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Laboratory Data Report

Client Information

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Data-File Information

Date: March 24, 2023

Project name:

ODM batch number: 2852

Sample numbers: AER22TS-3002, AER22TS-3059, AER22TS-4022, AER22TS-4092, AER22TS-5005, AER22TS-5022, AERHL225003, AERHL225004, AERHL225010, AERHL225012, AERHL225014, AERHL225043, AERHL225059, AERHL225060, AERHL225064, AERHL225069, AERHL225075, AERHL225092, AERHL225093, AERHL225096, AERHL225097, AERHL225103, AERHL225108, AERHL225109, AERHL225110, AERHL225114

Data file: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Number of samples in this report: 26

Number of samples processed to date: 299

Total number of samples in project: 299

Preliminary data:

Final data:

Revised data:

X

Samples Processed For:

Gold, KIM, MMSIM, Apatite

Processing Specifications:

1. Submitted by client: Till and sand/gravel samples mostly prescreened to -2.0 mm in the field.
2. One ± 300 g archival split taken from each sample.
3. All samples panned for gold, PGMs and fine-grained metallic indicator minerals.
4. +0.25 mm table concentrates refined by heavy liquid separation at S.G. 3.0 and 3.2 to obtain mid-density and heavy mineral concentrates (MDCs and HMCs).
5. Nonferromagnetic mineral fractions of 0.25-2.0 mm MDCs and HMCs picked for apatite and indicator minerals.
6. 1.0-2.0 mm, 0.5-1.0 mm and nonparamagnetic (>1.0 amp) 0.25-0.5 mm HMC fractions examined for scheelite by UV lamping.

Notes

Mike Crawford
Laboratory Manager

Primary Sample Processing Weights and Descriptions

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 26

ODM Batch Number(s): 2852

Sample Number	Weight (kg wet)					Screening and Shaking Table Sample Descriptions													
						Clasts (+2.0 mm)					Matrix (-2.0 mm)					Colour			Class
											Percentage								
	Bulk Rec'd	Archived Split	Table Split	+2.0 mm Clasts	-2.0 mm Table Feed	Size	V/S	GR	LS	OT*	S/U	SD	ST	CY	ORG	SD	CY		
AER22TS-3002	14.4	0.3	14.1	3.6	10.5	P	100	TR	0	TR	U	Y	Y	Y	N	OC	OC	TILL	
AER22TS-3059	11.1	0.3	10.8	1.3	9.5	P	100	0	0	0	U	-	Y	+	N	OC	OC	TILL	
AER22TS-4022	15.6	0.3	15.3	5.0	10.3	P	100	0	0	0	U	Y	Y	Y	N	DOC	DOC	TILL	
AER22TS-4092	11.9	0.3	11.6	0.3	11.3	P	20	80	0	TR	U	Y	Y	Y	N	LOC	LOC	TILL	
AER22TS-5005	15.8	0.3	15.5	1.1	14.4	P	60	20	0	20	U	-	Y	+	N	LOC	LOC	TILL	
AER22TS-5022	13.7	0.3	13.4	0.8	12.6	P	75	20	0	5	U	-	Y	+	N	OC	OC	TILL	
AERHL225003	9.3	0.3	9.0	0.0	9.0		No Clasts				S	MC	N	N	N	OC	NA	SAND + GRAVEL	
AERHL225004	7.6	0.3	7.3	0.0	7.3		No Clasts				S	MC	-	Y	N	OC	NA	SAND + GRAVEL	
AERHL225010	7.4	0.3	7.1	0.0	7.1		No Clasts				S	MC	N	N	N	OC	NA	SAND + GRAVEL	
AERHL225012	7.3	0.3	7.0	0.0	7.0		No Clasts				S	FM	N	N	N	OC	NA	SAND + GRAVEL	
AERHL225014	8.7	0.3	8.4	0.0	8.4		No Clasts				S	FM	N	N	N	DOC	NA	SAND + GRAVEL	
AERHL225043	9.3	0.3	9.0	0.0	9.0		No Clasts				S	FM	N	N	N	OC	NA	SAND + GRAVEL	
AERHL225059	9.5	0.3	9.2	0.0	9.2		No Clasts				S	MC	N	N	N	OC	NA	SAND + GRAVEL	
AERHL225060	11.5	0.3	11.2	0.0	11.2		No Clasts				S	FM	N	N	N	LOC	NA	SAND + GRAVEL	
AERHL225064	9.6	0.3	9.3	0.0	9.3		No Clasts				S	FM	N	N	N	LOC	NA	SAND + GRAVEL	
AERHL225069	10.7	0.3	10.4	0.0	10.4		No Clasts				S	FM	N	N	N	LOC	NA	SAND + GRAVEL	
AERHL225075	10.9	0.3	10.6	0.0	10.6		No Clasts				S	MC	N	N	N	LOC	NA	SAND + GRAVEL	
AERHL225092	9.1	0.3	8.8	0.0	8.8		No Clasts				S	MC	N	N	N	OC	NA	SAND + GRAVEL	
AERHL225093	10.0	0.3	9.7	0.0	9.7		No Clasts				S	FM	N	N	N	OC	NA	SAND + GRAVEL	
AERHL225096	10.0	0.3	9.7	0.0	9.7		No Clasts				S	FM	N	N	N	LOC	NA	SAND + GRAVEL	
AERHL225097	10.4	0.3	10.1	0.0	10.1		No Clasts				S	FM	N	N	N	OC	NA	SAND + GRAVEL	
AERHL225103	8.5	0.3	8.2	0.0	8.2		No Clasts				S	FM	N	N	N	LOC	NA	SAND + GRAVEL	
AERHL225108	8.1	0.3	7.8	0.0	7.8		No Clasts				S	FM	N	N	N	DOC	NA	SAND + GRAVEL	
AERHL225109	9.4	0.3	9.1	0.0	9.1		No Clasts				S	FM	N	N	N	LOC	NA	SAND + GRAVEL	
AERHL225110	9.3	0.3	9.0	0.0	9.0		No Clasts				S	FM	N	N	N	DOC	NA	SAND + GRAVEL	
AERHL225114	10.5	0.3	10.2	0.0	10.2		No Clasts				S	FM	N	N	N	LOC	NA	SAND + GRAVEL	

