60000953

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. SL-D393-00
AUTHOR	D. Mackerrow; B. Morris; K Allen; L. Macedon
DATE OF DOC(S)	2000
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Rosebud Mining Co. LLC Hecla Mining Co.; Saint Louis
COMMODITY If not obvious	gold; silver
NOTES	Drill log; geology; assay; [redacted]; total depth 592' receipt; handwritten notes; downhole camera images photographs 63 p. 4 down hole camera images

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:	DP	5/12/08
DB:	mh	
SCANNED:		

Revised: 1/22/08

SL-D393-00

6000 0953 4010

quartz, chalcedony, silicification
faults, fractures
FeOx/Hem
sulfide
calcite, carbonate
argillization, white clays
propylitization
potassic alteration
chlorite, chloritic clays

60000953

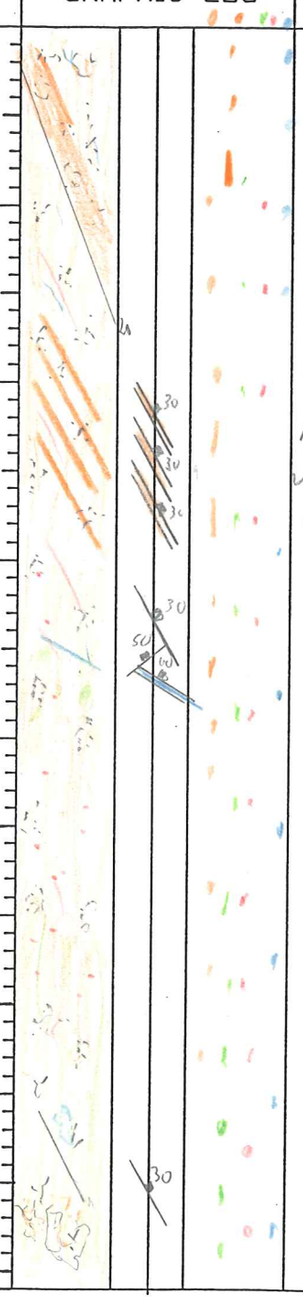
Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

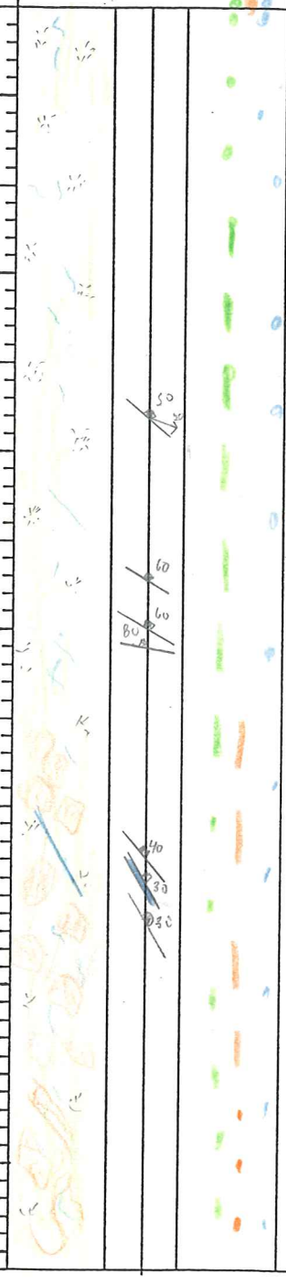
HOLE NUMBER	SLD-393-00	LOCATION	St. Louis 4335	REMARKS	
PAGE 1 OF 9		NORTHING		Block error at 417	
DATE	4-14-00	EASTING		417 Block was missed	
LOGGED BY	D.C. Mackeron/	ELEVATION			
SCALE	1" = 10	AZIMUTH			
TOTAL DEPTH	592	INCLINATION			

LITH	OX/RE	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
Td		0-500.3 DOZER Fine grained rhyolite flow with hematitic staining Flow banded or Autobrecciated Hematite decreases after 32' and is removed by argillization or green clay/propylitic alteration by 59	10 20 30 40 50	20 50	Minimal fracturing	0-59 Calcite on Micro Fx and small void filling						

HOLE NUMBER SCD-593-00 PAGE 2 OF 9

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
TI		0 - 500.0 DOZER Rhyolite Flow continues Hematite end of 59' on 20° tan fracture 59' Pale green gray Dozer white clay veinlets	60 70 80 90 100 110 120		72.5-77 Fracture zone with white clay coatings	59' Pyrite veinlets begins 72 - 77 marcasite in white clay on fracture 100 Argillization decreases and only green clay/ propilitic alteration remains 115 Traces of hematite on fracture surfaces	72	77				

HOLE NUMBER SCD-393-00 PAGE 3 OF 9

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
Td		0-500.3 DOZER Rhyolite flow continues Increasing greenclay/propylitic alteration 130 medium green gray with increasing hematite trace. Darker green (chlorite staining) on fractures and autobreccia texture 162 - Moderate Hematite produces a mottled surface. Autobreccia begins developing	130 140 150 160 170 180 190		152-157 Fracture zone Calcite and trace white clay	Pyrite decreasing from 110 and >.5% by 120						

HOLE NUMBER SLA-393-00 PAGE 4 OF 9

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
Td		0-500.3 DOZER Rhyolite flow contin Mottled apparence from hematite continues. Autobreccia with variable	200 210 220 230 240 250 260			Below Trace level of Pyrite Minimal calcite on fracture to 266						

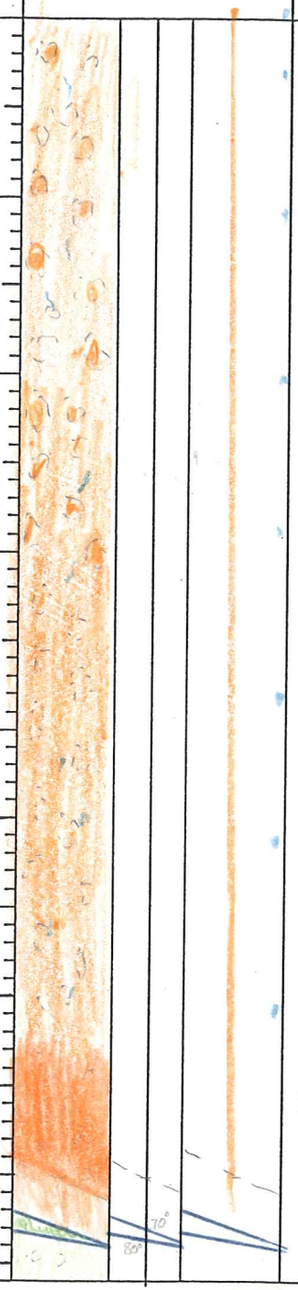
HOLE NUMBER SCD-393-00 PAGE 5 OF 9

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
Td		0-500.3 DOZER Rhyolite Flow with internal autobreccia continues to 268. 268-273 Flow banded rhyolite with bands stained by hematite	270 280 290 300 310 320 330	30								

HOLE NUMBER SCD-393-00 PAGE 6 OF 9

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
Td		0 - 500.3 DOZER Hematitic rhyolite Flow continues Hematite increases to moderate to heavy levels from 362 Block error found at 412 to 417 No block 417 Block shifted in core boxes after photos were taken	340 350 360 370 380 390 400									

HOLE NUMBER SCA-393-00 PAGE 7 OF 9

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0-500.7 — 465.2' - HEMATITIC, FINE-GRAINED, AUTO BRECCIATED DACITE Formation (Aphanitic flow - Rhyolitic) missed Block 417 465.2-468' - Auto Rx'd DACITE - INCREASED Argillization / Bleaching	410 420 430 440 450 460 470		468-468.7 SHEAR ZONE w/ Black, pyritic clay gouge at Both ENDS w/ propylitized clay matrix Rubble zone Between	468-468.7 - ± white clay + DISSEMINATED Pyrite. 463 - 463.7 — ~~468~~ ~~468.7~~ 463.7 468

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
452	460.2				
457	465.2				
460.2 465.2	463 468				
468.7	473				

