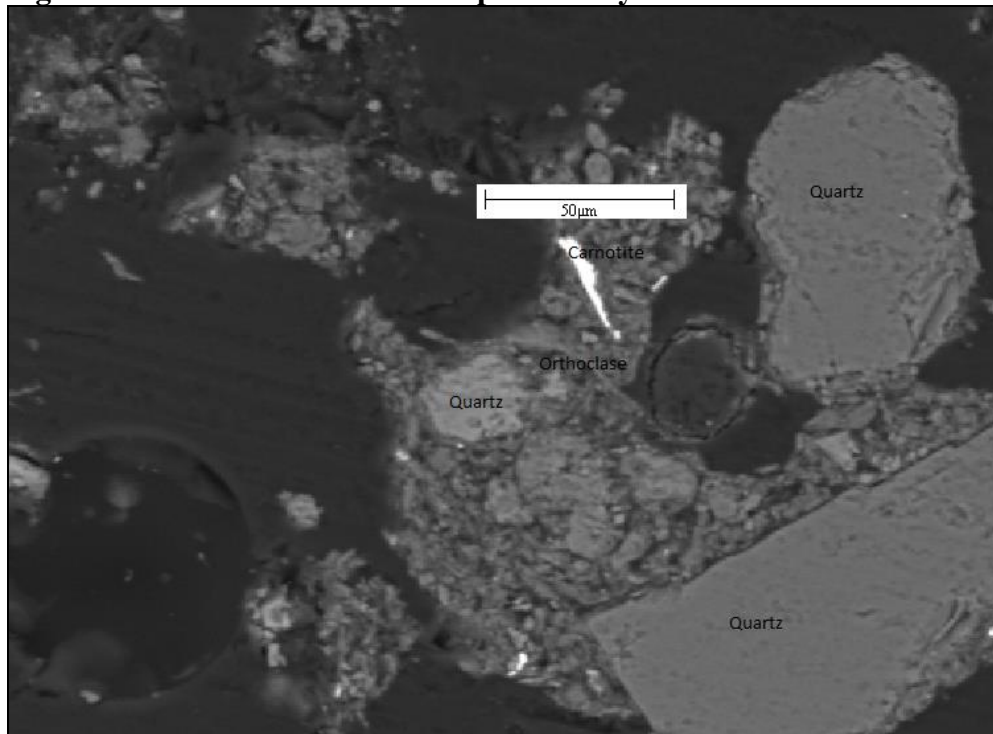


Figure 30. Carnotite Particle Encapsulated by Orthoclase.

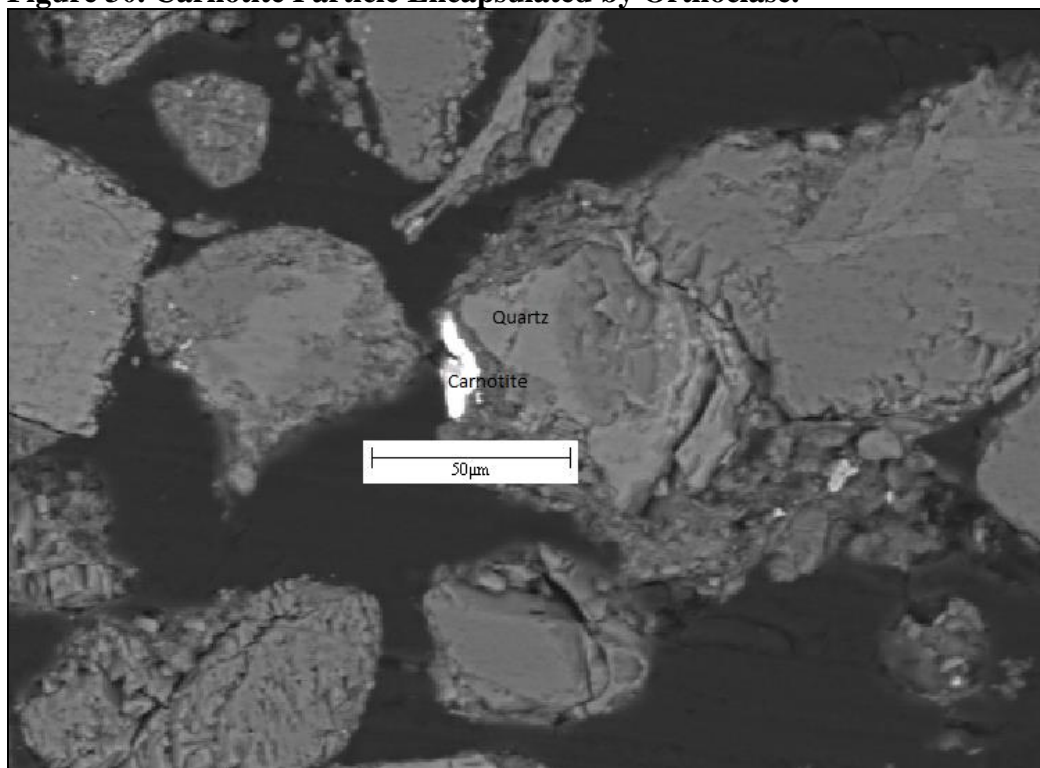


Figure 31. Carnotite Particle Encapsulated by Quartz.

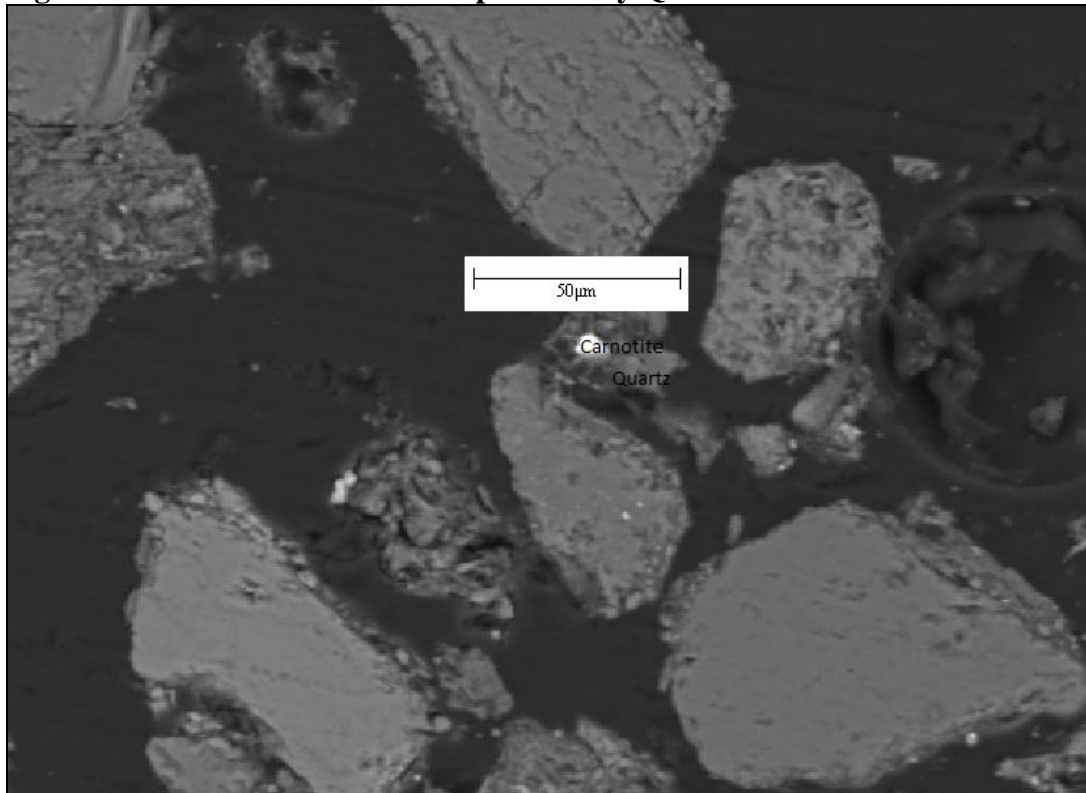
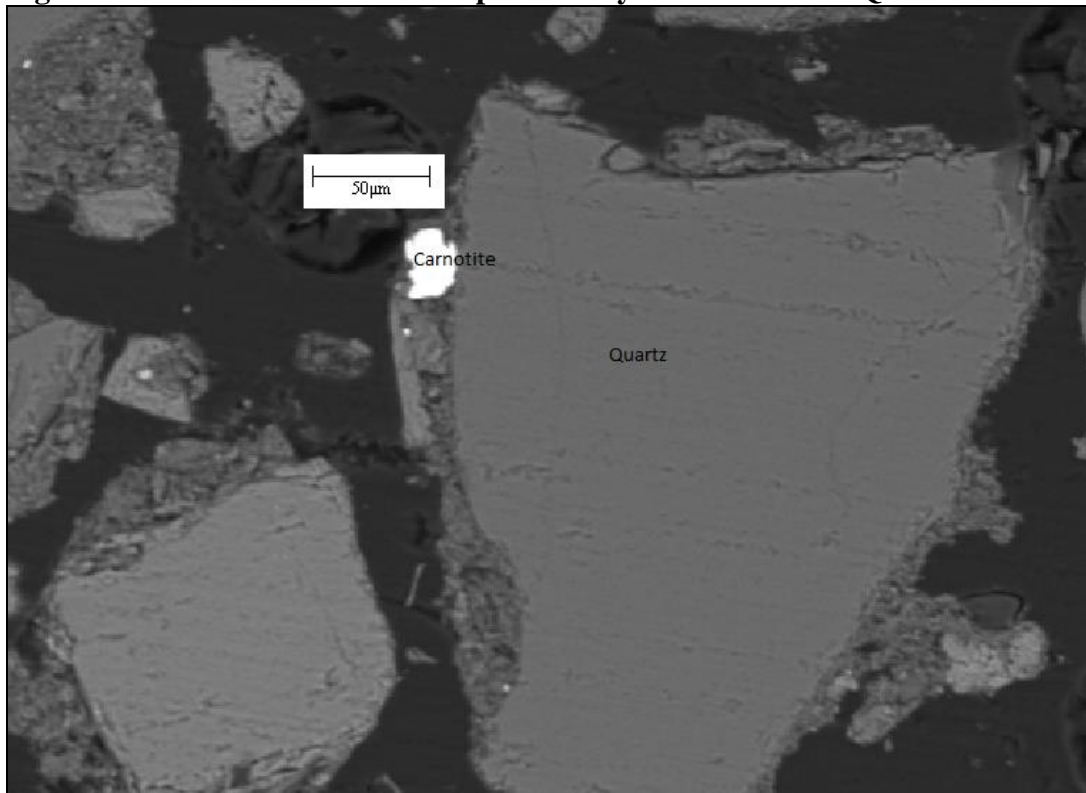


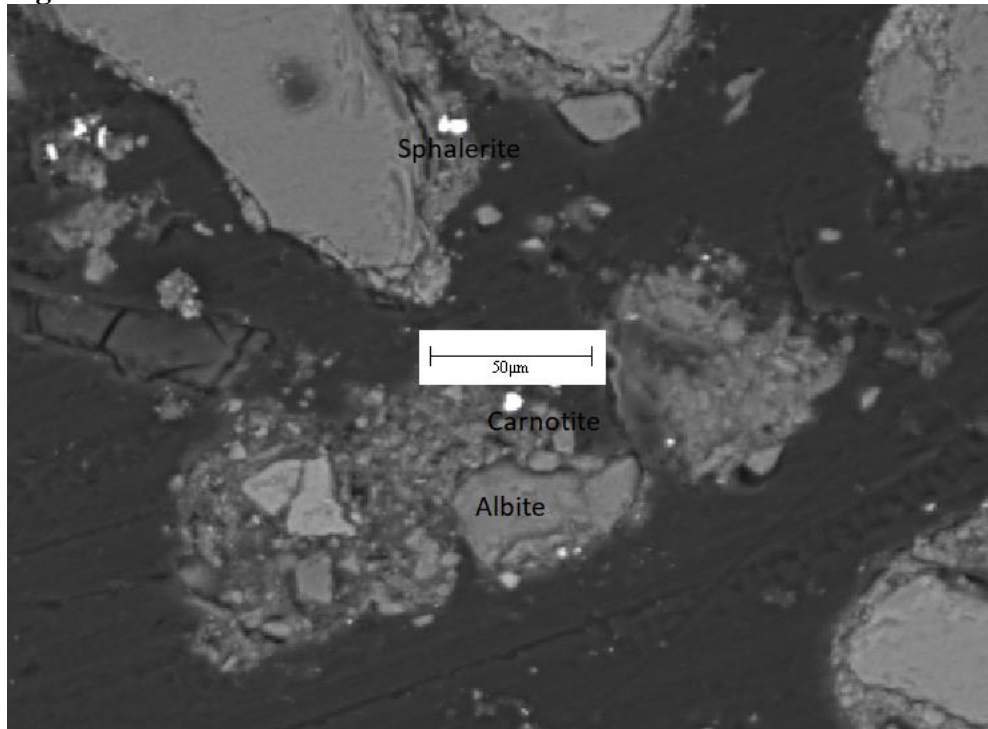
Figure 32. Carnotite Particle Encapsulated by Orthoclase and Quartz.



CR-M-4-SY -25/+270

For CR-M-4-SY -25/+270 sample, one carnotite particles were identified. Results are shown in figure 33. According to the data, the particle is leachable but not floatable with albite association.

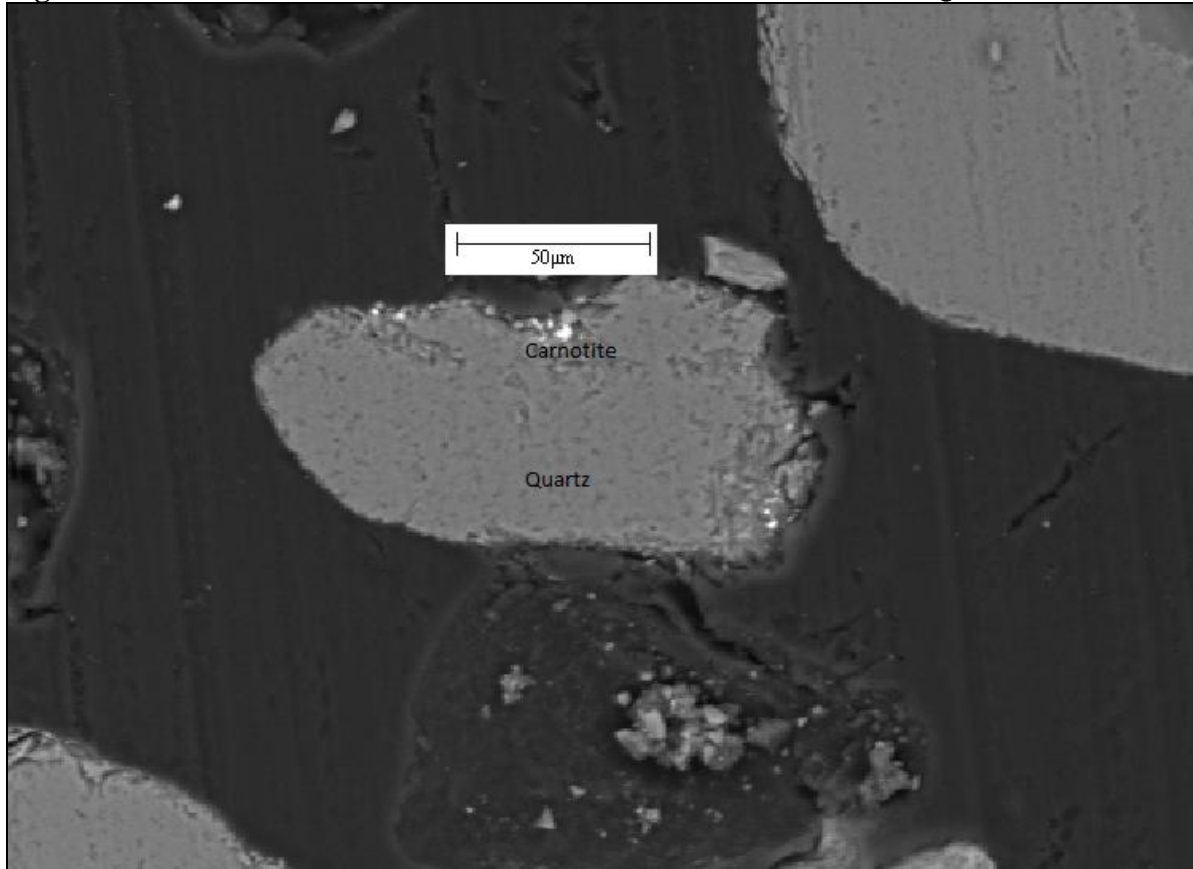
Figure 33. Carnotite Particle Associated with Albite.



CR-M-8-SY -25/+270

For CR-M-8-SY -25/+270 sample, one carnotite particle was identified. Results are shown in figure 34. According to the data, the carnotite particle appear to be approximately 10 microns in size with quartz encapsulation. This particle is not flatable or leachable.

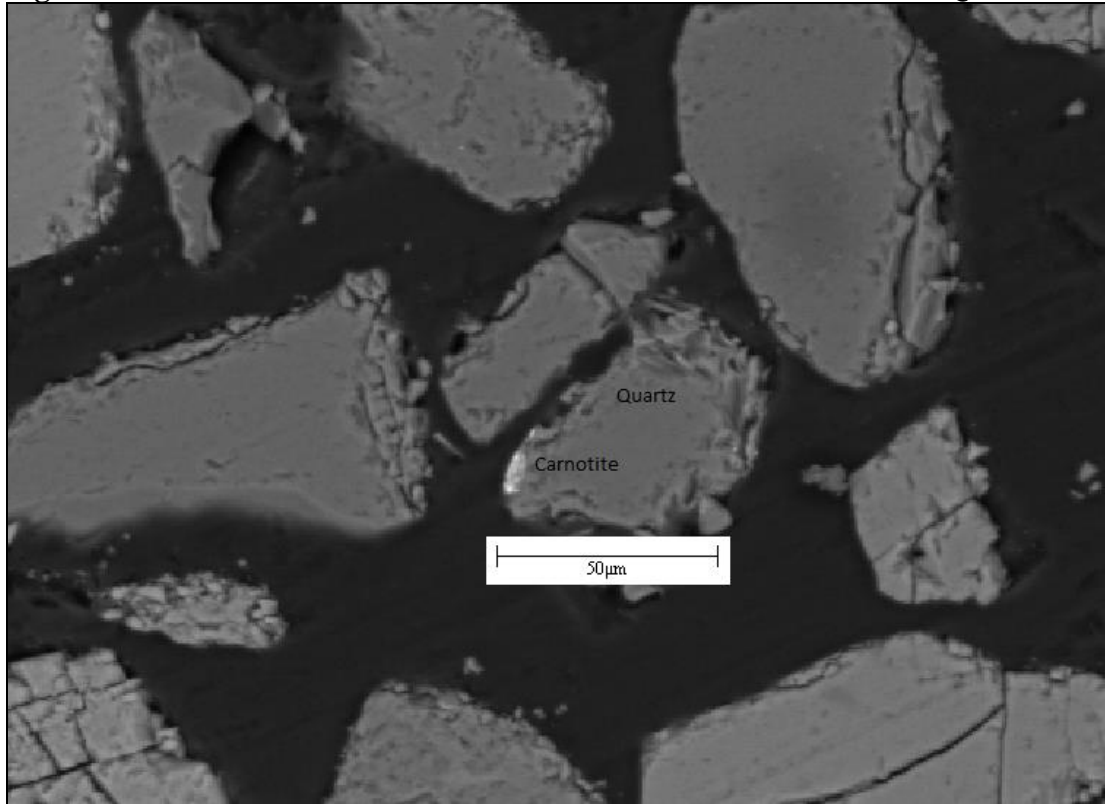
Figure 34. CR-M-8-SY -25/+270 Carnotite Particle Associated with Quartz.



CR-M-30-SY -25/+270

For CR-M-30-SY -25/+270 sample, one carnotite particle was identified. Results are shown in figure 35. According to the data, the carnotite particle appear to be approximately 5 microns in size with quartz association. This particle is not floatable but is leachable.

Figure 35. CR-M-30-SY -25/+270 Carnotite Particle Associated with Quartz.



CR-H-0-SL-01

For CR-H-SL-01 sample, several carnotite particles were identified. Results are shown in figures 36 through 45. According to the data, the carnotite particles are approximately 5 to 20 microns in size with albite and orthoclase association. These particles are not floatable, however, figures two particles are leachable (Figures 37 and 39).

Figure 36. CR-H-0-SL-01 Carnotite Particle Encapsulated by Albite.

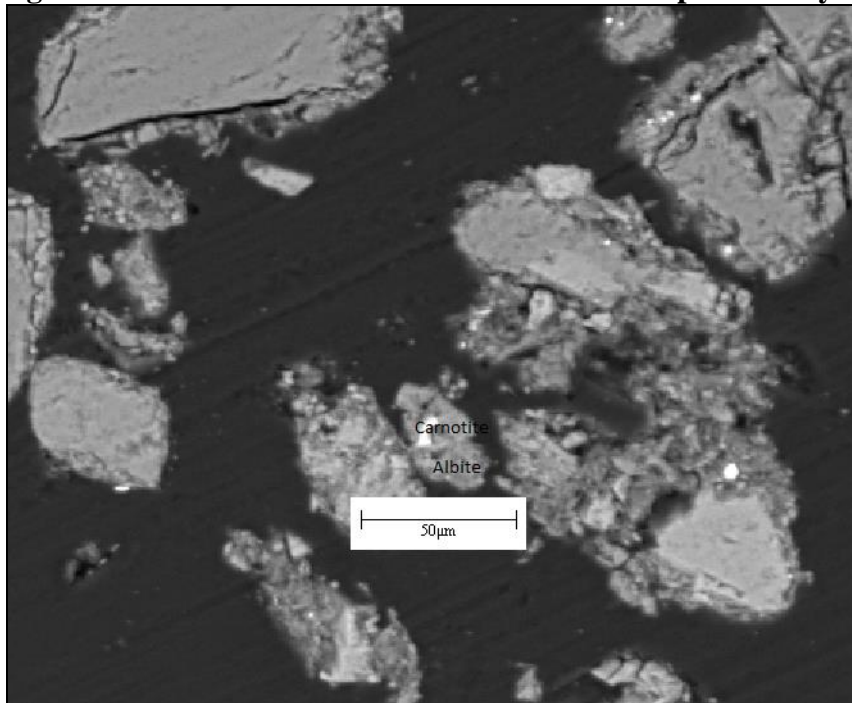


Figure 37. CR-H-0-SL-01 Carnotite Particles Encapsulated by Albite.

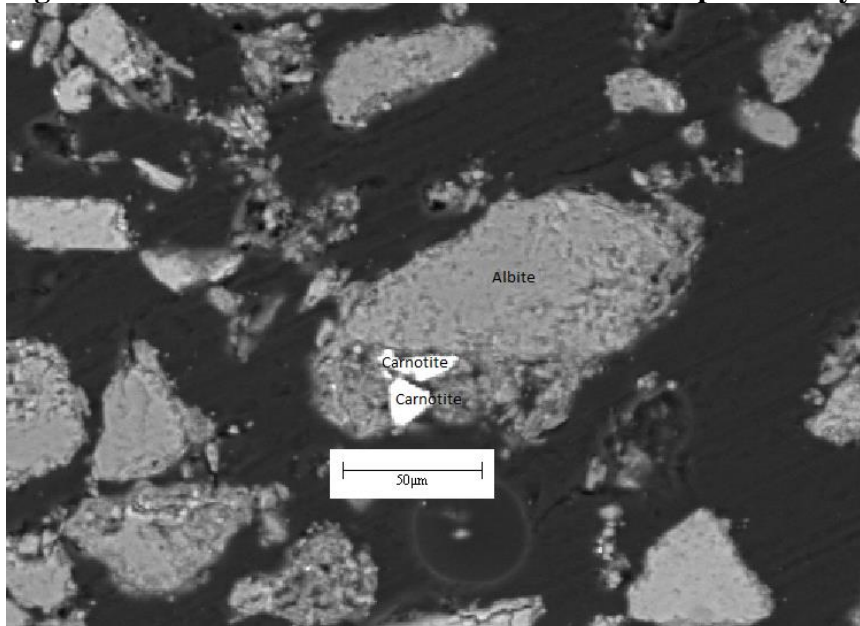


Figure 38. CR-H-0-SL-01 Carnotite Particles Encapsulated by Albite and Orthoclase.

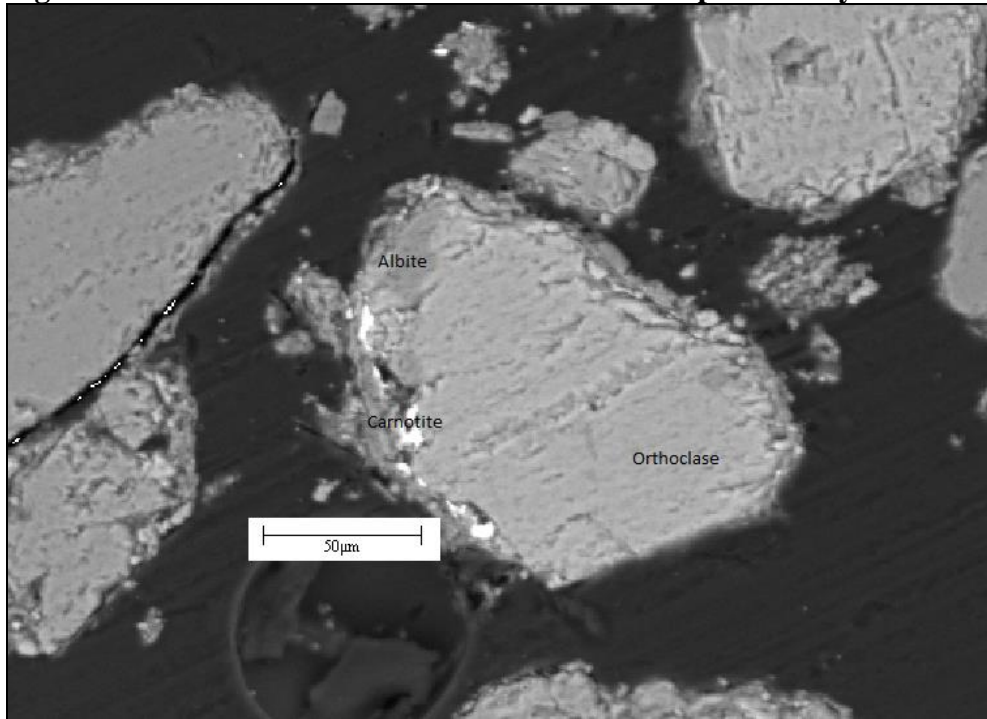


Figure 39. CR-H-0-SL-01 Carnotite Particle Encapsulated by Orthoclase.

