WBS: 1.2.5.3.6
QA: N/A
NR94030405

Data Request
For

Data Tracking Numbers
LA000000000026.002
Topical Report
Evaluation of the Potentially Adverse Conditions
"Evidence of Extreme Erosion During the Quaternary Period"
at Yucca Mountain, NV
Rock-Varnish Cation-Ratio Calibration Curve Site with Data.

9404110346 940331
PDR WASTE
WM-11 PDR

WBS: 1.2.5.3.6
QA: N/A

GENISES
Quality Report

Dtn: LA000000000026.002 Qualified: Y Wbs: 1.2.3.2.5.5.1

Report No:na

Title: TOPICAL REPORT - EVALUATION OF THE POTENTIALLY ADVERSE CONDITION, "EVIDENCE OF EXTREME EROSION DURING THE QUATERNARY PERIOD", ROCK-VARNISH CATION-RATIO CALIBRATION CURVE SITES WITH DATA.

Submittal Date 15-jan-1993

Activity Number 8.3.1.6.1.1.3

Governing Plan SCPB

Test No:na Sample No: na

Test Location LANL

Start Date: 01-jul-1986 End Date: 30-jun-1991

GENISES Processing Information

Date_received: 22-feb-1993

Tracking No: qr93022205 GENISES Document Tracking NumberD1670

Processing Equipment: SUN SPARCstation2

System Operating System: SUNOS 4.1.3

Software: Ingres (Version 6.4/02) ARC/INFO (Version 6.1.1)

Status: ACCEPTED Date Accepted Into GENISES 15-jun-1993

Date All Processing was Completed

The quality of the data identified above is the responsibility of the submitting participant organization. For more information please contact Elaine Ezra EG&G/EM RSL YMP Project Manager at (702) 794-7449 or Jim Beckett GENISES Databas Admistrator at (702) 794-7448.

The following digital files are provided in support of Yucca Mountain Project Data Tracking Number LA000000000026.002 Rock-Varnish Cation Ratio Data for Boulder Deposits on Yucca Mountain Area Hill slopes and Rock-Varnish Dating Curve Calibration Sites.

q93022205.dat - This file contains the Rock-Varnish Dating Curve Calibration Sites data extracted from the GENISES database. The following information lists the column name for each field in the order provided. Each column is coma delimited for entry into a users database.

Column	Item
1	ref_no
2	field_id
3	d1_10
4	d1_10_note
5	d1_15
6	d1_15_note
7	d1_20
8	d1_20_note
9	d1_25
10	d1_25_note
11	d1_30
12	d1_30_note
13	d2_10
14	d2_10_note
15	d2_15
16	d2_15_note
17	d2_20
18	d2_20_note
19	d2_25
20	d2_25_note
21	d2_30
22	d2_30_note
23	vcr_site
24	lab_id
25	qa
26	Data tracking number

Note : Hardcopy is provided with this submittal.

q93022205.dic - This file contains the data dictionary for the q93022205.dat file. In addition to the information provided an additional field was added to the g93022205.dat file to reference the Data Tracking number associated with this data package.

Note : Hardcopy is provided with this submittal.

footnote.rep - This file contains a description of the footnotes referenced in the dat files. The footnotes were copied from the original document and added to the GENISES footnote master file. In order to accomplish this, the original footnote symbol was translated to a unique identifier. this is provided in the .dat file and the footnote file.

Note : Hardcopy is provided with this submittal.

The following files are provided as copies of the original files provided to GENISES from the participants. These files were provided in Word Perfect format.

40lter.05
40ma.05
bclava.05
rclava.05
crater.05

The following spatial data file is provide in ARC/INFO export format . A hardcopy of the data dictionary for the INFO attributes is included.

Description of DOUBLE precision coverage bdssdpg

ARCS		POLYGONS	
Arcs	= 0	Polygons	= 0
Segments	= 0	There is NO Polygon Topology.	
0 bytes of Arc Attribute Data		0 bytes of Polygon Attribute Data	

NODES		POINTS	
Nodes =	0	Label Points =	17
0 bytes of Node Attribute Data		190 bytes of Point Attribute Data	

ANNOTATIONS

Subclass	Annotations	Text Attribute Data
(blank):	17	0 bytes

TOLERANCES		SECONDARY FEATURES	
Fuzzy =	0.000 N	Tics =	4
Dangle =	0.000 N	Links =	0

COVERAGE BOUNDARY

Xmin =	-118.331	Ymin =	34.739
Xmax =	-118.331	Ymax =	34.739

STATUS

The coverage has not been Edited since the last BUILD or CLEAN.

