6000 0833

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. D-31-94
AUTHOR	C. Winteer; C. Muerhoff; S. Faircloth
DATE OF DOC(S)	1994
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Hecla Mining Co.; Rosebud Project South Zone
COMMODITY If not obvious	gold; silver
NOTES	Drill log; geology; assay; total depth 200'; receipt; handwritten notes 8p

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)

SS: DD 5/1/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

D-31-94

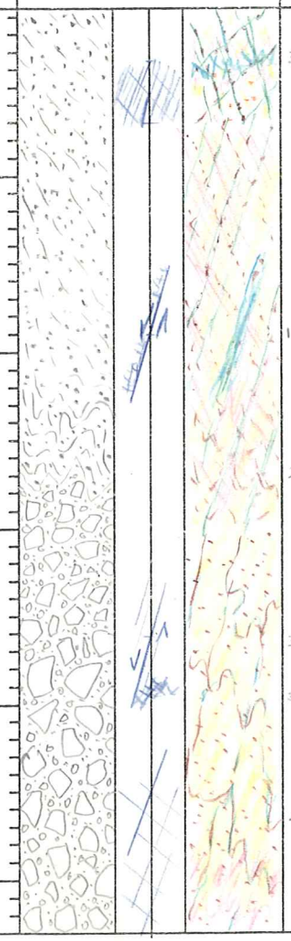
6000 0833
4010

6000 0833

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-31-94	LOCATION	South Zone	REMARKS	ORIENTATIONS STATED AS
PAGE 1 OF	4	NORTHING	2203603.9		∡ TO CORE AXIS; CORE PHOTO'D;
DATE	9-21-94	EASTING	481516.3		WHOLE CORE ASSAY SAMPLES; COLLAR
LOGGED BY	CBWINETEER	ELEVATION	4711.1		LOC. DD5 #9; SECTION 500N;
SCALE	1" = 10'	AZIMUTH	131.5°		NDBGM CORE
TOTAL DEPTH	200'	INCLINATION	+51°		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
0 –	27.2'	Waterlain fine-grained flow-laminated tephra/tuff. Planar flow-laminated + 24'. Contorted flow-sheared. 24-27.2'. Well-sorted, slightly porphyritic ash flow tuff. Dense, moderately hard, cream, grey, pink banded.	10, 20, 30, 40, 50		3.5-7' densely frac'd to crackle bx on 10' & 40' stx's w/ Chl / $CaCO_3$ 19' slick @ 15° w/ thin fault bx. 27.2' gradational crackle contact. 36' slick & microbx on 15° stx 39' $CaCO_3$ flooded microbx w/ angular wall rx frags. 45-51' post-sulf. ser. slicks @ 20° & 50' 1-2/ft.	0-9' wk silic.; wk arg-T; v. wk alun., wk py-T (Tr); ming frac's 5-7/ft. @ 10° & 40° w/ dk grn chl. + ser + py + $CaCO_3$ 9-30' wk silic; v. wk arg-T wk py-T (Tr-1%)-pref. concent. along flow-lam's; ming frac's 5-15/ft @ 20° w/ chl + py ± $CaCO_3$ or $CaCO_3$ after chl-py ± microbx tr alun. pref. along flow-lam's. 30-51' mod. silic, 1st & 2nd order RR w/ pref. repl. of clasts by cubic py; wk to mod. arg-T of clasts pref over g/m.; pale grn ser. g/m & clasts; v. wk alun. + to 49' wk to mod. + 51'; wk to mod. py-T (1-3%) diss. cubic; ming frac's 1-3/ft. irreg but gen. at 5-20° w/ $CaCO_3$ + py ± more. loc. w/ oxid. clay cores
27.2 –	51'	Lithic tuff breccia: clast-supported, poorly-sorted, angular fragments to subrounded altered smaller lithic fragments.				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
0	7	7.0'	<.001	<.02		
7	15	8.0'	<.001	<.02		
15	20	5.0'	.001	.02		
20	25	5.0'	.008	.03	.007	
25	30	5.0'	.003	.05		
30	35	5.0'	<.001	.03		
35	40	5.0'	.019	.46		
40	45	5.0'	.006	.12	.007	
45	51	6.0'	.029	.17		