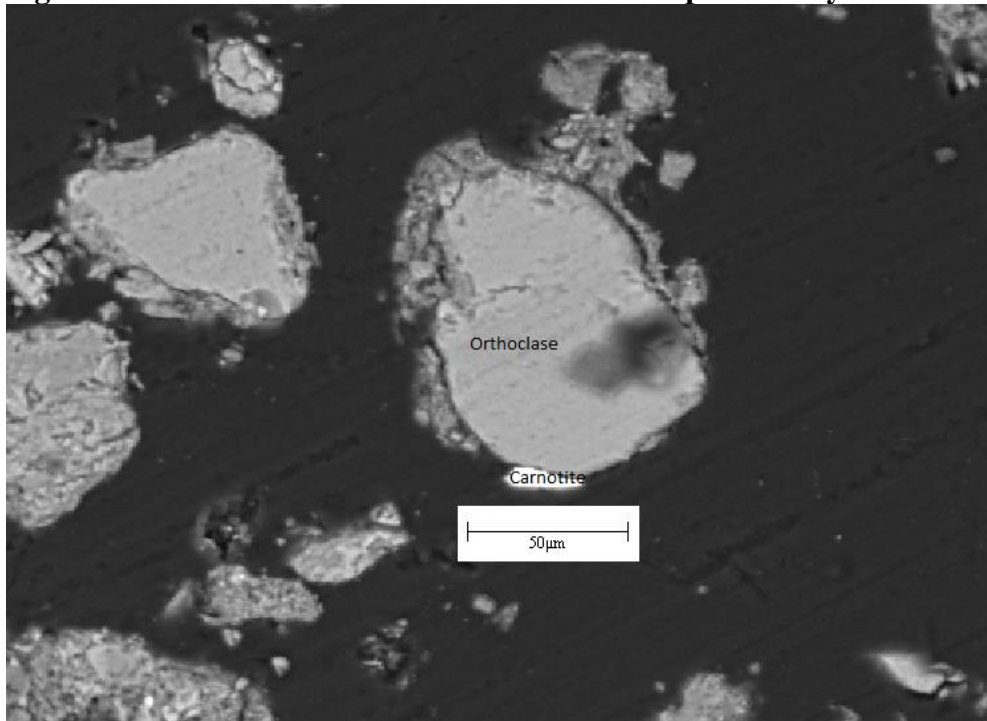


Figure 40. CR-H-0-SL-01 Carnotite Particle Encapsulated by Albite.

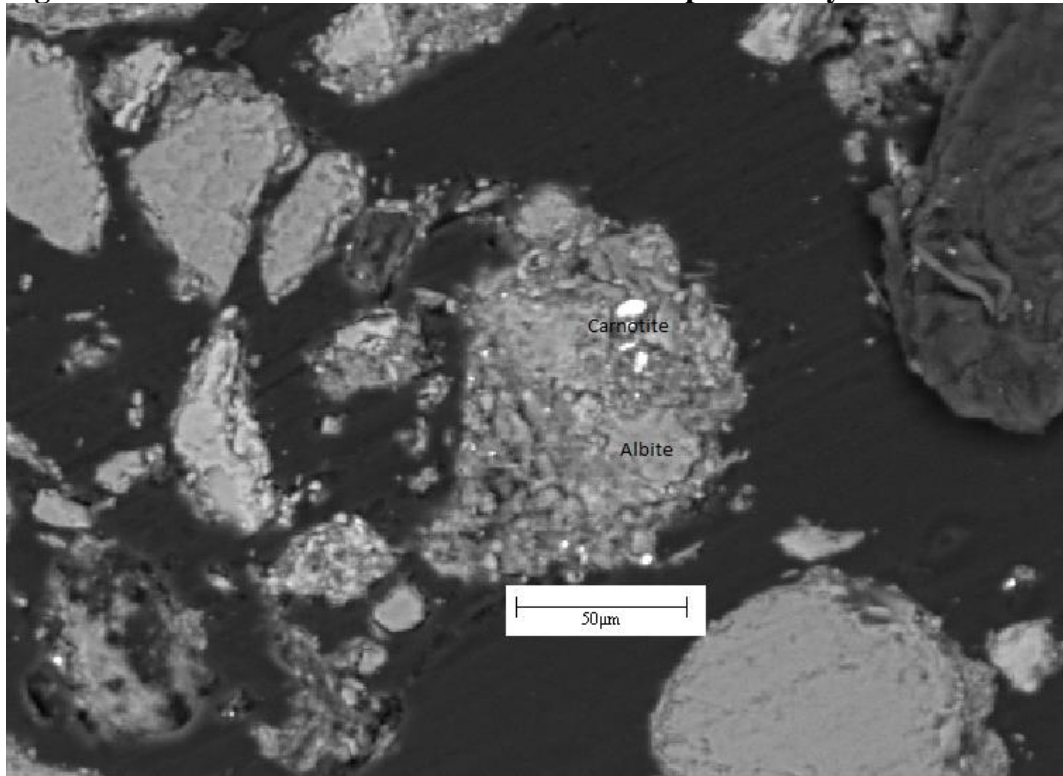


Figure 41. Free Carnotite Particle.

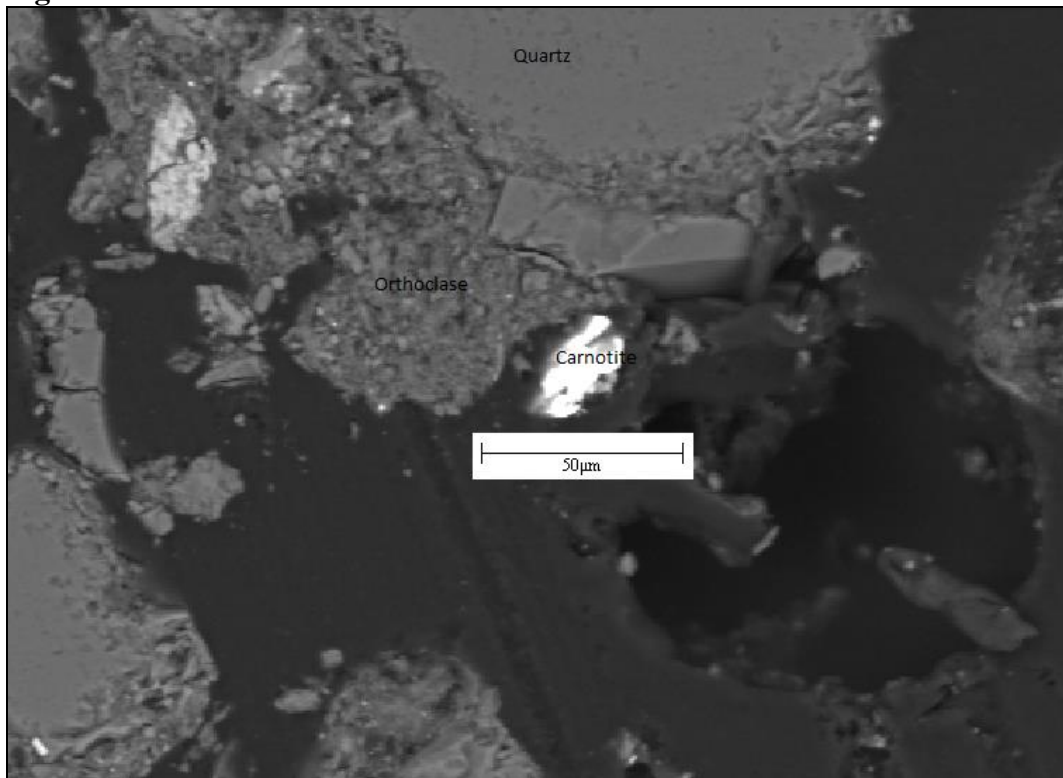


Figure 42. Carnotite Particle Associated with Orthoclase.

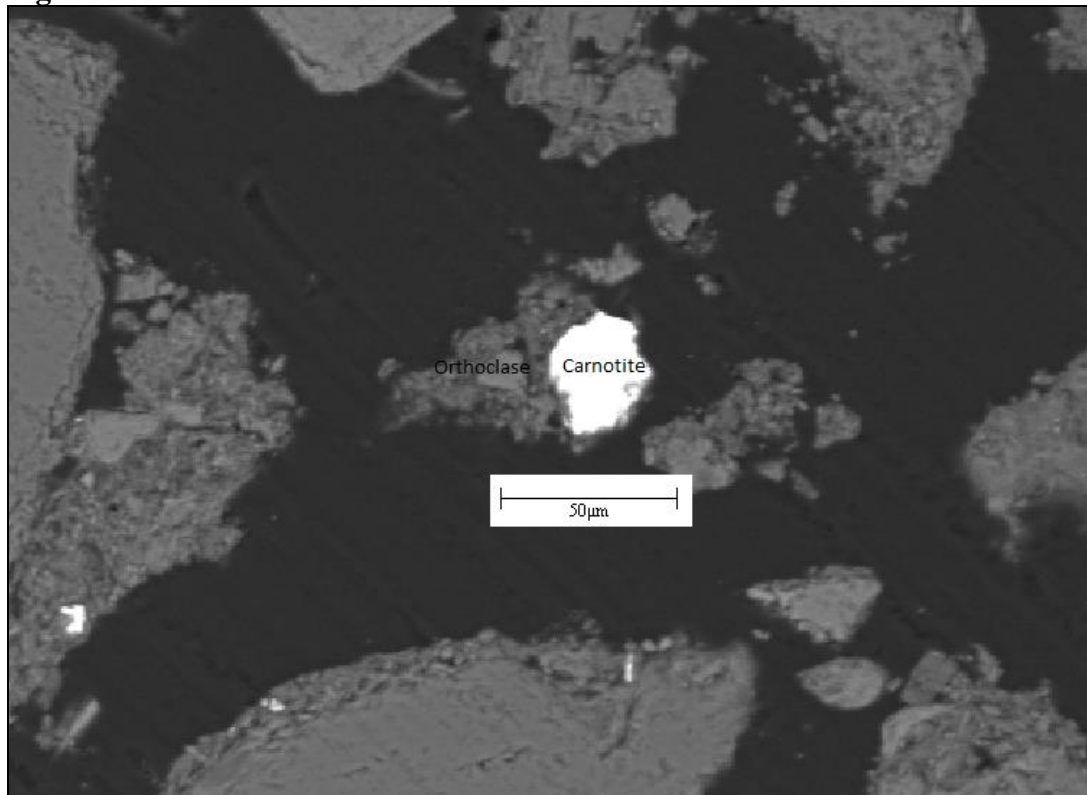


Figure 43. Carnotite Particle Encapsulated by Orthoclase.

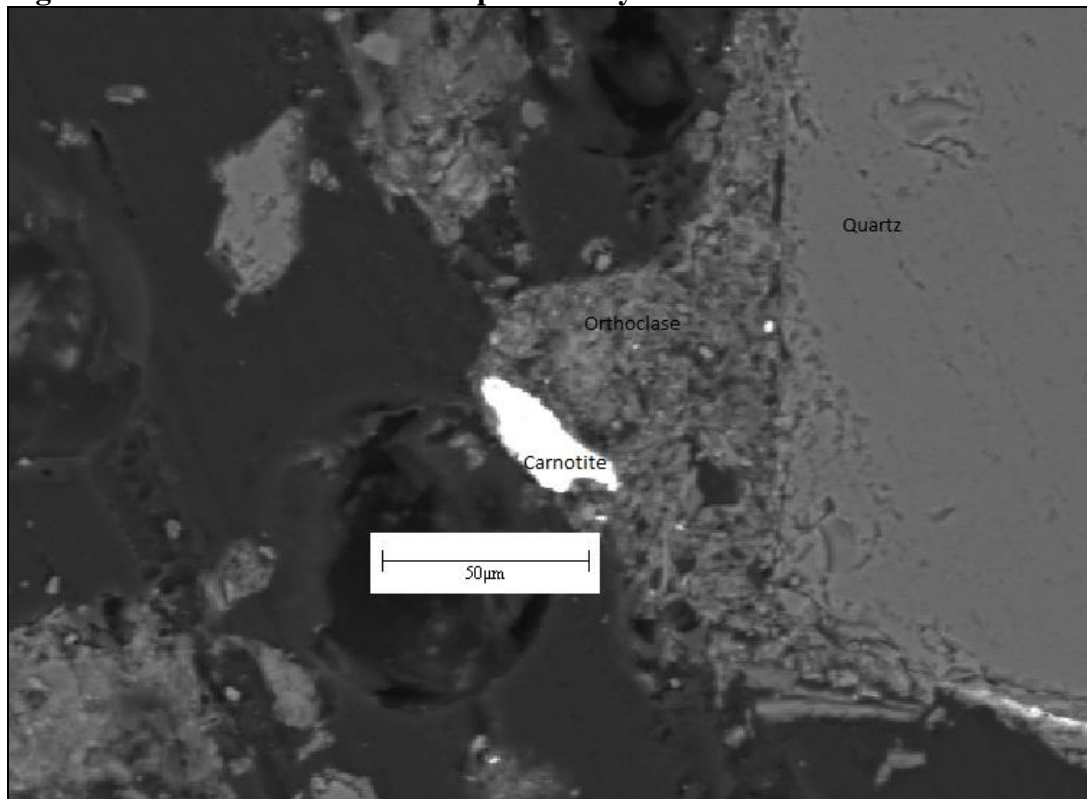


Figure 44. Carnotite Particle Associated with Orthoclase.

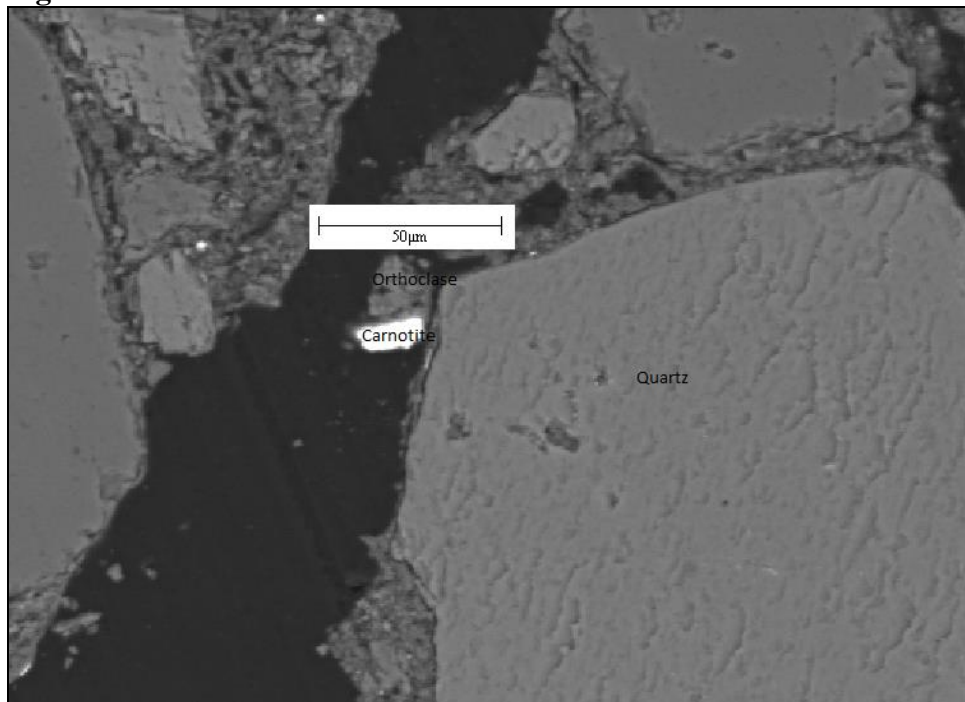
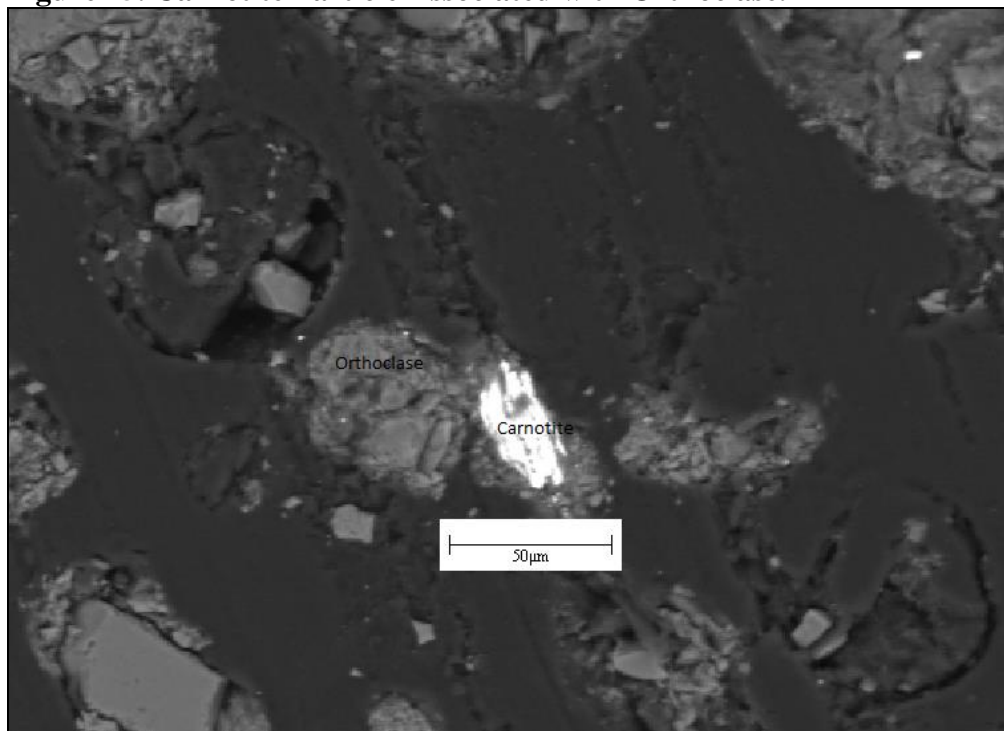


Figure 45. Carnotite Particle Associated with Orthoclase.



CR-H-4-SY -25/+270

For CR-H-4-SY -25/+270 sample, three carnotite particles were identified. Results are shown in figures 46 through 48. According to the data, the carnotite particle appear to be approximately 5 microns in size with orthoclase association. These particles are all leachable but not floatable.

Figure 46. CR-H-4-SY -25/+270 Carnotite Particle Associated with Orthoclase.

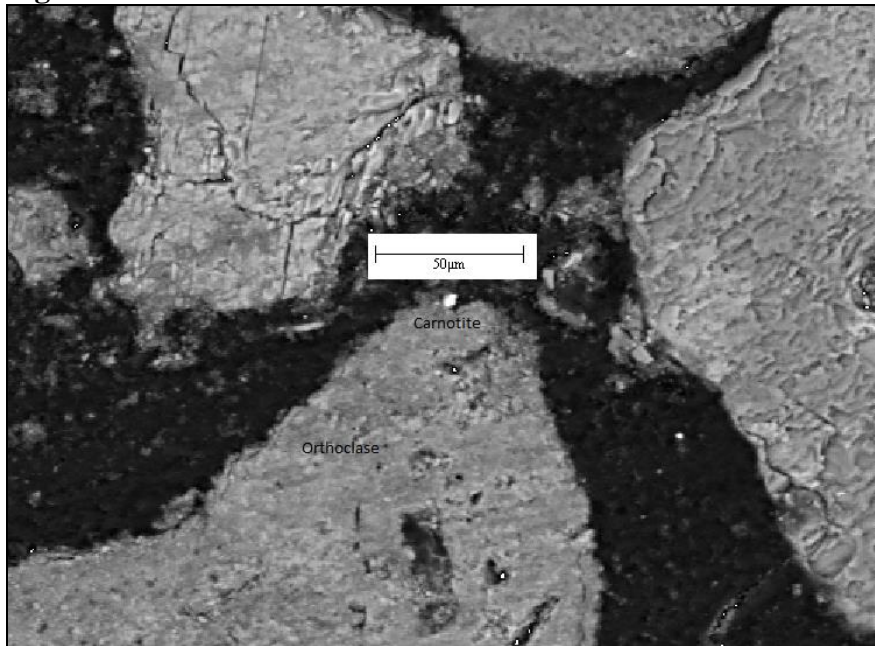


Figure 47. CR-H-4-SY -25/+270 Carnotite Particle Associated with Orthoclase.

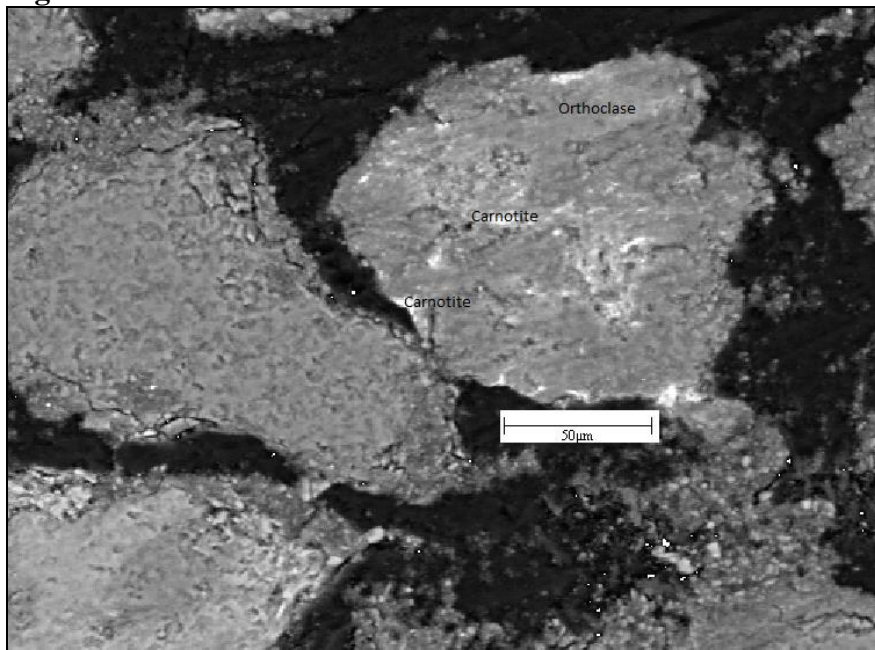
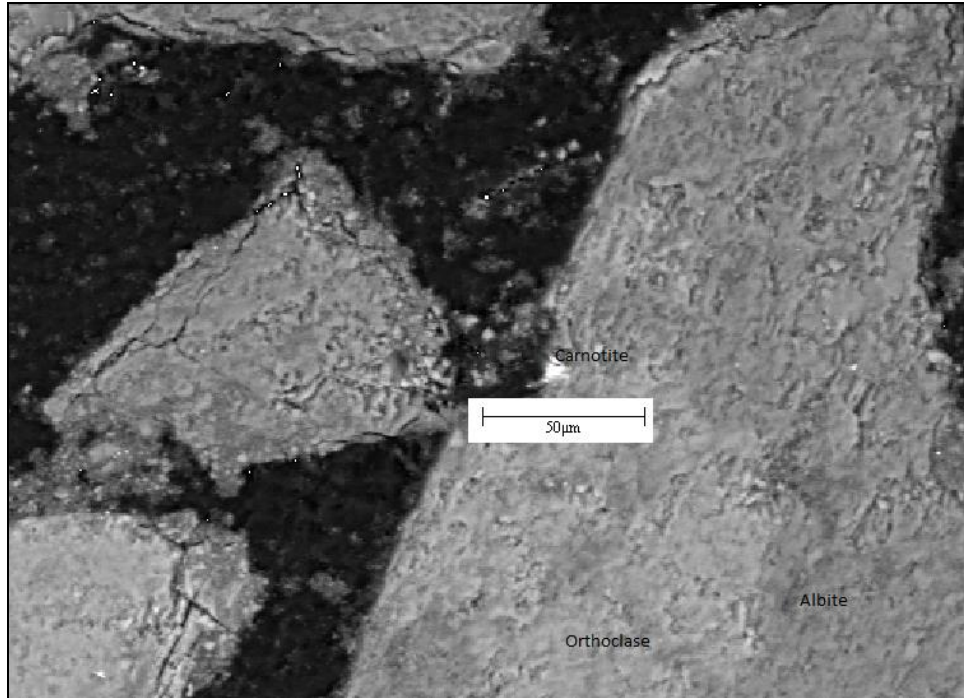


Figure 48. CR-H-4-SY -25/+270 Carnotite Particle Associated with Orthoclase and Albite.



CR-H-8-SY -25/+270

For CR-H-8-SY -25/+270 sample, three carnotite particles were identified. Results are shown in figures 49 through 51. According to the data, the carnotite particles appear to be approximately 5 microns in size with orthoclase, quartz, and albite encapsulation. Observation of the carnotite particles indicates two particles (Figures 49 and 50) are leachable while one particle (Figure 51) is not leachable. All observed particles for this sample is not floatable.

Figure 49. CR-H-8-SY -25/+270 Carnotite Particle Associated with Quartz.

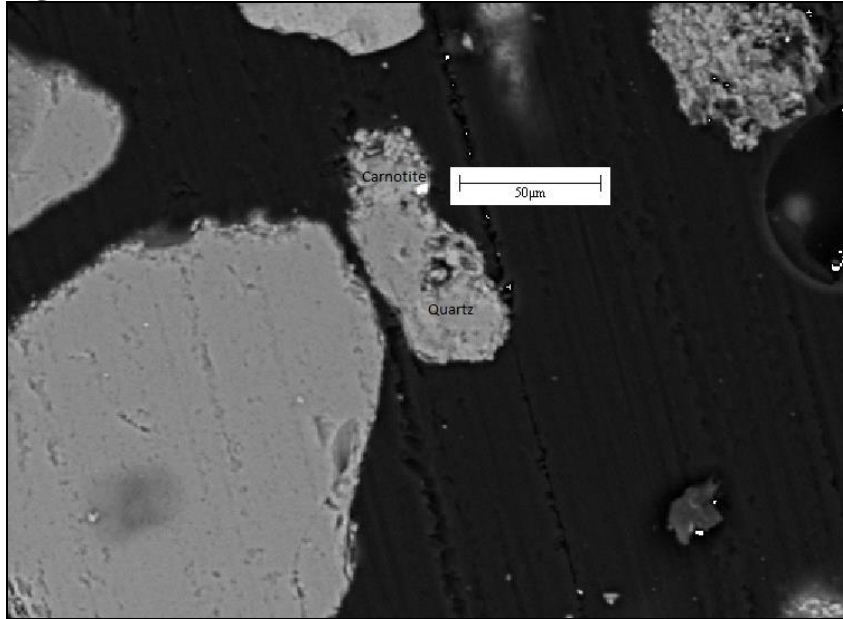


Figure 50. CR-H-8-SY -25/+270 Carnotite Particle Associated with Albite.

