60001360

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud Drill Hole File - Hole No. RL-123-C
AUTHOR	K. Kenner; N. Brewer; R. Grondin; K. Tullar
DATE OF DOC(S)	1990
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Coates Drilling; Lac Minerals (USA), Inc
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 698' handwritten notes 24p.

Keep docs at about 250 pages if no oversized maps attached
(for every 1 oversized page (>11x17) with text reduce
the amount of pages by ~25)

	Initials	Date
SS:	DD	5/20/08
DB:	mah	
SCANNED:		

Revised: 1/22/08

[redacted] RL-123-U

60001360 4010

60001360

LAC MINERALS (U.S.A.) INC.

DRILL LOG SUMMARY SHEET

PROJECT Rosebud

HOLE NUMBER RL-123 TOTAL DEPTH 698' LOGGED BY KNT/KLK

Date started 9-21-90

Date completed 9-23-90

Initial bearing S52°E

Initial inclination -60°

Elevation 5203.2

Collar coordinates:

N 2203884.0

E 481618.9

Contractor: Coates

Drill Type: UDR

Hole Size: RC to 300', HQ to

Drilling Conditions: Good Hole!

Footage: Wet / Dry

Comments:

DOWN HOLE SURVEY INFORMATION

0 50 -60 S52E

FROM	TO	SURVEY POINT	INCLI-NATION	BEARING	X (Northing)	Y (Easting)	Z (Elevation)
50	200	100'	-60	S53E			
200	400	300'	-62	S52E			
400	599	500	-62	S52E			
599	698	698'	-62	S55E			

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

CHOCOLATE TUFF
BUD BRECCIA
BUD TUFF
BUD EPICLASTIC
BUD TUFF BRECCIA
DT DOZER WELDED TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-123

Page 1 of 3

LOGGED BY KNT

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK
									Brown + grn					0-5 Overburden, gravels	✓	✓	
05	✓✓								lt grn					5-(300) Bud Bx; Lithic lapilli tuff w/local pyrite			
10	✓								Brown, lt grn					to 2%; med grn, cubic, disseminated			
15	✓								lt grn					local clay alt.			
20	✓✓								"								
25	✓✓								mixed dk brown lt grn					25-50 Brown, red matrix, lithic lapilli interbed; welded.			
30	✓								DK Brown								
35	✓								"								
40	✓								"								
45	✓								"								
50	✓								Brown-grn								
55	✓								"								
60	✓								"								
65	✓								orange					70-75 orange, silicified, mod limonite possible structure			
70	✓								"								
75	✓✓								Olive drab grn/grn								
80									lt grn								
85	✓								SAGE grn								
90	✓✓								"							.20	
95	✓								"							.22	
100																	

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DRILL HOLE RL-123

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LOGGED BY KNT

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	
	✓								SAME GRN					Bud BX	<	.23		
/05	✓															<		
/10	✓														.02	<		
/15	✓															<		
/20	✓															<		
/25	✓															.15		
/30	✓															.22		
/35	✓															<		
/40	✓															<		
/45	✓															<		
/50	✓															.18		
/55	✓															<		
/60	✓															<		
/65	✓															<		
/70	✓															<		
/75	✓															2.23		
/80	✓															<		
/85	✓															<		
/90	✓															<		
/95	✓															<		
200	✓																	

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

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DRILL HOLE RL-123

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LOGGED BY KNT

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK
	✓✓								SAGE GRN					Bud Bx	<	<	
205	✓								"						<	.13	
210	✓								"						.02	<	
215	✓✓								dK GRN						<	<	
220	✓															<	
225	✓															.20	
230	✓															<	
235	✓															<	
240	✓															.18	
245	✓✓															.34	
250	✓✓															.17	
255	✓✓														.025	<	
260	✓								lt. olive GRN						<	<	
265	✓✓															<	
270	✓															.11	
275	✓															<	
280	✓															<	
285	✓															<	
290	✓✓															<	
295	✓✓															<	
300																	

HOLE # RL-123C LOGGED BY KLK DATE Dec. 11, 1990 PAGE 1 OF 6

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERAL-IZATION	GRAPHIC LOG	ALTER.	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
300	0	03/ flo wisp		1-2% diss + vn py			300' CORE BEGAN	300-309.5	NO	SAMPLE			
310	100	28/ CaCO3 vn	vug drus qtz 16/ vn				300-377.7 LITHIC LAPILLI TUFF (BEDDED BUD) Heterolithic w/ FGT, pumice, flow banded tuffs; local <1% Jurrassic shale lithics clast supported; averaging 3-10 mm w/ ±1% lithics 20-25 mm; most lithics bl white to clay alt to lt green to flesh except for shale frags pervasive weak to moderate glauconite alt; weak to mod perv. argillic clay alt; rich (str.) w/in matrix weak pervasive vuggy druzy QUARTZ pyrite veins; weak local CaCO3 vns; vug fill	309.5-314.5				.002	.17
320	100	45 flo wisp					300-365 pervasive wispy collapsed flow frags - glauconite green averaging 28° to 35° to CA.	314.5-319.5				.003	<
330	100	35 flo wisp	32 CaCO3 vn				309-327 weak qtz + CaCO3 + local dk gray (Ag) sulfide vns 16-28° to CA	319.5-324.5				.010	.15
340	100	flo wisp/ 24					320-338 coarser lithics up to 75mm w/ qtz/CaCO3 vns up to 3" wide local CaCO3 vn - milky + wk hint yellow (? OXIDATION)	324.5-330				.002	<
350	100	12/ CaCO3 vn											
		35 flo wisps											
360	100	33 flo wisps											