HOLE NUMBER D-31-94 PAGE 2 OF 4

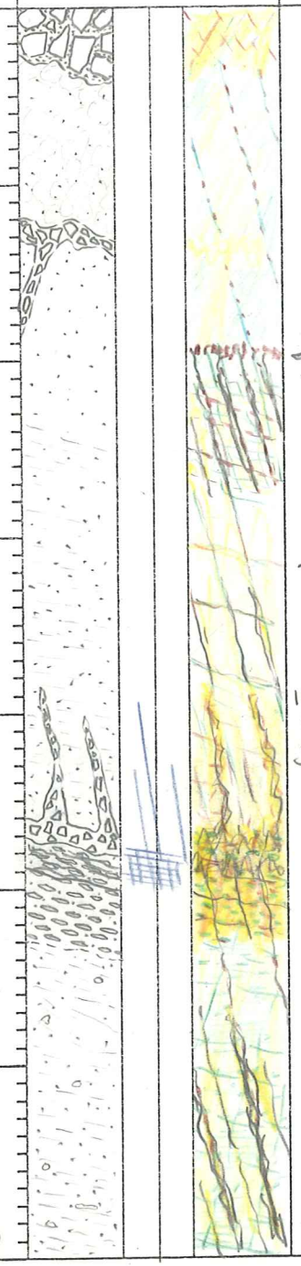
%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
51	68'	Carbonate flooded tectonic breccia w/in clast-supported lithic tuff breccia as above			51' contact @20° discont. frac's @ 10-20° minor offset w/in frags of laminations	51-68' 2nd order RR's mod to mod. intense silic of pref. flow-lams & or mod. ang-T + py-T of flow-lams w/in clasts; matrix comprised of $CaCO_3$ + ill + sericite; wk chl-T; banded alun. w/in clasts; 55-57' $CaCO_3$ + cpy-spl intergrowth ± ss ± copper to brilliant salmon pink v.G. ± silver Ag-V.E. loc. v. coarse at 56'.; 2-% py-T. v.f.g. phrambaidal py adj. to v.G-bearing units.
68	108'	Lithic tuff breccia: poorly-sorted, matrix-supported, heterolithic, choatically-bedded, angular to subangular fine-grained planar-laminated tephra in a fine-grained siliceous tuffaceous matrix.	60 70 80 90		* 57.9-58.6' CST-15 68' irreg. contact @ ~20°	68-89' mod. intense silic. g/m.; 2nd order RR w/ ≃ 1/2 1st order.; mod. to wk ang-T of clasts w/ silic core; matrix of SiO_2 f/ser. + py + marc.; min7. frac's 10-15/ft - v. discontinuous w/ marc + ill ± $CaCO_3$ ± py v. wk alun.; 1-3% py-T. 89-105.5 mod. intense silic + wk ang-T; wk py-T (2%); wk to mod. alun; V. wk chl-T of clasts; strong 2nd order RR's; min frac's 10-15/ft. discont. irreg. segregated $CaCO_3$ + py f/ marc + Tr cpy + Tr spl + Tr ss. predom. @ 30°
		105.5-108' darker pinkish brown matrix w/ pale to medium green angular tephra fragments discontinuous very dark green chlorite ± f.g. py micro vnlts.	100		105.5-107' arcuate 0-5° microbx 105.5' sharp planar slick @ 50° post-sulf.	105.5-108' wk silic. + wk to mod. ang-T; mod. chl-T of clasts w/ chl stringer stkwk wk py-T (Tr-2%) pref. concen. in clasts.; mod alun ± hem stn in g/m.; V. minor discont. $CaCO_3$ + py string.
108		Fine-grained, vitroclastic, massive-bedded fractured airfall tephra w/ local bedded crackle breccia w/ minor clast-rotation. 110.5-123; 132-132.5; VN bx 134-136 & 159-169'	110 120		108' sharp planar slick contact @ 35° 111' sericitic slick @ 15° 111-120' 3-7/ft. sericitic slicks @ 15° & 75°	108-123' wk silic + wk ang-T + wk py-T + mod. chl-T of g/m clasts & frac's; patchy alun. w/ bx'iation.; min7. frac's hairline chl + py stkwk