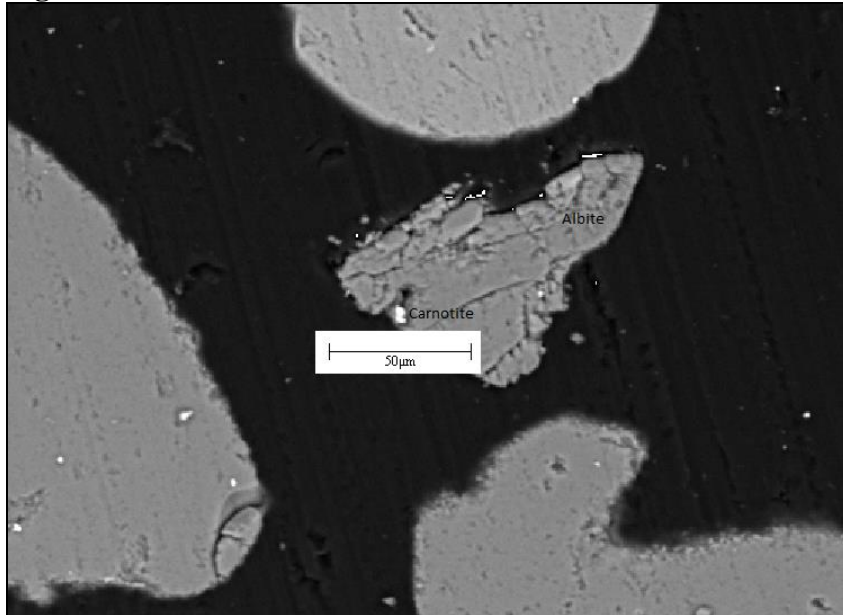
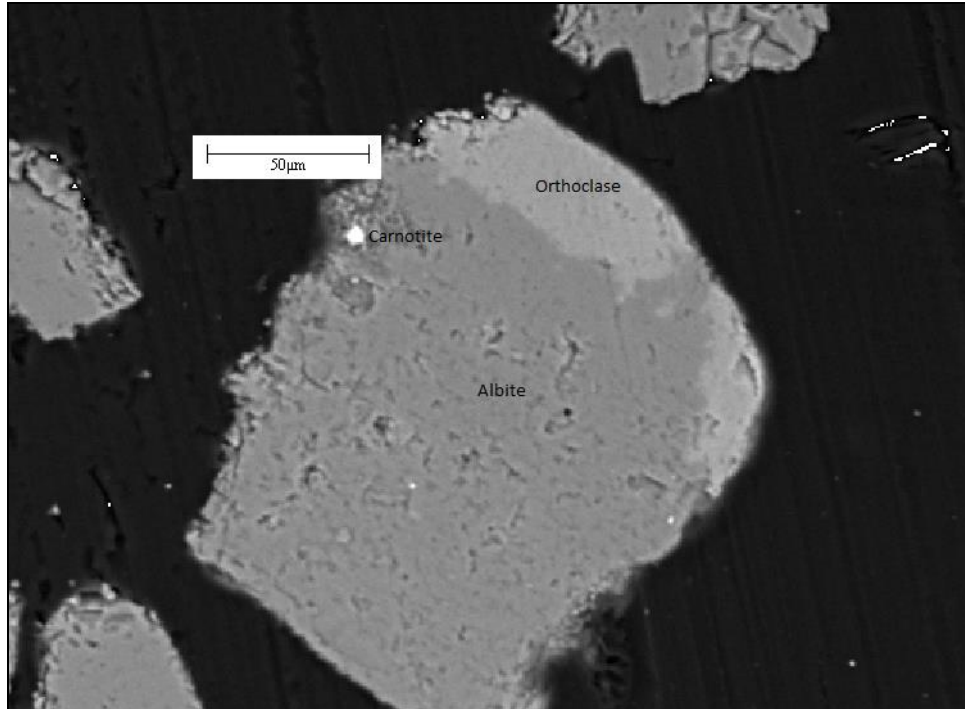


Figure 51. CR-H-8-SY -25/+270 Carnotite Particle Encapsulated with Orthoclase and Albite.



CR-H-30-SY -25/+270

For CR-H-30-SY -25/+270 sample, two carnotite particles were identified. Results are shown in figures 52 and 53. According to the data, the carnotite particles appear to be approximately 5 microns in size with orthoclase and calcite association. These particles are leachable but not floatable.

Figure 52. CR-H-30-SY -25/+270 Carnotite Particle Associated with Orthoclase.

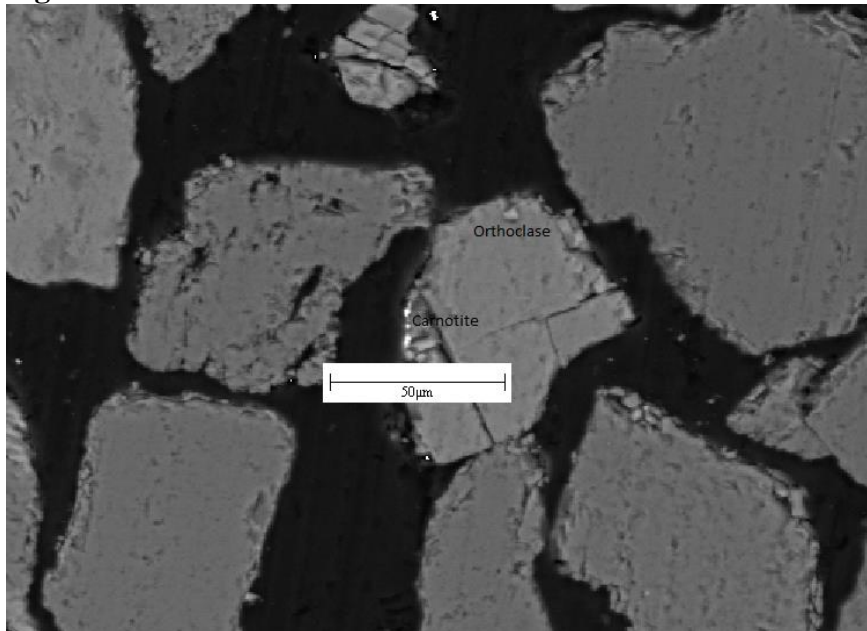
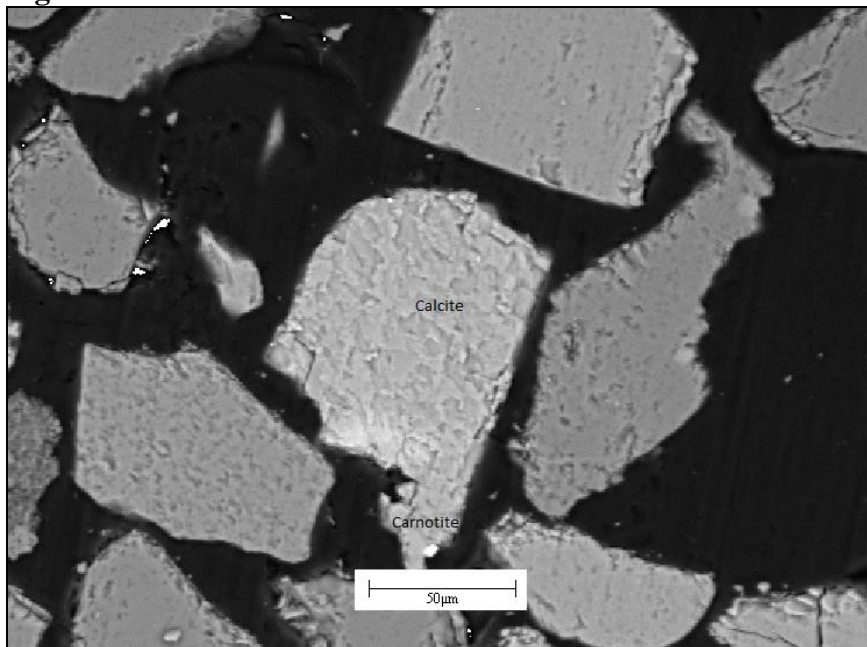


Figure 53. CR-H-30-SY -25/+270 Carnotite Particle Associated with Calcite.



QV-L-0-SL-01

For QV-L-SL-01 sample, two carnotite particles were identified. Results are shown in figures 54 and 58. According to the data, the carnotite particles are approximately 5 to 20 microns in size with albite and orthoclase association. Since these particles are encapsulated, they are not flatable nor leachable. One free carnotite particle was identified.

Figure 54. QV-L-0-SL-01 Carnotite Particle Encapsulated by Albite and Orthoclase.

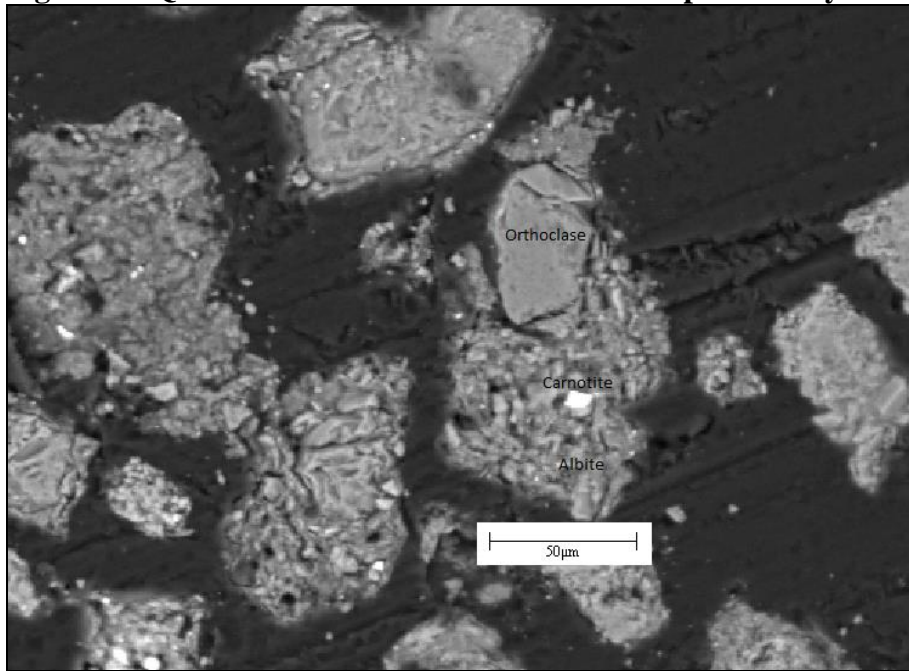


Figure 55. QV-L-0-SL-01 Carnotite Particle Encapsulated by Albite.

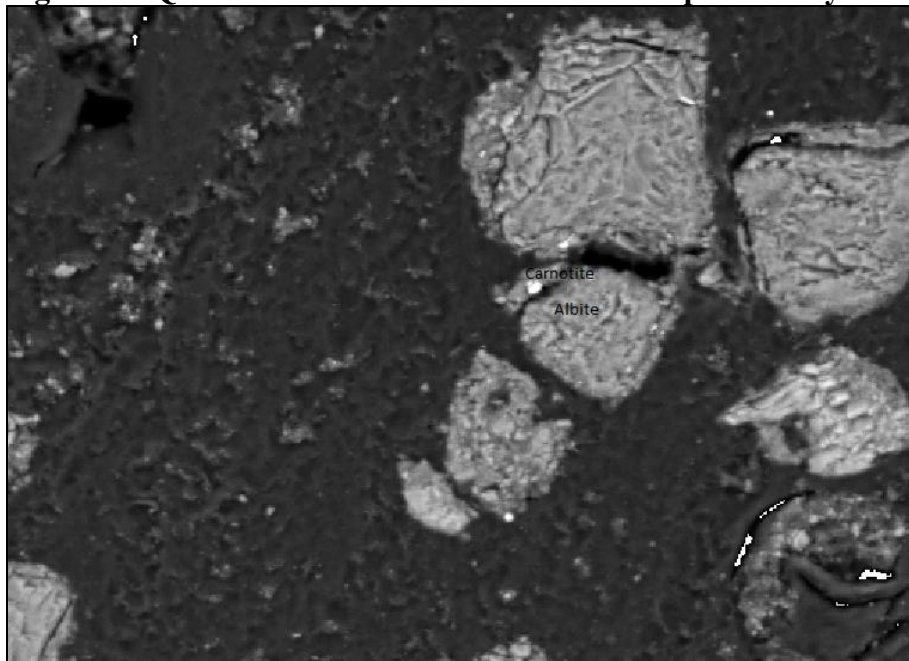


Figure 56. Free Carnotite Particle.

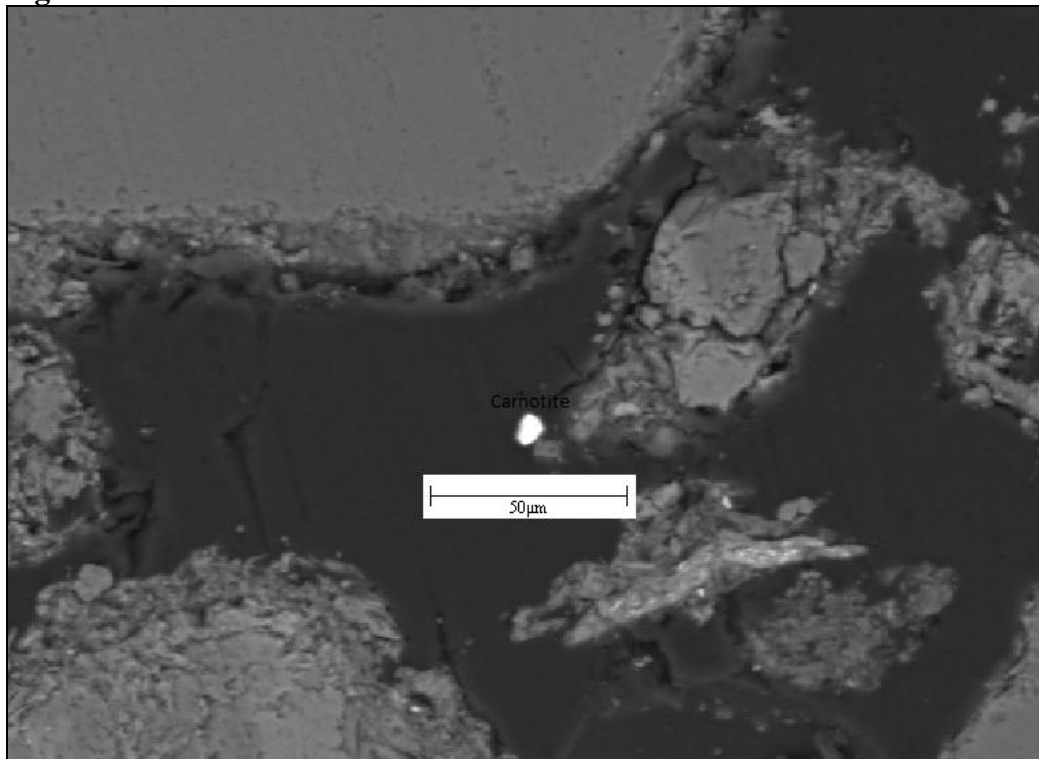


Figure 57. Carnotite Particle Encapsulated by Orthoclase.

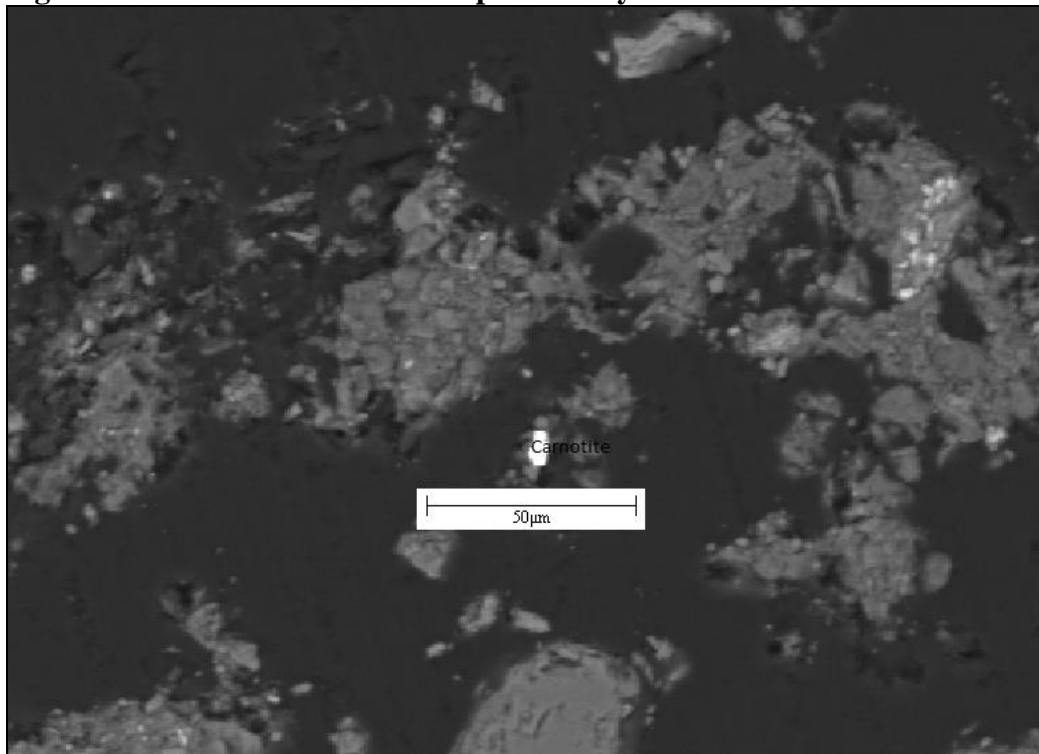
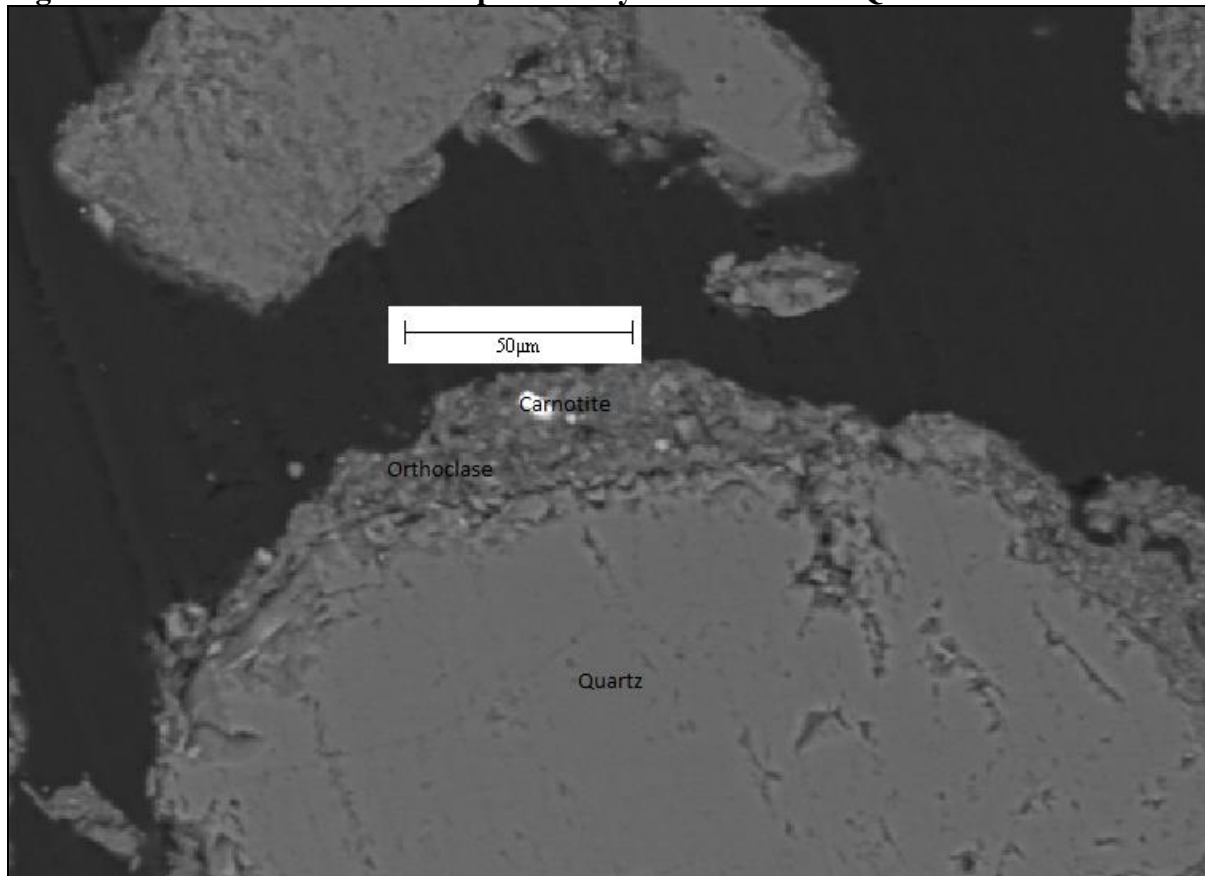


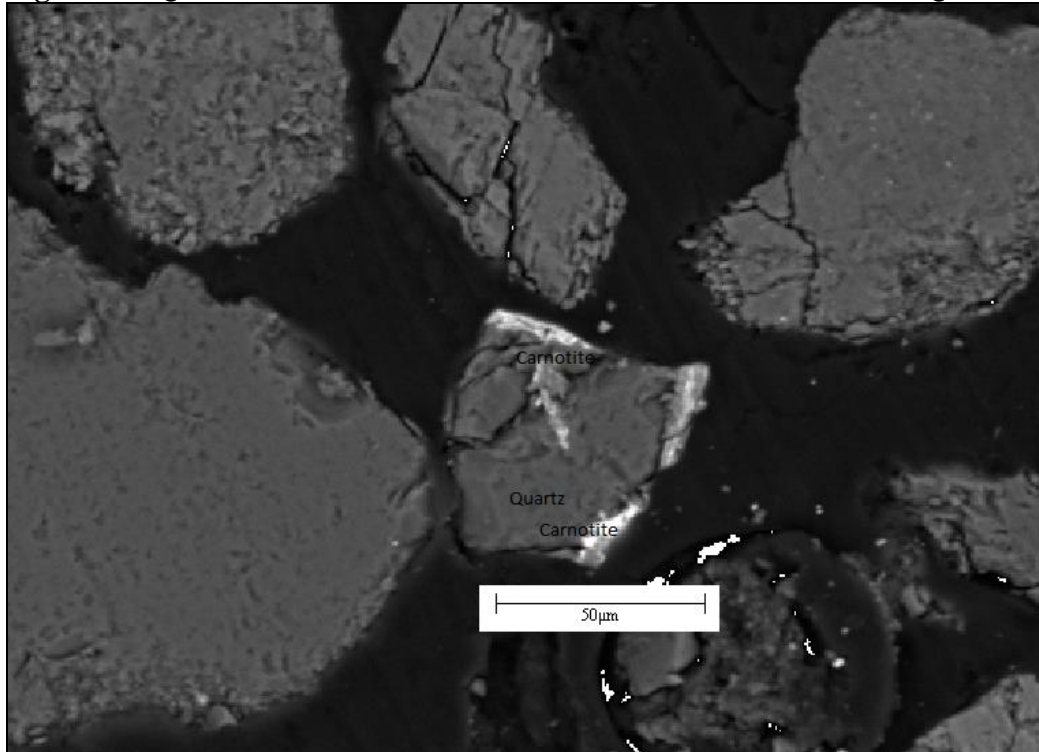
Figure 58. Carnotite Particle Encapsulated by Orthoclase and Quartz.



QV-L-4-SY -25/+270

For QV-L-4-SY -25/+270 sample, one carnotite particle was identified. Results are shown in figure 59. According to the data, the carnotite particle appear to be approximately 10 microns in size with quartz association. This particle is leachable but not floatable.

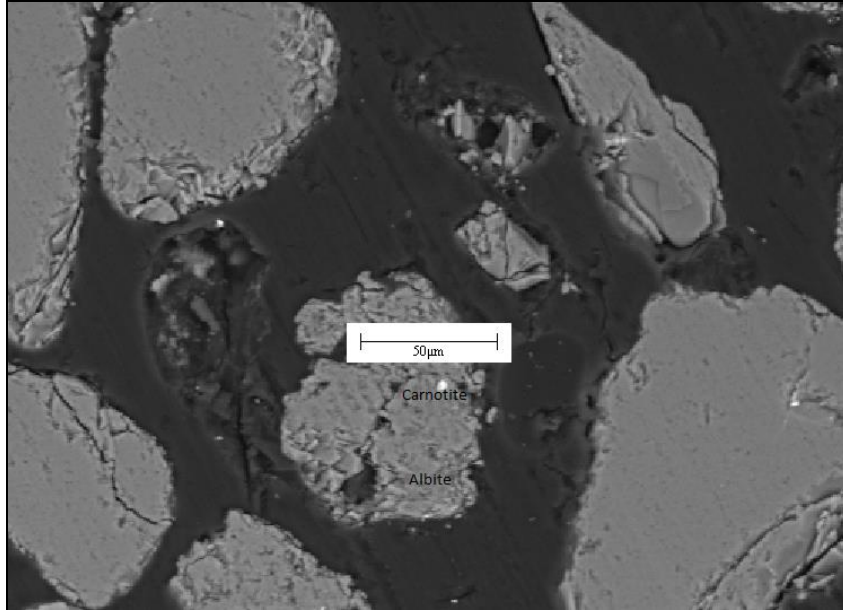
Figure 59. QV-L-4-SY -25/+270 Carnotite Particle Associated with Quartz.



QV-L-8-SY -25/+270

For QV-L-8-SY -25/+270 sample, one carnotite particle was identified. Results are shown in figure 60. According to the data, the carnotite particle appear to be approximately 5 microns in size with albite encapsulation. This particle is not leachable or flatable.