COORDINATE SYSTEM DESCRIPTION

Projection	GEOGRAPHIC		
Datum	NAD27		
Units	DD	Spheroid	CLARKE1866
Parameters:			

WBS: 1.2.5.3.6
QA: NA

GENISES Data Dictionary

GEOLOGICAL HISTORY

qr93022205 (File Id) — Rock-Varnish Dating Calibration Sites with data. This data is provided as part of a Topical Report - Evaluation of the Potentially Adverse Condition " EVIDENCE OF EXTREME EROSION DURING THE QUATERNARY PERIOD" Rock-Varnish Cation-Ration Calibration Curve Sites.

Attribute	Description	Domain	Parameter No.
d1_10	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 10 KEV	Floating Point	
d1_10_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 10 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	
d1_15	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 15 KEV	Floating Point	
d1_15_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 15 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	
d1_20	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 20 KEV	Floating Point	
d1_20_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 20 KEV footnote	Character(5)	

GENISES Data Dictionary

GEOLOGICAL HISTORY

qr93022205 (File Id)	Rock-Varnish Dating Calibration Sites with data. This data is provided as part of a Topical Report - Evaluation of the Potentially Adverse Condition " EVIDENCE OF EXTREME EROSION DURING THE QUATERNARY PERIOD" Rock-Varnish Cation-Ration Calibration Curve Sites.

Attribute	Description	Domain	Parameter No.
	reference key. Use to lookup footnote information in footnote file.		
d1_25	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 25 KEV	Floating Point	
d1_25_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 25 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	
d1_30	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 30 KEV	Floating Point	
d1_30_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 1 - 30 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	
d2_10	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 10 KEV	Floating Point	

GENISES Data Dictionary

GEOLOGICAL HISTORY

qr93022205 (File Id) Rock-Varnish Dating Calibration Sites with data. This data is provided as part of a Topical Report - Evaluation of the Potentially Adverse Condition " EVIDENCE OF EXTREME EROSION DURING THE QUATERNARY PERIOD" Rock-Varnish Cation-Ration Calibration Curve Sites.

Attribute	Description	Domain	Parameter No.
d2_10_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 10 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	
d2_15	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 15 KEV	Floating Point	
d2_15_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 15 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	
d2_20	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 20 KEV	Floating Point	
d2_20_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 20 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	

GENISES Data Dictionary

GEOLOGICAL HISTORY

qr93022205 (File Id) Rock-Varnish Dating Calibration Sites with data. This data is provided as part of a Topical Report - Evaluation of the Potentially Adverse Condition " EVIDENCE OF EXTREME EROSION DURING THE QUATERNARY PERIOD" Rock-Varnish Cation-Ration Calibration Curve Sites.

Attribute	Description	Domain	Parameter No.
d2_25	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 25 KEV	Floating Point	
d2_25_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 25 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	
d2_30	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 30 KEV	Floating Point	
d2_30_note	Harrington and Whitney 1987 scanning electron microscope method for rock-varnish dating Disk 2 - 30 KEV footnote reference key. Use to lookup footnote information in footnote file.	Character(5)	
field_id	Field ID Number assigned by PI to uniquely identify the location of the sample taken from the field	Character(20)	
jb_no	jb_no	Integer	
lab_id	Lab ID Number assigned by the PI to uniquely identify the lab analysis	Character(15)	

GENISES Data Dictionary

GEOLOGICAL HISTORY

qr93022205 (File Id) Rock-Varnish Dating Calibration Sites with data. This data is provided as part of a Topical Report - Evaluation of the Potentially Adverse Condition " EVIDENCE OF EXTREME EROSION DURING THE QUATERNARY PERIOD" Rock-Varnish Cation-Ration Calibration Curve Sites.

