

Quivira Low Sample Concentration Mass Balance
1

Original Mass Collected			
Bulk Sample ID	Tare [lb]	Gross [lb]	Net [lb]
QV-L-0-SL-01 Unscreened	2.2	61	58.8
QV-L-0-SL-02 Unscreened	2.2	58.4	56.2
Totals	4.4	119.4	115

8/25/2022



Material Screening over 1/4 inch

1/4" Screened Material				
Bulk Sample ID	Tare [lb]	Gross [lb]	Net [lb]	Percent of Total
QV-L-0-SL +1/4-inch-01	2.2	6.8	4.6	4.0%
QV-L-0-SL -1/4-inch-01	2.2	59.8	57.6	96.0%
QV-L-0-SL -1/4-inch-02	2.2	54.6	52.4	
Totals	6.6	121.2	114.6	

8/26/2022



Mixing and Subsampling

Subsample Taken	
Net Mass [g]	1415.53
Estimated Remaining Mass 8/26 [lb]	111.48

CoC 8/26 recorded as 1414.34 g in field. Verified as 1415.53 in Lab

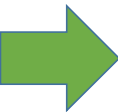


Moisture Content as Determined as Disa Lab

% Moisture	4.41%
Estimated True Dry Mass [lb]	106.56



Material Pre-Cutting over 270-mesh screen at site 8/27/2022



Continued on
Quivira Low
Concentration
Mass Balance 2



-270 Feed Fines Brought Back to Shop and Dried

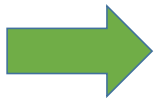
Notes:
Refer to sample nomenclature in Section 4.1
lb pound
g gram

Dried Pan ID	Tare Mass [lb]	Gross Mass [lb]	Net Mass [lb]
QV-L-0-F-01	2.8	3.0	0.2
QV-L-0-F-02	2.8	8.0	5.2
QV-L-0-F-03	2.8	5.8	3.0
QV-L-0-F-04	2.8	6.4	3.6
			12.0

Unsettled Water Collection	
Depth Drum Total [in]	34
Volume Drum Total [gal]	55
Depth to Top of Water [in]	5.25
Volume Unsettled Water [gal]	46.5
Collected Unsettled Water Bucket Net Mass [lb]	14.4
Collected Unsettled Water Volume [gal]	1.73
Sampled as % of Total	3.7%
Net Mass Unsettled Water Sample [g]	35.19
Approximate Unsettled Mass [lb]	2.1

Quivira Low Sample Concentration Mass Balance
2

Continued from
Quivira Low
Concentration
Mass Balance 2



Coarse Material Processed 8/28/2022



Samples Collected and Wet Sieved at Disa Lab

Dry Calculated Mass [lb]		92.47	
Still Wet Mass Recorded in Field 8/28			
ID	Tare [lb]	Gross [lb]	Net [lb]
Bucket 1	2.2	46	43.8
Bucket 2	2.2	64	61.8
		Total	105.6
		% Moisture	12.4%

Processed Mass % of Total	86.8%
Fines Mass % of Total	13.2%

Notes:
Refer to sample nomenclature in Section 4.1

CoC	chain of custody
g	gram
lb	pound
mg/kg	milligrams per kilogram
U	Uranium

Sample ID	Field CoC 8/28/22			Shop Receipt CoC 9/2/22 (True Value)			Solids Dry Mass [g]	Solids Dry Mass [lb]	Solids % by Mass
	Tare [lb]	Gross [lb]	Net [lb]	Tare [lb]	Gross [lb]	Net [lb]			
QV-L-4-SY	1.2	18.2	17.0	1.2	18.2	17.0	1092.75	2.409	14.2%
QV-L-8-SY	1.2	20.8	19.6	1.2	21.0	19.8	1428.03	3.148	15.9%
QV-L-30-SY	1.2	20.0	18.8	1.2	19.8	18.6	1473.62	3.249	17.5%

Mass Balance and Combination Goals							
Sample ID	Sieved Mass (-270-mesh) [g]	Mass % of Sieved Sample	Mass % TTL by Mass Balance	Proposed Mass Added of QV-L-0-F [g]	Sieved -270 XRF U mg/kg	Fines XRF U mg/kg	Proposed Combined Concentrate U mg/kg
QV-L-4-SY	117.17	11%	9.3%	166.52	154	313	247
QV-L-8-SY	141.64	10%	8.3%	224.56	145	313	248
QV-L-30-SY	181.25	13%	11.0%	217.61	106	313	219

Sample Mass Check				
Sample ID	Total Sieved Mass [g]	Total Sieved Mass Including Combined QV-L-0-F [g]	Concentrate Mass % of Total (Mass Calculated)	Concentrate Mass % of Total (Balance sum of Percents in this Sheet)
QV-L-4-SY	1092.75	1259.27	22.53%	22.53%
QV-L-8-SY	1473.62	1698.18	21.56%	21.56%
QV-L-30-SY	1428.03	1645.64	24.24%	24.24%