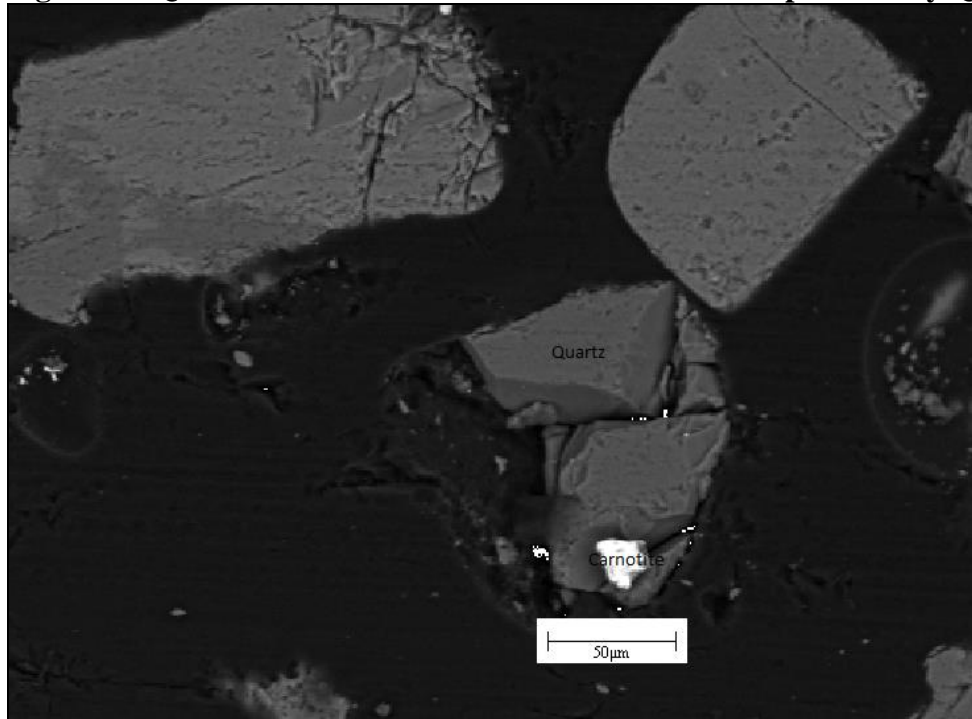
Figure 60. QV-L-8-SY -25/+270 Carnotite Particle Encapsulated by Albite.



QV-L-30-SY -25/+270

For QV-L-30-SY -25/+270 sample, one carnotite particle was identified. Results are shown in figure 61. According to the data, the carnotite particle appear to be approximately 20 microns in size with quartz encapsulation. This particle is not leachable or flutable.

Figure 61. QV-L-30-SY -25/+270 Carnotite Particle Encapsulated by Quartz.



QV-M-0-SL-01

For QV-M-SL-01 sample, several carnotite particles were identified. Results are shown in figures 62 through 68. According to the data, the carnotite particles are approximately 5 to 20 microns in size with albite, quartz, and orthoclase association. Three of these particles are not floatable or leachable, however, one particle is leachable (Figure 66).

Figure 62. QV-M-0-SL-01 Carnotite Particle Associated with Orthoclase.

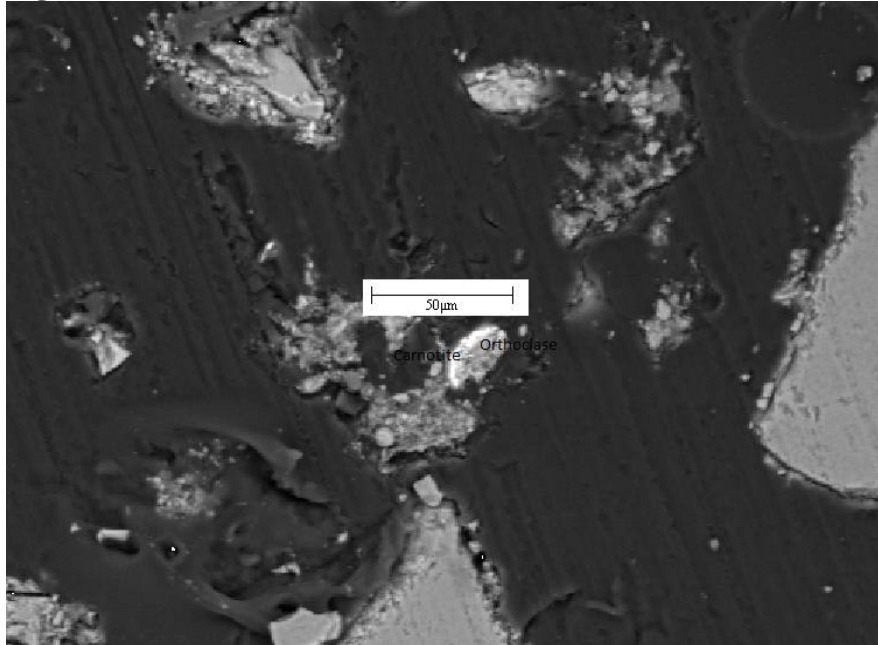


Figure 63. QV-M-0-SL-01 Carnotite Particle Encapsulated by Albite.

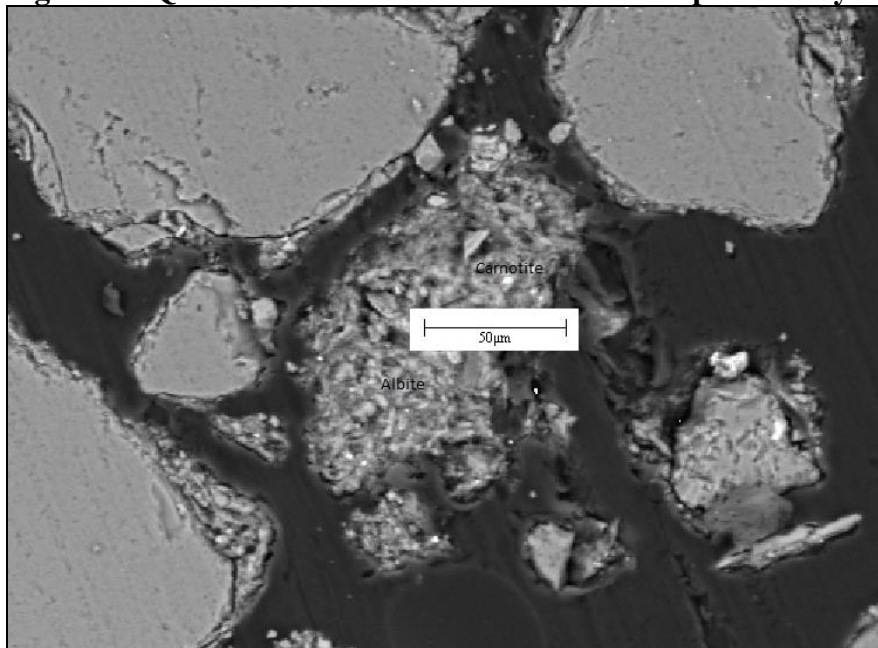


Figure 64. QV-M-0-SL-01 Carnotite Particle Encapsulated by Orthoclase and Quartz.

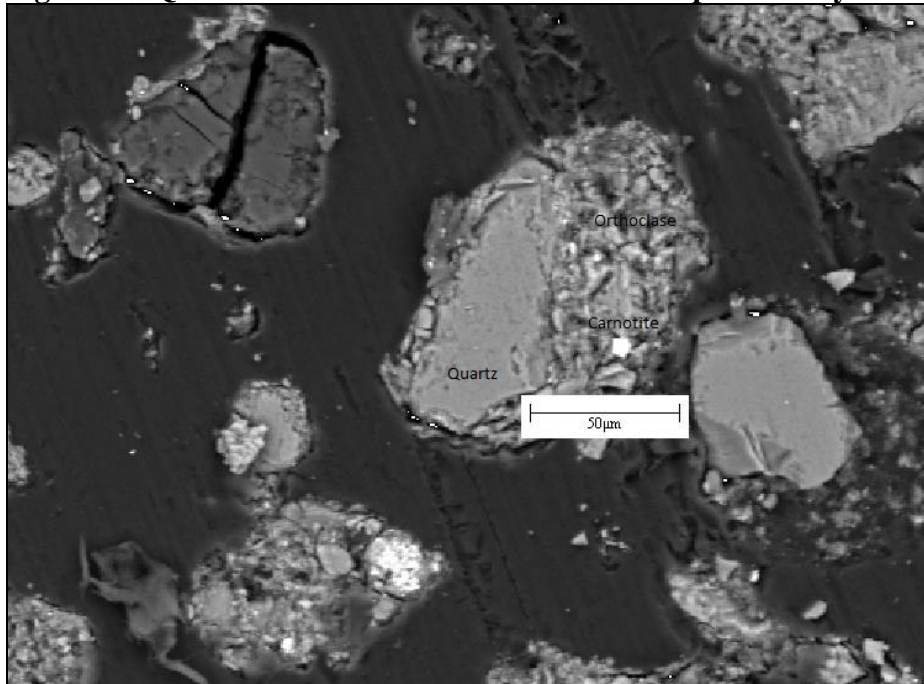


Figure 65. QV-M-0-SL-01 Carnotite Particle Encapsulated by Orthoclase and Quartz.

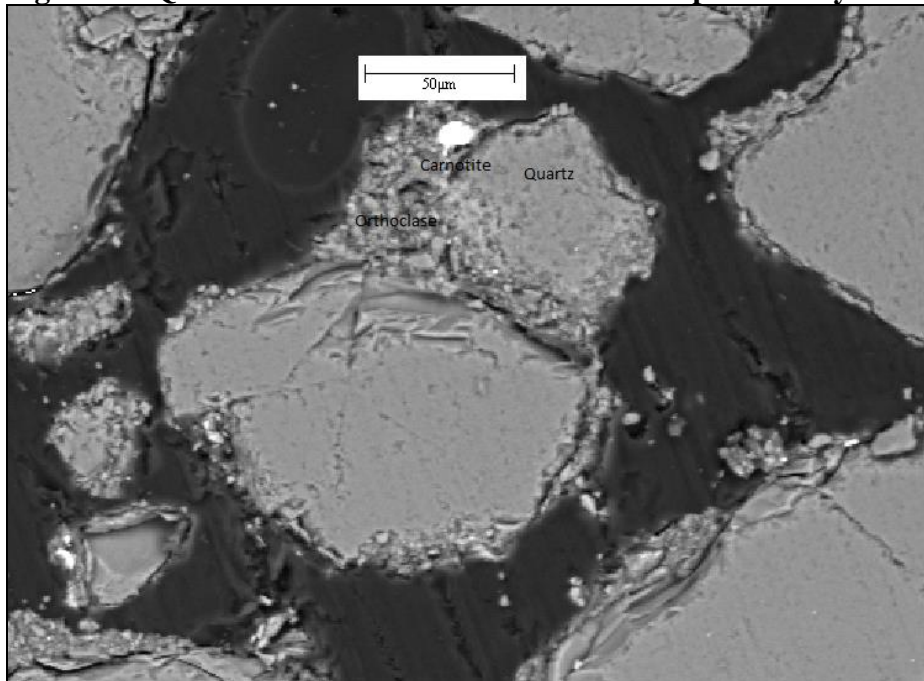


Figure 66. Carnotite Particle Encapsulated by Orthoclase and Quartz.

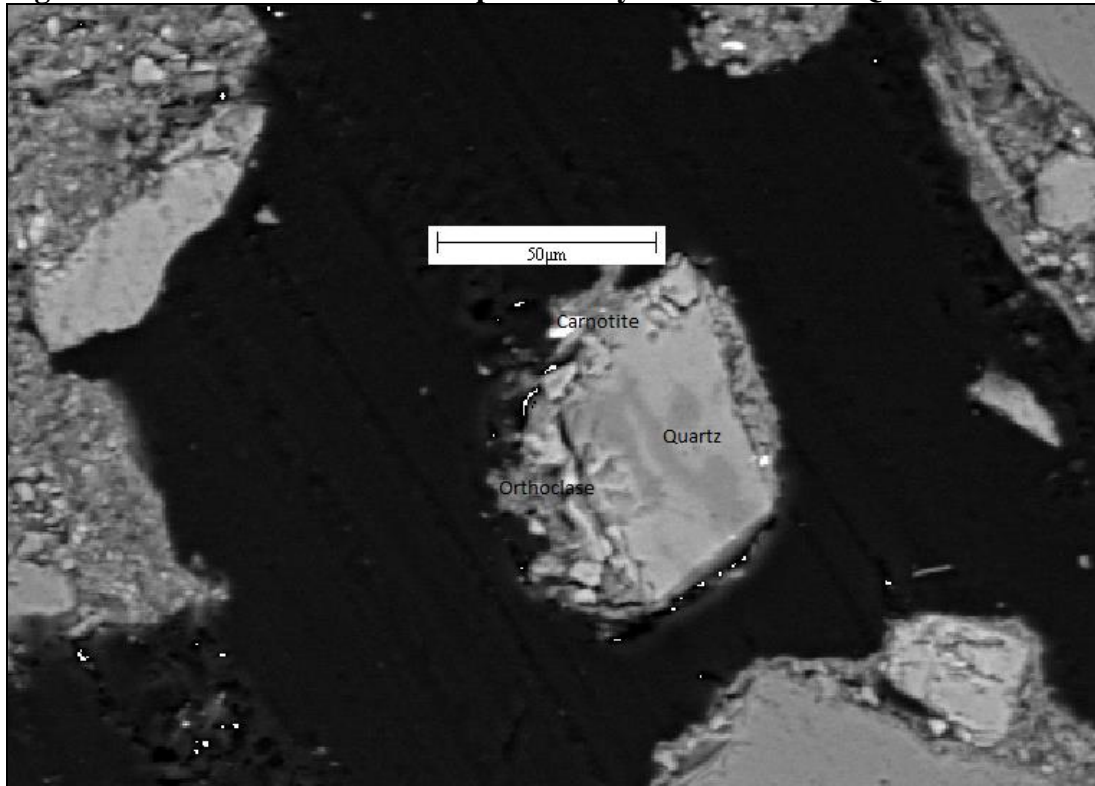


Figure 67. Carnotite Particle Encapsulated by Orthoclase and Quartz.

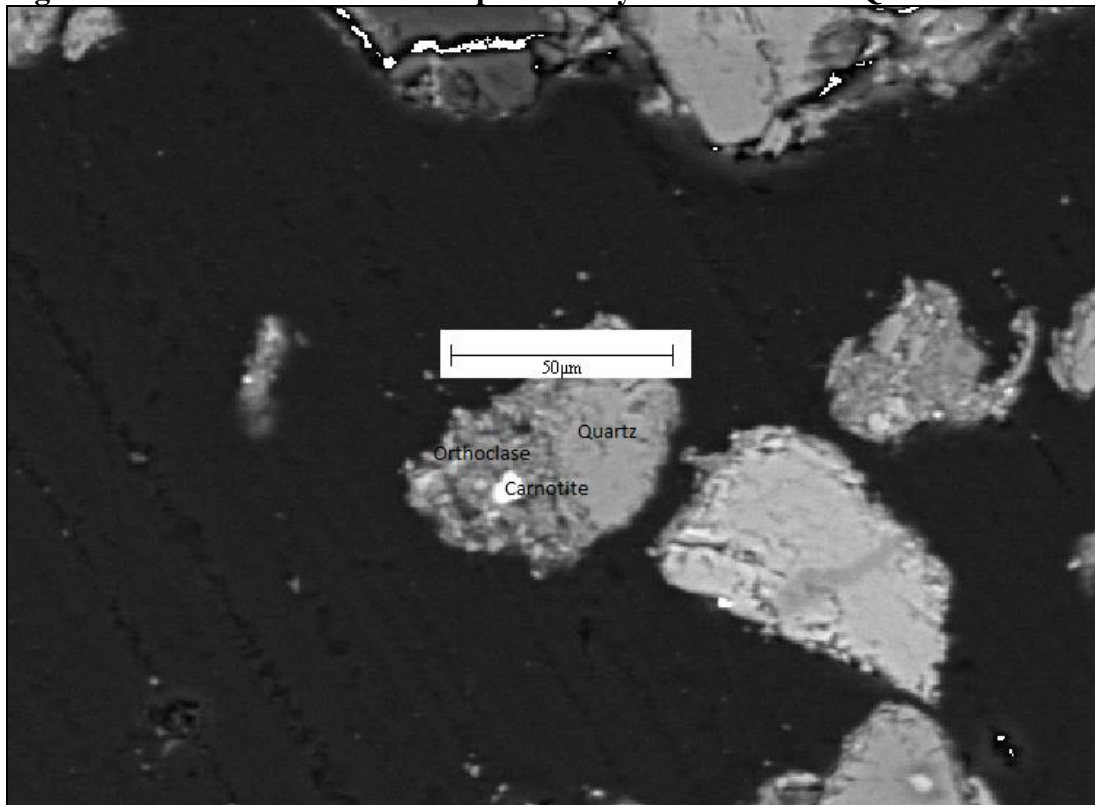
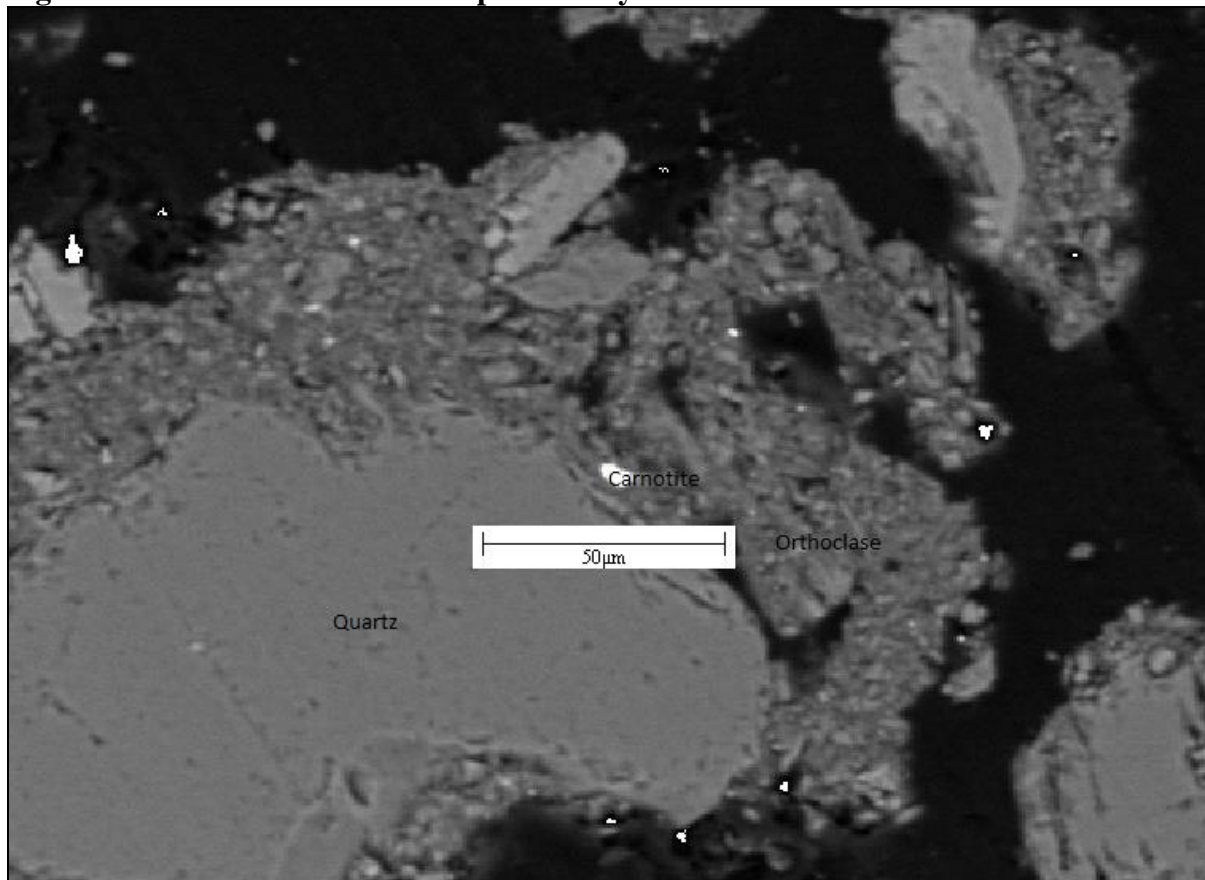


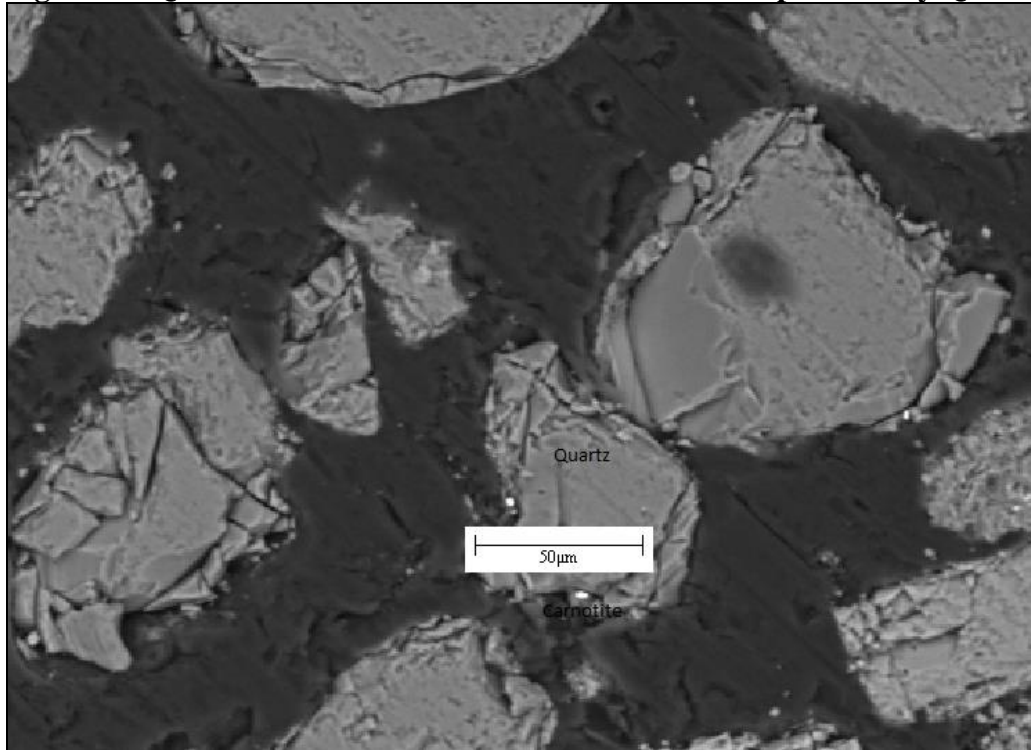
Figure 68. Carnotite Particle Encapsulated by Orthoclase.



QV-M-4-SY -25/+270

For QV-M-4-SY -25/+270 sample, one carnotite particle was identified. Results are shown in figure 69. According to the data, the carnotite particle appear to be approximately 5 microns in size with quartz encapsulation. This particle is not leachable or floatable.

Figure 69. QV-M-4-SY -25/+270 Carnotite Particle Encapsulated by Quartz.



QV-M-8-SY -25/+270

For QV-M-8-SY -25/+270 sample, two carnotite particles were identified. Results are shown in figures 70 and 71. According to the data, the carnotite particle appear to be approximately 5 microns in size with quartz and orthoclase encapsulation. These particles are not leachable or flatable.

Figure 70. QV-M-8-SY -25/+270 Carnotite Particle Encapsulated by Orthoclase.

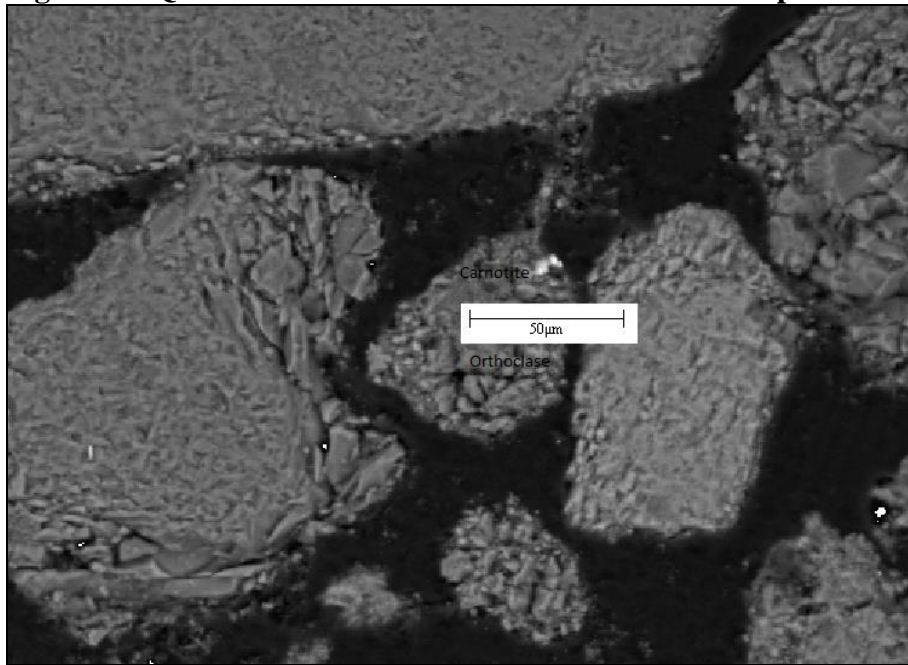
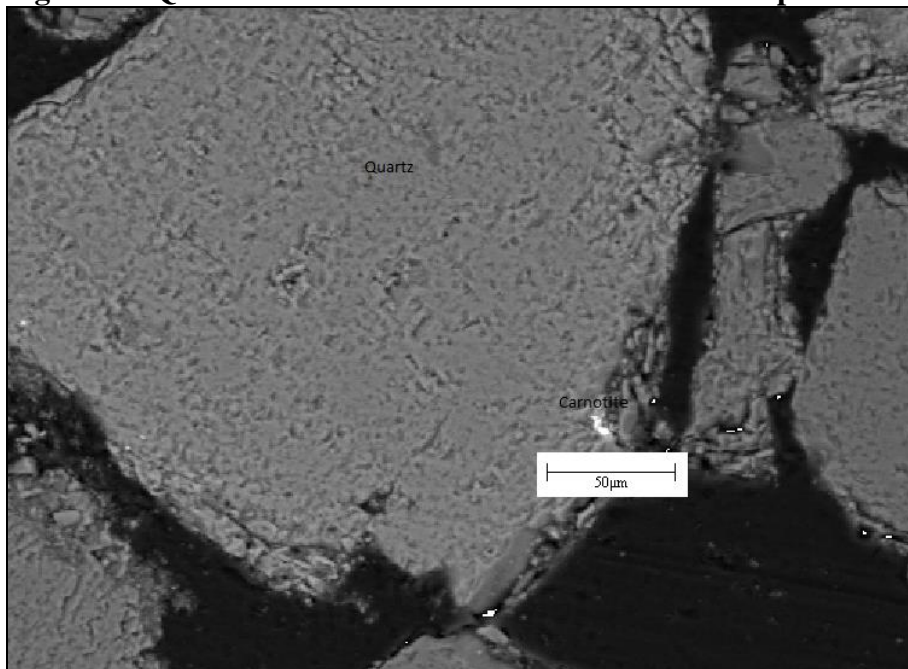


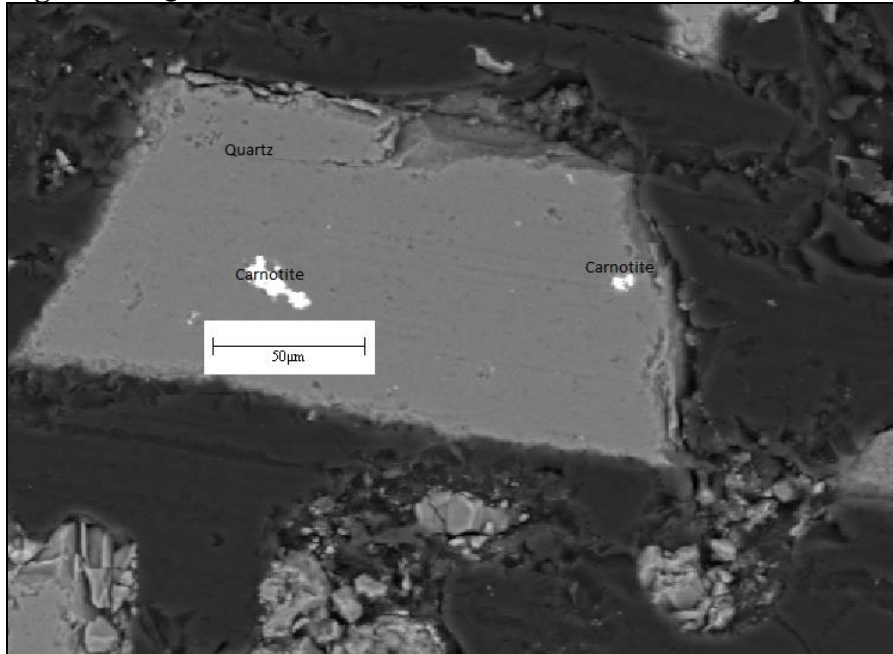
Figure 71. QV-M-8-SY -25/+270 Carnotite Particle Encapsulated by Quartz.