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
* 51	55	4.0'	.076	3.12		
* 55 *	57	2.0'	.213	25.00	.226(g)	
57	61	4.0'	.034	.47	.041	
61	65	4.0'	.032	.29		
65	70	5.0'	.045	.27		
70	75	5.0'	.005	.09		
75	80	5.0'	.007	.27		
80	85	5.0'	.010	.39		
85	89	4.0'	.010	.15		
89	94	5.0'	.004	.07		
94	99	5.0'	.003	.09		
99	105.5	6.5'	.003	.06		
105.5	108	2.5'	.003	<.02		
108	113	5.0'	<.001	<.02		
113	118	5.0'	<.001	<.02		

HOLE NUMBER D-31-94 PAGE 3 OF 4

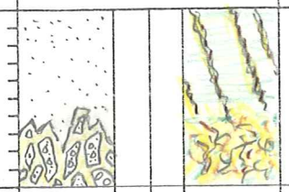
%REC	RQD	LITHOLOGY	FT	STRUCTURE	ALTERATION AND MINERALIZATION
		123-132 Vitrophere spherical chlorite-silica webbing encasing argillic devitrified glass.	130		123-140' Wk silic + wk arg-T + mod. chl-T; ND. alun; wk py-T (Tr); min. frac's 1-2/ft chl → $CaCO_3$ ± py @ 10-15°
			140	← bright yellow to red tarnish f. to c.g. py	139-147' Mod. silic + wk to mod. arg-T; wk chl-T; Tr-1% py-T; ND alun; min frac's 10-15/ft stkwk w/ f.g. ap. sp Q → ill w/ ss + ruby Ag + cpy pseudomorphs ft bladed marc/pyrr? 20° stx-min7. 70-80° stx bdd plane
			150	* CST-16 148.5-149'	147-155' wk silic + wk arg-T + v. wk py-T + ND alun + ser-T min. frac's v. tight Q → ill + bladed py ft marc. 155-159.5' s.a.a. + ill on min frac's
		163'-100gpm H_2O	160	159-169' silic tectonic lox → turning clayey gouge +	159.5-166.5 s.a.a w/dil-ulation of frac's + late-stage open-space Q + ill + carbon-coated brassy py ft thin bladed marc.
166.5	173	Bedded vesicular spotted or leopard-skin texture tuff: slightly porphyritic w/ elongated green chlorite & elongate tabular sulfide microphenocrysts; variety of vesicle fillings including opalline SiO_2; chlorite, f. g. open-space quartz, sericite, zeolites (radiating starburst), sulfides, and illite; flow-aligned vesicles @ 80°	170	166-169' Carbon-rich clayey coating on frac opening surfs & in vesicle-fillings	166.5-173' Intensely silic. (Tr-1%) vesicular; wk py-T; wk arg-T; spotted chl-T; wk alun.; min frac's 4-6/ft @ 15° & 80° w/ open space Q → ill → black carbon-coated bladed py ft marc/pyrr
173	197	Fine-grained, planar & planar-cross laminated, well-sorted, but w/ occasional 0.25 cm rounded devitrified pumice bombs.	180		173-197' Mod. intense silic wk arg.; spotted & banded chl-T; wk py-T (Tr-1%); v. wk banded alun; min7 frac's 10/ft @ 70° & 5-10° w/ chl + py or open-space f. to m.g. Q → ill → black coated bladed py ft marc/pyrr. — often vuggy w/ f.g. xln Q platelets after dissolved bar?; ducks butter ill clay filled frac's.
			190		