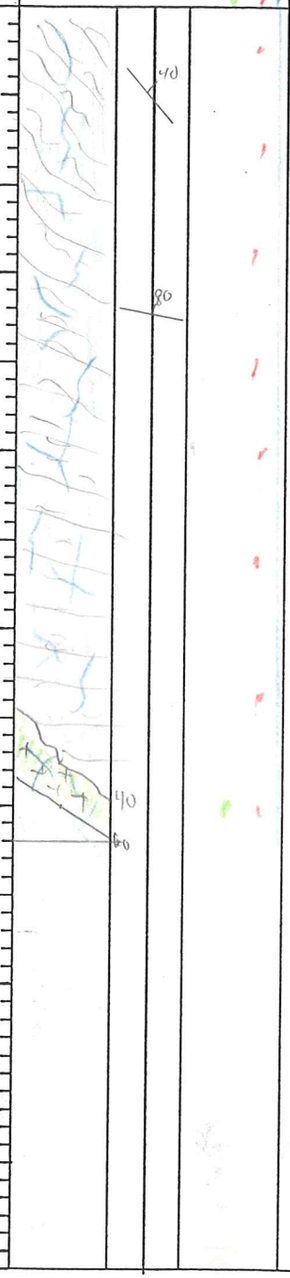
HOLE NUMBER SCD-393-00 PAGE 8 OF 9

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		Correct Footage both 5' 468-500.3' – propylitized, Argillized, Fine-grained, Aphanitic, Auto Bx'd to Flow Laminated Dacite Rhyolite.				468.7-473 – WHITE CLAY + $CaCO_3$ FRACTURES/stockwork ZONE @ 40 & 20° to CA. Disseminated pyrite. Fractures sulfide POOR
		ALS 500.3-502.6' – CALCAREOUS, BLACK, graphitic?, phyllites of the ALS FORMATION.	480	30° 70°	482.4' – SHEAR @ 30° to CA w/ 1/4" pyritic clay gouge (1/32").	473-482.4' – INCREASED mod-strong ARGILLIZATION, w/ HAIR like $CaCO_3$ stockworks. sulfide POOR.
		502.6-503.4' – FAULT/SHEAR ZONE			489.8' – SMALL sulfide filled 1/2" Fracture/Fault w/ increased Shearing in footwall	
		503.4-514.2' – ALS	490	30 70° 70°	491.7' – Small High-angle to CA (30°) Fracture/Fault w/pyritic clay slicks.	482.4-485.6 – INCREASED SHEARING + white clay stockworks. still sulfide POOR.
		514.2-515.2' – Porphyritic Dike, 1/2 % clay phenos Now white clay. Doesn't look like one of the Fg-intrusives usually seen in the ALS.		40 40 40 50 60°	493.2-493.5' – pyritic gouge matrix supported Fault BRECCIA @ 70° to CA.	485.6-487 – pyrite + white clay FRACTURES at ≈ 20° to CA.
		515.2'-519' – ALS	500		500.3' – possible small fault ⇒ SHEARING is Limited And may simply be related to loading ALS surface w/ Dacite Fm.	487-489.8' – WHITE clay + pyrite ± marc veinlets & stockworks
		519- – Fg intrusive @ 50° to CA.	510	80°	502.6-503.4' – SHEAR ZONE consisting of clay & Rubbled Dacite Rocks	489.8-493.2' – INCREASED FRACTURE Fill w/ pyrite/pyritic gray clay
		512-513 Fine grained intrusive		86°		493.2-493.5 – pyritic clay Gouge
			520	50°		493.5-500.3' – VARIABLY sheared Zone w/ gray pyritic clay veinlets, Pyrite blebs, + white clay ± moderate to dark green chloritic clay fracts.
		535-536 Fg intrusive 40° to contact	530			505.2-506.4' – SiO_2 & devitrified ALS.
			540			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
		Samples missing	54:A 417	+ 5' block	Proc
468	473				
473	477				
473	477				
477	482.4				
477	482.4				
482.4	485.6				
485.6	487				
487	489.8				
489.8	491.7				
491.7	493.2				
493.2	493.5				
493.5	497				
497	500.3				
500.3	502.6				
502.6	503.4				
503.4	505.2				
505.2	506.4				
506.4	512				
512	514.2				
514.2	515.2				
515.2	519				

HOLE NUMBER SLD-393-00 PAGE 9 OF 9

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
		500.3 – 587 ALS Black phillitic shale Continues with flat beds 582.8 – 585 Fg intrusive Corrected TD = 587	550 560 570 580 590									

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-D393-00 DATE: 4-14-00 LOGGED BY: D G Mutherow PAGE 1 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
0	2	0	60	30										
2	7	60	90	56										
7	12	100	104	100										
12	17	100	100	100										
17	22	100	102	100										
22	27	100	100	82										
27	32	100	100	94										
32	37	100	100	88										
37	42	100	100	100										
42	47	100	104	64										
47	52	100	100	800										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-D393-00 DATE: 4-14-00 LOGGED BY: D.G. Mackerrow PAGE 2 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
52	57	100	100	98										
57	62	100	100	90										
62	67	100	98	100										
67	72	100	100	100										
72	77	100	100	50										
77	82	100	100	68										
82	87	96	104	68										
87	92	100	98	76										
92	97	100	100	78										
97	102	100	100	100										
102	107	100	102	46										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-10393-00 DATE: 4-14-00 LOGGED BY: D.C. Mackerron PAGE 3 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
107	112	100	98	76										
112	117	100	102	99										
117	122	100	102	98										
122	127	100	100	88										
127	132	94	100	96										
132	137	100	98	100										
137	142	100	104	98										
142	147	100	98	86										
147	152	100	100	80										
152	157	62	100	36										
157	162	94	100	70										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-D393-00 DATE: 4-14-00 LOGGED BY: D.G. Mackerron PAGE 4 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY g/cc
162	167	100	102	88										
167	172	100	96	94										
172	177	100	104	84										
177	182	100	98	88										
182	187	100	100	94										
187	192	100	96	72										
192	197	100	102	80										
197	202	100	98	90										
202	207	100	104	82										
207	212	100	102	70										
212	217	100	101	82										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-D393-00 DATE: 4-14-00 LOGGED BY: D.G. Mackerron PAGE 5 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
217	222	100	100	84										
222	227	100	100	72										
227	232	100	100	96										
232	237	100	98	100										
237	242	100	100	94										
242	247	100	96	78										
247	252	100	106	86										
252	257	100	98	64										
257	262	100	100	81										
262	269	100	102	90										
269	272	100	102	84										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-0393-00 DATE: 4-14-00 LOGGED BY: D.G. Mackerson PAGE 6 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
272	277	100	102	88										
277	282	100	100	86										
282	287	100	100	62										
287	292	100	102	68										
292	297	100	102	74										
297	302	100	100	84										
302	307	100	100	86										
307	312	100	98	100										
312	317	100	102	76										
317	322	100	100	70										
322	327	100	100	96										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-D393-00 DATE: 4-14-00 LOGGED BY: D.G. Mackerrow PAGE 7 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
327	332	100	100	100										
332	337	100	100	78										
337	342	100	100	81										
342	347	100	100	76										
347	352	100	100	96										
352	357	100	100	84										
357	362	100	100	72										
362	367	100	100	100										
367	372	100	100	92										
372	377	100	104	74										
377	382	100	100	74										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-D393-00 DATE: 4-14-00 LOGGED BY: D.G. Mackeiran PAGE 8 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
382	387	100	100	90										
387	392	100	100	80										
392	397	100	100	78										
397	402	100	98	100										
402	407	100	102	84										
407	412	100	102	74										
412	417	100	100	78	This is correct ↓	the Footage ↓	DGM 4/14/00							
417	422	100	102	98										
422	427	100	98	100										
427	432	100	100	96										
432	437	100	100	80										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SL-D 393-00 DATE: 4-14-00 3/7/00 LOGGED BY: D.G. MacKerron/HA PAGE 9 OF 12

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
437	442	100	100	100										
442	447	100	100	100										
447	452	100	100	100										
452	457	100	100	100										
457	462	100	100	100										
462	467	96	96	46										
467	472	100	100	86										
472	477	100	100	88										
477	482	100	100	52										
482	487	98	100	64										
487	492	100	100	70										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SC-D 393-00 DATE: 3/7/00 4/15/00 LOGGED BY: H A [illegible] PAGE 10 OF 11

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
492	497	100	100	66										
497	502	96	100	50										
502	507	90	96	46										
507	512	90	100	30										
512	517	90	100	34										
517	522	92	98	10										
522	527	98	98	0										
527	532	86	100	0										
532	537	98	102	20										
537	542	80	98	0										
542	547	90	108	0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SC-D 393-00 DATE: 4/15/00 LOGGED BY: D.G. Mackenzie PAGE 14 OF 17

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
547	552	82	100	0										
552	557	100	110	0										
557	562	92	100	0										
562	567	100	100	32										
567	572	100	100	42										
572	577	100	102	12										
577	582	100	100	106										
582	587	98	100	30										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # SLD-393-00 DATE: 3/7/00 LOGGED BY: KDA PAGE 10 OF

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY /FT.	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
452 457	457 462	100	100	100										
457 462	462 467	100	100	100										
462 467	467 472	96	96	46					NOT	Correct!				
467 472	472 477	100	100	86										
472 477	477 482	100	100	88			Re	copyed						
477 482	482 487	100	100	52										
482 487	487 492	98	100	64										
487 492	492 497	100	100	70										
492 497	497 502	100	100	66										
497 502	502 507	96	100	50										
502 507	507 512	90	96	46										
512	517	10	100	30										

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057028

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: SL-D393-00 RECEIVED : 17 APR 2000

No. SAMPLES : 2 REPORTED : 25 APR 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057028

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : SL-D393-00

REPORTED : 25 APR 2000

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
SL-D393-00 72-77	0.005		<0.02
89658	0.357		3.35

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057028

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: SL-D393-00 RECEIVED : 17 APR 2000

No. SAMPLES : 2 REPORTED : 25 APR 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057028

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : SL-D393-00

REPORTED : 25 APR 2000

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
SL-D393-00 72-77	0.005		<0.02
89658	0.357		3.35