QV-M-30-SY -25/+270

For QV-M-30-SY -25/+270 sample, one carnotite particle was identified. Results are shown in figure 72. According to the data, the carnotite particle appear to be approximately 20 microns in size with quartz encapsulation. This particle is not leachable or flatable.

Figure 72. QV-M-30-SY -25/+270 Carnotite Particle Encapsulated by Quartz.



QV-H-0-SL-01

For QV-H-SL-01 sample, several carnotite particles were identified. Results are shown in figures 73 through 78. According to the data, the carnotite particles are approximately 5 microns in size with albite and orthoclase association. All of the particles are not floatable, however, two of the four particles are leachable (Figures 53 and 54).

Figure 73. QV-H-0-SL-01 Carnotite Particle Encapsulated by Albite.

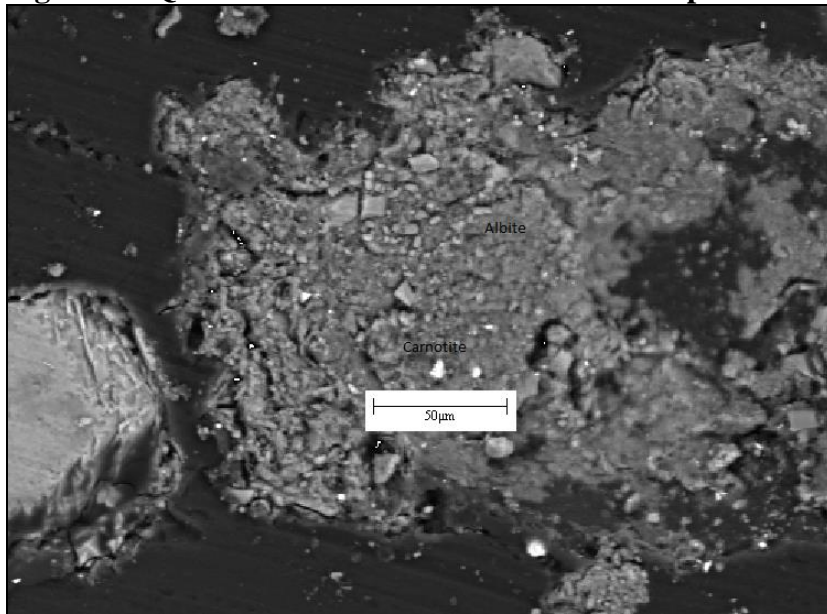


Figure 74. QV-H-0-SL-01 Carnotite Particle Encapsulated by Orthoclase

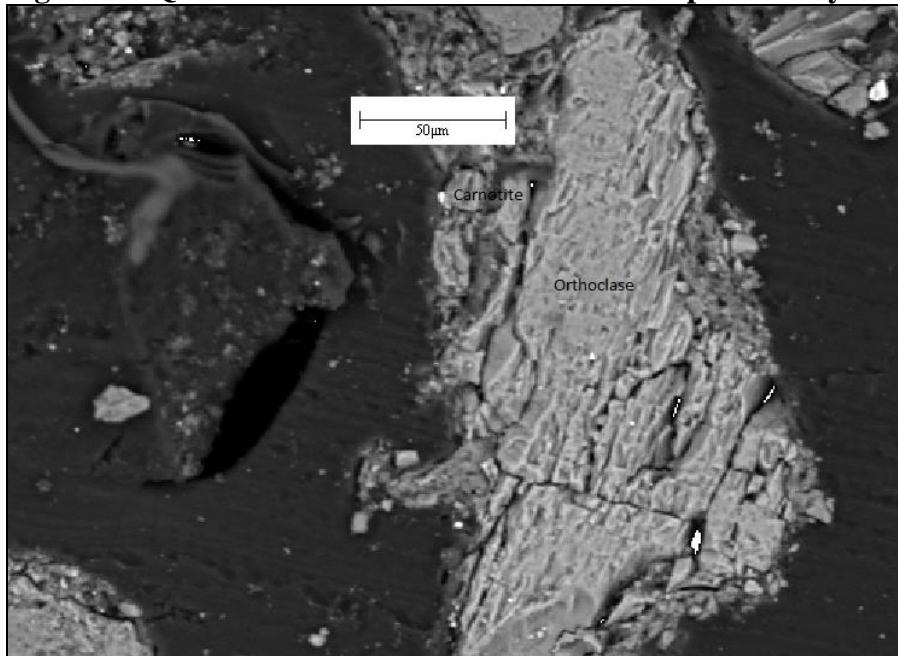


Figure 75. QV-H-0-SL-01 Carnotite Particle Encapsulated by Orthoclase.

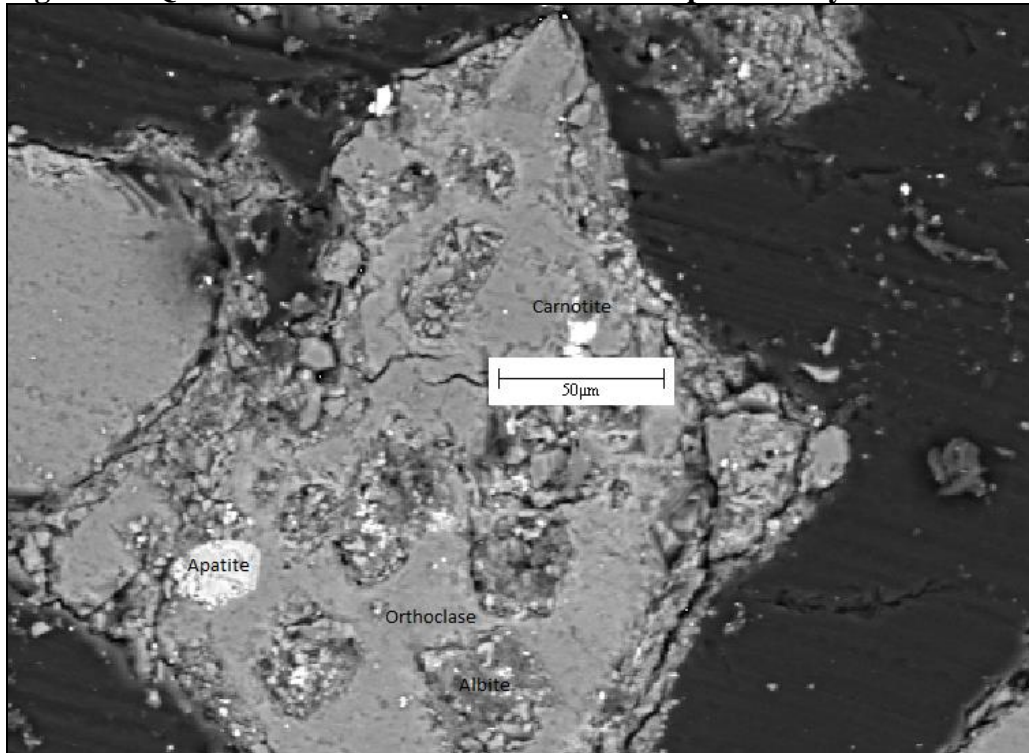


Figure 76. QV-H-0-SL-01 Carnotite Particle Encapsulated by Orthoclase.

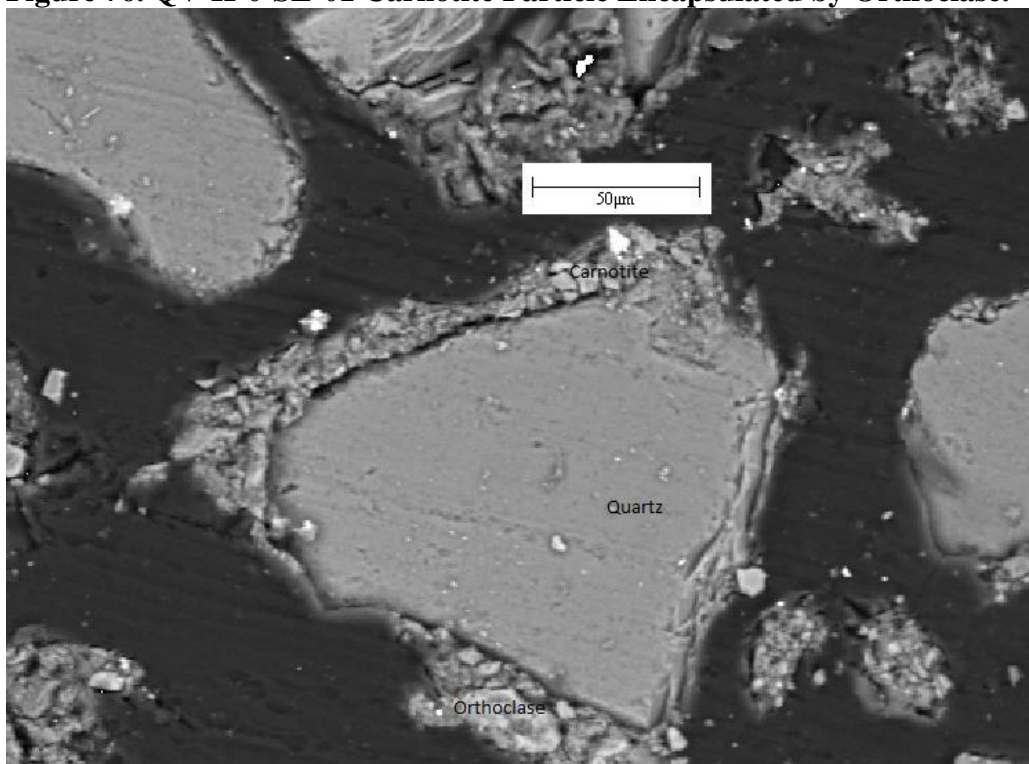


Figure 77. Carnotite Particle Encapsulated by Orthoclase.

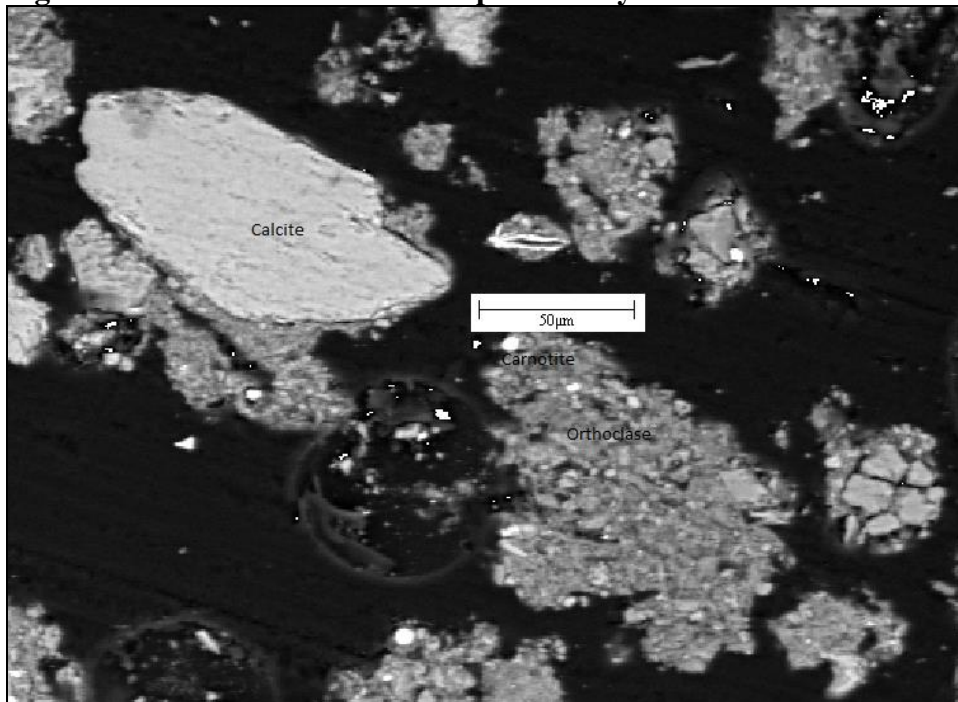
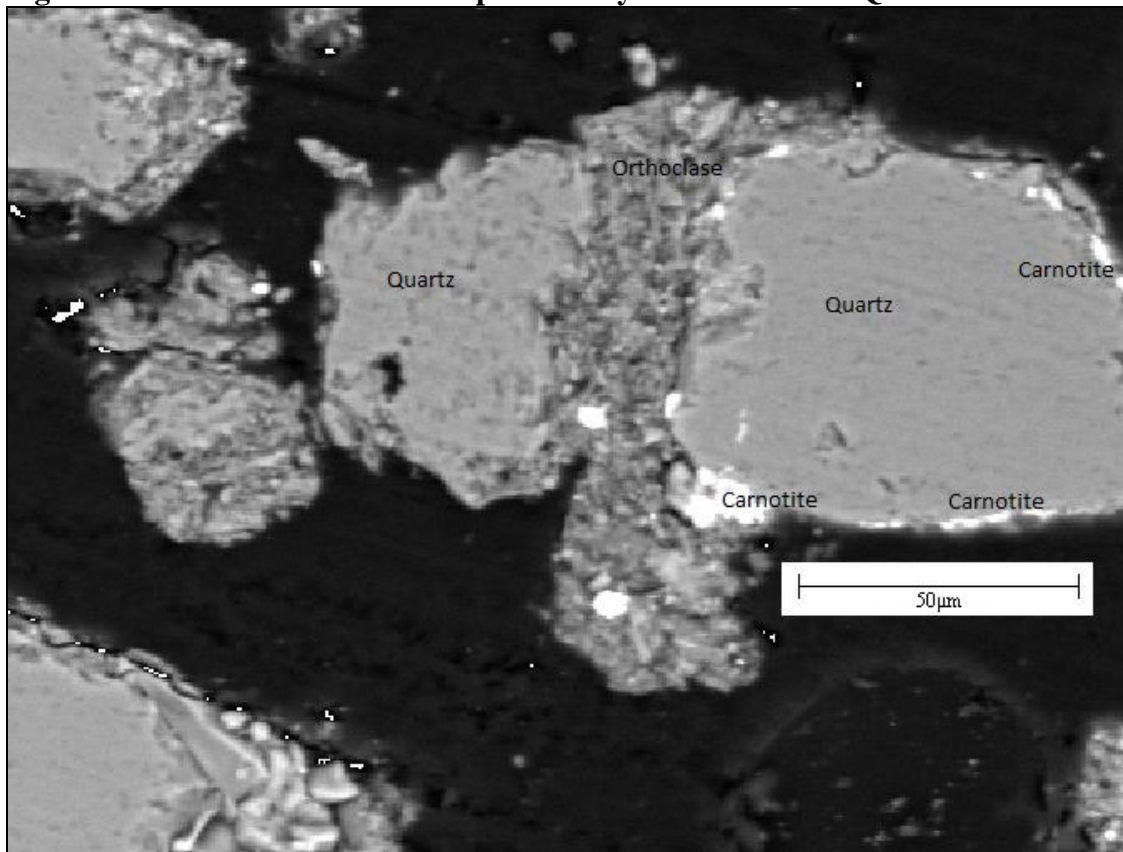


Figure 78. Carnotite Particle Encapsulated by Orthoclase and Quartz.



QV-H-4-SY -25/+270

For QV-H-4-SY -25/+270 sample, several carnotite particles were identified. Results are shown in figures 79 through 83. According to the data, the carnotite particles appear to be approximately 5 microns in size with albite, quartz and clinocllore encapsulation. One carnotite particle was identified at 40 microns with quartz association. Most particles are not leachable or floatable (Figures 79 through 82) while one particle was leachable only (Figure 83).

Figure 79. QV-H-4-SY -25/+270 Carnotite Particle Encapsulated by Albite.

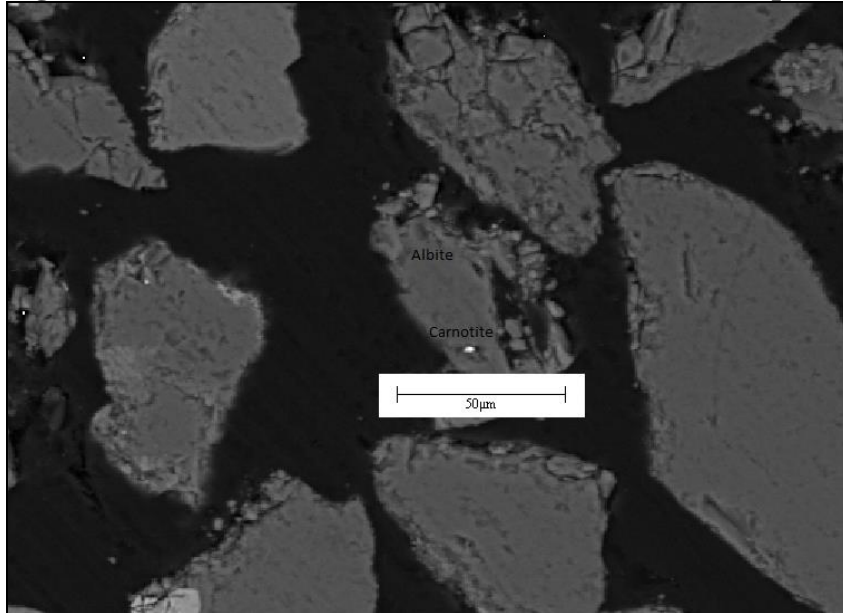


Figure 80. QV-H-4-SY -25/+270 Carnotite Particle Encapsulated by Albite.

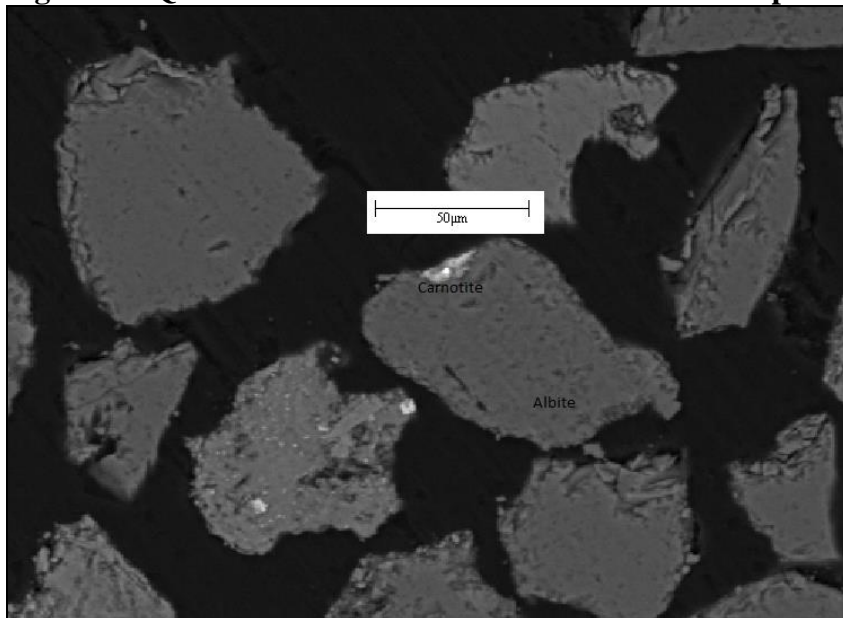


Figure 81. QV-H-4-SY -25/+270 Carnotite Particle Encapsulated by Clinocllore.

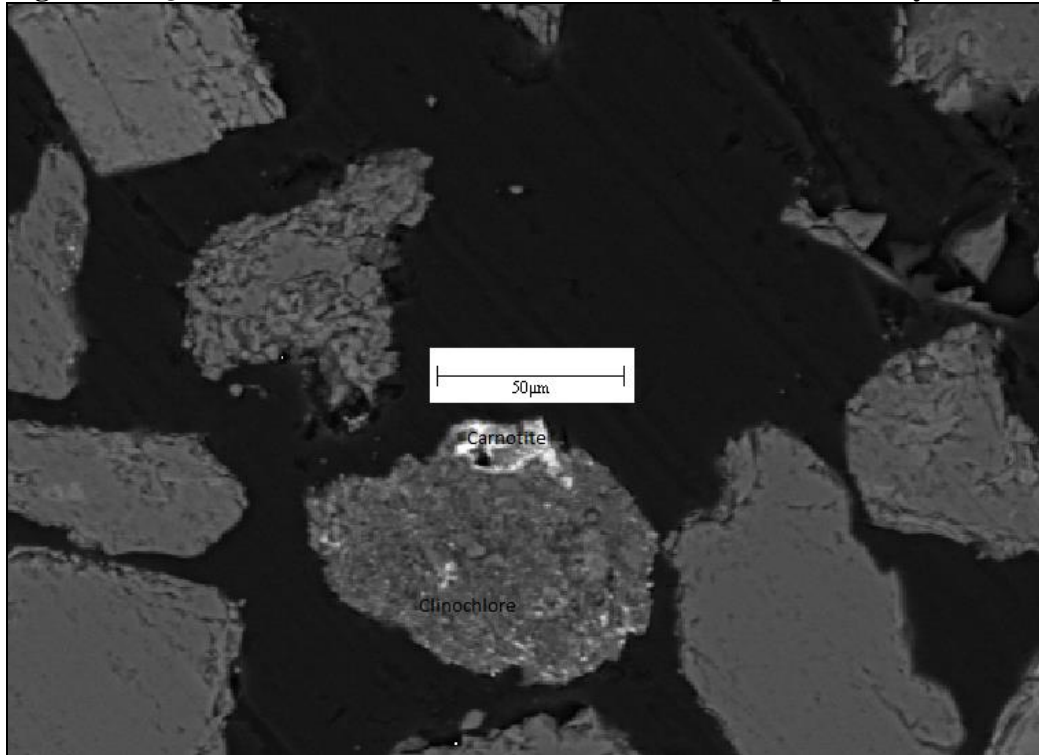


Figure 82. QV-H-4-SY -25/+270 Carnotite Particle Encapsulated by Orthoclase.