*Clasts listed as OT are Quartz.

Gold Grain Summary

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 26

ODM Batch Number(s): 2852

Sample Number	Number of Visible Gold Grains				Nonmag HMC Weight*	Calculated PPB Visible Gold in HMC			
	Total	Reshaped	Modified	Pristine		Total	Reshaped	Modified	Pristine
AER22TS-3002	0	0	0	0	42.0	0	0	0	0
AER22TS-3059	2	0	2	0	38.0	374	0	374	0
AER22TS-4022	0	0	0	0	41.2	0	0	0	0
AER22TS-4092	0	0	0	0	45.2	0	0	0	0
AER22TS-5005	0	0	0	0	57.6	0	0	0	0
AER22TS-5022	0	0	0	0	50.4	0	0	0	0
AERHL225003	0	0	0	0	36.0	0	0	0	0
AERHL225004	0	0	0	0	29.2	0	0	0	0
AERHL225010	0	0	0	0	28.4	0	0	0	0
AERHL225012	0	0	0	0	28.0	0	0	0	0
AERHL225014	0	0	0	0	33.6	0	0	0	0
AERHL225043	0	0	0	0	36.0	0	0	0	0
AERHL225059	0	0	0	0	36.8	0	0	0	0
AERHL225060	0	0	0	0	44.8	0	0	0	0
AERHL225064	0	0	0	0	37.2	0	0	0	0
AERHL225069	0	0	0	0	41.6	0	0	0	0
AERHL225075	0	0	0	0	42.4	0	0	0	0
AERHL225092	1	1	0	0	35.2	400	400	0	0
AERHL225093	0	0	0	0	38.8	0	0	0	0
AERHL225096	0	0	0	0	38.8	0	0	0	0
AERHL225097	0	0	0	0	40.4	0	0	0	0
AERHL225103	0	0	0	0	32.8	0	0	0	0
AERHL225108	0	0	0	0	31.2	0	0	0	0
AERHL225109	0	0	0	0	36.4	0	0	0	0
AERHL225110	2	1	1	0	36.0	21	16	5	0
AERHL225114	0	0	0	0	40.8	0	0	0	0

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 0.4% of the table feed.

Detailed Gold Grain Data

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 26

ODM Batch Number(s): 2852

Sample Number	Dimensions (µm)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
AER22TS-3002	No Visible Gold									No sulphides.
AER22TS-3059	27	C	100	175	1		1		93	No sulphides.
	38	C	150	250	1		1		281	
							2	38.0	374	
AER22TS-4022	No Visible Gold									No sulphides.
AER22TS-4092	No Visible Gold									No sulphides.
AER22TS-5005	No Visible Gold									No sulphides.
AER22TS-5022	No Visible Gold									No sulphides.
AERHL225003	No Visible Gold									No sulphides.
AERHL225004	No Visible Gold									Tr (~50 grains) galena (25-250 µm). Tr (~2000 grains) pyrite (25-250 µm). Tr (~2000 grains) marcasite (25-250 µm).
AERHL225010	No Visible Gold									Tr (~1000 grains) marcasite (25-250 µm).
AERHL225012	No Visible Gold									No sulphides.
AERHL225014	No Visible Gold									Tr (~1000 grains) pyrite (25-100 µm).
AERHL225043	No Visible Gold									Tr (~100 grains) marcasite (25-50 µm).
AERHL225059	No Visible Gold									Tr (~20 grains) pyrite (25-100 µm).
AERHL225060	No Visible Gold									Tr (~100 grains) marcasite (25 µm).
AERHL225064	No Visible Gold									No sulphides.
AERHL225069	No Visible Gold									Tr (~100 grains) marcasite (25-50 µm).
AERHL225075	No Visible Gold									No sulphides.
AERHL225092	25	M	200	375	1		1		400	No sulphides.
							1	35.2	400	
AERHL225093	No Visible Gold									Tr (~100 grains) marcasite (25-50 µm).
AERHL225096	No Visible Gold									Tr (~200 grains) marcasite (25-50 µm).

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 0.4% of the table feed.

Detailed Gold Grain Data

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ODM Batch Number(s): 2852

Sample Number	Dimensions (µm)			Number of Visible Gold Grains				Nonmag HMC Weight* (g)	Calculated V.G. Assay in HMC (ppb)	Metallic Minerals in Pan Concentrate
	Thickness	Width	Length	Reshaped	Modified	Pristine	Total			
AERHL225097	No Visible Gold									Tr (~50 grains) marcasite (25-50 µm).
AERHL225103	No Visible Gold									Tr (~50 grains) marcasite (25-50 µm).
AERHL225108	No Visible Gold									Tr (~10,000 grains) marcasite (25-500 µm).
AERHL225109	No Visible Gold									Tr (~30 grains) marcasite (25 µm).
AERHL225110	10	C	50	50		1	1	5	Tr (~200 grains) marcasite (25-75 µm).	
	15	C	50	100	1		1	16		
							2	36.0	21	
AERHL225114	No Visible Gold									Tr (~300 grains) marcasite (25-100 µm).