Attribute	Description	Domain	Parameter No.
	with the field sample		
qa	Indicates if submitter collected the data under an approved Quality Assurance program. This information is provided by the data submittal organization on the documentation. Y = Yes N = No	Character(2)	
ref_no	The ref_no or reference number is used to link spatial data sets to tabular data sets. This item should only be used by the database administrator as a change to this field will affect linkage of all files.	Integer	
skey	skey	Character(20)	
vcr_site	VCR Site assigned by the PI to uniquely identify analysis	Integer	

Footnote listing for TDB table

Note Id	Original Note	Footnote
1	*	VCRS USED IN CALCULATING MEAN VCR
2	*OM	VCRS USED IN CALCULATING MEAN; HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS
3	OM	HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

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14,H100285-27,,,,,,,3.989,,3.858,1,,,,,4.023,,3.702,,3.656,1,6,40MU,Y,LA000000000026.002
14,H100285-27,,,,,,,,,,,,,,,,,,3.791,,3.686,1,7,40MU,Y,LA000000000026.002
14,H100285-27,,,,,,,4.557,,4.327,,4.153,1,,,,,,,3.454,1,3.580,,5,40MU,Y,LA000000000026.002
14,H100285-27,,,,,,,4.395,,4.186,1,,,,,,3.856,,3.759,,3.740,2,,,3,40MU,Y,LA000000000026.002
14,H100285-27,,,,,,,4.264,,4.248,2,,,,,,,3.644,1,3.759,,,,1,40MU,Y,LA000000000026.002
14,H100285-27,,,,,,,4.248,,3.937,1,,,,,,3.904,,3.719,2,3.746,,,,4,40MU,Y,LA000000000026.002
14,H100285-27,,,,,,,4.008,,3.826,1,,,,,,3.130,0,3.436,,,,,,,2,40MU,Y,LA000000000026.002
14,H100285-28,3.821,,3.795,1,3.857,,,,,,,,,,,,3.265,1,,,4,40MV,Y,LA000000000026.002
14,H100285-28,,,3.594,1,3.932,,,,,,,,,,,,3.452,1,,,6,40MV,Y,LA000000000026.002
14,H100285-28,,,3.481,1,3.575,,3.993,,,,,,3.923,,3.828,,3.531,1,,,2,40MV,Y,LA000000000026.002
14,H100285-28,,,3.987,,3.948,2,,,,,,,,,3.594,3,,,3,40MV,Y,LA000000000026.002
14,H100285-28,,,3.411,1,4.147,,3.890,,,,,,3.610,,3.524,1,,,,,1,40MV,Y,LA000000000026.002
14,H100285-28,,,3.419,,3.316,1,,,,,,,,,3.557,,3.512,,,,5,40MV,Y,LA000000000026.002
16,H100385-20,,,,,,,,,3.041,,,,,,,,,,3.456,3,3,RCM,Y,LA000000000026.002
16,H100385-20,,,,,,,,,3.118,,,,,,,,,,3.462,3,7,RCM,Y,LA000000000026.002
16,H100385-20,,,,,,,,,3.273,3,,,,,,,,,3.197,,1,RCM,Y,LA000000000026.002
16,H100385-20,,,,,,,,,3.627,3,,,,,,,,,3.245,,2,RCM,Y,LA000000000026.002
16,H100385-20,,,,,,,,,3.162,,,,,,,,,,3.103,,4,RCM,Y,LA000000000026.002
16,H100385-20,,,,,,,,,3.258,,,,,,,,,,3.188,,6,RCM,Y,LA000000000026.002
16,H100385-20,,,,,,,,,2.703,,,,,,,,,,3.324,,5,RCM,Y,LA000000000026.002
16,H100385-21,,,,,,,,,2.505,3,,,,,,,,,2.391,3,4,RCN,Y,LA000000000026.002
16,H100385-21,,,,,,,,,2.409,,,,,,,,,,2.105,,2,RCN,Y,LA000000000026.002
16,H100385-21,,,,,,,,,2.228,,,,,,,,,,2.222,,3,RCN,Y,LA000000000026.002
16,H100385-21,,,,,,,,,2.270,,,,,,,,,,2.228,,5,RCN,Y,LA000000000026.002
16,H100385-21,,,,,,,,,2.324,,,,,,,,,,2.237,,6,RCN,Y,LA000000000026.002