American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(775) 356-0606

INVOICE NO: SP 0057028-IN
INVOICE DATE: 05/02/00

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
SL-D393-00	KURT ALLEN	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
2	SAMPLES RECEIVED	.00	.00
1	NO PREPARATION REQUIRED	.00	.00
1	DRY/JAW CRUSH ENTIRE SAMPLE	3.60	3.60
1	COARSE MILLING CHARGE	8.00	8.00
1	ROTARY SPLIT	3.00	3.00
1	RING/PUCK MILL	2.00	2.00
2	Au (1 A.T. FIRE ASSAY)	8.00	16.00
2	HYDROCHLORIC/NITRIC DIGESTION	2.00	4.00
2	Ag ANALYSES	1.00	2.00

86-3010-477
KDA

NET INVOICE:	38.60
LESS DISCOUNT:	11.58
FREIGHT:	.00
INVOICE TOTAL:	27.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057028

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: SL-D393-00 RECEIVED : 17 APR 2000

No. SAMPLES : 2 REPORTED : 25 APR 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057028

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : SL-D393-00

REPORTED : 25 APR 2000

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
SL-D393-00 72-77	0.005		<0.02
89658	0.357		3.35

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057028

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: SL-D393-00 RECEIVED : 17 APR 2000

No. SAMPLES : 2 REPORTED : 21 APR 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057028

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : SL-D393-00

REPORTED : 21 APR 2000

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
SL-D393-00 72-77	0.005		
89658	0.357		

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056511

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: SLD-393-00 RECEIVED : 8 MAR 2000

No. SAMPLES : 23 REPORTED : 3 APR 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056511

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : SLD-393-00

REPORTED : 3 APR 2000

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
SLD-393-00 457.0-465.2	<0.001		<0.02
SLD-393-00 465.2-468.0	<0.001	0.001	<0.02
SLD-393-00 468.0-468.7	0.002		<0.02
SLD-393-00 468.7-473.0	<0.001		<0.02
SLD-393-00 473-477	<0.001		<0.02
SLD-393-00 477.0-482.4	<0.001	<0.001	<0.02
SLD-393-00 482.4-485.6	0.003		<0.02
SLD-393-00 485.6-487.0	0.001		<0.02
SLD-393-00 487.0-489.8	0.001		<0.02
SLD-393-00 489.8-491.7	0.002		0.03
SLD-393-00 491.7-493.2	0.001		0.02
SLD-393-00 493.2-493.5	0.002		0.12
SLD-393-00 493.5-497.0	0.004		0.09
SLD-393-00 497.0-500.3	0.007	0.008	0.03
SLD-393-00 500.3-502.6	0.001		0.06
SLD-393-00 502.6-503.4	0.002		<0.02
SLD-393-00 503.4-505.2	0.004		0.34
SLD-393-00 505.2-506.4	0.005		0.20
SLD-393-00 506.4-512.0	0.004	0.004	0.11
SLD-393-00 512.0-514.2	0.002		0.40
SLD-393-00 514.2-515.2	0.001		<0.02
SLD-393-00 515.2-519.0	0.002	0.001	0.05
76038	0.059		1.12

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056511

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: SLD-393-00 RECEIVED : 8 MAR 2000

No. SAMPLES : 23 REPORTED : 3 APR 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056511

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : SLD-393-00

REPORTED : 3 APR 2000

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
SLD-393-00 457.0-465.2	<0.001		<0.02
SLD-393-00 465.2-468.0	<0.001	0.001	<0.02
SLD-393-00 468.0-468.7	0.002		<0.02
SLD-393-00 468.7-473.0	<0.001		<0.02
SLD-393-00 473-477	<0.001		<0.02
SLD-393-00 477.0-482.4	<0.001	<0.001	<0.02
SLD-393-00 482.4-485.6	0.003		<0.02
SLD-393-00 485.6-487.0	0.001		<0.02
SLD-393-00 487.0-489.8	0.001		<0.02
SLD-393-00 489.8-491.7	0.002		0.03
SLD-393-00 491.7-493.2	0.001		0.02
SLD-393-00 493.2-493.5	0.002		0.12
SLD-393-00 493.5-497.0	0.004		0.09
SLD-393-00 497.0-500.3	0.007	0.008	0.03
SLD-393-00 500.3-502.6	0.001		0.06
SLD-393-00 502.6-503.4	0.002		<0.02
SLD-393-00 503.4-505.2	0.004		0.34
SLD-393-00 505.2-506.4	0.005		0.20
SLD-393-00 506.4-512.0	0.004	0.004	0.11
SLD-393-00 512.0-514.2	0.002		0.40
SLD-393-00 514.2-515.2	0.001		<0.02
SLD-393-00 515.2-519.0	0.002	0.001	0.05
76038	0.059		1.12

American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(775) 356-0606

INVOICE NO: SP 0056511-IN
INVOICE DATE: 04/05/00

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
SLD-393-00	KURT ALLEN	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
23	SAMPLES RECEIVED	.00	.00
1	NO PREPARATION REQUIRED	.00	.00
22	DRY/JAW CRUSH ENTIRE SAMPLE	2.30	50.60
22	COARSE MILLING CHARGE	6.00	132.00
22	"JONES" RIFFLE SPLIT	2.40	52.80
22	RING/PUCK MILL	2.00	44.00
23	Au (1 A.T. FIRE ASSAY)	8.00	184.00
23	HYDROCHLORIC/NITRIC DIGESTION	2.00	46.00
23	Ag ANALYSES	1.00	23.00

86-3010-477
KDA

NET INVOICE:	532.40
LESS DISCOUNT:	159.72
FREIGHT:	.00
INVOICE TOTAL:	372.68

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP066511

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: SLD-393-00 RECEIVED : 8 MAR 2000

No. SAMPLES : 23 REPORTED : 3 APR 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056511

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : SLD-393-00

REPORTED : 3 APR 2000

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
SLD-393-00 457.0-465.2	<0.001		<0.02
SLD-393-00 465.2-468.0	<0.001	0.001	<0.02
SLD-393-00 468.0-468.7	0.002		<0.02
SLD-393-00 468.7-473.0	<0.001		<0.02
SLD-393-00 473-477	<0.001		<0.02
SLD-393-00 477.0-482.4	<0.001	<0.001	<0.02
SLD-393-00 482.4-485.6	0.003		<0.02
SLD-393-00 485.6-487.0	0.001		<0.02
SLD-393-00 487.0-489.8	0.001		<0.02
SLD-393-00 489.8-491.7	0.002		0.03
SLD-393-00 491.7-493.2	0.001		0.02
SLD-393-00 493.2-493.5	0.002		0.12
SLD-393-00 493.5-497.0	0.004		0.09
SLD-393-00 497.0-500.3	0.007	0.008	0.03
SLD-393-00 500.3-502.6	0.001		0.06
SLD-393-00 502.6-503.4	0.002		<0.02
SLD-393-00 503.4-505.2	0.004		0.34
SLD-393-00 505.2-506.4	0.005		0.20
SLD-393-00 506.4-512.0	0.004	0.004	0.11
SLD-393-00 512.0-514.2	0.002		0.40
SLD-393-00 514.2-515.2	0.001		<0.02
SLD-393-00 515.2-519.0	0.002	0.001	0.05
76038	0.059		1.12

D393

72 - 77 Burr 8-1

246 - 250

250 - 254

254 - 257,4

257,4 - 259

259 - 264

264 - 266

266 - 269

Block 417 missing core start 5'

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 11530
Reno, NV 89510
Telephone
(702) 356-0606
Fax
(702) 356-1413

Tucson Office
2775 E. Ganley
Tucson, AZ 85706
Telephone
(520) 294-8078
Fax
(520) 294-6352

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Mazatlan Office
Telephone/Fax
011-52-69-170035

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Rosebud Mining L.L.C.

Address: P.O. Box 2610

City Winnemucca State NV Zip 89446

Telephone Number: (775) 623-6712 Fax Number: (775) 623-6967

Project Name: _____ Purchase Order Number: _____

Date Submitted: _____ Number of Samples: 1

RESULTS REPORTED IN: ppm [ ] ppb [ ] opt [X]

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
SL-D393-00	core	Au, Ag: Use Rosebud Mine
		development protocol
72-77		

COARSE REJECTS (Normally Discarded After 60 Days)

[X] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[X] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

Kurt Allen

Results to:

Kurt Allen

Comments:

CLIENT FILE COPY

Drill hole # SL-D393-00

Down hole depth		Measured Bearing	Corrected Azimuth	Measured Inclination	Corrected Dip
	Quadrant:	SE			
52		13	182.62	27.25	-62.75
252		11	184.62	26.5	-63.5
457		10	185.62	26.75	-63.25
592		9.75	185.87	26.5	-63.5

TD Depth 592

2000 Declination 15.62

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 11530
Reno, NV 89510
Telephone
(702) 356-0606
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Tucson Office
2775 E. Ganley
Tucson, AZ 85706
Telephone
(520) 294-8078
Fax
(520) 294-6352

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Zacatecas Office
Telephone/Fax
011-52-49-234530

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Hecla Mining Company

Address: P.O. Box 2610

City Winnemucca State NV Zip 89446

Telephone Number: (775) 623-6912 Fax Number: (775) 623-6967

Project Name: Rosebud Exploration Purchase Order Number:

Date Submitted: 3/7/00 Number of Samples: 22

RESULTS REPORTED IN: ppm [ ] ppb [ ] opt [X]

SAMPLE IDENTIFICATION		TYPE	ELEMENTS REQUIRED
SLD-393-00		Core	Au/Ag w.tt
457-465.2	500.3-502.6		Rosebud Core Sample Pectral
465.2-468	502.6-503.4		
468-468.7	503.4-505.2		
468.7-473	505.2-506.4		
473-477	506.4-512		
477-482.4	512-514.2		
482.4-485.6	514.2-515.2		
485.6-487	515.2-519		
487-489.8			
489.8-491.7			
491.7-493.2			
493.2-493.5			
493.5-497			
497-500.3			

COARSE REJECTS (Normally Discarded After 60 Days)

[X] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[X] Return COD after one month

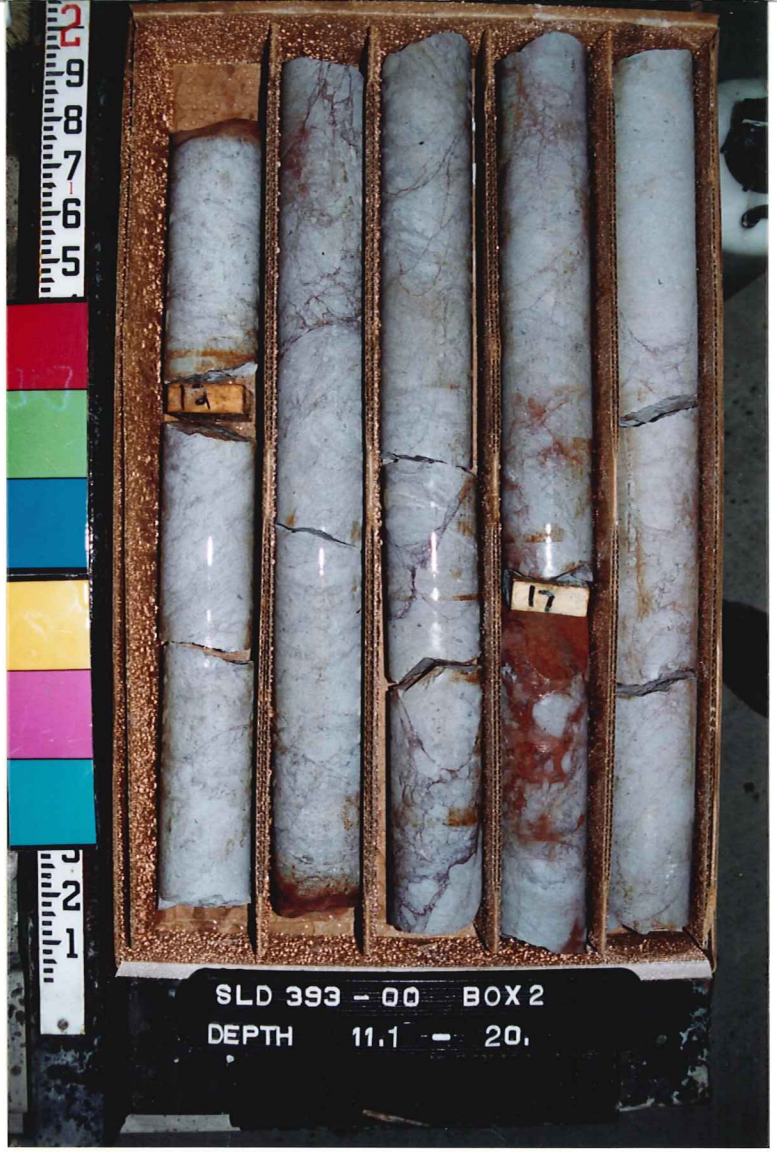
RESULTS AND INVOICES TO BE SENT TO:

Invoice to:
Kurt Allen

Results to:
Kurt Allen

Comments:

CLIENT FILE COPY


SLD 393 - 00 BOX 2
DEPTH 11.1 - 20.

SLD 393 - 00 BOX 1
DEPTH 0. - 11.1

SLD 393 - 00 BOX 3
DEPTH 20. - 29.1

42
47
SLD 393 - 00 BOX 5
DEPTH 38.2 - 47.3

37
SLD 393 - 00 BOX 4
DEPTH 29.1 - 38.2

52
SLD 393 - 00 BOX 6
DEPTH 47.3 - 57.

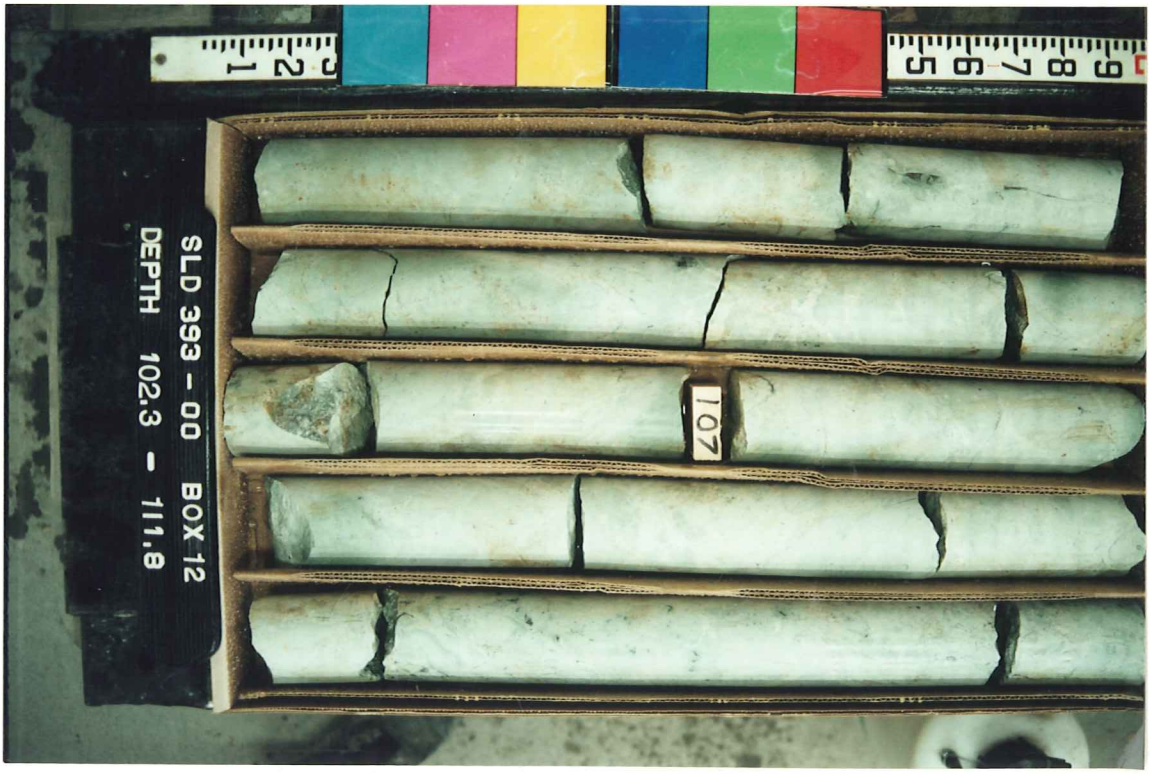
67
72
SLD 393 - 00 BOX 8
DEPTH 66.1 - 75.2

62
57
SLD 393 - 00 BOX 7
DEPTH 57. - 66.1

77
82
SLD 393 - 00 BOX 9
DEPTH 75.2 - 84.5

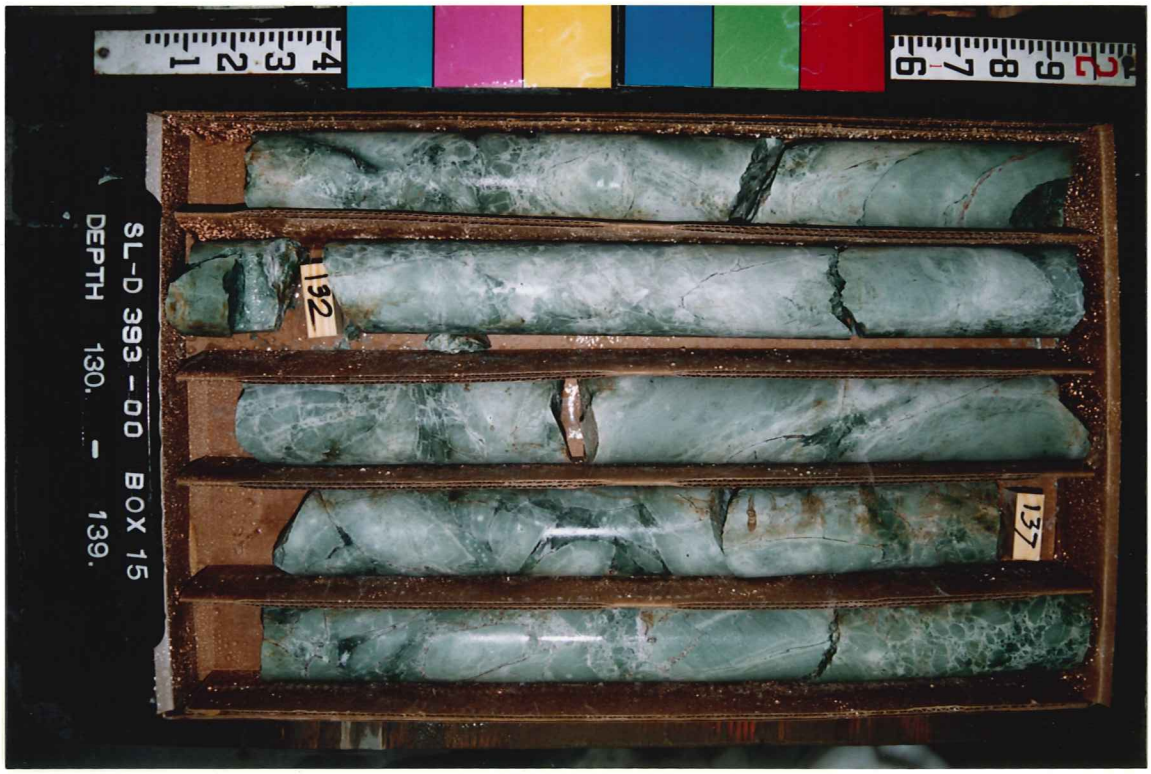
102
SLD 393 - 00 BOX 11
DEPTH 93.5 - 102.3