HOLE # RL-123C LOGGED BY KLK DATE 12-11-90 PAGE 2 OF 6

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER.
370	75	30/ 90 wisps; ±50° 90 wisps	63 contact	1-2% diss +VN py; ±1% diss +VN py		WK X
380	98		±40° CaCO3 py VN			X X; WK to WKLY mod bl
390	100	60 CaCO3 VN		+ gray alt		
400	100	50° py VN	42 clay + py VN			
410	100	25/ clay py VN	78 py VN	2-3% VNlt diss py + gray matrix IN VNS		
420	75	±5° py VN	hydro VN 70			
430	100	50 Δ VN	84 Δ VN; 32 Δ VN			

DESCRIPTION

365 - 377.7 LITHIC LAPILLI TUFF (CONTINUED)

367 - 377.7 weak pervasive silicification becomes poorly sorted w/ coarser clasts, rounded to subangular, lithics vary from 1-2 mm to 55 mm, weak twisted wispies

377.7 - 578 FINE GRAINED TUFF: LOWER BUD TUFF
weak to moderate pervasive bleaching giving lt green to local mottled flesh coloration, local ↑ bl zones intermittently tectonically brecciated w/ local unrotated crackle breccia, few local silicified hydrothermal breccia veins weak veining increases w/ depth; consists of ① vuggy drusy qtz pyrite vns ② white clay ± pyrite ③ calcite veins pervasive blue green mineral (glauconite?) w/ in fracts ± vns; decreasing w/ depth

377.7 - 380.5 mod silicified and v. coarsely brecciated up to 5" clasts

383 - 389 intermittent tectonic brecciation w/ ↑ bl flesh coloration

395 - 399 pervasive tectonic brecciation w/ few clasts > 32 mm w/ weak flesh color matrix bl wk to green clasts

403 - 407.8 Tectonic Δ w/ (WK) flesh MATRIX & lt green clasts few > 32 mm

ASSAYS

Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
360.5-365.5				<	<
365.5-391				<	<
391-396				<	<
396-401				.002	.15
401-406				.003	.18
406-411.5				.004	.19
411.5-416.5				.005	.17
416.5-421.5				.009	.25
421.5-426.5				.011	.22
426.5-432				.009	.44
432-437				.007	<

HOLE # RL-123C LOGGED BY KLK DATE 12-11-90 PAGE 3 OF 6

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERAL-IZATION	GRAPHIC LOG	ALTER.
440	100	py qtz clay vn 83 ±5° qtz py vn	22 63 SiO2 py ±4 vns	±3% diss tvn py + local marcasite		mod grn wk bl
450	100	58 89 qtz py vn	96 clay-qtz-py vn	±2% diss tvn py		wk ↑bl
460	100	±10° py vns	57 Δ vn			↑grn wk siln bl
470	100	77 white clay qtz-py vn	±5° qtz py vn 33 Δ vn 30 clay frack	2-3% diss + vn + py + gray silver min		wk siln + bl
480	100	60 clay fracture	63 clay qtz-py vn	±2% diss tvn py + gray metallic		wk-mod bl + org clay alt
490	98	clay py qtz vn				
500	98	31 SiO2 diss	91 dvuzy qtz marcasite vn	2-3% py-clay min 1-2% diss + vn py		

DESCRIPTION

435-578 FINE GRAINED TUFF (continued)
LBT description @ above

418-487 increase overall veining w/ fine qtz stockwork + white clay, pyrite local SiO2 rich hydrothermal Δ vns rehealed @ 421-421.5
429-433

433-445 pervasively speckled w/ blue-green vesicular (amyg.) fill locally chalcedonic

445-482 lt emerald green; flesh mottling wk pseudo banding due to preferential alt.