Quivira Medium Sample Concentration Mass Balance

1

Original Mass Collected			
Bulk Sample ID	Tare [lb]	Gross [lb]	Net [lb]
QV-M-0-SL-01			
Unscreened	2.2	56.8	54.6
QV-M-0-SL-02			
Unscreened	2.2	55.6	53.4
Totals	4.4	112.4	108

Originally collected as QV-H, Relabel due to concentration 8/25-8/27



Material Screening over 1/4 inch

1/4" Screened Material				
Bulk Sample ID	Tare [lb]	Gross [lb]	Net [lb]	Percent of Total
QV-M-0-SL +1/4-inch-01	2.2	4.6	2.4	2.2%
QV-M-0-SL -1/4-inch-01	2.2	58	55.8	97.8%
QV-M-0-SL -1/4-inch-01	2.2	51.8	49.6	
Totals	6.6	114.4	107.8	

8/26/2022



Mixing and Subsampling

Subsample Taken	
Net Mass [g]	1545.98
Estimated Remaining Mass 8/26 [lb]	104.39

CoC 8/27 recorded as 1545.11 g in field. Verified as 1545.98 g in Lab



Moisture Content as Determined as Disa Lab

% Moisture	4.64%
Estimated True Dry Mass [lb]	99.55



Material Pre-Cutting over 270-mesh screen at site 8/27/2022



Continued on Quivira Medium Concentration Mass Balance 2



-270 Feed Fines Brought Back to Shop and Dried

Dried Pan ID	Tare Mass [lb]	Gross Mass [lb]	Net Mass [lb]
QV-M-0-F-01	3.0	4.0	1.0
QV-M-0-F-02	2.8	8.0	5.2
QV-M-0-F-03	3.0	9.8	6.8
			13.0
Unsettled Water Collection			
Depth Drum Total [in]	34.0		
Volume Drum Total [gal]	55.0		
Depth to Top of Water [in]	7.0		
Volume Unsettled Water [gal]	43.7		
Collected Unsettled Water Bucket Net Mass [lb]	17.4		
Collected Unsettled Water Volume [gal]	2.1		
Sampled as % of Total	4.8%		
Net Mass Unsettled Water Sample [g]	74.39		
Approximate Unsettled Mass [lb]	3.4		

Notes:

Refer to sample nomenclature in Section 4.1

lb pound
g gram

Quivira Medium Sample Concentration Mass Balance
2

Continued from
Quivira Medium
Concentration
Mass Balance 2



Coarse Material Processed 8/28/2022



Samples Collected and Wet Sieved at Disa Lab

Dry Calculated Mass [lb]		83.11	
Still Wet Mass Recorded in Field 8/28			
ID	Tare [lb]	Gross [lb]	Net [lb]
Bucket 1	2.2	63.8	61.6
Bucket 2	2.2	35.8	33.6
		Total	95.2
		% Moisture	12.7%

Processed Mass % of Total	83.5%
Fines Mass % of Total	16.5%

Notes:

Refer to sample nomenclature in Section 4.1

CoC chain of custody

g gram

lb pound

mg/kg milligrams per kilogram

U Uranium

Sample ID	Field CoC 8/28/22			Shop Receipt CoC 9/2/22 (True Value)			Solids Dry Mass [g]	Solids Dry Mass [lb]	Solids % by Mass
	Tare [lb]	Gross [lb]	Net [lb]	Tare [lb]	Gross [lb]	Net [lb]			
QV-M-4-SY	1.0	20.8	19.8	1.2	21.0	19.8	1577.35	3.477	17.6%
QV-M-8-SY	1.2	20.8	19.6	1.2	21.0	19.8	1605.29	3.539	17.9%
QV-M-30-SY	1.2	20.8	19.6	1.2	21	19.8	1430.72	3.154	15.9%

Mass Balance and Combination Goals							
Sample ID	Sieved Mass (-270-mesh) [g]	Mass % of Sieved Sample	Mass % TTL by Mass Balance	Proposed Mass Added of QV-M-0-F [g]	Sieved -270 XRF U mg/kg	Fines XRF U mg/kg	Proposed Combined Concentrate U mg/kg
QV-M-4-SY	66.40	4%	3.5%	311.91	330	994	877
QV-M-8-SY	78.60	5%	4.1%	317.44	337	994	864
QV-M-30-SY	124.50	9%	7.3%	282.92	248	994	766

Sample Mass Check				
Sample ID	Total Sieved Mass [g]	Total Sieved Mass Including Combined QV-M-0-F [g]	Concentrate Mass % of Total (Mass Calculated)	Concentrate Mass % of Total (Balance sum of Percents in this Sheet)
QV-M-4-SY	1577.35	1889.26	20.02%	20.02%
QV-M-8-SY	1605.29	1922.73	20.60%	20.60%
QV-M-30-SY	1430.72	1713.64	23.78%	23.78%