87
92
SLD 393 - 00 BOX 10
DEPTH 84.5 - 93.5


107
SLD 393 - 00 BOX 12
DEPTH 102.3 - 111.8

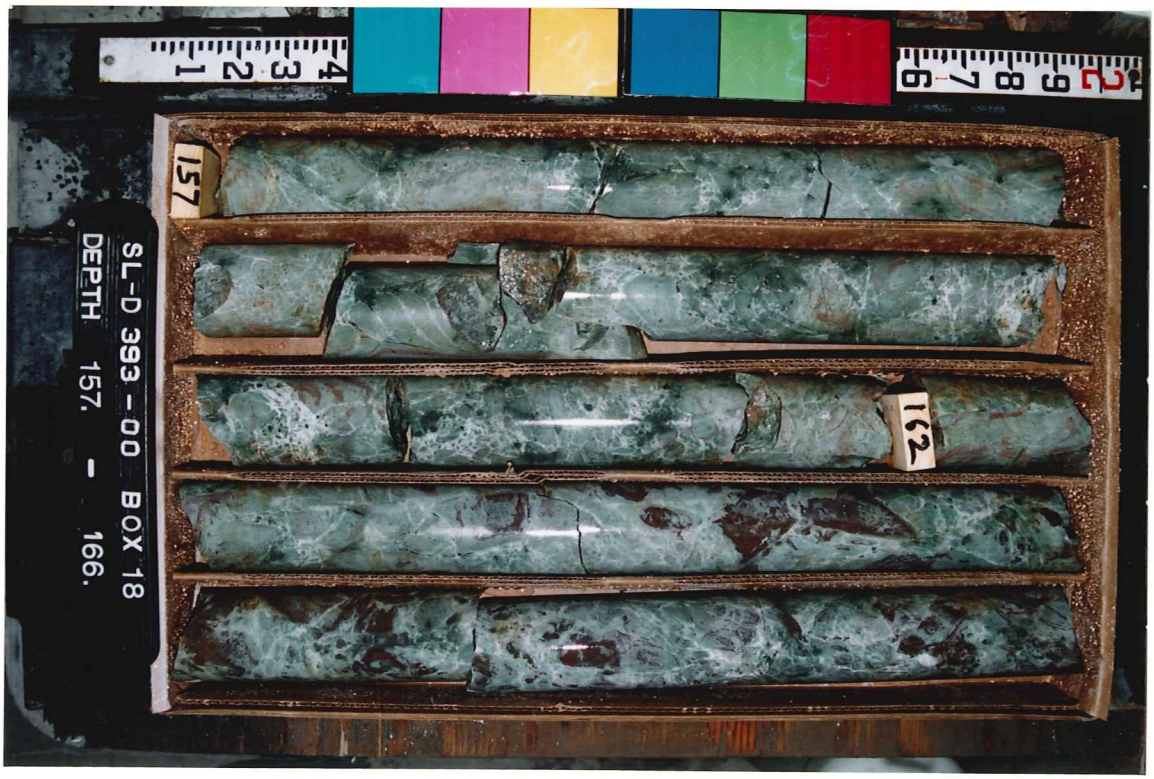
127
SL-D 393 - 00 BOX 14
DEPTH 121. - 130.

112
SLD 393 - 00 BOX 13
DEPTH 111.8 - 121.


SL-D 393 - 00 BOX 15
DEPTH 130. - 139.
132
137

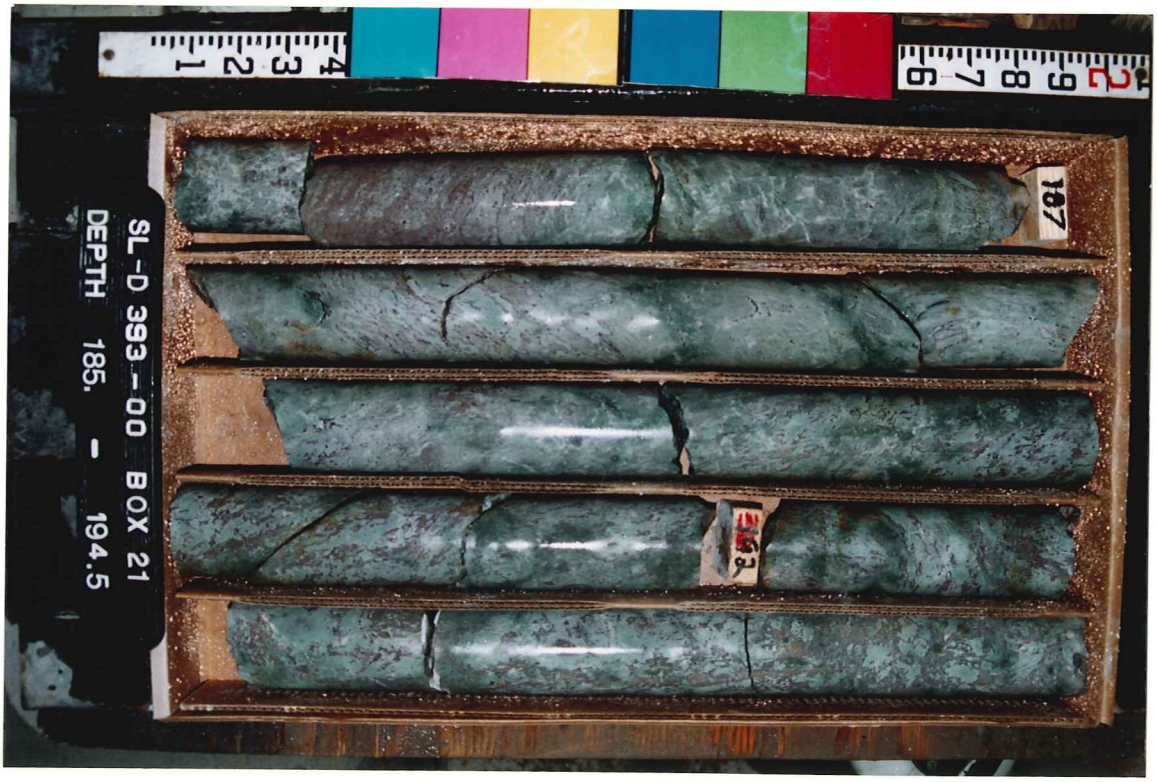
152
SL-D 393 - 00 BOX 17
DEPTH 147.5 - 157.