445-458 CRACKLE brecciated w/ micro Δ vns overprint by white clay + pyrite; local SiO2 + blue green mineral vns ↑ bl

447-458 ↑ bl

451-458 ↑ veining w/ white clay + py + bl green mineral ± local drvzy qtz, wk perv. silicification

457-458 hydro Δ vns well silicified w/ ~~trace~~ marcasite vns 2-3 stgs Δ no good measurable contact

458-470 ↑ pervasive green glauconite alt. + weak silicification ↓ veining

465.4-467 strong silicified hydrothermal Δ vns w/ vuggy drvzy qtz-py vns

469-470.2 strong silicification + strong veining w/ bluegreen (glauconite?) + SiO2, py + local white clay

473.5-482 strong veining: SiO2 + py + glaucon. + clay pervasive silicification + local ~~trace~~ py + poss barite

474.5-476 str. siln. hydro Δ vns w/ local vuggy drvzy qtz py vns + white clay

476-482 perv. crackle Δ iation ↑ bl w/ depth
481-482 str. siln w/ wk bl

495-497 weak local chalcedonic SiO2 flood

ASSAYS

Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
437-442				.011	.29
442-447				.021	<
447-452				.016	.35
452-457				.027	.24
457-462				.026	.25
462-467				.007	.19
467-472				.015	.15
472-477				.011	.25
477-482				.008	.12
482-487				.007	<
487-492				.004	<
492-497				.008	.11
497-502				.005	.11
502-507				.022	.20

HOLE # RL-123C LOGGED BY KLK DATE 12-11-90 PAGE 4 OF 6

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERAL-IZATION	GRAPHIC LOG	ALTER.
510	100	±5° CaCO3 py replac molyb site VN	55 white clay stkwk VN	3-4 VN/ft 2% diss + VN py		mod bl + clay alt
520	100	40 white clay py VN		3% clay + chlor MN 3-4 VN/ft 2% diss + VN py + gray metallic + local CaCO3		mod clay bl + glauc alt
530	100	27 SiO2 VN flood				mod clay + bl + glauc w/ chalc flush seams
540	100	70 Δ VN	70 Δ VN	7-10 VN/ft 4-5% diss + VN py + stibn + tetra hedrite		X ↑bl X
550	98	40 45 clay py chlor VNS	75 chalc py stibn Δ VN 35 tetra 53 stibn			X
560	100	tetra heavily py clot SiO2 VN	63 CaCO3 py + glauc VN	±6 VN/ft 3% + VNs + diss py + tetra hedrite		wk siln glauc + bl
570	100	78 CaCO3 + white clay/ Ag min				↑bl

DESCRIPTION

505-578 FGT (CONTINUED) descrip @ above

482-542 Lt sage green Fine Grained Tuff local tectonic brecciation weak to mod pervasive bl. & clay alt. ↓ overall veining (of py, $CaCO_3$ + clay) all appear rimmed w/ glauconite

516-518 zones of tectonic brecciation wk veining w/ white clay + bladed sulfide

534-534.5 } minor seams 1/4" to 1" wide
536.5-539 } of gray chalcedonic sulfide rich silica flooding

516-532 ↑ glauconite vesicle & fracture fill

542-561 mod to strong pervasive silicification ↑ pervasive bleaching to give mottled flesh coloration w/ hint lt green mottling entire zone w/ ↑ veining & intermittent SiO_2 rehealed breccia veins w/ pyrite & local white clay in SiO_2 matrix ~ 2 stgs. Δ ation

552.5-561 w/ flesh speckled texture w/in lt green matrix, vesicles predom filled w/ chalcedonic SiO_2 or qtz & locally w/ glauconite or pyrite & very weak local white clay, vesicles rimmed w/ flesh coloration

560.9-561.5 hydrothermally brecciated rehealed by SiO_2 w/ local wh clay mix + $CaCO_3$ ~ 3 stages of brecciation riddled w/ fine $CaCO_3$ ± SiO_2 stockwk fn VNs

561-573 Pseudo banded FGT due to preferential alt along perv. fracturing w/ glauconite fill pervasive wk silicification w/ mod stv. glauc. fract. VNing + local SiO_2 + py ± local white clay & bladed sulfide ± FeOx band fracts w/ depth local tectonic brecciation

573-578 FGT - ↑ bl ↓ siln. local tectonic brecciation - transitional grading contact into Volc bxa

ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
507-512				.005	<
512-517				.005	<
517-522				.003	<
522-527				.004	.20
527-532				.002	.12
532-537				.016	.11
537-542			Au ✓	.022	.19
542-547			.233	.225	.49
547-552			1.469	1.375	6.76
552-557			.305	.310	13.15
557-562			.639	.630	20.72
562-567			.211	.220	3.54
567-572			.428	.365	12.74
572-577				.005	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER
580	100	17/ 60 to 70 dk gray to black w 88 $CaCO_3$ VN		2-3% fine diss + VN py		wk-mod bl wk X
590	100					
600	100	68 $CaCO_3$ VN; 5-10° $CaCO_3$ + py + dk green min.	43 $CaCO_3$ VN			
610	100	22 py + wh clay + dk gray metallic; ±10° vuggy druzy qtz py VN	0-5° white clay + gray metallic	4-5% fine diss + VN py + local stibn IN VNS + poss tetrahedrite		mod XX ↑bl
620	100		17/ py white clay + dk gray metallic			
630	100				clay gouge	
640	100	74 druzy qtz moved sitic + clay VN; 65	70 Δ stibn wh clay gouge VN			