16,H100385-21,,,,,,,,,2.423,,,,,,,,,,2.258,,1,RCN,Y,LA000000000026.002
16,H100385-22,,,,,,,,,2.115,,,,,,,,,,2.249,3,4,RCO,Y,LA000000000026.002
16,H100385-22,,,,,,,,,2.185,,,,,,,,,,2.266,3,5,RCO,Y,LA000000000026.002
16,H100385-22,,,,,,,,,2.449,3,,,,,,,,,2.076,,2,RCO,Y,LA000000000026.002
16,H100385-22,,,,,,,,,2.469,3,,,,,,,,,2.126,,7,RCO,Y,LA000000000026.002
16,H100385-22,,,,,,,,,2.139,,,,,,,,,,2.095,,6,RCO,Y,LA000000000026.002
16,H100385-22,,,,,,,,,2.422,,,,,,,,,,2.121,,1,RCO,Y,LA000000000026.002
16,H100385-22,,,,,,,,,2.373,,,,,,,,,,2.211,,3,RCO,Y,LA000000000026.002
16,H100385-23,,,,,,,,,3.174,3,,,,,,,,,2.405,3,7,RCP,Y,LA000000000026.002
16,H100385-23,,,,,,,,,3.296,3,,,,,,,,,2.421,3,2,RCP,Y,LA000000000026.002
16,H100385-23,,,,,,,,,2.887,,,,,,,,,,2.101,,3,RCP,Y,LA000000000026.002
16,H100385-23,,,,,,,,,3.099,,,,,,,,,,2.256,,6,RCP,Y,LA000000000026.002
16,H100385-23,,,,,,,,,2.731,,,,,,,,,,2.265,,4,RCP,Y,LA000000000026.002
16,H100385-23,,,,,,,,,3.089,,,,,,,,,,2.304,,1,RCP,Y,LA000000000026.002
16,H100385-23,,,,,,,,,3.091,,,,,,,,,,2.403,,5,RCP,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.764,3,,,,,,,,,2.579,3,4,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.495,3,,,,,,,,,2.700,3,1,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.179,,,,,,,,,,2.580,3,8,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.421,3,,,,,,,,,2.435,,5,RCT,Y,LA000000000026.002
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16,H100385-24,,,,,,,,,2.443,3,,,,,,,,,2.379,,7,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.697,3,,,,,,,,,2.427,,6,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.552,3,,,,,,,,,2.557,,2,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.202,,,,,,,,,,2.333,,3,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.084,,,,,,,,,,,,*,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.352,,,,,,,,,,,,*,RCT,Y,LA000000000026.002
16,H100385-24,,,,,,,,,2.365,,,,,,,,,,,,9,RCT,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.851,3,,,,,,,,,2.665,3,*,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.710,3,,,,,,,,,2.916,3,3,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.610,3,,,,,,,,,3.146,3,1,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.600,,,,,,,,,,2.677,3,8,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.556,,,,,,,,,,2.748,3,2,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.347,,,,,,,,,,3.332,3,9,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.714,3,,,,,,,,,2.383,,4,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.672,3,,,,,,,,,2.552,,7,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.478,,,,,,,,,,2.243,,5,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.522,,,,,,,,,,2.412,,*,RCU,Y,LA000000000026.002
16,H100385-25,,,,,,,,,2.582,,,,,,,,,,2.583,,6,RCU,Y,LA000000000026.002
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CATION RATIO DATA FOR CALIBRATION OF ROCK VARNISH DATING CURVE
FOR YUCCA MOUNTAIN AREA