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
118	123	5.0'	<.001	.02		
123	129	6.0'	<.001	<.02		
129	135	6.0'	.002	.04		
135	139	4.0'	.005	.03		
* 139	147	8.0'				
147	152	5.0'	.249	20.20	.263 (g)	
152	157	5.0'	.016	.21	.018	
157	162	5.0'	.010	.06		
162	167	5.0'	.078	.56	.087 (g)	
167	169	2.0'	.159	1.17	.150(g)	
169	173	4.0'	.031	.18		
173	178	5.0'	.026	.11		
178	183	5.0'	.049	.21		
183	188	5.0'	.080	.29	.071 (g)	
188	192	4.0'	.023	.18	.023	

HOLE NUMBER D-31-94 PAGE 4 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
197	200'	Silicified tectonic breccia w/in lithic tuff breccia: poorly-sorted, angular green chloritized-pyritized-argillized tephra fragments in a siliceous-alunite-rich fine-grained tuffaceous pink matrix; x-cutting late-stage clear to whitish f.g. crystalline quartz + illite clay stockwork; very light in density-vuggy. END OF HOLE 200'	200			197-200' mod. intense silic + alun v of g/m; mod. intense chl-T+ arg-T of clasts; SiO_2 ± ill ± carbon-coated f.g. bladed sulf.; mod. py-T (2%) min'l. frac's fragmented & incorp. into silic. matrix	192	197	5.0'	.021	.16		
							197	200	3.0'	.017	.10		

ANALYSIS REPORT

American Assay Laboratories

P.O. BOX 71060
RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
Telex:

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF

:

:

:

CLIENT REFERENCE No: D-31-94

LABORATORY JOB No. : SP031048

SAMPLE TYPE :

RECEIVED : 27 SEP 1994

REPORTED : 6 OCT 1994

No. SAMPLES : 18

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA60	15%	OPT	0.001
Au(RZ)	FA60	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

89

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-31-94
JOB NUMBER : SP031048
REPORTED : 6 OCT 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-31-94 0-7	<0.001			<0.02
D-31-94 7-15	<0.001			<0.02
D-31-94 15-20	0.001			0.02
D-31-94 20-25	0.008	0.007		0.03
D-31-94 25-30	0.003			0.05
D-31-94 30-35	<0.001			0.03
D-31-94 35-40	0.019			0.46
D-31-94 40-45	0.006	0.007		0.12
D-31-94 45-51	0.029			0.17
D-31-94 51-55	0.076			3.12
D-31-94 55-57	0.213		0.226	25.00
D-31-94 57-61	0.034	0.041		0.47
D-31-94 61-65	0.032			0.29
D-31-94 65-70	0.045			0.27
D-31-94 70-75	0.005			0.09
D-31-94 75-80	0.007			0.27
D-31-94 80-85	0.010			0.39
D-31-94 85-90	0.010			0.15

ANALYSIS REPORT

American Assay Laboratories Inc.

P.O. BOX 71060
RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
Telex:

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF

:

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:

CLIENT REFERENCE No: D-31-94

LABORATORY JOB No. : SP031150

SAMPLE TYPE :

RECEIVED : 4 OCT 1994

REPORTED : 20 OCT 1994

No. SAMPLES : 22

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA60	15%	OPT	0.001
Au(RZ)	FA60	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Sue Faircloth M.S.