DESCRIPTION

578-644 VOLCANIC Bxa vs. lithic lapilli Tuff

clasts vary - unsorted - w/ predom size: 2-20mm w/ intermittent clasts 40-140mm verges on being a volc. bxa, mod peru. calcite VNS

578-606 weaker alt. wk-mod peru. bl. matrix is lt. flesh w/ bl white to lt green clasts weak to mod veining ± 6 VNS/ft, predom $CaCO_3$ ± pyrite, riddled w/ fine qtz stk wk weak lt. green clay VNS

606-644 Increased pervasive peach alteration; mod str peru. bl white to org-flesh, mod peru. silicification tuffaceous matrix supported w/ fine diss. buckshot py w/in isolated clasts; w/in matrix, wkly mod to mod str veining ≥10 VN/ft consisting of 1) white clay + pyrite + bladed sulfide (poss. tetrahedrite) 2) local isolated clasts w/ hydrothermal Δ VNS that do not extend into matrix @ 623.2' 3) local $CaCO_3$ VNS ± py 4) few druzy vuggy qtz-py VNS ± white clays

few local clay gouge seams @ 632', 642'

local crackle Δ w/ siln. micro Δ fill @ 617.5-620

643.6-644 ↑ veining; hydro Δ VNS w/ SiO_2 ± white clay mix, local white clay + bladed sulfide fract fill + stibnite, local vuggy druzy qtz VNS. w/ py replaced marcasite xtals

ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
577-582				.002	<
582-587				.012	<
587-592				.002	<
592-597				.003	<
597-602				.004	<
602-607				.003	<
607-612				.011	<
612-617				.114	.24
617-622				.009	.19
622-627				.008	.17
627-632				.007	.22
632-637				.010	<
637-642				.067	.30
642-647				.015	.42

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	ALTER
650	95	56 hydro Δ VN; SS clay filled Δ VN	5-7° clay fragt	~3% diss + VN py	Δ	mod wk
660	30, 79			≤3% diss + VN py + dk gray metallic	GOUGE	STR
670	57				GOUGE	
680	46, 70				GOUGE	
690	64, 150, 95	26	45 fault; white clay + sil fault 17 Δ VN 60	1-2% fine diss + VN + buck SHOT py		mod
698		14 dk gray Ag min				

FAULT clay gouge + broken rubble w/ local competent breccia zones

DESCRIPTION

644-690.5 SOUTH RIDGE FAULT
possible CONTACT @ 58° to C.A.
CONTACT w/ DOZER @ ~683.5'

644-664 secondary ΔIATION w/in FGT. perv. deep red-peach COLORATION breccia is rehealed w/ white opaque clay + pyrite + local SiO_2, tuff is perv. silicif. matrix is predom. clay w/ wk local silicified hydro Δ VNS & local massive sil'n. Δ w/out strong clay matrix @ 651-653.7'

647-654 w/ speckled texture due to preferential clay alt.

664-690.5 Predominant Rubble & str clay gouge alteration (white) few local competent brecciated FGT blocks - weakly silicified w/ micro breccia - clay gouge matrix 3-4" long local strong broken calcite rubble

690.5-698 DOZER? Bl white FGT very weak hint lt sag green w/ weak touch orange mottling intermittently lt. grn to white-gray clay gouge + dk gray sulfides locally wk fine CRACKLE fractures w/ SiO_2 + pyrite few v. fine ⧖ weak veining 1-2/ft w/ white clay + py ± dk gray Ag mineral

ASSAYS

Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
647-651				.006	.19
651-654				.005	.19
654-664				.002	.13
664-671				.003	.20
671-675				.014	.19
675-682				.004	.15
682-683.5				.016	.16
683.5-690.5				.013	.15
690.5-692				.018	.22
692-698				.008	.19

RL-123 9-23-90

RC Ø - 300'

Sample Rec.	%Rec
300 - 309^{S}	100%
309^{S} - 319^{S}	100
319^{S} - 330	100
330 - 340	100
340 - 350	100
350 - 360	100
360 - 370	100
370 - 380^{S}	95
380^{S} - 391	98
391 - 401	100
401 - 411^{S}	100
411^{S} - 421^{S}	100
421^{S} - 432	95
432 - 442	100
442 - 452	100
452 - 462	100
462 - 472	100
472 - 482	100
482 - 492	100
492 - 502	98
502 - 512	98
512 - 522	100
522 - 532	100
532 - 542	100
542 - 552	>100
552 - 562	98
562 - 572	100
572 - 582	100
582 - 592	100
592 - 602	100
602 - 612	100
612 - 622	100
622 - 632	100
632 - 642	100
642 - (3.7) 652	>100
652 - 654	95%
654 - 664	30%
664 - 671	5.5/7 =
671 - 675	.7/4 =
675 - 682	3.2/7