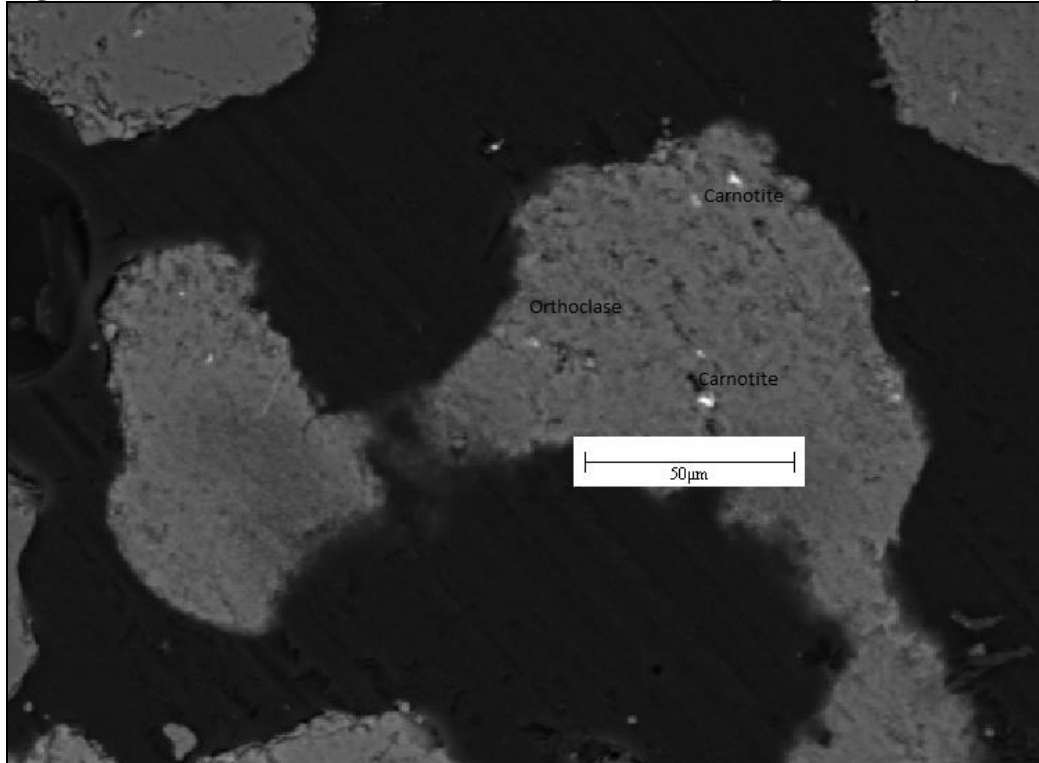
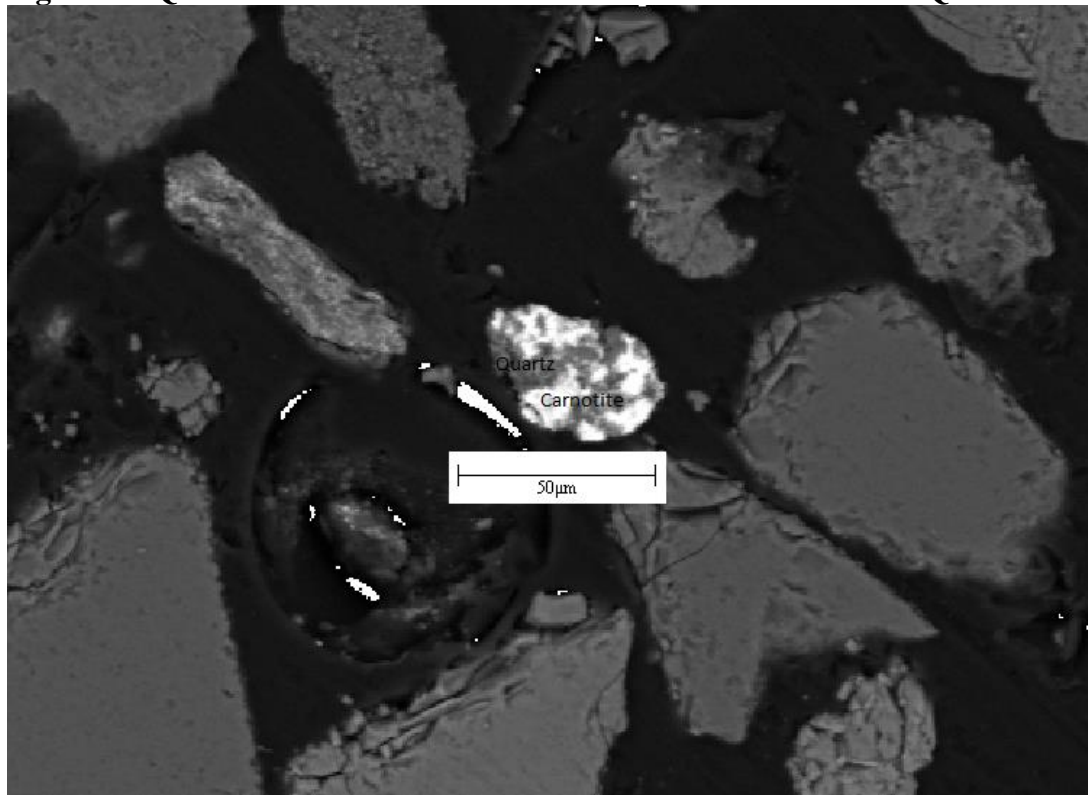


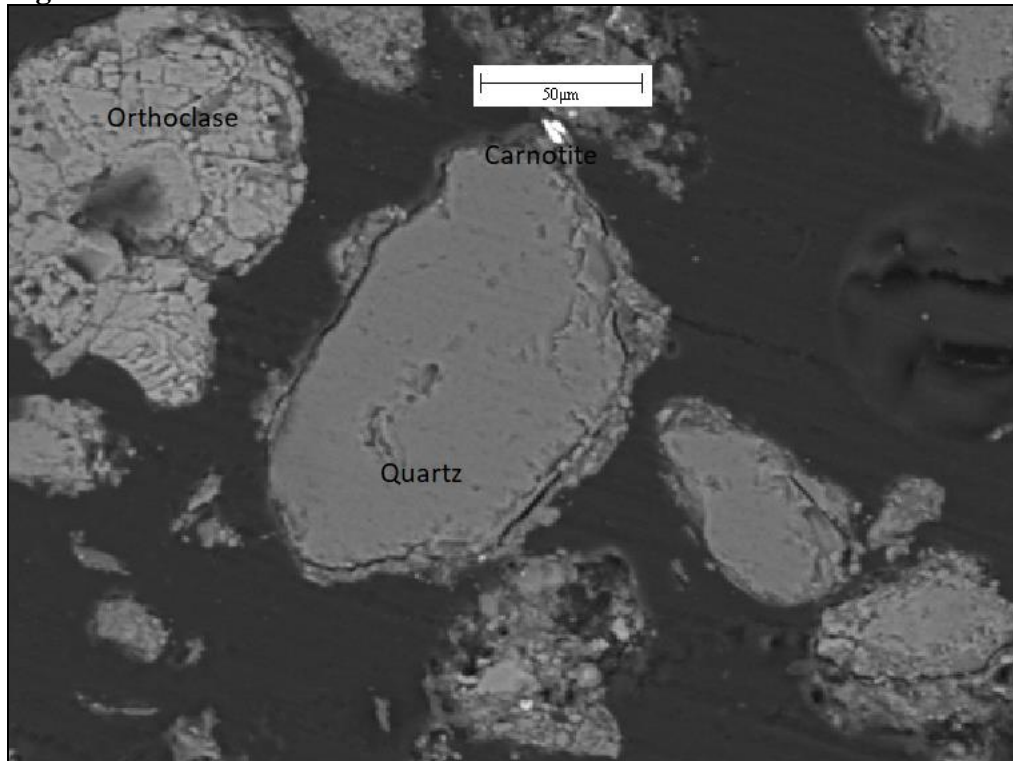
Figure 83. QV-H-4-SY -25/+270 Carnotite Particle Associated with Quartz.



QV-H-8-SY -25/+270

For sample QV-H-8-SY -25/+270, one carnotite particles was identified. Results are shown in figure 84. According to the image, this particle is associated with quartz. This particle is leachable but not floatable.

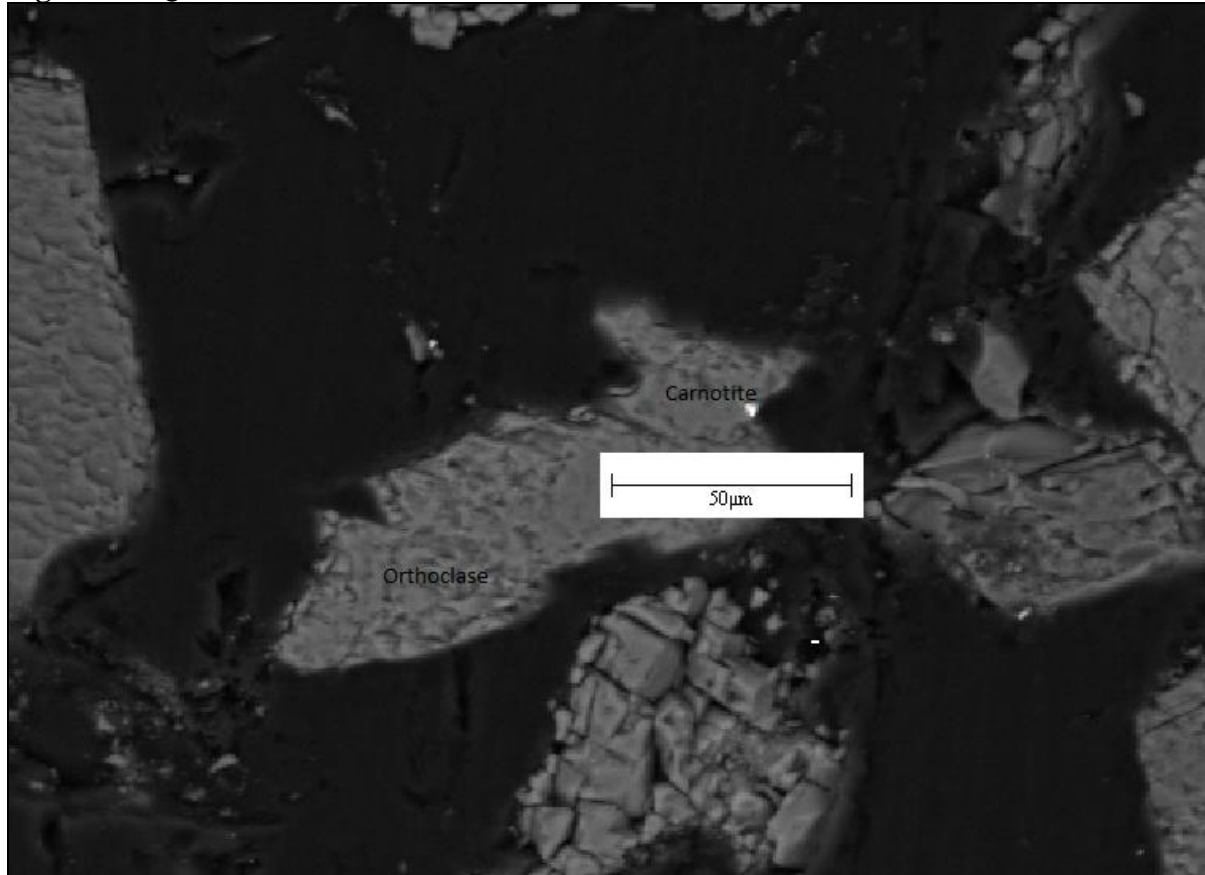
Figure 84. Carnotite Particle Association with Albite.



QV-H-30-SY -25/+270

For QV-H-30-SY -25/+270 sample, one carnotite particle was identified. Results are shown in figure 85. According to the data, the carnotite particles appear to be approximately 5 microns in size with orthoclase encapsulation. This particle is not flatable but is leachable.

Figure 85. QV-H-30-SY -25/+270 Carnotite Particle Associated with Orthoclase.



Tetra Tech Non Conformances Sample Requirements

Some of the items requested for Tetra Tech sample requirement are listed below with explanation based on AMICS software capabilities and include the following:

- Sample Preparation Logs** – As discussed on Page 8, samples are placed into epoxy, labeled, cured, polished, carbon coated and analyzed on the Scanning Electron Microscope (SEM) with AMICS software. No log is required for each sample. No extraction or leaching took place.
- Instrument and Analysis Log** – The process for AMICS analysis is shown on Page 8, however the AMICS technology does not record amount of time for each analysis, therefore, no analysis log is available. Secondly, SEM beam time is not recorded during manual search for each sample.
- Raw Data** – Raw data for modal mineralogy was placed into the tables for all samples. For AMICS data, the sample itself is used to build the library for modal mineralogy. Internal calibration checks are done on copper to verify EDX lines are correct for the analysis. This is done approximately every month with a QC check done on pure copper to verify proper lines as shown on Page 75. For uranium containing minerals, carnotite figure was placed into the report on Page 74. This mineral pattern was used to identify all carnotite minerals.

Field and Laboratory Design Cross Reference Table

CR-L-0-SL-01	BS	360.16 g	Bulk XRD, MLA, Mineral Lineup
CR-M-0-SL-01	BS	333.71 g	Bulk XRD, MLA, Mineral Lineup
CR-H-0-SL-01	BS	448.77 g	Bulk XRD, MLA, Mineral Lineup
QV-L-0-SL-01	BS	321.64 g	Bulk XRD, MLA, Mineral Lineup
QV-M-0-SL-01	BS	367.59 g	Bulk XRD, MLA, Mineral Lineup
QV-H-0-SL-01	BS	380.54 g	Bulk XRD, MLA, Mineral Lineup
CTS-L-0-SL-01	BS	311.80 g	Bulk XRD, MLA, Mineral Lineup
CTS-M-0-SL-01	BS	331.80 g	Bulk XRD, MLA, Mineral Lineup
CTS-H-0-SL-01	BS	362.39 g	Bulk XRD, MLA, Mineral Lineup
• DC: Drill Core, BS: Bulk Solids, S: Slurry			
CR-L-4-SY +25/+270	BS	207.65 g	Bulk XRD, MLA, Mineral Lineup
CR-L-8-SY +25/+270	BS	220.75 g	Bulk XRD, MLA, Mineral Lineup
CR-L-30-SY +25/+270	BS	213.73 g	Bulk XRD, MLA, Mineral Lineup
CR-M-4-SY +25/+270	BS	255.64 g	Bulk XRD, MLA, Mineral Lineup
CR-M-8-SY +25/+270	BS	326.94 g	Bulk XRD, MLA, Mineral Lineup
CR-M-30-SY +25/+270	BS	270.24 g	Bulk XRD, MLA, Mineral Lineup
CR-H-4-SY +25/+270	BS	391.55 g	Bulk XRD, MLA, Mineral Lineup
CR-H-8-SY +25/+270	BS	387.45 g	Bulk XRD, MLA, Mineral Lineup
CR-H-30-SY +25/+270	BS	295.77 g	Bulk XRD, MLA, Mineral Lineup
QV-L-4-SY +25/+270	BS	243.92 g	Bulk XRD, MLA, Mineral Lineup
QV-L-8-SY +25/+270	BS	332.96 g	Bulk XRD, MLA, Mineral Lineup
QV-L-30-SY +25/+270	BS	311.81 g	Bulk XRD, MLA, Mineral Lineup
QV-M-4-SY +25/+270	BS	377.81 g	Bulk XRD, MLA, Mineral Lineup
QV-M-8-SY +25/+270	BS	381.69 g	Bulk XRD, MLA, Mineral Lineup
QV-M-30-SY +25/+270	BS	326.81 g	Bulk XRD, MLA, Mineral Lineup
QV-H-4-SY +25/+270	BS	525.48 g	Bulk XRD, MLA, Mineral Lineup
QV-H-8-SY +25/+270	BS	507.44 g	Bulk XRD, MLA, Mineral Lineup
QV-H-30-SY +25/+270	BS	415.85 g	Bulk XRD, MLA, Mineral Lineup
• DC: Drill Core, BS: Bulk Solids, S: Slurry			

Acronyms

AMICS – Automated Mineralogy Identification and Characterization System

EDX – Energy Dispersive X-Ray Analysis

SEM – Scanning Electron Microscope

QC- Quality Control

Chain of Custody Form

DISA		Client-Project #: 2-2013-001	
SAMPLE SUBMISSION		Quote #: N/A	
Company:	Disa Technologies, Inc.		ATTN: Andrew Halverson
Submitted by:	Andrew Halverson		
Address:	1653 English Ave		
City:	Casper	State:	WY
Zip:	82601		
Phone:	307-871-7291	Email:	a.halverson@disausa.com
Report to:	1. Andrew Halverson	Email:	a.halverson@disausa.com
	2. John Lee		john@disausa.com
Bill to:	or <input checked="" type="checkbox"/> Same as above		
Address:			
City:	State:		
Zip:			
Phone:	Email:		
Testing Priority:	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush		
Sample Characteristics:	<input checked="" type="checkbox"/> Radioactive <input type="checkbox"/> High Org. Carbon <input checked="" type="checkbox"/> High Silica <input type="checkbox"/> Hydrocarbons <input type="checkbox"/> Other specify: _____		
Storage:	<input checked="" type="checkbox"/> Return <input type="checkbox"/> Dispose <input type="checkbox"/> Store <i>Return after final reporting</i>		
CHAIN OF CUSTODY			
Relinquished by:		Received by:	
Print:	Sign:	Print:	Sign:
Andrew Halverson	<i>[Signature]</i>	Paul Miranda	<i>[Signature]</i>
Date/Time:	Date/Time:	Date/Time:	Date/Time:
10/10/12, 16:50	1-30-13 14:00	12-15-12	
SAMPLE INFORMATION			
Sample ID:	Sample Type:	Weight/Core Length:	Testing/Analyses Requested:
1 CR-L-0-SL-01	BS	380.16 g	Bulk XRD, MLA, Mineral Lineup
2 CR-M-0-SL-01	BS	333.71 g	Bulk XRD, MLA, Mineral Lineup
3 CR-H-0-SL-01	BS	448.77 g	Bulk XRD, MLA, Mineral Lineup
4 QV-L-0-SL-01	BS	321.64 g	Bulk XRD, MLA, Mineral Lineup
5 QV-M-0-SL-01	BS	367.59 g	Bulk XRD, MLA, Mineral Lineup
6 QV-H-0-SL-01	BS	380.54 g	Bulk XRD, MLA, Mineral Lineup
7 CTS-L-0-SL-01	BS	311.80 g	Bulk XRD, MLA, Mineral Lineup
8 CTS-M-0-SL-01	BS	331.80 g	Bulk XRD, MLA, Mineral Lineup
9 CTS-H-0-SL-01	BS	362.39 g	Bulk XRD, MLA, Mineral Lineup
* DC: Drill Core, BS: Bulk Solids, S: Slurry			

SAMPLE INFORMATION

Sample ID:	Sample Type:	Weight/Core Length:	Testing/Analyses Requested:
CR-L-4-SY +25/+270	BS	207.65 g	Bulk XRD, MLA, Mineral Lineup
CR-L-8-SY +25/+270	BS	220.75 g	Bulk XRD, MLA, Mineral Lineup
CR-L-30-SY +25/+270	BS	213.73 g	Bulk XRD, MLA, Mineral Lineup
CR-M-4-SY +25/+270	BS	255.64 g	Bulk XRD, MLA, Mineral Lineup
CR-M-8-SY +25/+270	BS	326.94 g	Bulk XRD, MLA, Mineral Lineup
CR-M-30-SY +25/+270	BS	270.24 g	Bulk XRD, MLA, Mineral Lineup
CR-H-4-SY +25/+270	BS	391.55 g	Bulk XRD, MLA, Mineral Lineup
CR-H-8-SY +25/+270	BS	387.45 g	Bulk XRD, MLA, Mineral Lineup
CR-H-30-SY +25/+270	BS	295.77 g	Bulk XRD, MLA, Mineral Lineup
QV-L-4-SY +25/+270	BS	243.92 g	Bulk XRD, MLA, Mineral Lineup
QV-L-8-SY +25/+270	BS	332.96 g	Bulk XRD, MLA, Mineral Lineup
QV-L-30-SY +25/+270	BS	311.81 g	Bulk XRD, MLA, Mineral Lineup
QV-M-4-SY +25/+270	BS	377.81 g	Bulk XRD, MLA, Mineral Lineup
QV-M-8-SY +25/+270	BS	381.69 g	Bulk XRD, MLA, Mineral Lineup
QV-M-30-SY +25/+270	BS	326.81 g	Bulk XRD, MLA, Mineral Lineup
QV-H-4-SY +25/+270	BS	525.48 g	Bulk XRD, MLA, Mineral Lineup
QV-H-8-SY +25/+270	BS	507.44 g	Bulk XRD, MLA, Mineral Lineup
QV-H-30-SY +25/+270	BS	415.85 g	Bulk XRD, MLA, Mineral Lineup

*: DC: Drill Core, BS: Bulk Solids, S: Slurry

Instrument and Analysis Logs

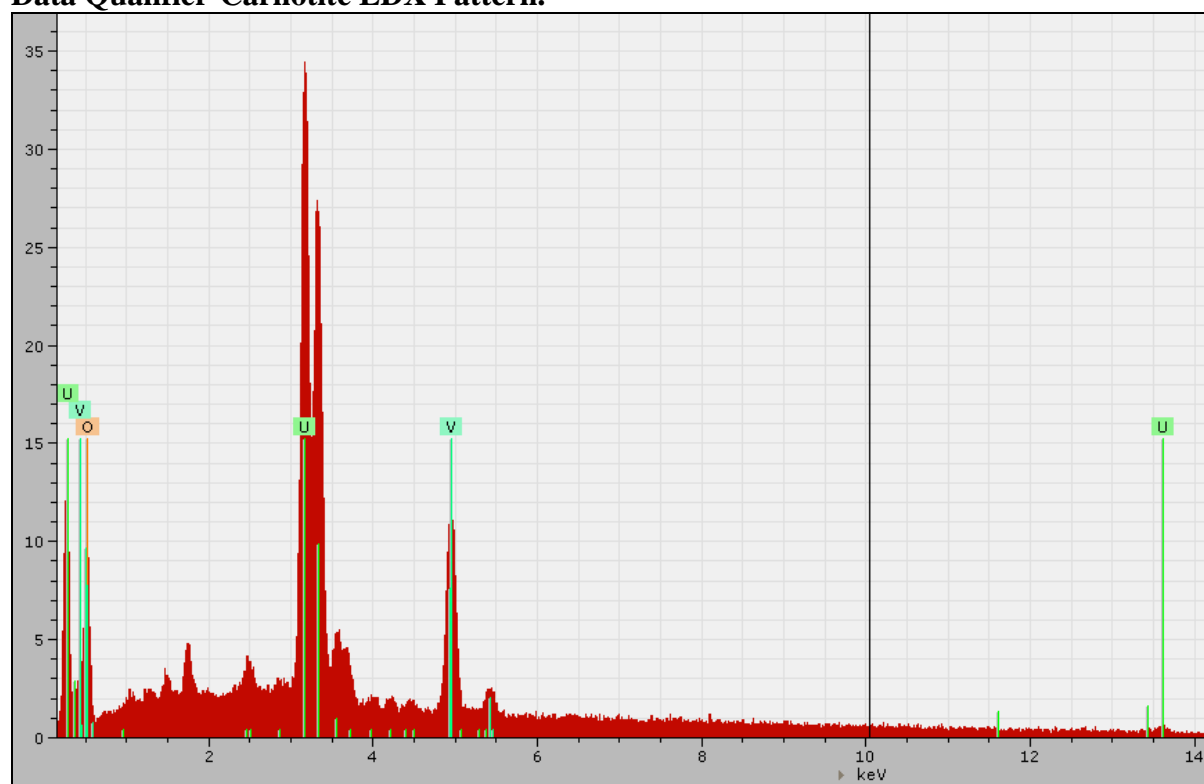
For each sample analyzed, three types of analysis was performed. Initially, for modal mineralogy, AMICS analysis was performed after building mineral library from a sample itself. Each modal analysis took approximately 90 minutes to determine overall mineralogy. Once initial modal mineralogy was completed. Further unknowns were added to the library until all unknown minerals are identified. The sample is reprocessed to determine final overall mineralogy.

Further analysis was completed to determine uranium containing minerals. This included performing a brightness search for higher Z (average atomic number) containing minerals. Silicate and some sulfide minerals were ignored for EDX analysis based on lower gray scale or Z number from backscatter imaging. Brightness search were conducted for 3 hours to determine any potential uranium bearing minerals. If uranium was identified, AMICS software allows scanning electron microscope stage to be driven back to the mineral of interest (carnotite) for further images placed into the report.

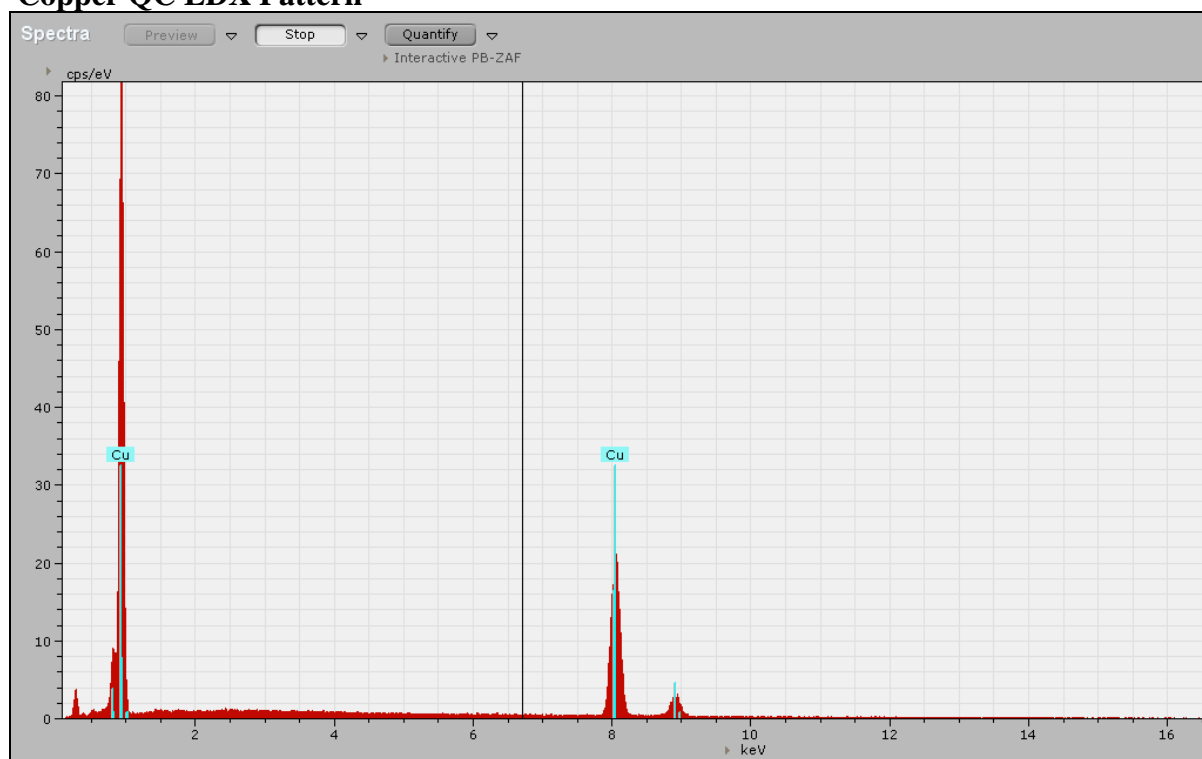
Lastly, a manual search was conducted near the edges of each epoxy mount to determine if any uranium containing minerals were identified. If any were found, EDX was performed to identify uranium bearing minerals and backscatter images were taken and placed into the report. The manual search took approximately 45 minutes per mounted sample.

Overall, over 4 hours of scanning electron beam time was used to process each sample.

Data Qualifier-Carnotite EDX Pattern.

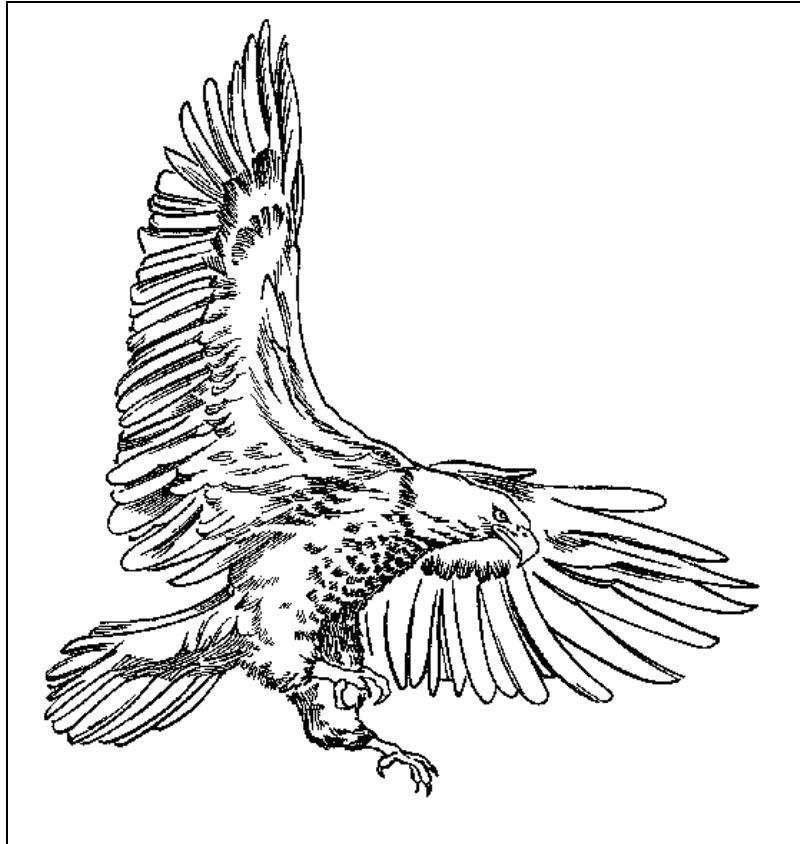


Copper QC EDX Pattern



AMICS ANALYSIS

DISAUSA



Eagle Engineering

February 5, 2023

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AMICS ANALYSIS

Prepared for: Andrew Halverson, Process Engineer, DISAUSA

Project: EPA 2 Samples

Email: A.Halverson@disausa.com

By

**Paul Miranda, PhD
Chief Metallurgist/Mineralogist
E-mail: eaglemt711@gmail.com**

February 5, 2023

EXECUTIVE SUMMARY

Nine (9) samples, CTS-L, CTS-M, and CTS-H, were received for AMICS analysis. The scope of work was to determine overall mineralogy for received samples. A brightness search was also conducted to determine uranium containing minerals. Backscatter images of uranium minerals were observed for size and mineral association.