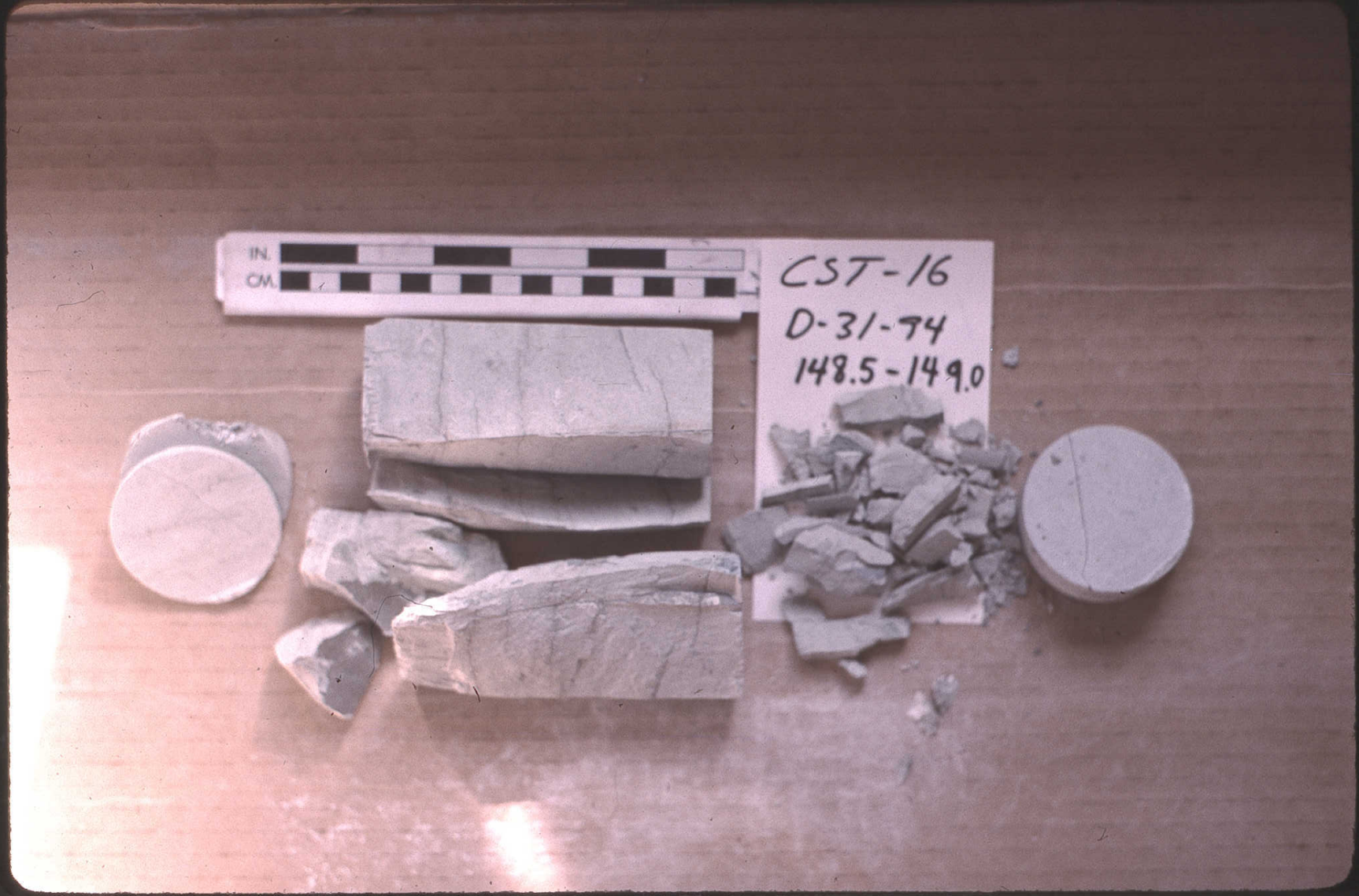
AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-31-94
JOB NUMBER : SP031150
REPORTED : 20 OCT 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-31-94 89-94	0.004			0.07
D-31-94 94-99	0.003			0.09
D-31-94 99-105.5	0.003			0.06
D-31-94 105.5-108	0.003			<0.02
D-31-94 108-113	<0.001			<0.02
D-31-94 113-118	<0.001			<0.02
D-31-94 118-123	<0.001			0.02
D-31-94 123-129	<0.001			<0.02
D-31-94 129-135	0.002			0.04
D-31-94 135-139	0.005			0.03
D-31-94 147-152	0.249		0.263	20.20
D-31-94 152-157	0.016	0.018		0.21
D-31-94 157-162	0.010			0.06
D-31-94 162-167	0.078		0.087	0.56
D-31-94 167-169	0.159		0.150	1.17
D-31-94 169-173	0.031			0.18
D-31-94 173-178	0.026			0.11
D-31-94 178-183	0.049			0.21
D-31-94 183-188	0.080		0.071	0.29
D-31-94 188-192	0.023	0.023		0.18
D-31-94 192-197	0.021			0.16
D-31-94 197-200	0.017			0.10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