* Calculated PPB Au based on assumed nonmagnetic HMC weight equivalent to 0.4% of the table feed.

Heavy Mineral Concentrate Processing Weights

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ODM Batch Number(s): 2852

Sample Number	Weight of -2.0 mm Table Concentrate (g)													
	0.25-2.0 mm Heavy Liquid Separation at S.G. 3.0 and 3.2													
	Total	-0.25 mm	Total	Lights S.G. <3.0	Total S.G. >3.0 HMC	-0.25 mm (wash)	Mag HMC	S.G. 3.0 to 3.2 Total	Nonferromagnetic Fractions					
									S.G. >3.2					
									Total	Processed Split				
										Total		0.25 to 0.5	0.5 to 1.0 mm	1.0 to 2.0 mm
										%	Weight			
AER22TS-3002	745.1	641.0	104.1	102.1	2.0	0.6	<0.01	0.4	1.0	100.0	1.0	0.5	0.3	0.2
AER22TS-3059	859.3	707.9	151.4	150.6	0.8	0.3	0.04	0.2	0.3	100.0	0.3	0.1	0.1	0.1
AER22TS-4022	854.0	339.5	514.5	514.5	0.03	0.0	<0.01	0.0	<0.01	100.0	0.0	<0.01	0.0	0.0
AER22TS-4092	1381.4	846.8	534.6	530.2	4.4	1.0	0.1	0.9	2.4	100.0	2.4	1.6	0.6	0.2
AER22TS-5005	1008.8	663.7	345.1	334.0	11.1	2.0	0.2	3.4	5.5	100.0	5.5	3.5	1.4	0.6
AER22TS-5022	621.8	578.0	43.8	39.0	4.8	0.8	0.1	1.0	2.9	100.0	2.9	2.2	0.5	0.2
AERHL225003	540.3	178.8	361.5	351.9	9.6	1.3	0.2	4.0	4.1	100.0	4.1	4.1	0.02	0.0
AERHL225004	620.8	372.5	248.3	219.6	28.7	7.6	1.0	4.3	15.8	100.0	15.8	13.5	1.7	0.6
AERHL225010	585.2	324.3	260.9	142.3	118.6	16.2	6.4	10.1	85.9	23.3	20.0	10.1	8.1	1.8
AERHL225012	794.8	374.6	420.2	416.4	3.8	0.9	0.05	1.5	1.4	100.0	1.4	1.3	0.1	0.0
AERHL225014	694.6	203.9	490.7	397.3	93.4	6.9	12.0	8.3	66.2	30.2	20.0	9.1	8.7	2.2
AERHL225043	541.9	486.4	55.5	54.0	1.5	0.6	0.03	0.5	0.4	100.0	0.4	0.4	0.04	<0.01
AERHL225059	773.7	387.9	385.8	343.0	42.8	5.2	2.8	6.6	28.2	70.9	20.0	14.8	4.9	0.3
AERHL225060	668.0	340.4	327.6	312.0	15.6	3.0	0.3	3.3	9.0	100.0	9.0	8.5	0.4	0.1
AERHL225064	863.6	527.2	336.4	254.4	82.0	10.7	3.6	7.2	60.5	33.1	20.0	15.6	3.8	0.6
AERHL225069	559.2	244.2	315.0	305.6	9.4	1.4	0.7	2.4	4.9	100.0	4.9	2.9	1.7	0.3
AERHL225075	920.9	541.5	379.4	300.5	78.9	9.5	4.8	10.9	53.7	37.2	20.0	10.5	5.9	3.6
AERHL225092	875.5	637.9	237.6	177.8	59.8	6.3	5.5	6.9	41.1	48.7	20.0	11.3	6.7	2.0
AERHL225093	679.1	530.0	149.1	107.3	41.8	5.7	2.4	3.7	30.0	66.7	20.0	15.9	3.5	0.6
AERHL225096	612.0	405.6	206.4	124.8	81.6	10.8	6.2	5.9	58.7	34.1	20.0	11.8	6.3	1.9
AERHL225097	829.3	434.0	395.3	274.3	121.0	11.7	9.9	12.0	87.4	22.9	20.0	5.7	8.2	6.1
AERHL225103	608.2	228.7	379.5	369.3	10.2	1.4	0.5	2.3	6.0	100.0	6.0	5.4	0.6	0.01
AERHL225108	786.1	481.3	304.8	260.6	44.2	10.6	1.6	5.1	26.9	74.3	20.0	13.0	6.4	0.6
AERHL225109	603.0	448.0	155.0	131.7	23.3	3.5	2.2	2.9	14.7	100.0	14.7	11.4	2.8	0.5
AERHL225110	936.9	649.9	287.0	252.6	34.4	6.7	1.7	5.9	20.1	100.0	20.1	16.8	2.4	0.9
AERHL225114	540.5	386.0	154.5	123.4	31.1	4.7	2.4	2.1	21.9	91.3	20.0	15.9	3.6	0.5