Sample Int	Lithology
No sample 300 - 309^{S}	300 - 377.7 Bud Bx
Split: 309^{S} - 314^{S}	green, lithic, lapilli tuff
314^{S} - 319^{S}	local minor calcite
319^{S} - 324^{S}	+ qtz microvein - limit
324^{S} - 330	veining
NS 330 - 380.5	309.5 - 327
	qtz - sulfide - limit
Split: 380.5 - 385^{S}	veining
385^{S} - 391	
391 - 396	377.7 - 578
396 - 401	lt grn to local purple
401 - 406	FGT to local lithic tuff?
406 - 411^{S}	sly local alteration
411^{S} - 416^{S} *	± 418 - 487
416^{S} - 421^{S}	intermittent sly
421^{S} - 426^{S}	qtz stock wk + sulfide
426^{S} - 432 *	542 - 572
432 - 437	sly bx, silicified +
437 - 442	qtz sulfide veining
442 - 447	578 -
447 - 452	lt grn - purple lithic
452 - 457	tuff
457 - 462	local oblique fractures
462 - 467	w/ qtz sulfide veins
467 - 472	sly sericite (soft, wht)
472 - 477	clay from 620 ↓
477 - 482	
482 - 487	607 - ±654
487 - 492	purple, w/ oblique
492 - 497	qtz sulfide veining
497 - 502	
502 - 507	
507 - 512	
512 - 517	
517 - 522	
522 - 527	
527 - 532	
532 - 537	

RL-123

682-683.5	70%
683.5-690.5	4.5/7
690.5-692	150%
692-698 TD	95%

Split 537-542

CUT
542-547
547-552
552-557
557-562
562-567
567-572

SPLIT
572-577
577-582
582-587
587-592
592-597
597-602
602-607
607-612

CUT
612-617
617-622
622-627
627-632
632-637
637-642
642-647
647-652 ✓
652-654
654-664
664-671
671-675
675-682
682-683.5
683.5-690.5
690.5-692
692-698 TD

2578
Houston
77252
(713) 659-4437

654-683.5
South Ridge
Fault-
stg Calcite,
stg Fractured

683.5-698
Hgrn, FGT
Dozer

NEVADA GSI, INC.

PREP QUALITY ASSURANCE CERTIFICATION

Date 10/2/90

Company LAC MINERALS

Job # 8542

Geologist NATE BREWER

No. Samples 77

Sample ID	Weight	+150Wt	-150 Wt	% -150
RL-112-C 2 470-475	48.18	4.25	43.93	91.2%
RL-123-C 3 314.5-319.5	47.79	2.54	45.25	94.7%
RL-123-C 4 492-497	48.61	.66	47.95	98.6%
RL-123-C 5 607-612	48.25	.33	47.92	99.3%

☑ PASSED ☐ FAILED

Explanation/Actions

Approved By Richard A. Grondin

Richard Grondin, Lab Manager

file:prep.frm

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NEVADA GSI, INC.

PREP QUALITY ASSURANCE CERTIFICATION

Date 10/2/90

Company LAC MINERALS

Job # 8553

Geologist NATE BREWER

No. Samples 17

Sample ID	Weight	+150Wt	-150 Wt	% -150
RL-123-C 654-664	47.65	.16	47.49	99.7%

☑ PASSED

☐ FAILED

Explanation/Actions

Approved By Richard A. Grondin

Richard Grondin, Lab Manager

file:prep.frm

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NEVADA GSI, INC.

PREP QUALITY ASSURANCE CERTIFICATION

Date 9/28/90

Company LAC MINERALS

Job # 8530

Geologist NATE BREWER

No. Samples 60

Sample ID	Weight	+150Wt	-150 Wt	% -150
1 RL-123 0-5	49.85	1.48	48.37	97 %
2 RL-123 135-140	49.64	2.84	46.8	94.4 %
3 RL#123 295-300	49.96	1.47	48.49	97 %

☑ PASSED ☐ FAILED

Explanation/Actions

Approved By Richard A. Grondin

Richard Grondin, Lab Manager

file:prep.frm

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NEVADA GSI, INC.

GEOCHEMICAL ANALYSIS REPORT

October 4, 1990

RL-123c
0 - 300

CUST. CODE: LOA
PROJECT: URBD
P.O. #: XXXX
LOT ID: 8530

GEOLOGIST: NATE BREWER
COPIES TO: KEN TULLAR
COMPANY: LAC MINERALS
ANALYSIS: FIRE ASSAY FOR GOLD AND SILVER, WITH AN A.A. FINISH.