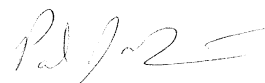
Modal mineralogy was performed and according to the data, two major silicate phases, orthoclase and quartz, were identified. Minor phases include albite, calcite, clinocllore, dolomite, and oligoclase.

A brightness search was used to identify uranium containing minerals. Carnotite was identified in several samples.

For samples CTS-L, multiple pucks were analyzed with no identification of carnotite or other uranium containing minerals.

For CTS-M samples, carnotite was leachable in the CTS-M-4 samples with quartz association. Two particles indicated carnotite encapsulated by quartz. Uranium particles are approximately 5 to 10 microns in size.

For CTS-H samples, all identified carnotite particles were liberated at approximately 20 to 50 microns in size. These particles are both leachable and flatable.



Paul Miranda, Ph. D
February 5, 2023

Qualifying Statement

This confidential report was prepared for DisaUSA and is based on information available at the time of the report preparation. It is believed the information, estimates, conclusions and recommendations contained herein are reliable under the conditions and subject to the qualifications set forth herein. The information, estimates, conclusions and recommendations herein are based on our experience and data supplied by others, but the actual result of the work is dependent, in part, on factors over which we have no control. This report is intended to be used exclusively by DisaUSA. We disclaim any assumption of responsibility for any reliance on this report by any person other than DisaUSA, or for any purpose other than that for which it was prepared. We disclaim all liability to any other party for all costs, losses, damages, and liabilities that the other party might suffer or incur arising from or relating to the contents of this report, the provision of this report to the other party, or the reliance on this report by the other party.

Scope of Work

Nine (9) samples, CTS-L, CTS-M, and CTS-H, were received for AMICS analysis. The scope of work was to determine overall mineralogy for received samples. A brightness search was also conducted to determine uranium containing minerals. Backscatter images of uranium minerals were observed for size and mineral association.

Experimental Work and Results

From received samples, approximately 2 grams were split out using small splitters to produce the sample. The sample was placed into an epoxy cup, labeled, and epoxy was placed onto the ore sample. Next, the sample was placed into a vacuum chamber and vacuumed for approximately 2 minutes in order to remove any residual bubbles entrained within the sample.

The samples were allowed to dry overnight for epoxy curing. Samples were then polished on an automated polisher and allowed to dry. Lastly, the samples were carbon coated for backscatter imaging and AMICS analysis.

During AMICS analysis, a library was produced using energy dispersive x-ray (EDX) of minerals of the sample. From the library, only one uranium containing mineral, carnotite, was identified.

Secondly, a brightness search was used to determine uranium containing minerals.

Modal Mineralogy

Modal mineralogy was performed and according to the data, two major silicate phases, orthoclase and quartz, were identified. Minor phases include albite, calcite, clinocllore, dolomite, and oligoclase. Results are shown in tables 1 through 3.

Table 1. Modal Mineralogy for CTS-L Samples.

Mineral	Chemistry	CTS-L-4-SY	CTS-L-8-SY	CTS-L-30-SY
Albite	$\text{NaAlSi}_3\text{O}_8$	7.74	8.07	7.69
Apatite	$\text{Ca}_5(\text{PO}_4)_3(\text{OH})$	0.05	0.01	0.01
Barite	BaSO_4	0.00	0.01	0.00
Biotite	$\text{K}(\text{Mg,Fe,Al})_3\text{Si}_3\text{O}_{10}(\text{OH})_2$	0.04	0.08	0.04
Calcite	CaCO_3	1.39	1.21	1.68
Carnotite	$\text{K}(\text{UO}_2)_2(\text{VO}_4)_2$	< 0.01	< 0.01	< 0.01
Clinocllore	$(\text{Mg,Fe,Al})_5\text{Si}_3\text{O}_{10}(\text{OH})_8$	1.53	1.43	0.88
Diopside	$\text{CaMgSi}_2\text{O}_6$	0.16	0.25	0.01
Dolomite	$\text{Ca,Mg}(\text{CO}_3)_2$	1.33	0.72	0.83
Ilmenite	FeTiO_3	0.12	0.27	0.36
Iron Oxides	Fe_xO_y	0.18	0.17	0.32
Oligoclase	$(\text{Na,Ca})\text{AlSi}_3\text{O}_8$	0.70	1.45	1.13
Orthoclase	KAlSi_3O_8	22.34	23.99	23.60
Quartz	SiO_2	63.59	61.70	63.02
Wollastonite	CaSiO_3	0.83	0.52	0.43
Zircon	ZrSiO_4	0.00	0.12	0.00

Table 2. Modal Mineralogy for CTS-M Samples.

Mineral	Chemistry	CTS-M-4-SY	CTS-M-8-SY	CTS-M-30-SY
Albite	NaAlSi ₃ O ₈	8.89	8.11	7.18
Apatite	Ca ₅ (PO ₄) ₃ (OH)	0.00	0.03	0.05
Barite	BaSO ₄	0.00	0.00	0.00
Biotite	K(Mg,Fe,Al) ₃ Si ₃ O ₁₀ (OH) ₂	0.09	0.08	0.04
Calcite	CaCO ₃	2.47	2.28	1.99
Carnotite	K(UO ₂) ₂ (VO ₄) ₂	< 0.01	< 0.01	< 0.01
Clinocllore	(Mg,Fe,Al) ₅ Si ₃ O ₁₀ (OH) ₈	2.08	1.51	1.13
Diopside	CaMgSi ₂ O ₆	0.17	0.26	0.06
Dolomite	Ca,Mg(CO ₃) ₂	1.76	1.35	1.00
Ilmenite	FeTiO ₃	0.00	0.03	0.08
Iron Oxides	Fe _x O _y	0.87	1.42	0.07
Oligoclase	(Na,Ca)AlSi ₃ O ₈	1.50	1.97	0.79
Orthoclase	KAlSi ₃ O ₈	21.26	24.44	18.36
Quartz	SiO ₂	60.34	57.99	69.05
Wollastonite	CaSiO ₃	0.57	0.53	0.15
Zircon	ZrSiO ₄	0.00	0.00	0.05

Table 3. Modal Mineralogy for CTS-H Samples.

Mineral	Chemistry	CTS-H-4-SY	CTS-H-8-SY	CTS-H-30-SY
Albite	NaAlSi ₃ O ₈	7.46	10.66	10.92
Apatite	Ca ₅ (PO ₄) ₃ (OH)	0.02	0.02	0.02
Barite	BaSO ₄	0.00	0.00	0.00
Biotite	K(Mg,Fe,Al) ₃ Si ₃ O ₁₀ (OH) ₂	0.04	0.09	0.07
Calcite	CaCO ₃	1.17	2.12	2.01
Carnotite	K(UO ₂) ₂ (VO ₄) ₂	< 0.01	< 0.01	< 0.01
Clinocllore	(Mg,Fe,Al) ₅ Si ₃ O ₁₀ (OH) ₈	1.52	2.42	1.55
Diopside	CaMgSi ₂ O ₆	0.57	0.01	0.06
Dolomite	Ca,Mg(CO ₃) ₂	0.57	1.13	0.89
Ilmenite	FeTiO ₃	0.01	0.14	0.06
Iron Oxides	Fe _x O _y	0.33	0.23	0.30
Oligoclase	(Na,Ca)AlSi ₃ O ₈	1.19	2.16	1.56
Orthoclase	KAlSi ₃ O ₈	20.16	19.54	14.45
Quartz	SiO ₂	66.48	60.95	67.44
Wollastonite	CaSiO ₃	0.47	0.34	0.42
Zircon	ZrSiO ₄	0.01	0.19	0.25

Backscatter Images

A brightness search was used to identify uranium containing minerals. Carnotite was identified in several samples.

For samples CTS-L, multiple pucks were analyzed with no identification of carnotite or other uranium containing minerals.

For CTS-M samples (figures 1 through 3), carnotite was leachable in the CTS-M-4 samples with quartz association. Two particles (figures 4 and 5) indicated carnotite encapsulated by quartz. Uranium particles are approximately 5 to 10 microns in size.

For CTS-H samples (figures 6 through 8), all identified carnotite particles were liberated at approximately 20 to 50 microns in size. These particles are both leachable and floatable.

Figure 1. CTS M-4-SY Carnotite Particle Associated with Quartz.

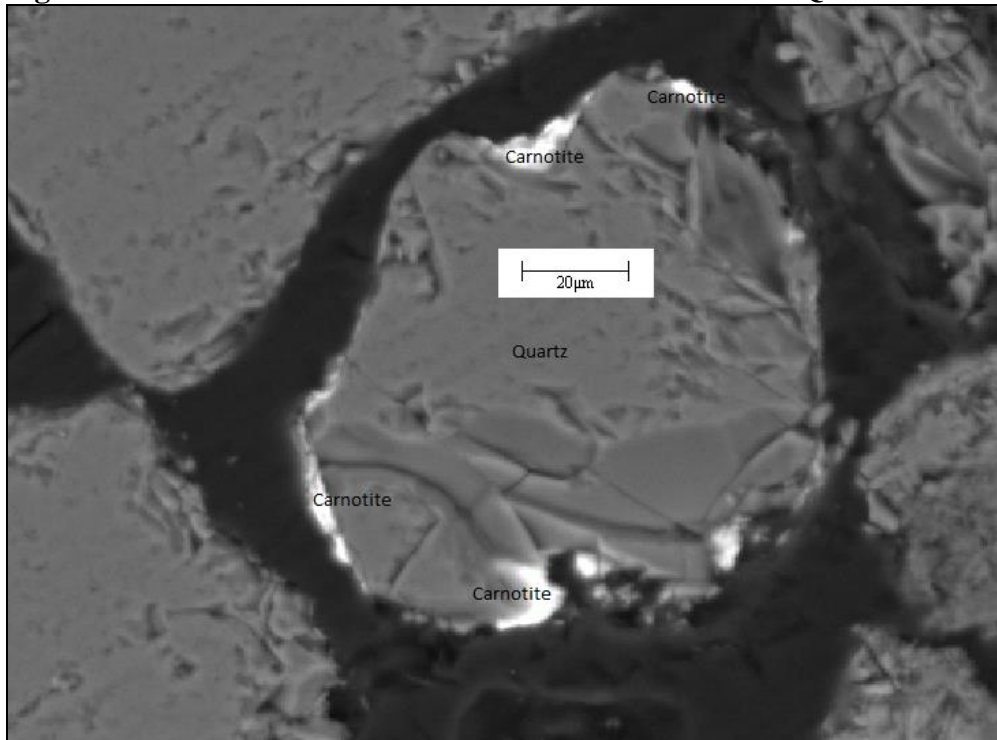


Figure 2. CTS M-4-SY Carnotite Particle Associated with Quartz.

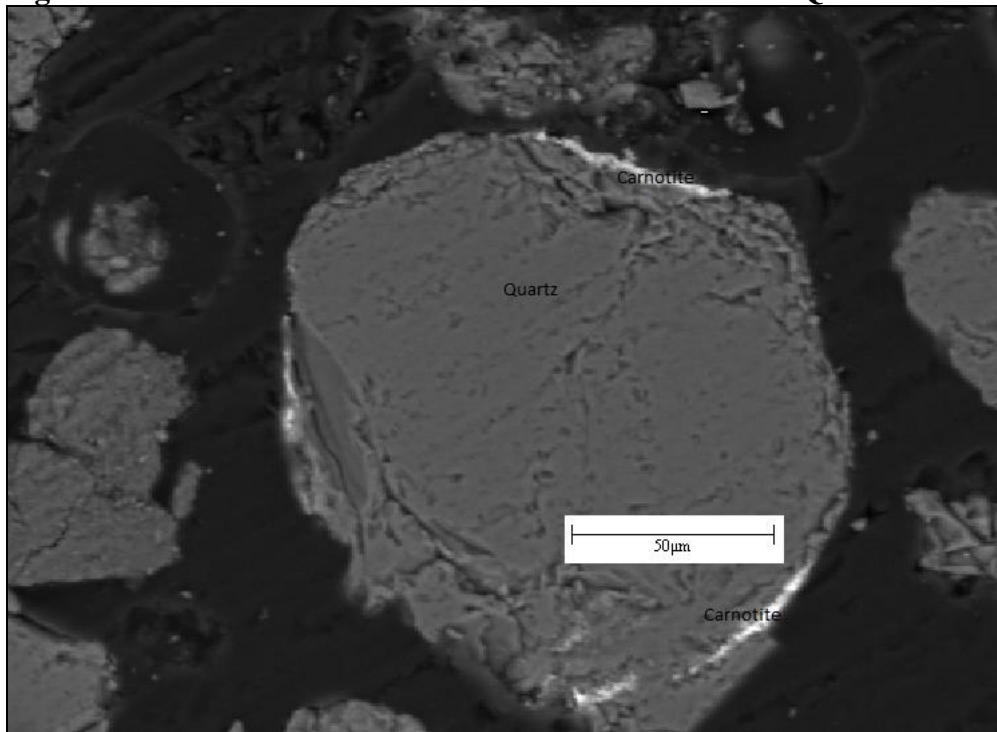


Figure 3. CTS M-4-SY Carnotite Particle Associated with Quartz.

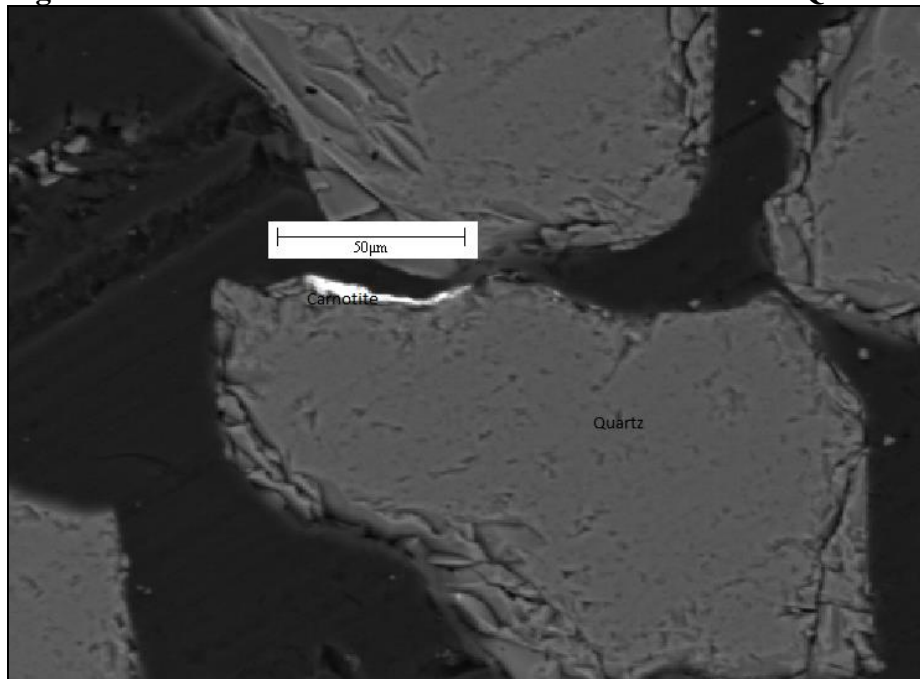


Figure 4. CTS M-8-SY Carnotite Encapsulated with Quartz.

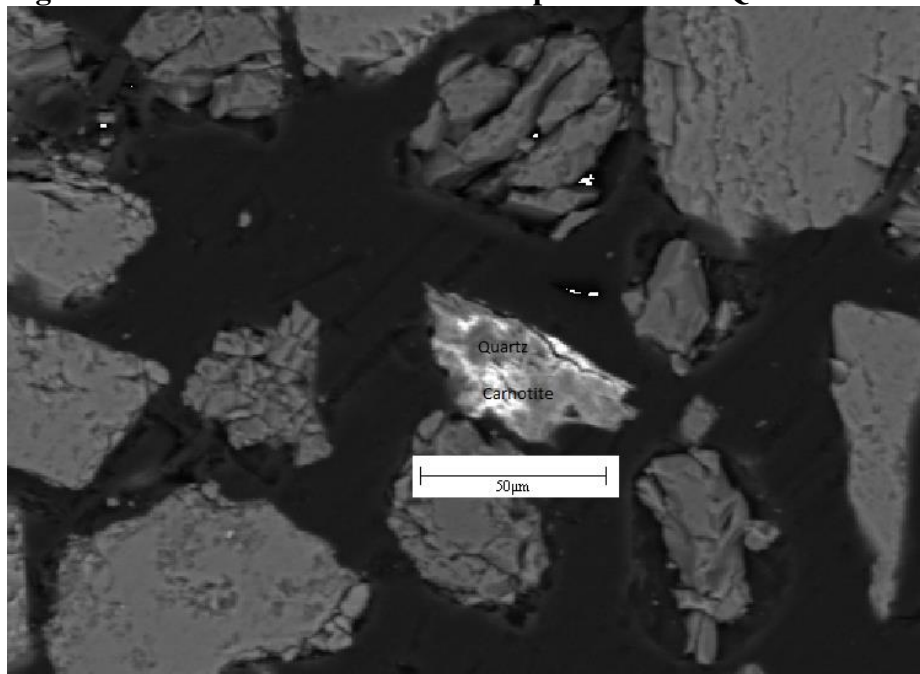


Figure 5. CTS M-30-SY Carnotite Encapsulated with Quartz.

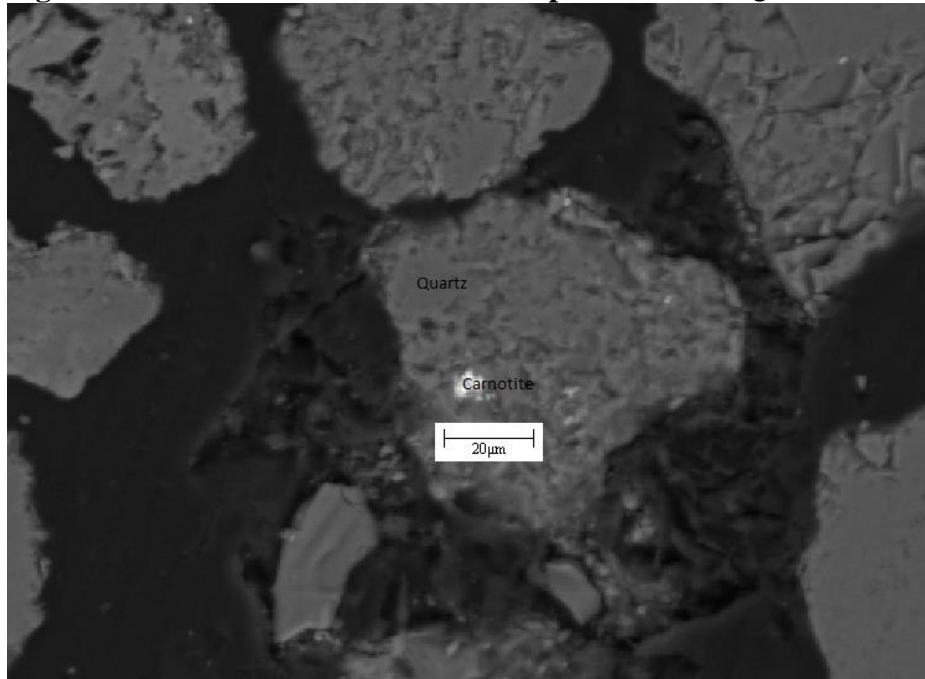


Figure 6. CTS H-4-SY Free Carnotite Particle.

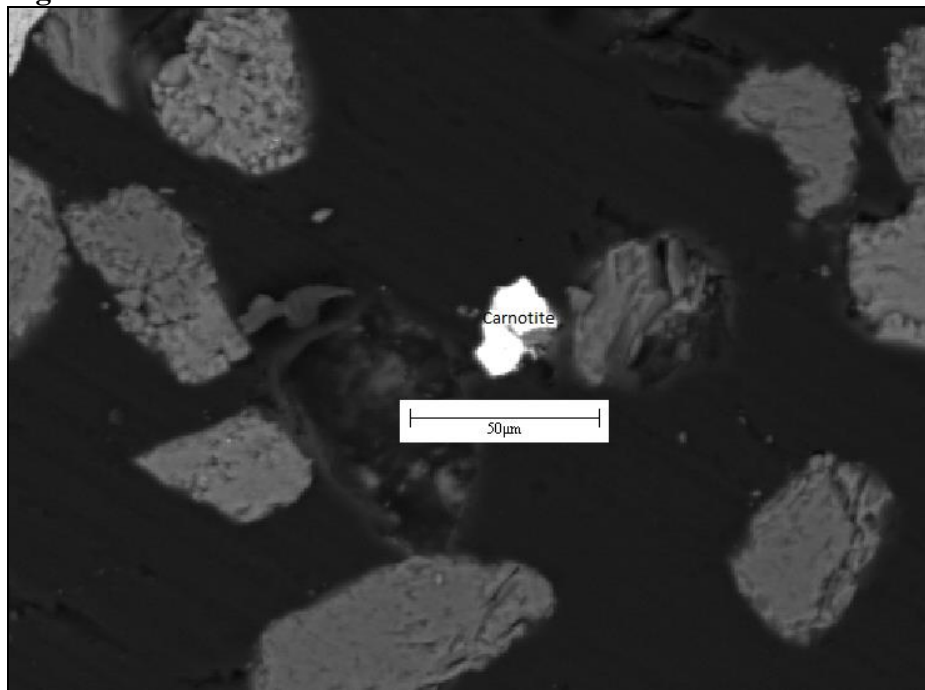


Figure 7. CTS H-8-SY Free Carnotite Particle.

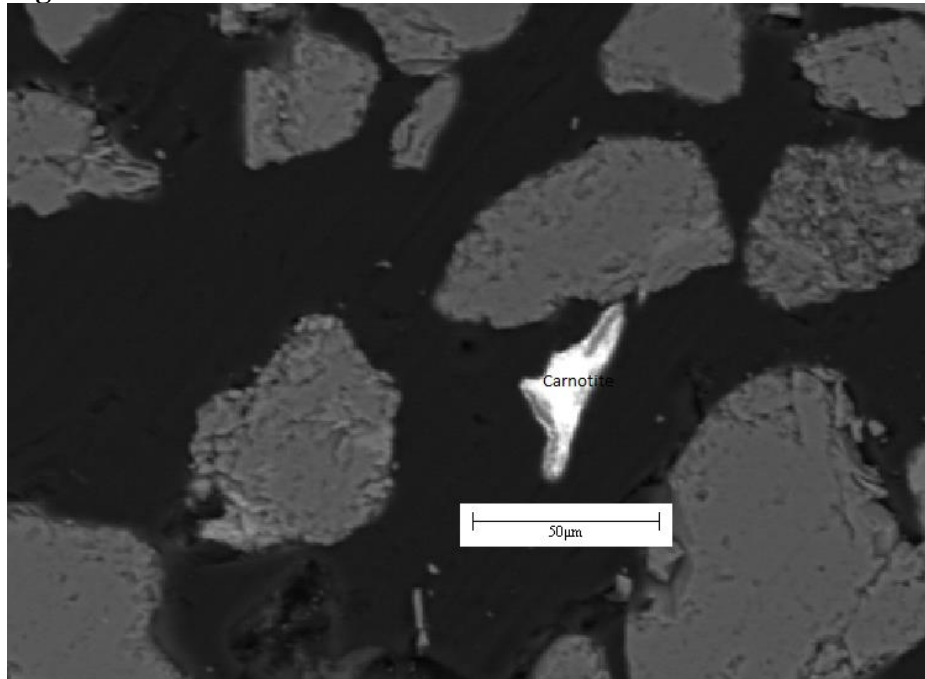


Figure 8. CTS M-30-SY Free Carnotite Particle.

Tetra Tech Non Conformances Sample Requirements

Some of the items requested for Tetra Tech sample requirement are listed below with explanation based on AMICS software capabilities and include the following:

- Sample Preparation Logs** – As discussed on Page 8, samples are placed into epoxy, labeled, cured, polished, carbon coated and analyzed on the Scanning Electron Microscope (SEM) with AMICS software. No log is required for each sample. No extraction or leaching took place.
- Instrument and Analysis Log** – The process for AMICS analysis is shown on Page 8, however the AMICS technology does not record amount of time for each analysis, therefore, no analysis log is available. Secondly, SEM beam time is not recorded during manual search for each sample.
- Raw Data** – Raw data for modal mineralogy was placed into the tables for all samples. For AMICS data, the sample itself is used to build the library for modal mineralogy. Internal calibration checks are done on copper to verify EDX lines are correct for the analysis. This is done approximately every month with a QC check done on pure copper to verify proper lines as shown on Page 75. For uranium containing minerals, carnotite figure was placed into the report on Page 74. This mineral pattern was used to identify all carnotite minerals.