0.25-0.5 mm Paramagnetic/Non-Paramagnetic Fraction Weights

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 26

ODM Batch Number(s): 2852

Sample Number	Weight of 0.25-0.5 mm S.G. >3.2 Nonferromagnetic Heavy Mineral Fractions (g)					
	Total	Paramagnetic			Nonparamagnetic	
		Strongly (<0.6 amp)	Moderately (0.6-0.8 amp)	Weakly (0.8-1.0 amp)	>1.0 amp	>1.0 amp Lights*
AER22TS-3002	0.53	<0.01	0.06	0.46	0.01	NA
AER22TS-3059	0.13		0.12		0.01	NA
AER22TS-4022	0.00	Undersized concentrate therefore not electromagnetically separated.				
AER22TS-4092	1.64	0.19	1.09	0.30	0.06	<0.01
AER22TS-5005	3.47	0.10	0.73	2.36	0.27	0.01
AER22TS-5022	2.24	0.04	0.47	1.54	0.18	0.01
AERHL225003	4.07	0.41	1.54	1.56	0.53	0.03
AERHL225004	13.51	3.55	3.66	1.81	4.45	0.04
AERHL225010	10.09	1.57	4.05	1.12	3.32	0.03
AERHL225012	1.30	0.11	0.59	0.45	0.15	<0.01
AERHL225014	9.12	1.74	4.73	1.34	1.29	0.02
AERHL225043	0.38	0.04	0.10	0.20	0.04	NA
AERHL225059	14.79	3.86	7.73	1.59	1.52	0.09
AERHL225060	8.46	1.02	3.54	2.59	1.18	0.13
AERHL225064	15.62	3.67	9.53	1.01	1.36	0.05
AERHL225069	2.93	0.52	1.26	0.76	0.37	0.02
AERHL225075	10.47	3.24	4.30	1.62	1.28	0.03
AERHL225092	11.26	4.04	3.72	1.46	2.01	0.03
AERHL225093	15.91	4.47	6.66	1.61	3.09	0.08
AERHL225096	11.76	2.64	5.82	1.09	2.12	0.09
AERHL225097	5.68	0.73	2.38	0.98	1.56	0.03
AERHL225103	5.43	1.31	2.61	1.21	0.28	0.02
AERHL225108	13.00	1.97	3.24	1.98	5.80	0.01
AERHL225109	11.42	3.12	5.54	1.42	1.30	0.04
AERHL225110	16.82	6.30	6.68	2.11	1.63	0.10
AERHL225114	15.90	4.59	6.09	1.48	3.71	0.03

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

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Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine				% Cr*	Phosphates			
													% Fo*	% Fay	% Opx		% Ap	% Mz				
AER22TS-3002	0	0	30 barite (13 gr)	0	40 (~2000 gr)	0	0	0	5 (2 gr)	2 (1 gr)	0	10 (4 gr)	0	0	0	0	0	0	0	0	Hematite-goethite/barite-titanite-epidote assemblage.	0.5-1.0 mm fraction: 2 barite 0.25-0.5 mm fraction: 13 barite
AER22TS-3059	0	0	0	0	100 (~1500 gr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Goethite/epidote-leucoxene assemblage.	
AER22TS-4022	0	0	0	0	8 (8 gr)	0	0	0	0	0	0	2 (2 gr)	0	0	0	0	0	0	0	0	Undersized concentrate therefore not electromagnetically separated and mineral assemblage not listed. Main minerals are augite, almandine and hornblende.	
AER22TS-4092	0	0	0	0	10 (~1800 gr)	4 green-grey, blue, pink, grey	Tr sapphire corundum (1 gr); Tr low-Cr diopside (1 gr)	1 (10 gr)	70 (~500 gr)	0.5 (5 gr)	0	0	0	0	0	0	0	Tr (2 gr)	Tr (2 gr)	0	Almandine-augite-hornblende/kyanite assemblage.	0.25-0.5 mm fraction: 4 spinel 1 sapphire corundum 1 low-Cr diopside 10 red rutile 2 apatite 2 monazite

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

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File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
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Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine				% Cr*	Phosphates			
													% Fo*	% Fay	% Opx		% Ap	% Mz				
AER22TS-5005	0	0	8 barite (~200 gr)	1 (~25 gr)	70 (~20,000 gr)	0	0	Tr (4 gr)	20 (~500 gr)	2 (~50 gr)	0	2 (~50 gr)	0	Tr (1 gr)	0	0	Tr (3 gr)	0	Tr (4 gr)	0	Goethite-almandine/epidote-kyanite assemblage. "Pyrite" is mostly marcasite. 0.5-1.0 mm fraction contains 4% (~60 grains) barite.	1.0-2.0 mm fraction: 2 barite 0.5-1.0 mm fraction: 10 representative barite 3 forsterite* 0.25-0.5 mm fraction: 10 representative barite 4 red rutile 1 forsterite 1 representative staurolite (see KIM notes) 3 chromite 4 monazite
AER22TS-5022	0	0	30 barite (~600 gr)	0.2 (4 gr)	70 (~15,000 gr)	0	Tr low-Cr diopside (1 gr)	Tr (1 gr)	10 (~200 gr)	0	0	2 (~40 gr)	0	0	0	0	0	0	0	0	Goethite-almandine/epidote-barite assemblage. SEM check from 1.0-2.0 mm fraction: 1 barite candidate = 1 barite + quartz. 0.5-1.0 mm fraction contains 5% (~30 grains) barite.	1.0-2.0 mm fraction: 1 barite + quartz 0.5-1.0 mm fraction: 10 representative barite 2 forsterite* 0.25-0.5 mm fraction: 10 representative barite 1 low-Cr diopside 1 red rutile
AERHL225003	0	0	0.7 sphalerite (~40 gr); 2 barite (~100 gr)	1 (~50 gr)	0.5 (~150 gr)	2 blue, pink	Tr low-Cr diopside (1 gr)	0	15 (~800 gr)	0	Tr (5 gr)	0	0	0	0	0	0	1 (~50 gr)	0	Tr florencite (4 gr)	Augite-almandine-hornblende/diopside-epidote-kyanite assemblage. "Pyrite" is mostly marcasite.	0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 2 spinel 1 low-Cr diopside 5 tourmaline 20 representative apatite 4 florencite