	SAMPLE I.D.			Au o/t	Ag o/t
1.	RL-123	0	5	-0.001	-0.10
2.	M-46			0.017	-0.10
3.	RL-123	5	10	-0.001	-0.10
4.	RL-123	10	15	-0.001	-0.10
5.	RL-123	15	20	-0.001	-0.10
6.	RL-123	20	25	-0.001	-0.10
7.	RL-123	25	30	-0.001	-0.10
8.	RL-123	30	35	-0.001	-0.10
9.	RL-123	35	40	-0.001	-0.10
10.	RL-123	40	45	-0.001	-0.10
11.	RL-123	45	50	-0.001	-0.10
12.	RL-123	50	55	-0.001	-0.10
13.	RL-123	55	60	-0.001	-0.10
14.	RL-123	60	65	-0.001	-0.10
15.	RL-123	65	70	-0.001	-0.10
16.	RL-123	70	75	-0.001	-0.10
17.	RL-123	75	80	-0.001	-0.10
18.	RL-123	80	85	-0.001	-0.10
19.	RL-123	85	90	-0.001	-0.10
20.	RL-123	90	95	-0.001	0.20
21.	RL-123	95	100	-0.001	0.22
22.	M-47			0.031	0.20
23.	RL-123	100	105	-0.001	0.23
24.	RL-123	105	110	-0.001	-0.10
25.	RL-123	110	115	0.002	-0.10
26.	RL-123	115	120	-0.001	-0.10
27.	RL-123	120	125	-0.001	-0.10
28.	RL-123	125	130	-0.001	0.15
29.	RL-123	130	135	-0.001	0.22
30.	RL-123	135	140	-0.001	-0.10
31.	RL-123	140	145	-0.001	-0.10
32.	RL-123	145	150	-0.001	-0.10
33.	RL-123	150	155	-0.001	0.18
34.	RL-123	155	160	-0.001	-0.10
35.	RL-123	160	165	-0.001	-0.10

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LAC MINERALS
LOT I.D. #: 8530

	SAMPLE I.D.			Au o/t	Ag o/t
36.	RL-123	165	170	-0.001	-0.10
37.	RL-123	170	175	-0.001	-0.10
38.	RL-123	175	180	-0.001	21.23 ✓ ??
39.	RL-123	180	185	-0.001	-0.10
40.	RL-123	185	190	-0.001	-0.10
41.	RL-123	190	195	-0.001	-0.10
42.	M-49			0.099	-0.10
43.	RL-123	195	200	-0.001	-0.10
44.	RL-123	200	205	-0.001	-0.10
45.	RL-123	205	210	-0.001	0.13
46.	RL-123	210	215	0.002	-0.10
47.	RL-123	215	220	-0.001	-0.10
48.	RL-123	220	225	-0.001	-0.10
49.	RL-123	225	230	-0.001	0.20
50.	RL-123	230	235	-0.001	-0.10
51.	RL-123	235	240	-0.001	-0.10
52.	RL-123	240	245	-0.001	0.18
53.	RL-123	245	250	-0.001	0.34
54.	RL-123	250	255	-0.001	0.17
55.	RL-123	255	260	0.025 ✓	-0.10
56.	RL-123	260	265	-0.001	-0.10
57.	RL-123	265	270	-0.001	-0.10
58.	RL-123	270	275	-0.001	0.11
59.	RL-123	275	280	-0.001	-0.10
60.	RL-123	280	285	-0.001	-0.10
61.	RL-123	285	290	-0.001	-0.10
62.	M-50			-0.001	-0.10
63.	RL-123	290	295	-0.001	-0.10
64.	RL-123	295	300	-0.001	-0.10

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This report reviewed and approved by:

Richard A. Grondin

Richard Grondin, Laboratory Director

LAC MINERALS
LOT I.D. #: 8542

	SAMPLE I.D.			Au o/t	Ag o/t	Checks Au o/t
30.	RL-123-C	309.5	314.5	0.002	0.17	-
31.	RL-123-C	314.5	319.5	0.003	-0.10	-
32.	RL-123-C	319.5	324.5	0.010	0.15	-
33.	RL-123-C	324.5	330	0.002	-0.10	-
34.	RL-123-C	380.5	385.5	-0.001	-0.10	-
35.	RL-123-C	385.5	391	-0.001	-0.10	-
36.	RL-123-C	391	396	-0.001	-0.10	-
37.	RL-123-C	396	401	0.002	0.15	-
38.	RL-123-C	401	406	0.003	0.18	-
39.	RL-123-C	406	411.5	0.004	0.19	-
40.	RL-123-C	411.5	416.5	0.005	0.17	-
41.	RL-123-C	416.5	421.5	0.009	0.25	-
42.	M-71			0.037	0.30	-
43.	RL-123-C	421.5	426.5	0.011	0.22	-
44.	RL-123-C	426.5	432	0.009	0.44	-
45.	RL-123-C	432	437	0.007	-0.10	-
46.	RL-123-C	437	442	0.011	0.29	-
47.	RL-123-C	442	447	0.021	-0.10	-
48.	RL-123-C	447	452	0.016	0.35	-
49.	RL-123-C	452	457	0.027	0.24	-
50.	RL-123-C	457	462	0.026	0.25	-
51.	RL-123-C	462	467	0.007	0.19	-
52.	RL-123-C	~~472~~ 467	~~477~~ A 472?	0.015	0.15	-
53.	RL-123-C	472	477 B	0.011	0.25	-
54.	RL-123-C	477	482	0.008	0.12	-
55.	RL-123-C	482	487	0.007	-0.10	-
56.	RL-123-C	487	492	0.004	-0.10	-
57.	RL-123-C	492	497	0.008	0.11	-
58.	RL-123-C	497	502	0.005	0.11	-
59.	RL-123-C	502	507	0.022	0.20	-
60.	RL-123-C	507	512	0.005	-0.10	-
61.	RL-123-C	512	517	0.005	-0.10	-
62.	M-76			0.008	0.99	-
63.	RL-123-C	517	522	0.003	-0.10	-
64.	RL-123-C	522	527	0.004	0.20	-
65.	RL-123-C	527	532	0.002	0.12	-
66.	RL-123-C	532	537	0.016	0.11	-
67.	RL-123-C	537	542	0.022	0.19	-
68.	RL-123-C	542	547	0.225	0.49	0.233
69.	RL-123-C	547	552	1.375	6.76	1.466
70.	RL-123-C	552	557	0.310	13.15	0.305
71.	RL-123-C	557	562	0.630	20.72	0.639
72.	RL-123-C	562	567	0.220	3.54	0.211
73.	RL-123-C	567	572	0.365	12.74	0.428
74.	RL-123-C	572	577	0.005	-0.10	-
75.	RL-123-C	577	582	0.002	-0.10	-
76.	RL-123-C	582	587	0.012	-0.10	-