142
147
SL-D 393 - 00 BOX 16
DEPTH 139. - 147.5

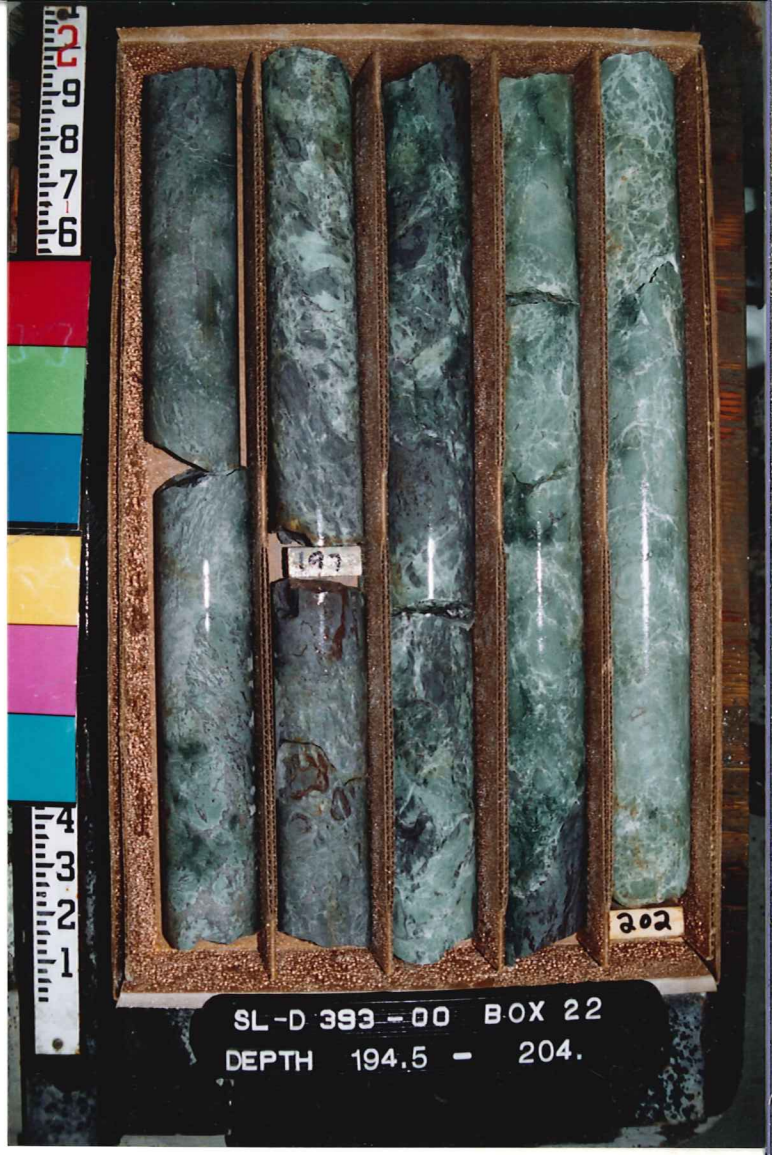

157
162
SL-D 393 - 00 BOX 18
DEPTH 157. - 166.

177
182
SL-D 393-00 BOX 20
DEPTH 175.5 - 185.

172
167
SL-D 393-00 BOX 19
DEPTH 166. - 175.5


187
SL-D 393-00 BOX 21
DEPTH 185. - 194.5

207
212
SL-D 393-00 BOX 23
DEPTH 204. - 213.


197
202
SL-D 393-00 BOX 22
DEPTH 194.5 - 204.

217
222
SL-D 393-00 BOX 24
DEPTH 213. - 222.1

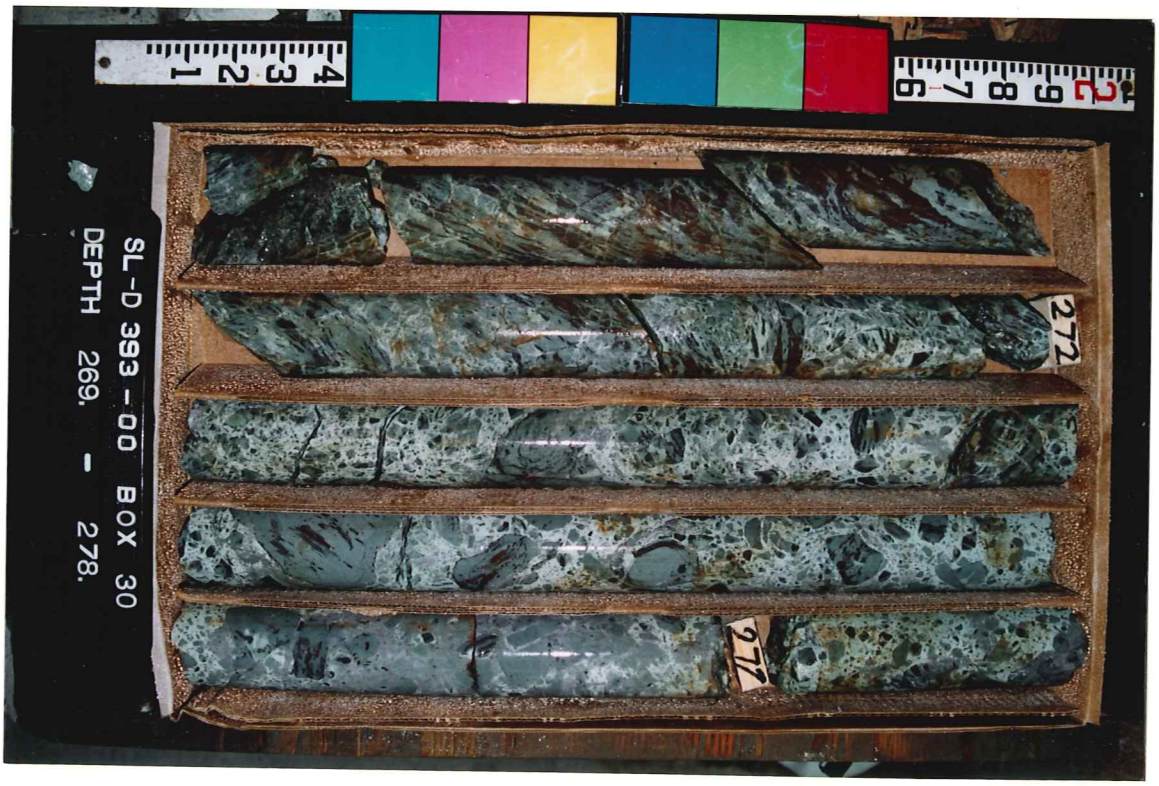
237
232
SL-D 393-00 BOX 26
DEPTH 232. - 241.5

227
SL-D 393-00 BOX 25
DEPTH 222.1 - 232.

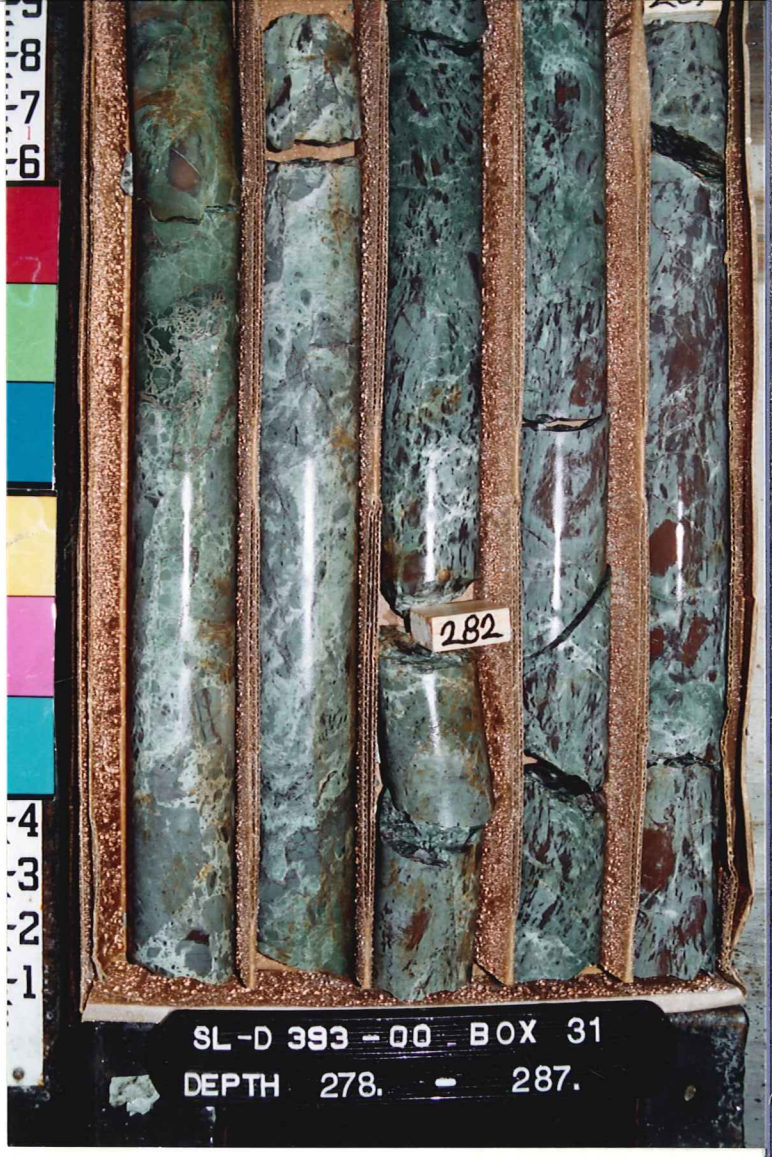
242
247
SL-D 393-00 BOX 27
DEPTH 241.5 - 251.5