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine				% Cr*	Phosphates			
													% Fo*	% Fay	% Opx		% Ap	% Mz				
AERHL225004	0	0	1 sphalerite (~500 gr); 12 barite (~600 gr)	80 (~40,000 gr)	4 (~4000 gr)	5 blue, green, purple, pink	0	Tr (1 gr)	2 (~1000 gr)	Tr (~20 gr)	Tr (~30 gr)	Tr (~50 gr)	0	0	0	0	0	Tr (~20 gr)	Tr (4 gr)	Tr florencite (2 gr)	Almandine/marcasite assemblage. 0.5-1.0 mm fraction contains trace (~30 grains) sphalerite and 0.5% (~40 grains) barite.	0.5-1.0 mm fraction: 20 representative sphalerite 13 representative barite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 5 spinel 1 red rutile 10 representative tourmaline 10 representative apatite 4 monazite 2 florencite
AERHL225010	0	0	Tr sphalerite (2 gr); 15 barite (~5000 gr)	75 (~25,000 gr)	Tr (~60 gr)	0	0	0	Tr (~40 gr)	0	Tr (6 gr)	Tr (~15 gr)	0	0	0	0	0	0	Tr (~60 gr)	0	Almandine/marcasite-barite assemblage. 1.0-2.0 mm and 0.5-1.0 mm fractions contain 5% (~25 grains) and 8% (~800 grains) barite, resepectively	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 2 sphalerite 10 representative barite 6 tourmaline 1 staurolite (see KIM data) 5 representative monazite
AERHL225012	0	0	2 sphalerite (~30 gr); 2 barite (~25 gr)	2 (~30 gr)	Tr (~40 gr)	0	0	0	40 (~700 gr)	Tr (5 gr)	0	0	0	0	0	0	0	0	0	Tr florencite (2 gr)	Almandine-hornblende-augite/kyanite-epidote assemblage. "Pyrite" is mostly marcasite.	0.5-1.0 mm fraction: 3 sphalerite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 2 florencite

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp					>1.0 amp			
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals		
														% Fo*	% Fay			% Ap	% Mz			
AERHL225014	0	0	0.1 sphalerite (12 gr); 40 barite (~5000 gr)	30 (~4000 gr)	2 (~1500 gr)	4 blue, green spinel	0	Tr (7 gr)	0.5 (~60 gr)	Tr (~30 gr)	Tr (11 gr)	Tr (2 gr)	0	0	0	0	0	0	1 (~120 gr)	0	Almandine-ilmenite/barite-marcasite-epidote assemblage. 1.0-2.0 mm and 0.5-1.0 mm fractions contain 6% (~40 grains and 600 grains, respectively) barite.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 2 sphalerite 10 representative barite 0.25-0.5 mm fraction: 12 sphalerite 10 representative barite 4 spinel 7 red rutile 11 tourmaline 5 representative monazite
AERHL225043	0	0	0.2 sphalerite (1 gr); 50 barite (~250 gr)	3 (13 gr)	20 (~800 gr)	0	0	0	10 (~50 gr)	0	0	0	0	0	0	0	0	2 (2 gr)	0	0	Augite-hornblende-goethite/barite-leucoxene assemblage.	0.5-1.0 mm fraction: 3 barite 0.25-0.5 mm fraction: 1 sphalerite 10 representative barite

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains		
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																		
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp					>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals				
% Fo*	% Fay													% Ap	% Mz									
AERHL225059	0	0	Tr sphalerite (1 gr); 60 barite (~10,000 gr); Tr fluorite (1 gr)	5 (~800 gr)	0.5 (~600 gr)	0	Tr ruby corundum (1 gr); Tr sapphire corundum (1 gr); Tr low-Cr diopside (2 gr)	Tr (2 gr)	Tr (~50 gr)	Tr (5 gr)	Tr (~60 gr)	0	0	0	0	0	1 (~150 gr)	Tr (~30 gr)	Tr florencite (3 gr)	Almandine-hornblende/barite-diopside assemblage. "Pyrite" is mostly marcasite. 0.5-1.0 mm fraction contains 10% (~600 grains) barite.	1.0-2.0 mm fraction: 8 barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 1 sphalerite 10 representative barite 1 fluorite 1 ruby corundum 1 sapphire corundum 2 low-Cr diopside 2 red rutile 10 representative tourmaline 20 representative apatite 5 representative monazite 3 florencite			
AERHL225060	0	0	0	0.2 (~30 gr)	Tr (5 gr)	5 blue, green, pink spinel	Tr low-Cr diopside (4 gr)	0	50 (~8000 gr)	0	1 (~150 gr)	Tr (~40 gr)	0	0	0	0	0	2 (~300 gr)	0	Tr (3 gr)	Almandine-hornblende-augite/kyanite-diopside-epidote assemblage.	0.25-0.5 mm fraction: 5 spinel 4 low-Cr diopside 5 representative tourmaline 20 representative apatite 3 florencite		