	SAMPLE I.D.			Au o/t	Ag o/t	Checks Au o/t
77.	RL-123-C	587	592	0.002	-0.10	-
78.	RL-123-C	592	597	0.003	-0.10	-
79.	RL-123-C	597	602	0.004	-0.10	-
80.	RL-123-C	602	607	0.003	-0.10	-
81.	RL-123-C	607	612	0.041	-0.10	-
82.	M-77			0.061	-0.10	-

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This report reviewed and approved by:

Richard A. Grondin

Richard Grondin, Laboratory Director

NEVADA GSI, INC.

GEOCHEMICAL ANALYSIS REPORT

October 4, 1990

RL-123C
612-698

CUST. CODE: LOA
PROJECT: URBD
P.O. #: XXXX
LOT ID: 8553

GEOLOGIST: NATE BREWER
COPIES TO: KEN TULLAR
COMPANY: LAC MINERALS
ANALYSIS: FIRE ASSAY FOR GOLD AND SILVER, WITH AN A.A. FINISH.

	SAMPLE I.D.			Au o/t	Ag o/t
1.	RL-123-C	612	617	0.114	0.24
2.	M-61			0.051	-0.10
3.	RL-123-C	617	622	0.009	0.19
4.	RL-123-C	622	627	0.008	0.17
5.	RL-123-C	627	632	0.007	0.22
6.	RL-123-C	632	637	0.010	-0.10
7.	RL-123-C	637	642	0.067	0.30
8.	RL-123-C	642	647	0.015	0.42
9.	RL-123-C	647	651	0.006	0.19
10.	RL-123-C	652	654	0.005	0.19
11.	RL-123-C	654	664	0.002	0.13
12.	RL-123-C	664	671	0.003	0.20
13.	RL-123-C	671	675	0.014	0.19
14.	RL-123-C	675	682	0.004	0.15
15.	RL-123-C	682	683.5	0.016	0.16
16.	RL-123-C	683.5	690.5	0.013	0.15
17.	RL-123-C	690.5	692	0.018	0.22
18.	RL-123-C	692	698	0.008	0.19

This report reviewed and approved by:

Richard A. Grondin

Richard Grondin, Laboratory Director

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1063

Nov. 5, 1990

RL-123 QUICK LOG

300 - 377.7 Lithic Lapilli Tuff (Bedded Bed)
heterolithic, clast supported: bl to mod str clay alt clasts, locally predom green to wk local few flesh color frags weak ~~+~~ +py + wk local $CaCO_3$ vns
matrix: predom green clay alt.
300 - 365 wispy - grn alt flow collapse
309.5 - 327 qtz sulfide Barite vns frag
wispys ~ 35° to core axis
320 - 338 coarser clasted up to 75 mm
(in all: qtz-$CaCO_3$ vns up to 3" wide
367 - 377.7 weak sln. rounded to subangular - poorly sorted w str green clay matrix

Jc shards FLAT pumice flowbd tuffs

Contact ~ 45° \ to axis somewhat gradational

377.7 - 578 FINE GRAINED TUFF - predom. lt sage green, mod perv bl w local str. bl zones, locally autobrecciated w local crackle Δ (local hydro ther. Δ sim.) weak veining increases w/ depth w white clay + py fill local druzy qtz sulfide veins - vuggy predom blue green mineral in vns decreases w depth local $CaCO_3$ + py vns
378.5 - 380.5 mod sim.
383 - 389 auto Δ intermittent w/ ↑ bl wk flesh coloration
395 - 399 Auto Δ predom lithic lap size w/ few clasts > 32 mm w weak flesh color matrix: bl white to grn & lapps
403 - 407.8 Auto Δ w/ flesh (wk) matrix & lt green clasts few > 32 mm
418 - 487 ↑ overall veining w/ qtz X_K + white clay & py, local hydro cemented breccia veins
@ 421 - 421.5
429 - 433
433 - 445 SPECKLED w/ blue green vesicular fill
445 - 447 CRACKLE Brecciated w/ micro Δ fill w/ white clay + py predom & local SiO2 + blue grn min
↑ bl

RL-123 (continued)

445-482 lt emerald green FGT poss wk banding dye to prefer alt along fract uns

447-458 ↑ bl

451-458 ↑ veining w/ white clay + py + bl grn min + tr py wk perv siln.