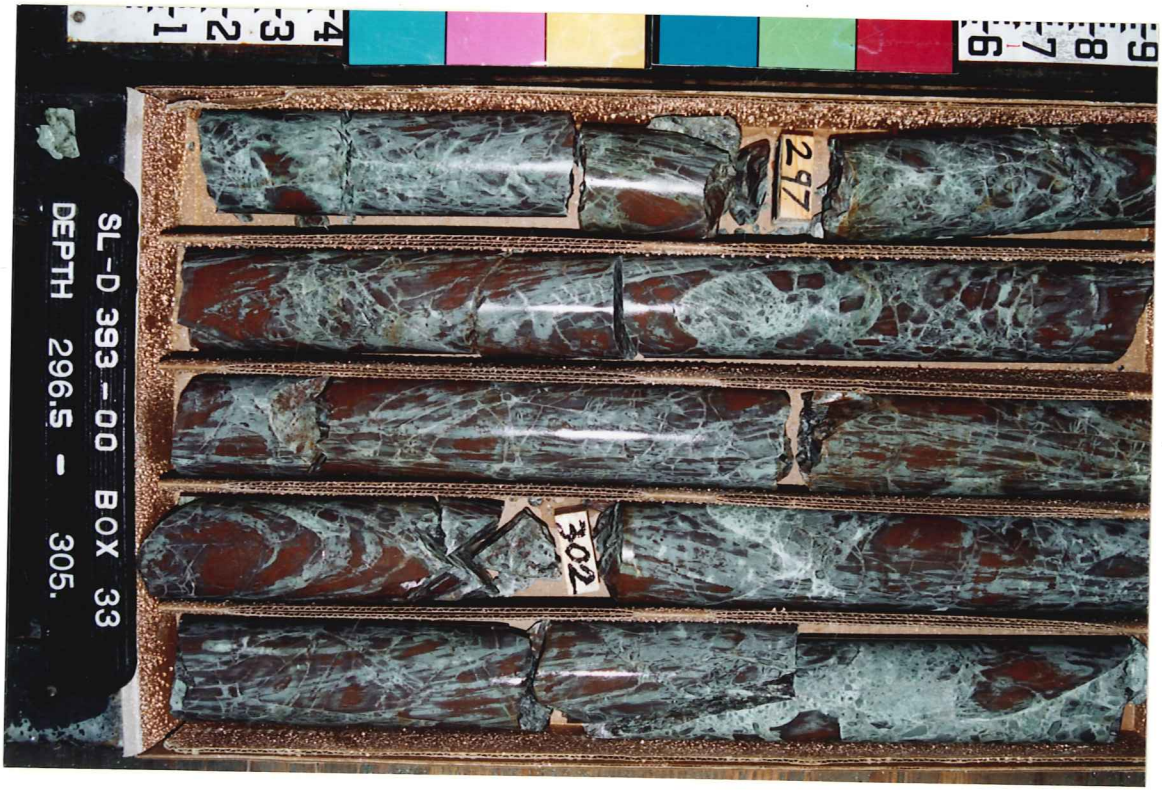
262
269
SL-D 393-00 BOX 29
DEPTH 260. - 269.

252
257
SL-D 393-00 BOX 28
DEPTH 251.5 - 260.


272
277
SL-D 393-00 BOX 30
DEPTH 269. - 278.

292
287
SL-D 393-00 BOX 32
DEPTH 287. - 296.5


282
SL-D 393-00 BOX 31
DEPTH 278. - 287.


297
302
SL-D 393-00 BOX 33
DEPTH 296.5 - 305.

317
322
SL-D 393-00 BOX 35
DEPTH 314.5 - 323.5

312
307
SL-D 393-00 BOX 34
DEPTH 305. - 314.5

327
332
SL-D 393-00 BOX 36
DEPTH 323.5 - 332.5

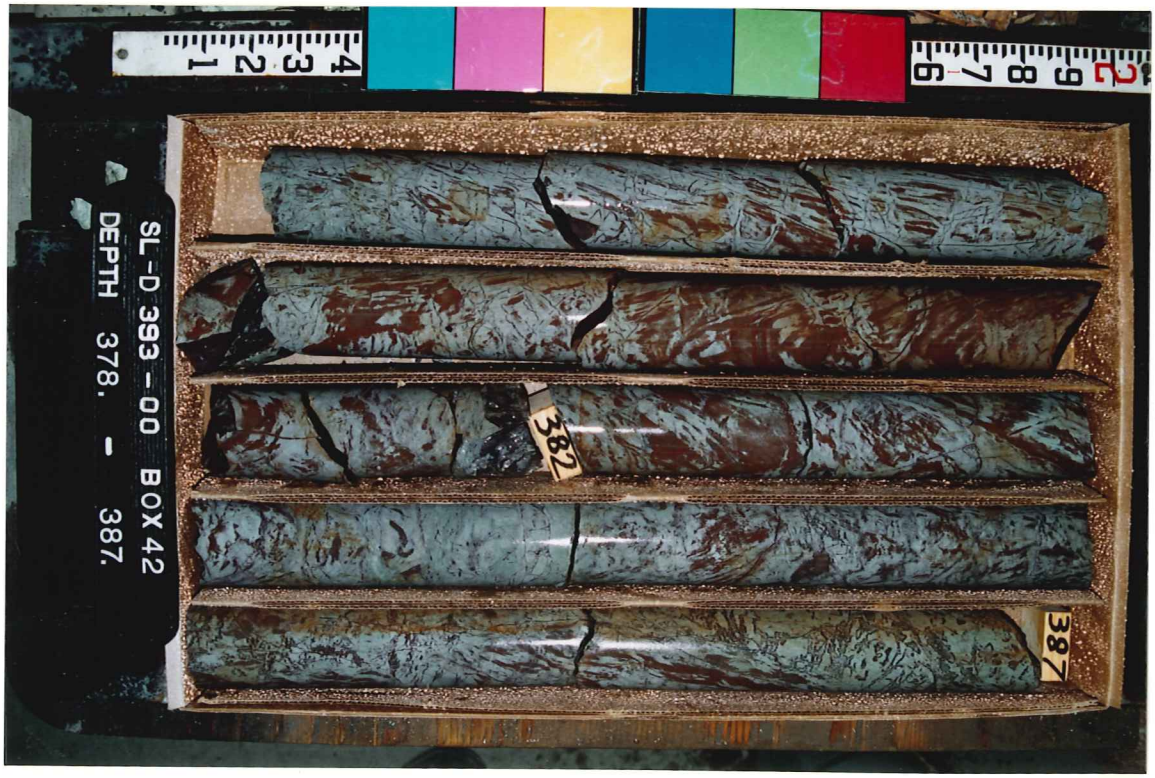
347
342
SL-D 393-00 BOX 38
DEPTH 341.5 - 351.

337
SL-D 393-00 BOX 37
DEPTH 332.5 - 341.5

352
357
SL-D 393-00 BOX 39
DEPTH 351. - 360.

372
377
SL-D 393 - 00 BOX 41
DEPTH 369. - 378.

362
367
SL-D 393 - 00 BOX 40
DEPTH 360. - 369.


382
387
SL-D 393 - 00 BOX 42
DEPTH 378. - 387.

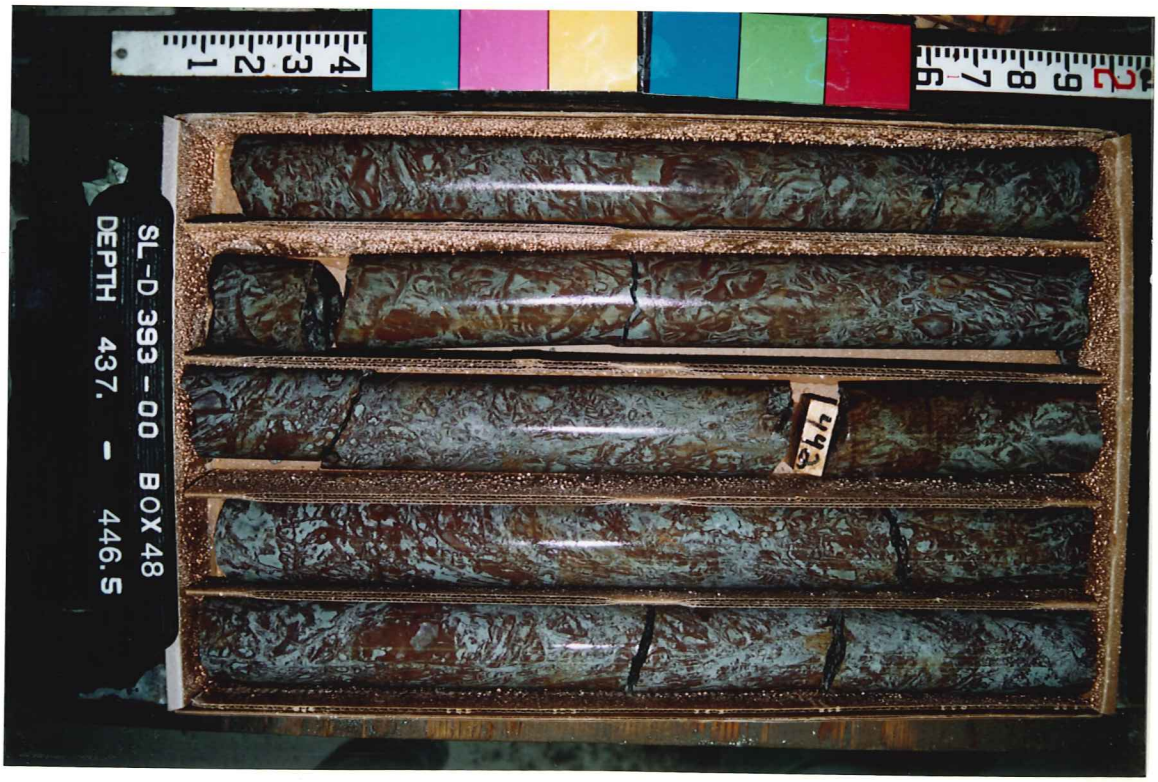
397
402
SL-D 393-00 BOX 44
DEPTH 396.5 - 405.