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains			
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																			
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp									>1.0 amp		
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals					
													% Fo*	% Fay			% Ap	% Mz							
AERHL225064	0	Tr (1 gr)	Tr sphalerite (7 gr); Tr scheelite (1 gr); 60 barite (~8000 gr)	0.4 (~250 gr)	0	1 blue-green gahnite	0	0	Tr (~15 gr)	0	Tr (~25 gr)	0.5 (~80 gr)	0	0	0	0	Tr (1 gr)	0.5 (~100 gr)	Tr (~25 gr)	0	Almandine-augite/barite-diopside assemblage. SEM check from 0.25-0.5 mm fraction: 1 blue-green gahnite versus spinel candidate = 1 gahnite. 0.5-1.0 mm fraction contains 5% (~200 grains) barite.	1.0-2.0 mm fraction: 4 barite 0.5-1.0 mm fraction: 1 chalcopyrite 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 7 sphalerite 1 scheelite 10 representative barite 1 gahnite 10 representative tourmaline 1 Cr-spinel (see KIM data) 20 representative apatite 5 representative monazite			
AERHL225069	0	Tr (1 gr)	Tr sphalerite (2 gr); 30 barite (~1200 gr)	5 (~200 gr)	2 (~500 gr)	1 blue	0	Tr (2 gr)	0.5 (~20 gr)	0	0.5 (~25 gr)	1 (~40 gr)	0	0	0	0	0	1 (~50 gr)	0.5 (~20 gr)	Tr florencite (1 gr)	Almandine-augite/barite-diopside-epidote assemblage. 0.5-1.0 mm fraction contains 4% (~80 grains) barite	1.0-2.0 mm fraction: 4 barite 0.5-1.0 mm fraction: 1 chalcopyrite 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 2 sphalerite 10 representative barite 2 red rutile 10 representative tourmaline 20 representative apatite 5 representative monazite 1 florencite			

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains			
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																			
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp									>1.0 amp		
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals					
% Fo*	% Fay													% Ap	% Mz										
AERHL225075	0	0	60 barite (~8000 gr)	Tr (5 gr)	1 (~1000 gr)	0	Tr low-Cr diopside (2 gr)	Tr (1 gr)	2 (~300 gr)	0	Tr (~20 gr)	Tr (~40 gr)	0	0	0	0	0	Tr (8 gr)	Tr (4 gr)	Tr florencite (5 gr)	Almandine/barite-epidote assemblage.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 10 representative barite 2 low-Cr diopside 1 red rutile 5 representative tourmaline 8 apatite 4 monazite 5 florencite			
AERHL225092	0	Tr (1 gr)	0.2 sphalerite (~50 gr); Tr scheelite (3 gr); 80 barite (~15,000 gr)	4 (~800 gr)	Tr (~15 gr)	0	Tr ruby corundum (1 gr)	0	Tr (~50 gr)	0	Tr (~20 gr)	0	0	0	0	0	0	Tr (~40 gr)	Tr (~50 gr)	Tr florencite (2 gr)	Almandine/barite assemblage. "Pyrite" is mostly marcasite. 1.0-2.0 mm and 0.5-1.0 mm fractions contain 10% (~60 grains) and 40% (~3000 grains) barite, respectively.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 1 sphalerite 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 20 representative sphalerite 3 scheelite 10 representative barite 1 ruby corundum 10 representative tourmaline 20 representative apatite 5 representative monazite 2 florencite			

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains		
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																		
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp					>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals				
% Fo*	% Fay													% Ap	% Mz									
AERHL225093	0	Tr (1 gr)	Tr sphalerite (8 gr); 80 barite (~25,000 gr)	15 (~5000 gr)	Tr (~25 gr)	4 blue-green, blue	0	0	0	0	0	Tr (~100 gr)	0	0	0	0	0	Tr (10 gr)	Tr (~25 gr)	Tr florencite (1 gr)	Almandine/barite-marcasite assemblage. SEM checks from 0.25-0.5 mm fraction: 3 blue-green gahnite versus spinel candidates = 3 spinel; and 1 blue spinel versus sapphire corundum candidate = 1 spinel. 1.0-2.0 mm and 0.5-1.0 mm fractions contain 20% (~40 grains and ~800 grains, respectively) barite.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 8 sphalerite 10 representative barite 4 spinel 10 representative tourmaline 5 representative monazite 1 florencite		
AERHL225096	0	0	Tr sphalerite (4 gr); 60 barite (~15,000 gr)	20 (~5000 gr)	Tr (~100 gr)	3 purple, blue-grey	0	0	Tr (3 gr)	0	Tr (~40 gr)	Tr (2 gr)	0	0	0	0	0	Tr (~50 gr)	Tr (10 gr)	Tr florencite (3 gr)	Almandine/barite-marcasite assemblage. SEM checks from 0.25-0.5 mm fraction: 1 blue-grey gahnite versus spinel candidate = 1 spinel; 1 purple spinel versus almandine candidate = 1 spinel; and 1 xenotime versus sphalerite candidate = 1 sphalerite. 1.0-2.0 mm and 0.5-1.0 mm fractions contain 25% (~60 grains and ~2000 grains, respectively) barite.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 4 sphalerite 10 representative barite 3 spinel 5 representative tourmaline 20 representative apatite 6 representative monazite 3 florencite		