FIELD SITE:CRATER FLAT ALLUVIAL SURFACE
FIELD ID NUMBER: 23068503-A LAB ID NUMBER: CF3A

	DISK 1			DISK 2		
KEV	10	15	20	10	15	20
VCR						
SITE 1		8.576*OM	8.690	7.106*	9.588	10.577
2		7.152*		17.269	10.221*OM	12.518
3	6.408*	8.750		7.439*	11.133	
4	7.518	6.141*		7.333*		
5	5.639*	8.196		8.250*	9.720	
6	5.806*			8.510*	12.900	

DISK 1 MEAN VCR 6.229 DISK 2 MEAN VCR 7.728

* = ANALYSIS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: CRATER FLAT ALLUVIAL SURFACE
FIELD ID NUMBER: 23068503-B LAB ID NUMBER: CF3B

	DISK 1			DISK 2		
KEV	10	15	20	10	15	20
VCR						
SITE 1	7.070	6.891*		11.724	7.802*	
2		6.672*			9.588*	
3	10.117	8.691*OM	9.216		6.293*	
4		6.254*			10.781*OM	
5	5.460*	9.355			8.923*	
6	5.536*				8.109*	

DISK 1 MEAN VCR 6.163 DISK 2 MEAN VCR 8.143

* = ANALYSIS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE:CRATER FLAT ALLUVIAL SURFACE

FIELD ID NUMBER: 23068503-C LAB ID NUMBER: CF3C

KEV	DISK 1 10	DISK 1 15	DISK 1 20	DISK 2 15	DISK 2 20	DISK 2 25
VCR SITE 1	3.886	3.564*	3.891	6.039	5.803	5.732*
2		3.218*				6.378*OM
3		3.668*OM			5.408*	6.503
4		3.172*			5.023*	
5		3.621*			5.276*	
6		2.834*	2.894		3.995*	

DISK 1 MEAN VCR 3.282 DISK 2 MEAN VCR 5.087

* = ANALYSIS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE:CRATER FLAT ALLUVIAL SURFACE
FIELD ID NUMBER: 23068503-D LAB ID NUMBER: CF3D

KEV	DISK 1 15	DISK 1 20	DISK 1 25	DISK 2 15	DISK 2 20	DISK 2 25
VCR SITE 1	12.351	6.835*	7.550	6.901	6.125*	6.712
2		6.180*			6.982	6.441*
3		7.369*			6.543*	7.813
4	9.419	8.902*OM	11.250		5.055*	
5		7.278*			5.255*	
6	8.300*	13.027	9.553	ONLY 5 SITES ANALYZED		

DISK 1 MEAN VCR 7.192 DISK 2 MEAN VCR 5.884

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE:CRATER FLAT ALLUVIAL SURFACE
FIELD ID NUMBER: 23068503-E LAB ID NUMBER: CF3E

	DISK 1			DISK 2		
KEV	15	20	25	15	20	25
VCR SITE 1	8.728	8.229*	10.581	5.813*	7.114	
2	8.434*	12.802	11.753	6.098*		
3	6.433*			5.149*		
4	9.077*OM			6.185*OM		
5	6.888*			5.479*		
6	7.640*			5.115*		

DISK 1 MEAN VCR 7.525 DISK 2 MEAN VCR 5.531

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE:CRATER FLAT ALLUVIAL SURFACE
FIELD ID NUMBER: 23068503-F LAB ID NUMBER: CF3F

	DISK 1			DISK 2		
KEV	15	20	10	15	20	25
VCR SITE 1	3.189*	3.540		9.580	7.935*	
2	3.387*			9.738	8.940*OM	13.792
3	3.012*			7.679*	10.011	
4	3.565*OM			8.765	6.859*	
5	2.968*				6.949*	
6	2.885*		6.775*	8.635	10.563	

DISK 1 MEAN VCR 3.088 DISK 2 MEAN VCR 7.239

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE:CRATER FLAT ALLUVIAL SURFACE
FIELD ID NUMBER: 23068503-G LAB ID NUMBER: CF3G

	DISK 1			DISK 2		
KEV	10	15	20	10	15	20
VCR SITE 1		3.422*	4.167	7.554	6.126*	9.220
2		3.469*			6.200*	
3		3.971*	4.010		6.713*	
4		4.340*OM	4.161		6.621*	7.630
5		3.796*		12.591	8.411*OM	16.407
6		3.962*			8.295	

DISK 1 MEAN VCR 3.724 DISK 2 MEAN VCR 6.791

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE:CRATER FLAT ALLUVIAL SURFACE
FIELD ID NUMBER: 23068503-H LAB ID NUMBER: CF3H

	DISK 1			DISK 2		
KEV	10	15	20	10	15	20
VCR SITE 1	10.970	7.104*	7.159	8.070*OM	10.623	11.762
2		8.614	6.991*	9.169	7.195*	
3		8.989	8.657*OM		9.081	6.438*
4			8.330*			6.777*
5		6.664*	8.979		7.114*	7.982
6		6.972*		4.644*	9.368	