Field and Laboratory Design Cross Reference Table

SAMPLE INFORMATION			
Sample ID:	Sample Type:	Weight/Core Length:	Testing/Analyses Requested:
CTS-L-4-SY +25/+270	BS	182.99 g	Bulk XRD, MLA, Mineral Lineup
CTS-L-8-SY +25/+270	BS	149.44 g	Bulk XRD, MLA, Mineral Lineup
CTS-L-30-SY +25/+270	BS	127.40 g	Bulk XRD, MLA, Mineral Lineup
CTS-M-4-SY +25/+270	BS	155.40 g	Bulk XRD, MLA, Mineral Lineup
CTS-M-8-SY +25/+270	BS	148.14 g	Bulk XRD, MLA, Mineral Lineup
CTS-M-30-SY +25/+270	BS	141.75 g	Bulk XRD, MLA, Mineral Lineup
CTS-H-4-SY +25/+270	BS	157.17 g	Bulk XRD, MLA, Mineral Lineup
CTS-H-8-SY +25/+270	BS	171.38 g	Bulk XRD, MLA, Mineral Lineup
CTS-H-30-SY +25/+270	BS	181.74 g	Bulk XRD, MLA, Mineral Lineup

DC: Drill Core, BS: Bulk Solids, S: Slurry

Acronyms


AMICS – Automated Mineralogy Identification and Characterization System

EDX – Energy Dispersive X-Ray Analysis

SEM – Scanning Electron Microscope

QC- Quality Control

Chain of Custody Form



SAMPLE SUBMISSION

Client-Project #: 23013-001

Quote #: N/A

ATTN: Andrew Halverson

Company: Dsa Technologies, Inc.

Submitted by: Andrew Halverson

Address: 1653 English Ave

City: Casper

Zip: 82601

Phone: 307-671-7291

Report to: 1. Andrew Halverson

Bill to: 2. John Lee

Address:

City:

Zip:

Phone:

State: WY

Email: a.halverson@disausa.com

Email: a.halverson@disausa.com

Email: john@disausa.com

or

Same as above

State:

Email:

Testing Priority

☒ Standard ☐ Rush

Sample Characteristics

☒ Radioactive ☐ High Org. Carbon ☒ High Silica ☐ Hydrocarbons ☐ Other specify:

Storage

☒ Return ☐ Dispose ☐ Store

CHAIN OF CUSTODY

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Andrew Halverson	<i>[Signature]</i>	10/26/23 16:40	Paul M. Anderson	<i>[Signature]</i>	10-27-23
Paul M. Anderson	<i>[Signature]</i>	2-9-23 15:00			

SAMPLE INFORMATION

Sample ID:	Sample Type:	Weight/Core Length:	Testing/Analyses Requested:
CTS-L-4-SY +25/+270	BS	182.99 g	Bulk XRD, MLA, Mineral Lineup
CTS-L-8-SY +25/+270	BS	149.44 g	Bulk XRD, MLA, Mineral Lineup
CTS-L-30-SY +25/+270	BS	127.40 g	Bulk XRD, MLA, Mineral Lineup
CTS-M-4-SY +25/+270	BS	155.40 g	Bulk XRD, MLA, Mineral Lineup
CTS-M-8-SY +25/+270	BS	148.14 g	Bulk XRD, MLA, Mineral Lineup
CTS-M-30-SY +25/+270	BS	141.75 g	Bulk XRD, MLA, Mineral Lineup
CTS-H-4-SY +25/+270	BS	157.17 g	Bulk XRD, MLA, Mineral Lineup
CTS-H-8-SY +25/+270	BS	171.36 g	Bulk XRD, MLA, Mineral Lineup
CTS-H-30-SY +25/+270	BS	161.74 g	Bulk XRD, MLA, Mineral Lineup

*: DC: Drill Core, BS: Bulk Solids, S: Slurry

Instrument and Analysis Logs

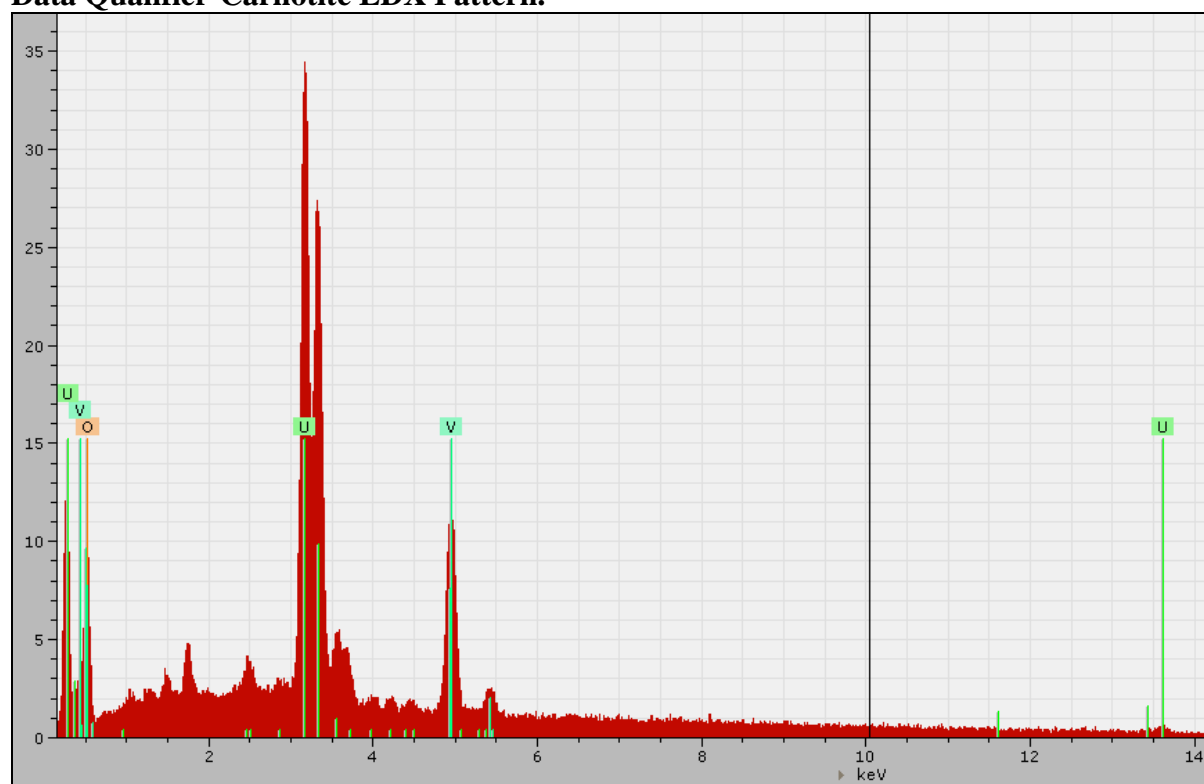
For each sample analyzed, three types of analysis was performed. Initially, for modal mineralogy, AMICS analysis was performed after building mineral library from a sample itself. Each modal analysis took approximately 90 minutes to determine overall mineralogy. Once initial modal mineralogy was completed. Further unknowns were added to the library until all unknown minerals are identified. The sample is reprocessed to determine final overall mineralogy.

Further analysis was completed to determine uranium containing minerals. This included performing a brightness search for higher Z (average atomic number) containing minerals. Silicate and some sulfide minerals were ignored for EDX analysis based on lower gray scale or Z number from backscatter imaging. Brightness search were conducted for 3 hours to determine any potential uranium bearing minerals. If uranium was identified, AMICS software allows scanning electron microscope stage to be driven back to the mineral of interest (carnotite) for further images placed into the report.

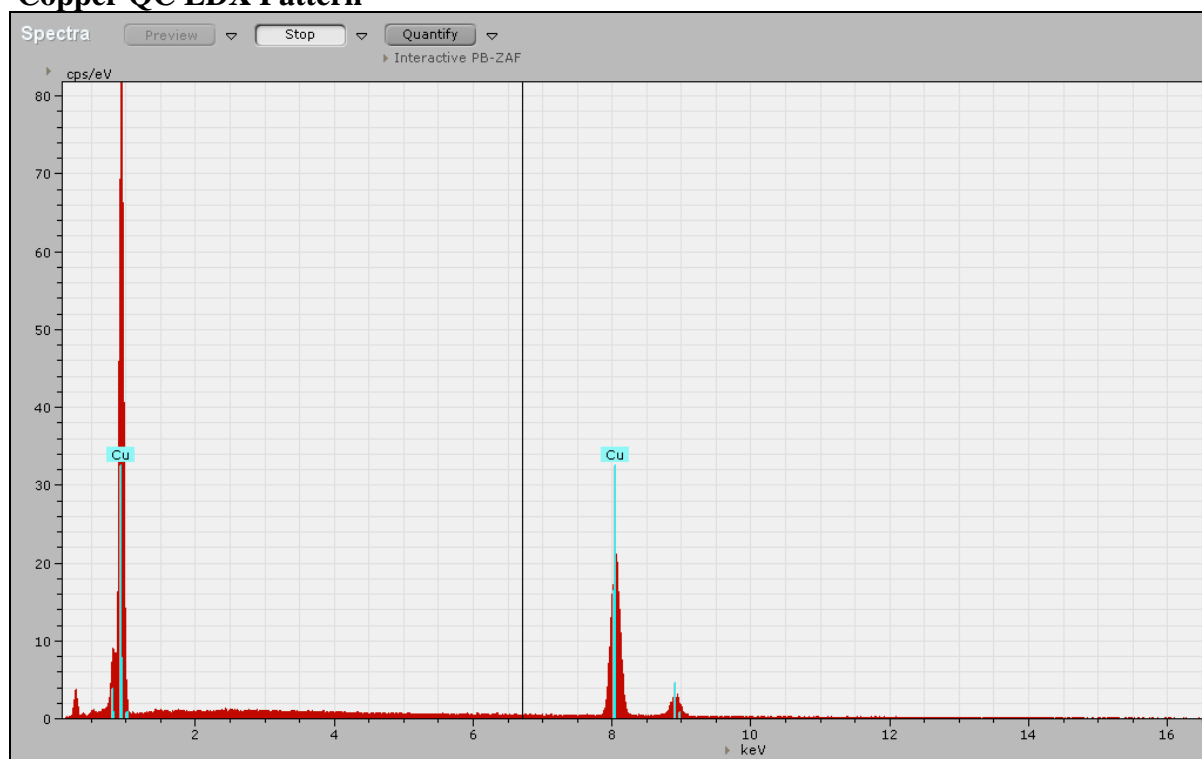
Lastly, a manual search was conducted near the edges of each epoxy mount to determine if any uranium containing minerals were identified. If any were found, EDX was performed to identify uranium bearing minerals and backscatter images were taken and placed into the report. The manual search took approximately 45 minutes per mounted sample.

Overall, over 4 hours of scanning electron beam time was used to process each sample.

Data Qualifier-Carnotite EDX Pattern.



Copper QC EDX Pattern



ADDENDUM

Explanation of AMICS Analysis

Automated mineralogy identification and characterization systems (AMICS) utilizes Scanning Electron Microscopy (SEM) backscatter images along with Energy Dispersive X-Rays (EDAX or EDX) to determine overall mineralogy for various samples. There are several techniques for AMICS to identify minerals, however, only two of the method types are generally used for most samples, overall modal determination and brightness searches.

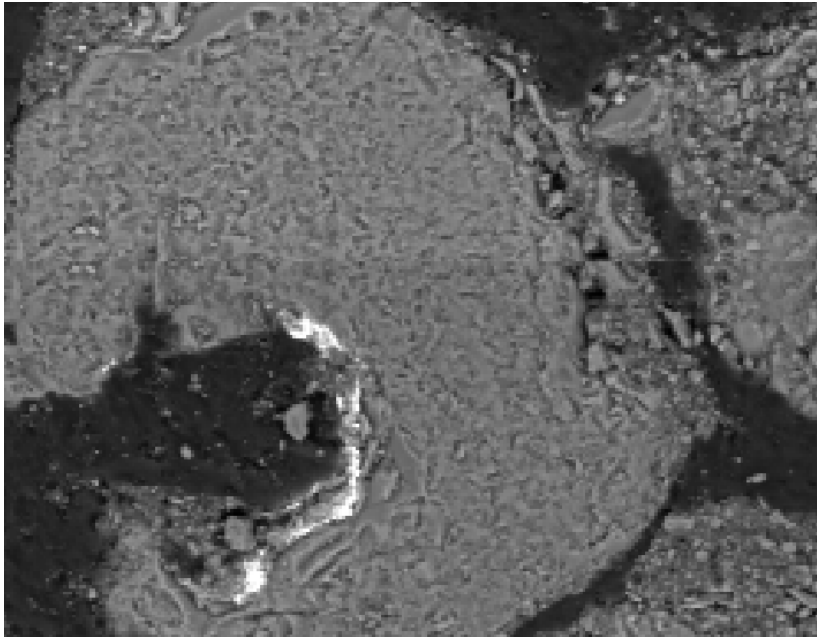
Overall modal determination is used to identify all minerals with an atomic number (Z) of the unknown minerals greater than carbon which is used to prepare mounted particles required for backscatter imaging. The technique takes an initial backscatter image of the sample. The background is removed from the image. Multiple x-rays (EDX) are collected and compared to a known library within the software for identification. This procedure is done over multiple images for at least an hour of SEM beam time. Usually, 25 frames or more used based on the particle size within the samples.

For brightness searches, the same technique utilizes backscatter images, however, the background brightness is increased to a point above common minerals such as quartz and pyrite which helps identify higher Z numbers by using less time on these common minerals. Secondly, using brightness searches, a higher magnification is also used to determine higher Z minerals which helps identify minerals that are approximately 1 microns and larger. An example of AMICS brightness search is listed below. This technique allows for large amounts of frames to be analyzed (up to 400 frames). This analytical technique takes approximately 3.5 to 4 hours of SEM beam time.

X-Ray Diffraction (XRD) is a different technique used to identify minerals compared to AMICS analytical techniques. XRD uses an x-ray source to determine minerals by focusing a movable sample from 15 to 80 degrees 2 theta which generates peaks and compares them to a known library. This technique is used for bulk mineralogy and has a limit of detection of 1% to 5%. For AMICS analysis, the limit of detection is 0.01% for all samples.

Initially, a backscatter image is taken. (Figure 1)

Figure 1. Backscatter Image.



Secondly, since the background was set at a higher brightness, these particles are removed for X-Ray analysis (Figure 2). These particles are then identified using a known library to determine final analysis (Figure 3). In this case, carnotite particles were identified.

Figure 2. Backscatter Background Removal.

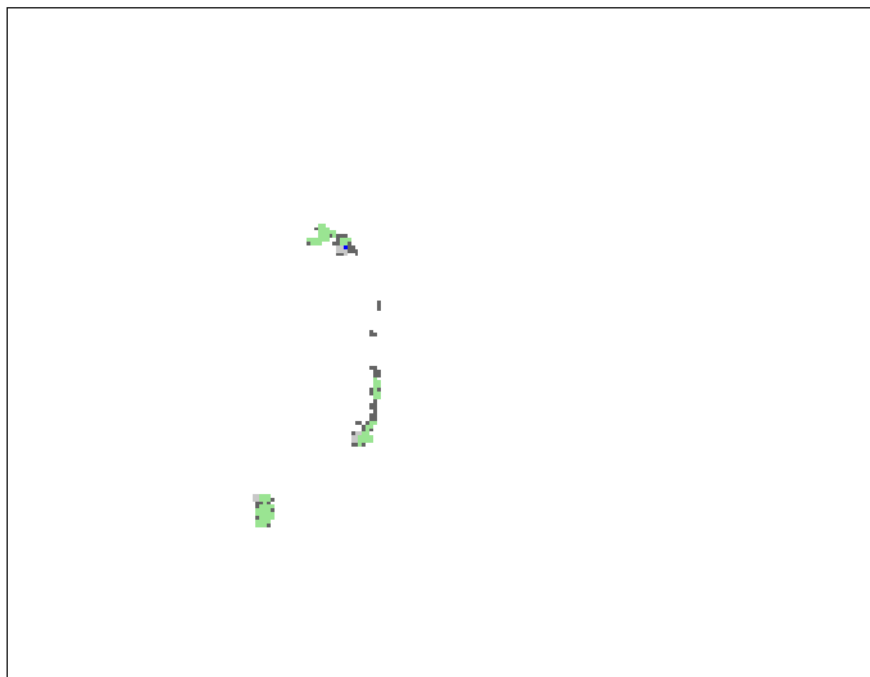
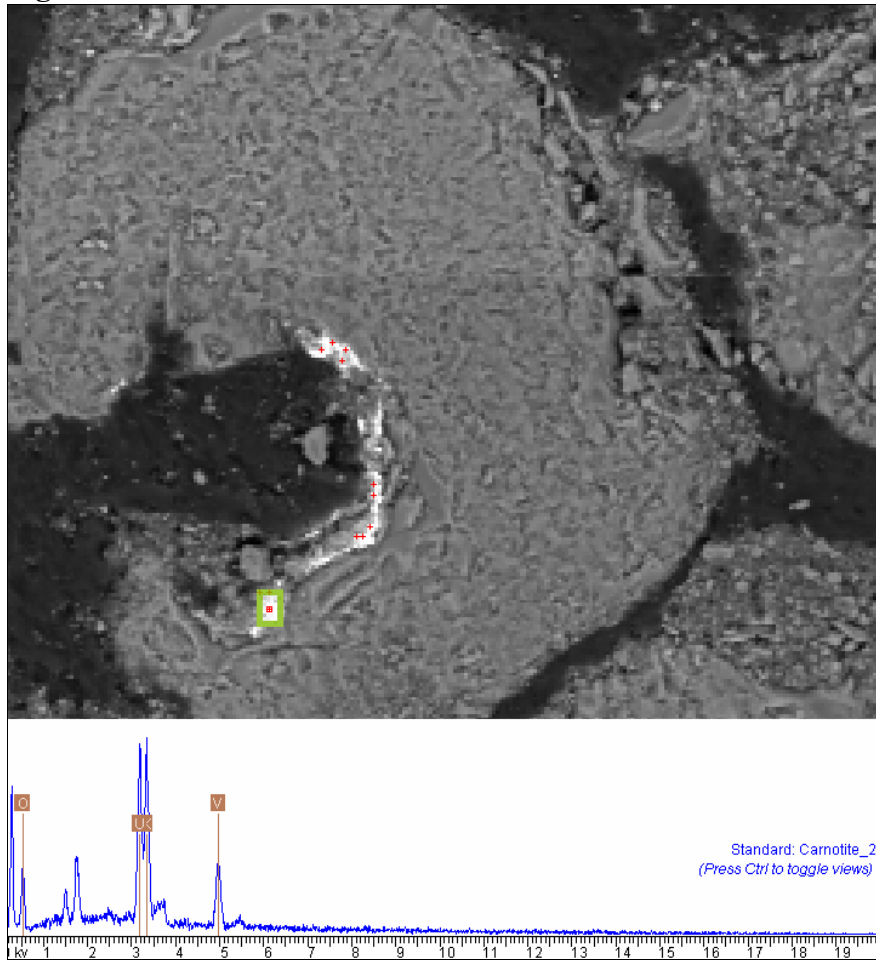


Figure 3. Carnotite Identified Particles.



Carnotite Verification

For mineral identification, AMICS uses the sample itself compared to other mineralogical software packages such as QEMSCAN or TEMA. These technologies solely rely on the library to determine minerals. For pure phases, the library is adequate for mineral identification, however, if mixed mineral phases or spectrums are collected, the software can struggle to identify the minerals.

AMICS similar to the older software package called Minerals Liberations Analysis (MLA). As previously stated, it uses the sample itself to collect x-rays for mineral identification, however, AMICS does contain for a known library for comparison and verification of the minerals. This technique is done several times until all minerals are identified within the sample.

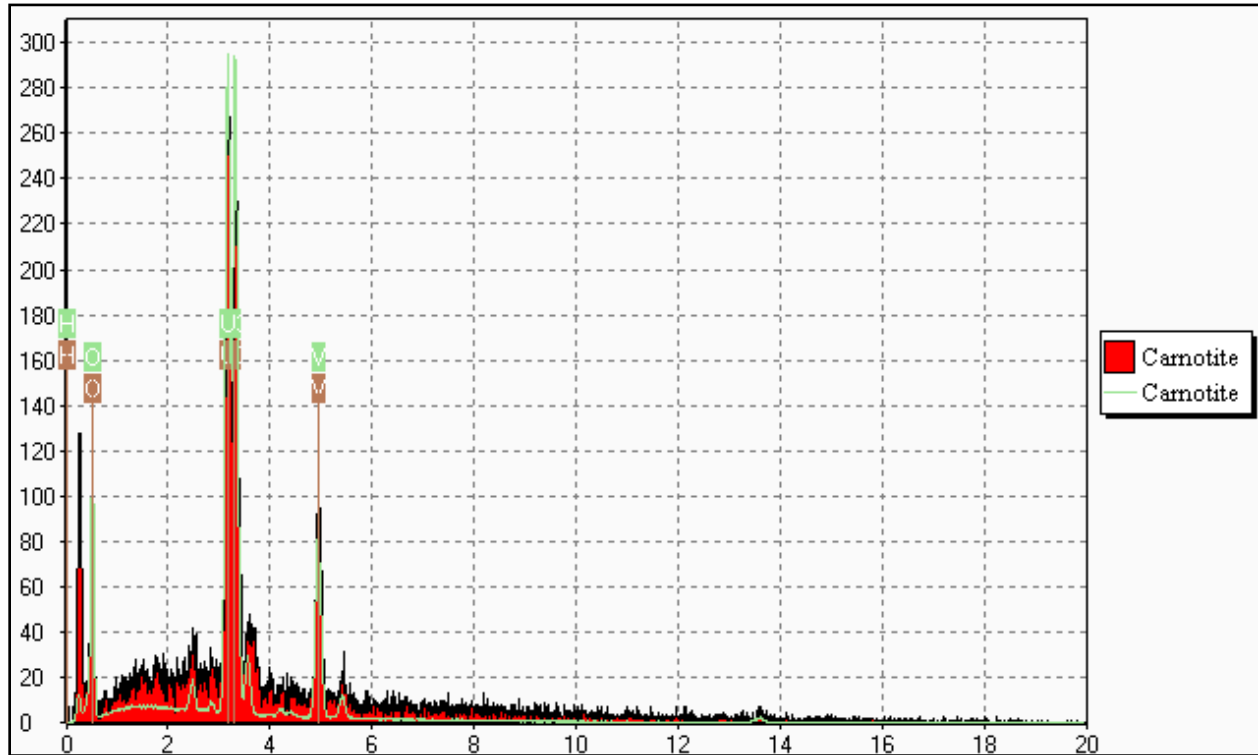
For carnotite verification, figure 4 indicates the AMICS carnotite library x-ray.

Figure 4. AMICS Carnotite Library Image.



From collected carnotite x-rays, comparison to library AMICS carnotite indicates excellent correlation and verification of the vanadium uranium mineral. In this case, the red x-rays are the collected x-rays of the sample as compared to the green pattern of the AMICS library. Results are shown in figure 5.

Figure 5. Identified Carnotite Particles.



This technique is also used for other minerals which have a high z number and are very bright using backscatter techniques. Minerals such as galena and gold are easily identified based on this technique. Since both galena and gold are very bright, it impossible to identify based on brightness alone. However, the bright particles x-rays collected and compared to the known library for easy identification of both minerals. An example of both galena and gold particles along with identified x-rays are shown in figures 6 and 7.

Figure 6. Identified Galena Particle.

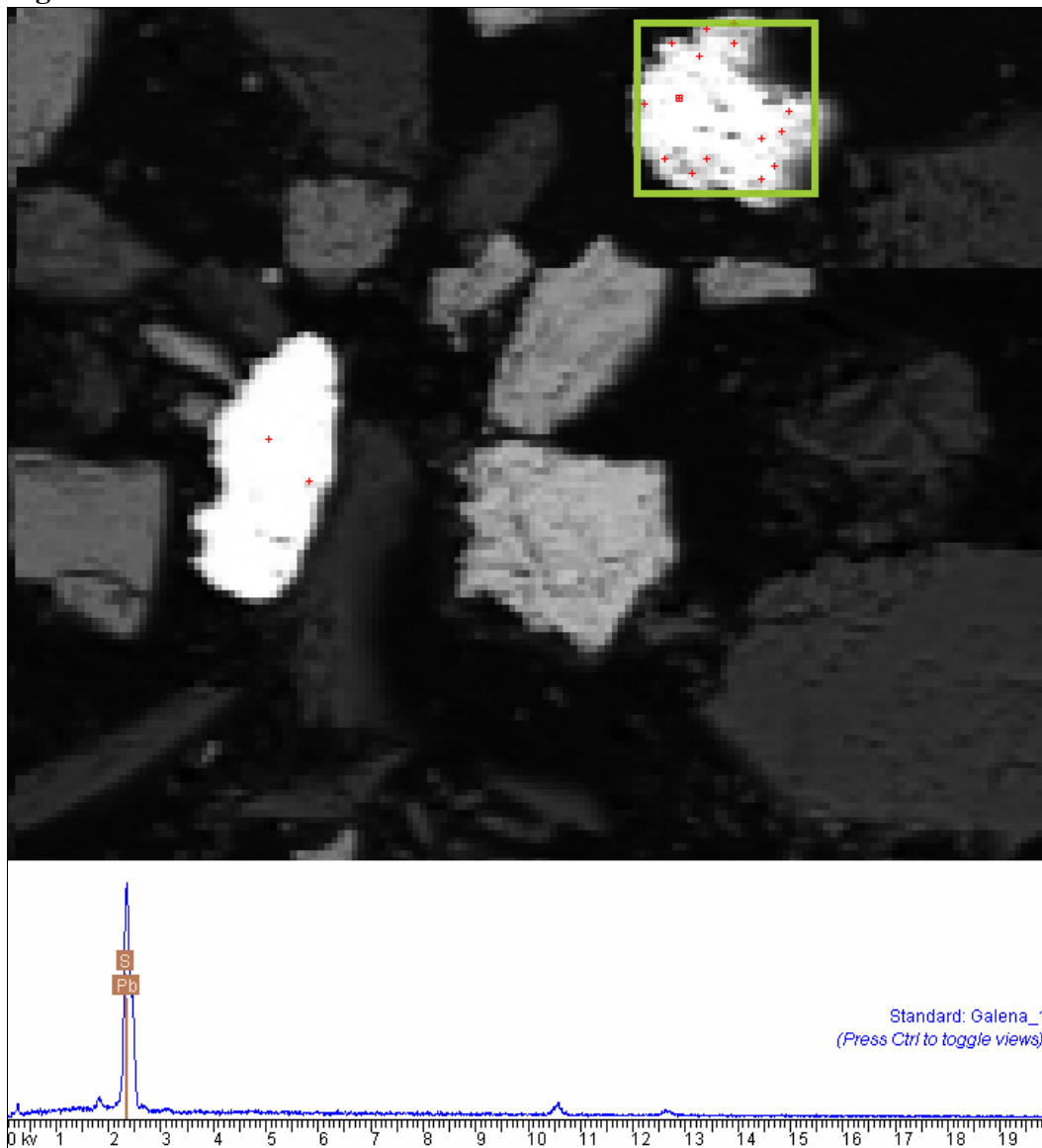


Figure 7. Identified Gold Particle.