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp							<1.0 amp				>1.0 amp					
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals		
% Fo*	% Fay													% Ap	% Mz							
AERHL225097	0	0	0.3 sphalerite (~40 gr); 60 barite (~10,000 gr)	25 (~4000 gr)	4 (~2000 gr)	1 blue-grey	0	Tr (1 gr)	Tr (5 gr)	Tr (1 gr)	Tr (~20 gr)	0	0	0	0	0	0	0	Tr (~25 gr)	0	Almandine/barite-marcasite assemblage. 1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 1 spinel 1 red rutile 5 representative tourmaline 5 representative monazite	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 20 representative sphalerite 10 representative barite 1 spinel 1 red rutile 5 representative tourmaline 5 representative monazite
AERHL225103	0	0	0.2 sphalerite (5 gr); 25 barite (~800 gr)	4 (~150 gr)	0	0	0	0	15 (~500 gr)	Tr (5 gr)	Tr (6 gr)	0	0	0	0	0	0	1 (~25 gr)	Tr (10 gr)	0	Almandine/barite-diopside-leucoxene-kyanite assemblage.	0.5-1.0 mm fraction: 7 barite 2 apatite 0.25-0.5 mm fraction: 6 sphalerite 10 representative barite 6 tourmaline 14 representative apatite 5 representative monazite

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains	
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																	
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp					>1.0 amp				% REE Bearing Minerals
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates					
														% Fo*	% Fay			% Ap	% Mz				
AERHL225108	0	0	Tr sphalerite (40 gr); Tr scheelite (1 gr); 15 barite (~8000 gr)	80 (~40,000 gr)	1 (~1000 gr)	1 blue-green gahnite; 1 blue-green spinel	0	Tr (1 gr)	Tr (~20 gr)	0	Tr (~30 gr)	0	0	0	0	0	0	0	0	Tr (~20 gr)	Tr florencite (2 gr)	Almandine-hornblende/marcasite-barite assemblage. SEM checks from 0.25-0.5 mm fraction: 2 blue-green gahnite versus spinel candidates = 1 gahnite and 1 spinel. 0.5-1.0 mm fraction contains 5% (~400 grains) barite.	
AERHL225109	0	Tr (1 gr)	Tr sphalerite (4 gr); 60 barite (~10,000 gr)	Tr (~20 gr)	0	4 blue-grey, blue-green	0	0	Tr (~20 gr)	0	Tr (~30 gr)	0	0	0	0	0	0	Tr (~50 gr)	Tr (~50 gr)	Tr florencite (2 gr)	Almandine/barite-epidote assemblage. 1.0-2.0 mm and 0.5-1.0 mm fractions contain 25% (~15 grains) and 15% (~500 grains) barite, respectively.	1.0-2.0 mm fraction: 10 representative barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 4 sphalerite 10 representative barite 4 spinel 5 representative tourmaline 20 representative apatite 5 representative monazite 2 florencite	

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Metamorphosed/Magmatic Massive Sulphide Indicator Mineral (MMSIM) Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Gold Grains	0.25 to 0.5 mm Nonferromagnetic Heavy Mineral Fraction																			Remarks	Picked Grains
		Sulphide/Arsenide + Related Minerals				Mg/Mn/Al/Cr Minerals																
		>1.0 amp			<1.0	>1.0 amp								<1.0 amp					>1.0 amp			
		% Cpy	Misc. Prime MMSIMs	% Pyrite	% Goethite	# Grains + Colour Spinel	Misc. Prime MMSIMs*	% Red Rutile	% Ky	% Sil	% Tm	% St	% Sps	Olivine		% Opx	% Cr*	Phosphates		% REE Bearing Minerals		
% Fo*	% Fay													% Ap	% Mz							
AERHL225110	0	Tr (1 gr)	Tr sphalerite (9 gr); 50 barite (~10,000 gr)	6 (~1000 gr)	0	1 blue-grey	Tr sapphire corundum (1 gr)	Tr (3 gr)	5 (~800 gr)	Tr (5 gr)	0.5 (~80 gr)	0	0	0	0	0	0	2 (~300 gr)	Tr (~15 gr)	Tr florencite (6 gr)	Almandine-hornblende-augite/barite-epidote assemblage. SEM checks from 0.25-0.5 mm fraction: 2 spinel candidates = 1 spinel and 1 zoisite; 1 sapphire corundum versus kyanite candidate = 1 sapphire corundum. 0.5-1.0 mm fraction contains 4% (~100 grains) barite.	1.0-2.0 mm fraction: 2 barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 9 sphalerite 10 representative barite 1 spinel 1 sapphire corundum 3 red rutile 5 representative tourmaline 20 representative apatite 5 representative monazite 6 florencite
AERHL225114	0	Tr (1 gr)	Tr sphalerite (1 gr); 80 barite (~30,000 gr)	10 (~400 gr)	Tr (~800 gr)	2 purple, green	Tr low-Cr diopside (1 gr)	Tr (2 gr)	1 (~500 gr)	0	Tr (~25 gr)	0	0	0	0	0	0	Tr (16 gr)	Tr (~100 gr)	Tr florencite (3 gr)	Almandine-hornblende/barite assemblage. "Pyrite" is mostly marcasite. 0.5-1.0 mm fraction contains 25% (~1000 grains) barite.	1.0-2.0 mm fraction: 7 barite 0.5-1.0 mm fraction: 10 representative barite 0.25-0.5 mm fraction: 1 chalcopyrite 1 sphalerite 10 representative barite 2 spinel 1 low-Cr diopside 2 red rutile 5 representative tourmaline 16 apatite 5 representative monazite 3 florencite

*Low-Cr diopside, forsteritic olivine and chromite are referenced on KIM data.