DISK 1 MEAN VCR 7.212 DISK 2 MEAN VCR 6.434

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE:CRATER FLAT ALLUVIAL SURFACE
FIELD ID NUMBER: 23068503-I LAB ID NUMBER: CF3I

	DISK 1		DISK 2		
KEV	15	20	10	15	20
VCR SITE 1	5.471*	5.881	7.903*	9.467	11.083
2	5.875*OM		10.028	9.640	8.374*
3	4.794*				8.674*
4	5.053*			8.892	8.724*OM
5	5.179*		8.467	8.229*	11.410
6	5.065*			6.723*	

DISK 1 MEAN VCR 5.112 DISK 2 MEAN VCR 7.981

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

TABLE OF DISK VCRS USED TO CALCULATE CATION RATIO FOR DEPOSIT: CRATER FLAT ALLUVIAL SURFACE (CF3) CALIBRATION POINT (PUBLISHED IN TABLE 1, HARRINGTON AND WHITNEY, 1987, SCANNING ELECTRON MICROSCOPE METHOD FOR ROCK-VARNISH DATING: GEOLOGY, V. 15, p. 967-970).

DEPOSIT	DISK 1 VCR	DISK 2 VCR
CF3A	6.229	7.728
CF3B	6.163	8.143
CF3C	3.282	5.087
CF3D	7.192	5.884
CF3E	7.525	5.531
CF3F	3.088	7.239
CF3G	3.724	6.791
CF3H	7.212	6.434
CF3I	5.112	7.981

MEAN VCR FOR CRATER FLAT ALLUVIAL SURFACE (CF3) 6.00+/-1.00

CATION RATIO DATA FOR CALIBRATION OF ROCK VARNISH DATING CURVE
FOR YUCCA MOUNTAIN AREA

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: 22068501-A LAB ID NUMBER: 40LA

	DISK 1				DISK 2				
KEV	10	15	20	25	10	15	20	25	
VCR SITE									
1			8.330*OM	11.384	9.494	8.171*	9.196		
2		7.483*	9.962	9.306		8.698*	9.223		3
		8.204*			34.217	10.868	10.247*OM	10.990	4
	6.325*	9.421	11.494				11.057*OM		
5	5.336*	8.152			9.488*	10.671	11.152	10.491	6
	7.478*					9.304		8.905*	7
						8.009*			

DISK 1 MEAN VCR 6.965 DISK 2 MEAN VCR 8.964

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: 22068501-B LAB ID NUMBER: 40LB

	DISK 1			DISK 2	
KEV	20	25	30	20	25
VCR SITE 1	6.744	6.392*OM	6.478	4.953*	5.789
2		5.890*		6.252	5.728*
3		5.565*		5.741*	6.411
4		5.932*		5.937*	6.289
5		5.469*		5.427*	
6	6.097	6.041*		8.000	6.919*OM

DISK 1 MEAN VCR 5.779 DISK 2 MEAN VCR 5.557

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)

FIELD ID NUMBER: 22068501-C LAB ID NUMBER: 40LC

	DISK 1			DISK 2	
KEV	15	20	25	20	25
VCR SITE 1		4.419	4.349*	4.423*	4.717
2			4.578*	5.465	4.872*OM
3	4.150*	4.570	5.043		4.466*
4	4.823	4.630	4.500*	4.803*	4.960
5	5.016*OM	5.087	5.226	4.582*	
6	4.724	4.956	4.579*	4.752	4.370*

DISK 1 MEAN VCR 4.431 DISK 2 MEAN VCR 4.529

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: 22068501-D LAB ID NUMBER: 40LD

	DISK 1			DISK 2		
KEV	15	20	15	20	25	30
VCR SITE 1	4.660*	5.189	11.177	10.911	9.342*	
2	4.179*		9.860	9.757*	12.744	
3	4.932*OM		14.379	15.015	10.714	9.946*
4	4.398*				11.710*OM	13.596
5	4.096*			19.792	12.382	10.972*
6	4.338*					9.180*

DISK 1 MEAN VCR 4.334 DISK 2 MEAN VCR 9.839

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: 22068501-E LAB ID NUMBER: 40LE