457-458 hydro Δ on well siln w/ tr marcasite uns 2-3 stg Δ

no good measurable contact

458-470 ↑ grn color + wk siln

465.4-467 str siln hydro Δ uns w/ vugs + tr py

469-470.2 str. siln + str vning bluegrn mineral + SiO_2 + py + weak local white clay

473.5-482 strong veining SiO_2 + py + blgrn + clay ; pervasive siln. ; local tr py + poss barite

474.5-476 str. siln. hydro Δ uns w/ local vug tr py + white clay

476-482 perv. crackle Δ ation ↑ bl w/ depth

481-482 str siln. w/ wk (Δ)

482-542 ordinary lt sag grn FGT
local auto Δ
wh clay alt ; bl ↓ overall veining
1% py, local $CaCO_3$, local white clay
↳ rimmed w/ blue grn minerals

495-497 weak local chalcedonic SiO_2 flood uns

516-518 zone of AUTO to CRACKLE Δ wk veins w/ white clay + bladed sulfide

534-534.5 } minor seam of gray (sulfide rich chalcedonic silica flooding
536.5-539 }

542-561 mod str to str perv. silicif.
↑ bl to give mottled flesh ; lt grn text. less green
entire zone w/ ↑ veining ; intermitt hydro thermal SiO_2 shelled Δ veins w/ py ; local clay in SiO_2 matrix

552.5-561 w/ flesh specks - text in lt grn matrix

561-573 PSEUDO BANDED FGT perv. siln w/ mod str veins of bluegrn min + SiO_2 + py + white clays ; local bladed sulfide + $FeOx$ band fracts
local crackle Δ

573-578 FGT - local auto Δ transitional grading contact into volc bxa vs. lithic lapilli tuff

RL-123 (cont.)

578 - 644 Volc. bxa vs lithic lapilli.
clasts vary w/ predom size: 2-20 mm
w/ intermittent clasts ~ 40-140 mm
verges on being a volc bxa
578 - 606 weaker alt wk-mod perv bl
matrix is lt flesh w/ bl white to lt green
frags weak to mod veining w/
$CaCO_3$ + py predom, + lt green clay
; fine hairline qtz stkwk
606 - 644 ↑ perv. peach alteration
w/ mod str perv bl ; mod perv. silin
clasts perv bl white to flesh - org coloration
tuffaceous matrix supported w/ fine diss
blached sulfides w/in matrix ; locally
isolated w/ in clasts mod to wk/mod str
veining w/: 1) white clay + py + blached sulfide
local isolated clasts w/ hydro-Δ vns that do not
extend into matrix @ 623.2'
few local clay gouge seams @ 632
local crackle Δ w/ silin micro Δ fill @ 617.5 - 620
643.6 - 644 ↑ veining ; hydro Δ vns w/ SiO_2 cement
w/ white clay + blached sulfide fill + poss
dk gray silver mineral + vns (uggy)

Poss. CONTACT @ 58° to core axis
vs. 683.5

* FAULT 644 - 690.5 SOUTH RIDGE
644 - 664 Secondarily Δ FAULT w/ in FGT
perv. deep red - peach coloration
647 - 654 w/ speckled text of FGT (preferential clay alt.)
→ breccia is rehealed w/ white opaque clay + pyrite + local SiO_2, tuff is perv. silin ;
matrix is predom clay w/ wk local hydro silin
Δ vns (weak) ; local massive silin Δ w/o
str clay matrix @ 651 - 653.7
664 - 690.5 Predom Rubble w/ str. clay gouge
alt - white w/ few white FGT silin blocks up to
3-4" long — mostly rubbly clay gouge

690.5 - 698 BL-WHITE FGT - DOZER? very weak hint Green
w/ wk touch orange mottling intermittent lt grn to white -
gray clay gouge + dk sulfides locally
wk fine crackle fractures w/ SiO_2 ± py few v. fine ss

11-6-90
KLK

RL-123 Summary Log of Rotary

OB	0-25	OB	15-25 str clay
LLP	25-50		purple tobacco matrix LLP
LLP	50-300		Deep Sea Green LLP
			45-65 strong clay alt
			65-75 FeOx
			110-130 FGT inner
			190-195 w/ FGT "
			235-245 deep grn FGT "