Kimberlite Indicator Mineral Counts

Client: Alberta Geological Survey
File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023
Total Number of Samples in this Report: 26
ODM Batch Number(s): 2852

Sample Number	Number of Grains																																												
	Pseudo-KIMs						KIMs																																						
	1.0 to 2.0 mm		0.5 to 1.0 mm		0.25 to 0.5 mm		1.0 to 2.0 mm										0.5 to 1.0 mm										0.25 to 0.5 mm								Total (KIMs)										
	Low-Cr diopside*		Low-Cr diopside*		Low-Cr diopside*		GP		GO		DC		IM		CR*		FO*		GP		GO		DC		IM		CR*		FO*		GP		GO				DC		IM		CR*		FO*		
	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P			
AER22TS-3002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AER22TS-3059	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AER22TS-4022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AER22TS-4092	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AER22TS-5005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AER22TS-5022	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	2	2	5	5	1	1	1	1	3	3	0	0	0	0	13	13	
AERHL225003	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225059	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225060	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	2	2	0	0	0	0	5	5		
AERHL225064	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225069	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225075	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	1	1	0	0	0	0	0	0	5	5
AERHL225092	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225093	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225096	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225097	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
AERHL225114	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

T = Total number of grains in sample. Total is estimated if number is greater than number of picked grains.
P = Number of picked grains in sample.
* Low-Cr diopside, forsteritic olivine and chromite also referenced on MMSIMs data.

Kimberlite Indicator Mineral Remarks

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 26

ODM Batch Number(s): 2852

Sample Number	Remarks
AER22TS-3002	No KIM remarks.
AER22TS-3059	No KIM remarks.
AER22TS-4022	No KIM remarks.
AER22TS-4092	No KIM remarks.
AER22TS-5005	SEM check from 0.5-1.0 mm fraction: 1 GO versus almandine candidate = 1 almandine. SEM checks from 0.25-0.5 mm fraction: 1 GO versus staurolite candidate = 1 staurolite; 3 IM versus crustal ilmenite candidates = 3 crustal ilmenite; 2 CR candidate = 2 CR; and 9 FO versus epidote candidates = 1 FO and 8 epidote.
AER22TS-5022	SEM check from 0.5-1.0 mm fraction: 1 GO versus almandine candidate = 1 almandine (grain lost in transfer); and 2 FO versus diopside candidates = 2 FO. SEM checks from 0.25-0.5 mm fraction: 1 GO versus almandine candidate = 1 GO; 1 IM versus crustal ilmenite candidate = 1 IM; 1 CR candidate = 1 Fe-spinel; and 1 FO versus epidote candidate = 1 epidote.
AERHL225003	No KIM remarks.
AERHL225004	No KIM remarks.
AERHL225010	SEM check from 0.25-0.5 mm fraction: 1 GO versus staurolite candidate = 1 staurolite.
AERHL225012	No KIM remarks.
AERHL225014	No KIM remarks.
AERHL225043	No KIM remarks.
AERHL225059	No KIM remarks.
AERHL225060	No KIM remarks.
AERHL225064	SEM check from 0.5-1.0 mm fraction: 1 CR versus crustal ilmenite candidate = 1 Cr-spinel.
AERHL225069	No KIM remarks.
AERHL225075	SEM checks from 0.25-0.5 mm fraction: 4 IM versus crustal ilmenite = 4 crustal ilmenite; 3 CR candidates = 1 crustal ilmenite, 1 Fe-spinel, and 1 black staurolite.
AERHL225092	No KIM remarks.
AERHL225093	No KIM remarks.
AERHL225096	No KIM remarks.
AERHL225097	No KIM remarks.
AERHL225103	No KIM remarks.
AERHL225108	No KIM remarks.
AERHL225109	No KIM remarks.
AERHL225110	SEM check from 0.25-0.5 mm fraction: 1 FO versus epidote candidate = 1 diopside.
AERHL225114	No KIM remarks.

Apatite Separates

Client: Alberta Geological Survey

File Name: 20232820 - AER - Alberta Geological Survey - (KIM, MMISM) - Jan 2023

Total Number of Samples in this Report: 26

ODM Batch Number(s): 2852

Sample Number	Apatite Grains in S.G. 3.0-3.2, 0.25-2.0 mm Concentrates			Remarks
	Estimated Total %	Number		
		Estimated Total	Picked	
AER22TS-3002	0	0	0	
AER22TS-3059	0	0	0	
AER22TS-4022	NA	NA	NA	
AER22TS-4092	1	80	18	
AER22TS-5005	Tr	2	2	
AER22TS-5022	0	0	0	
AERHL225003	0.5	80	0	
AERHL225004	Tr	100	10	
AERHL225010	Tr	40	20	
AERHL225012	0.5	60	20	
AERHL225014	Tr	19	19	
AERHL225043	1	40	20	
AERHL225059	2	400	0	
AERHL225060	20	300	0	
AERHL225064	1	300	0	
AERHL225069	1	60	0	
AERHL225075	Tr	100	12	
AERHL225092	Tr	50	0	
AERHL225093	Tr	40	20	
AERHL225096	Tr	10	0	
AERHL225097	Tr	11	11	
AERHL225103	Tr	20	6	
AERHL225108	Tr	60	22	
AERHL225109	0.5	100	0	
AERHL225110	Tr	50	0	
AERHL225114	Tr	30	4	