KEV	DISK 1 10	DISK 1 15	DISK 1 20	DISK 1 25	DISK 2 15	DISK 2 20	DISK 2 25
VCR SITE 1		5.752*	7.197	6.815	6.009*		
2	4.468*	6.307	6.748		6.287	5.341*	
3	6.400	4.944*			6.339*OM	8.068	6.661
4	3.671*	6.274	6.688			4.909*	5.871
5	4.890*					4.082*	
6	5.957*OM	6.452				5.231*	

DISK 1 MEAN VCR 4.745 DISK 2 MEAN VCR 5.114

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: 22068501-F LAB ID NUMBER: 40LF

KEV	DISK 1 20	DISK 2 10	DISK 2 15	DISK 2 20	DISK 2 25
VCR SITE 1	2.721*		5.794*	6.880	
2	4.047*	4.392*	6.319		
3	4.377*OM	7.155	6.466*OM	6.695	6.549
4	3.678*		6.886	5.950*	
5	3.734*		6.464		5.690*
6	3.187*				6.431*

DISK 1 MEAN VCR 3.473 DISK 2 MEAN VCR 5.651

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: 22068501-G LAB ID NUMBER: 40LG

DISK 1 DISK 2

KEV	15	20	25	20	25	30
VCR SITE 1	5.543	4.933*OM		5.052	5.056*OM	5.311
2		4.913	4.766*	4.878*	5.207	
3			4.565*	5.321	4.683*	
4			4.595*		4.541*	
5		4.589*	5.061	5.536	5.039*	5.070
6		4.856	4.500*		5.133	4.768*

DISK 1 MEAN VCR 4.603 DISK 2 MEAN VCR 4.728

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: H100285-14 LAB ID NUMBER: 40LM

	DISK 1			DISK 2		
KEV	15	20	25	10	15	20
VCR SITE 1	4.756*	5.140	6.416	9.143*	10.628	11.256
2	4.598*			11.694	10.841*	
3	4.903	4.644*		7.713*	11.645	
4	4.489*	5.771	7.041	14.982	13.104	12.013*OM
5	4.640*			10.644*	19.885	13.859
6	4.871*OM		6.243	6.659*		

DISK 1 MEAN VCR 4.625 DISK 2 MEAN VCR 9.000

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: H100285-15 LAB ID NUMBER: 40LN

DISK 1 DISK 2

KEV	15	20	25	10	15	20
VCR						
SITE 1	3.784	3.674*	4.065	9.790	6.557*	8.008
2	3.926*	4.221	4.474		6.220*	
3	3.576*			6.831*OM	8.755	7.541
4	4.231*OM					6.259*
5	4.160*	4.433			6.624*	
6	3.768*				6.493*	

DISK 1 MEAN VCR 3.821 DISK 2 MEAN VCR 6.430

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: H100285-16 LAB ID NUMBER: 40LO

	DISK 1			DISK 2		
KEV	20	25	30	10	15	20
VCR						
SITE 1	5.632	5.391*			10.862	8.296*
2	4.937*	5.412	5.609			8.007*
3	6.118	5.743*		6.336*	13.368	10.427
4	7.071	5.908*OM		5.987	8.750*OM	
5	5.583	5.471*		17.277	8.5663*	
6	5.362 5.103*			7.584*		

DISK 1 MEAN VCR 5.329 DISK 2 MEAN VCR 7.757

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B)
FIELD ID NUMBER: H100285-17 LAB ID NUMBER: 40LP

DISK 1 DISK 2

KEV	10	15	20	20	25
VCR SITE 1	11.167*OM	12.989		4.445*	5.397
2	8.087	12.371		3.696*	
3	12.520	10.624*	13.371	4.566*	
4		8.488*		4.822*OM	5.735
5		7.795*		4.737*	
6		6.738*		4.280*	

DISK 1 MEAN VCR 8.346 DISK 2 MEAN VCR 4.344

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

TABLE OF DISK VCRS TO BE USED TO CALCULATE CATION RATIO FOR DEPOSIT: FORTYMILE WASH LOWER ALLUVIAL TERRACE (Q2B) CALIBRATION POINT (PUBLISHED IN TABLE 1, HARRINGTON AND WHITNEY, 1987, SCANNING ELECTRON MICROSCOPE METHOD FOR ROCK-VARNISH DATING: GEOLOGY, V. 15, p. 967-970).