1

Original Mass Collected			
Bulk Sample ID	Tare [lb]	Gross [lb]	Net [lb]
QV-H-0-SL-01			
Unscreened	2.2	68.6	66.4
QV-H-0-SL-02			
Unscreened	2.2	69.2	67
Totals	4.4	137.8	133.4



Material Screening over 1/4 inch

1/4" Screened Material				
Bulk Sample ID	Tare [lb]	Gross [lb]	Net [lb]	Percent of Total
QV-H-0-SL +1/4-inch-01	2.2	5.6	3.4	2.6%
QV-H-0-SL -1/4-inch-01	2.2	62.0	59.8	97.4%
QV-H-0-SL -1/4-inch-02	2.2	57.8	55.6	
QV-H-0-SL -1/4-inch-03	2.2	15.6	13.4	
Totals	8.8	141	132.2	

8/26/2022



Mixing and Subsampling

Subsample Taken	
Net Mass [g]	1603.28
Estimated Remaining Mass 8/26 [lb]	128.67

CoC 8/27 recorded as 1602.93 g in field. Verified as 1603.28 g in Lab



Moisture Content as Determined as Disa Lab

% Moisture	4.19%
Estimated True Dry Mass [lb]	123.3



Material Pre-Cutting over 270-mesh screen at site 8/27/2022



Continued on
Quivira High
Concentration
Mass Balance 2



-270 Feed Fines Brought Back to Shop and Dried

Dried Pan ID	Tare Mass [lb]	Gross Mass [lb]	Net Mass [lb]
QV-H-O-F-01	2.8	11.2	8.4
QV-H-O-F-02	2.8	4.4	1.6
QV-H-O-F-03	2.8	5.8	3
			13
Unsettled Water Collection			
Depth Drum Total [in]	34		
Volume Drum Total [gal]	55		
Depth to Top of Water [in]	9		
Volume Unsettled Water [gal]	40.4		
Collected Unsettled Water Bucket Net Mass [lb]	16		
Collected Unsettled Water Volume [gal]	1.92		
Sampled as % of Total	4.7%		
Net Mass Unsettled Water Sample [g]	121.64		
Approximate Suspended Mass [lb]	5.66		

Notes:

Refer to sample nomenclature in Section 4.1

lb pound

gram

Quivira High Sample Concentration Mass Balance
2

Continued from
Quivira High
Concentration
Mass Balance 2



Coarse Material Processed 8/28/2022



Samples Collected and Wet Sieved at Disa Lab

Dry Calculated Mass [lb]		104.6	
Still Wet Mass Recorded in Field 8/28			
ID	Tare [lb]	Gross [lb]	Net [lb]
Bucket 1	2.2	65.6	63.4
Bucket 2	2.2	58.2	56
		Total	119.4
		% Moisture	12.4%

Processed Mass % of Total	84.9%
Fines Mass % of Total	15.1%

Notes:

Refer to sample nomenclature in Section 4.1

CoC chain of custody

g gram

lb pound

mg/kg milligrams per kilogram

U Uranium

Sample ID	Field CoC 8/28/22			Shop Receipt CoC 9/2/22 (True Value)			Solids Dry Mass [g]	Solids Dry Mass [lb]	Solids % by Mass
	Tare [lb]	Gross [lb]	Net [lb]	Tare [lb]	Gross [lb]	Net [lb]			
QV-H-4-SY	1.2	22.2	21.0	1.2	22.4	21.2	2185.54	4.818	22.7%
QV-H-8-SY	1.2	21.6	20.4	1.2	21.4	20.2	2125.8	4.687	23.2%
QV-H-30-SY	1.0	20.8	19.8	1.0	20.8	19.8	1808.39	3.987	20.1%

Mass Balance and Combination Goals							
Sample ID	Sieved Mass (-270-mesh) [g]	Mass % of Sieved Sample	Mass % TTL by Mass Balance	Proposed Mass Added of QV-H-0-F [g]	Sieved -270 XRF U mg/kg	Fines XRF U mg/kg	Proposed Combined Concentrate U mg/kg
QV-H-4-SY	84.22	4%	3.27%	389.75	658	1510	1359
QV-H-8-SY	96.03	5%	3.83%	379.09	545	1510	1315
QV-H-30-SY	144.96	8%	6.80%	322.49	340	1510	1147

Sample Mass Check				
Sample ID	Total Sieved Mass [g]	Total Sieved Mass Including Combined QV-H-0-F [g]	Concentrate Mass % of Total (Mass Calculated)	Concentrate Mass % of Total (Balance sum of Percents in this Sheet)
QV-H-4-SY	2185.54	2575.29	18.40%	18.40%
QV-H-8-SY	2125.80	2504.89	18.97%	18.97%
QV-H-30-SY	1808.39	2130.88	21.94%	21.94%