392
SL-D 393-00 BOX 43
DEPTH 387. - 396.5

407
419
SL-D 393-00 BOX 45
DEPTH 405. - 419.

437
432
SL-D 393 - 00 BOX 47
DEPTH 427.5 - 437.

422
427
SL-D 393 - 00 BOX 46
DEPTH 419. - 427.5


SL-D 393 - 00 BOX 48
DEPTH 437. - 446.5
443

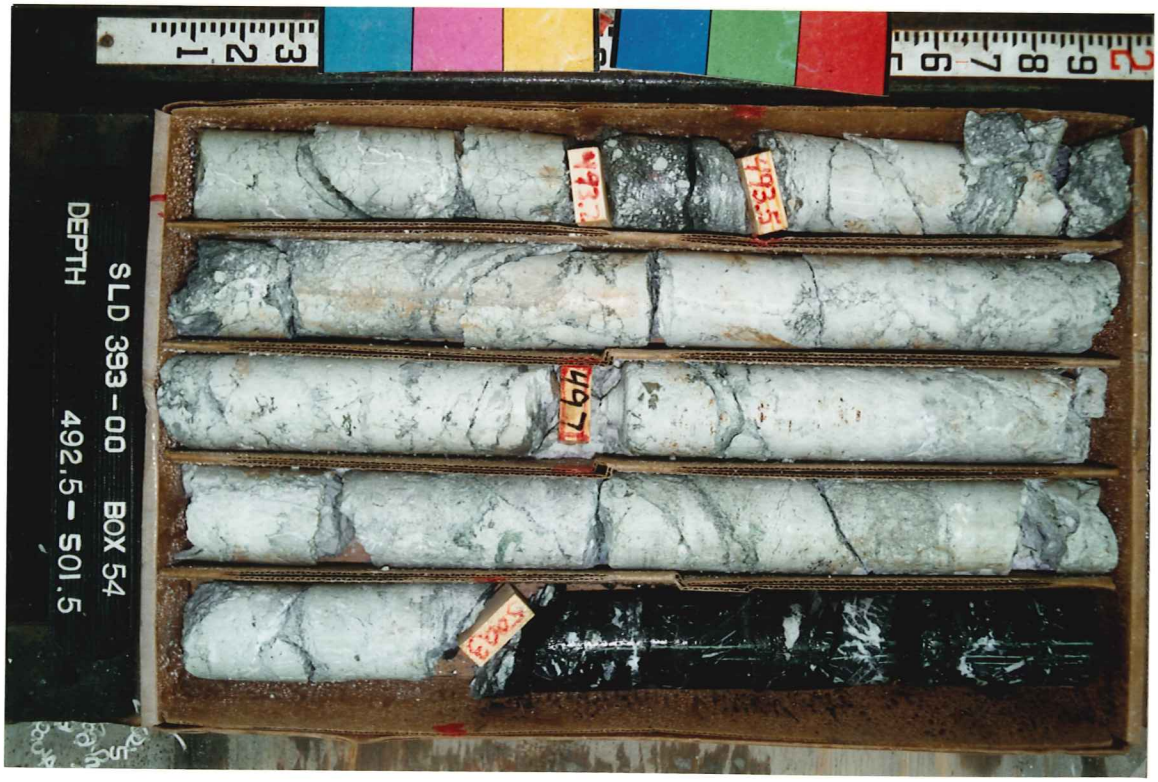
465.2
457
SLD 393-00 BOX 50
DEPTH 456. - 465.3

452
447
SL-D 393-00 BOX 49
DEPTH 446.5 - 456.

467
468
474
473
SLD 393-00 BOX 51
DEPTH 465.3 - 474.5

SLD 393-00 BOX 53
DEPTH 484. - 492.5

SLD 393-00 BOX 52
DEPTH 474.5 - 484.


SLD 393-00 BOX 54
DEPTH 492.5 - 501.5

SLD 393-00 BOX 56
DEPTH 511. - 520.

SLD 393-00 BOX 55
DEPTH 501.5- 511.

SL-D 393-00 BOX 57
DEPTH 520. - 528.

537
542
SL-D 393-00 BOX 59
DEPTH 537. - 546.

537
532
SL-D 393-00 BOX 58
DEPTH 528. - 537.

547
552
SL-D 393-00 BOX 60
DEPTH 546. - 554.5

572
SL-D 393 - 00 BOX 62
DEPTH 563. - 572.

557
562
SL-D 393 - 00 BOX 61
DEPTH 554.5 - 563.

572
577
SL-D 393 - 00 BOX 63
DEPTH 572. - 581.5

592
SL-D 393 - 00 BOX 65
DEPTH 590.5 - 592. TD

587
SL-D 393 - 00 BOX 64
DEPTH 581.5 - 590.5

WELL SL-D-393

DEPTH 598

PICTURE NO. 4

INCLINATION -64°

OBS. DIR.

COR. DIR.

TOOL FACE

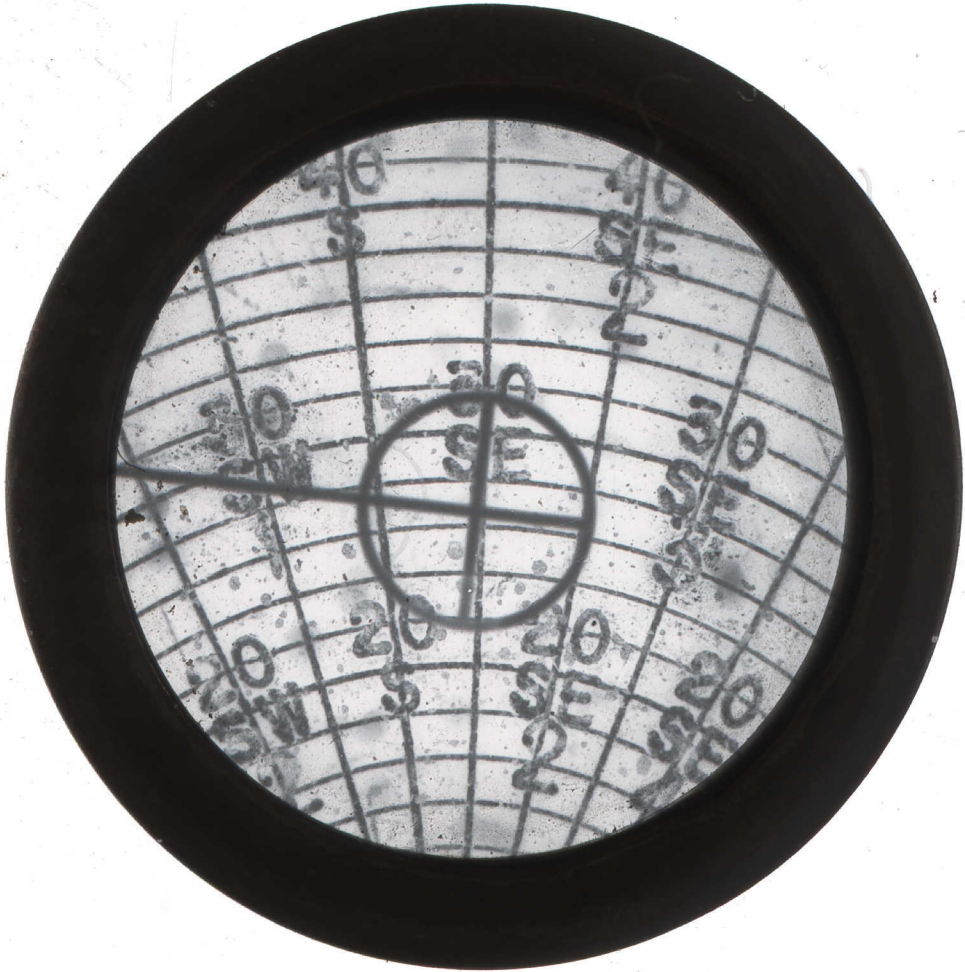
RUN BY CS.

DATE 2-24-00

CHECKED BY

sperry-sun

DRILLING SERVICES


40
S
40
SE
2
10
SW
20
SE
30
SE
20
S
20
SE
2
10
SW
20
S
20
SE
2

WELL SL-D-393

DEPTH 457'

PICTURE NO. 3 ~~64~~

INCLINATION -64°63°

OBS. DIR. 1° SE

COR. DIR.

TOOL FACE

RUN BY C.

DATE 2-23-00

CHECKED BY

sperry-sun

DRILLING SERVICES

WELL SLA-393

DEPTH 252'

PICTURE NO.

INCLINATION .64

OBS. DIR.

COR. DIR.

TOOL FACE

RUN BY G. GADDIE

DATE 2-23-99

CHECKED BY

sperry-sun

DRILLING SERVICES

WELL SL-D-393

DEPTH 52

PICTURE NO. 1

INCLINATION .64°

OBS. DIR.

COR. DIR.

TOOL FACE

RUN BY CL

DATE 2-22-00

CHECKED BY

sperry-sun

DRILLING SERVICES

S
40
SE
30
SE
20
SE
10
SE
10
SW
20
SW
30
SW
40
SW
S
10
SE
20
SE
30
SE
40
SE