DEPOSIT	DISK 1 VCR	DISK 2 VCR
40LA	6.965**	8.964**
40LB	5.779	5.557
40LC	4.431	9.839**
40LD	4.334	5.114
40LE	4.745	5.114
40LF	3.473	5.651
40LG	4.603	4.782
40LM	4.625	9.000**
40LN	3.821	6.430**
40LO	5.329	7.757**
40LP	8.346**	4.344

MEAN VCR FOR FORTYMILE WASH
LOWER ALLUVIAL TERRACE (Q2B) 4.68+/-0.53

In the samples collected from the Fortymile Wash lower alluvial terrace (Q2B), several of the samples appeared to show abrasion of the varnish and revarnishing (40LA and disk 2 from 40LC). A second collection of clasts were made that clearly possessed a stripped varnish from part of the clast with what appeared to be unmodified varnish on the opposite side of the clast (40LM-40LP).
In calculating the mean VCR for the terrace (Q2B), neither 40LA, nor disk 2 from 40LC, nor the stripped and revarnished disks from 40LM-40LP were used (all disks omitted from the VCR calculation are noted by **).

CATION RATIO DATA FOR CALIBRATION OF ROCK VARNISH DATING CURVE
FOR YUCCA MOUNTAIN AREA

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-A LAB ID NUMBER: 40MA

	DISK 1			DISK 2		
KEV	20	25	30	20	25	30
VCR SITE 1	3.932	3.854	3.833*		3.936	3.580*
2		3.692	3.656*		3.969	3.732*OM
3		3.921	3.719*			3.672*
4			3.534*			3.493*
5		4.238	3.915*OM			3.678*
6		3.612*	3.785			3.593*

DISK 1 MEAN VCR 3.671 DISK 2 MEAN VCR 3.603

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-B LAB ID NUMBER: 40MB

	DISK 1			DISK 2			
KEV	20	25	30	15	20	25	30
VCR SITE 1		5.978*	6.725	4.792*	5.168	5.885	
2		5.430*		6.627*	6.731		
3	6.358*OM	7.231	7.532	5.120*	7.600	7.557	8.207
4	4.612*			7.375	6.805*OM	7.008	
5	5.046*			5.015*	6.295	6.611	
6	5.521*			4.556*			

DISK 1 MEAN VCR 5.318 DISK 2 MEAN VCR 5.222

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-C LAB ID NUMBER: 40MC

	DISK 1			DISK 2		
KEV	10	15	20	10	15	20
VCR SITE 1	6.422*	7.526	9.867	6.972*	9.400	
2	5.933*	8.746		7.769*	8.569	
3	6.036*	7.983		7.807*	9.031	
4	6.939*	9.416		14.361	8.026*	
5	7.407*OM	7.597			6.543*	
6	7.042*	8.168			6.008*	

DISK 1 MEAN VCR 6.474 DISK 2 MEAN VCR 7.020

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-D LAB ID NUMBER: 40MD

	DISK 1		DISK 2		
KEV	15	20	15	20	25
VCR SITE 1	1.987*	1.973	2.995*OM	4.159	5.030
2		1.921*	1.771*		
3		1.614*	1.676*		
4		1.688*	1.685*		
5		2.070*OM	1.739*		
6		1.720*	2.211*	2.776	

DISK 1 MEAN VCR 1.783 DISK 2 MEAN VCR 1.816

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-E LAB ID NUMBER: 40ME

	DISK 1			DISK 2		
KEV	15	20	25	10	15	20
VCR SITE 1	3.949*	4.907	5.826	4.238*	6.239	7.347
2	6.621	6.065*OM		3.803*		
3	5.860*	7.302		3.826*		
4	4.656*			4.681*	6.288	
5	4.044*			4.006*	6.689	
6	3.902*			5.078*OM		

DISK 1 MEAN VCR 4.482 DISK 2 MEAN VCR 4.111

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-F LAB ID NUMBER: 40MF

	DISK 1			DISK 2		
KEV	10	15	20	15	20	25
VCR SITE 1	2.973	2.815*	3.050	4.645*OM	4.906	5.330
2			3.063*	3.904*		
3			3.111*	3.561*		
4			3.061*	4.184*		
5			2.881*	3.519*		
6			3.181*OM	3.059*		

DISK 1 MEAN VCR 2.986 DISK 2 MEAN VCR 3.645

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-G LAB ID NUMBER: 40MG

		DISK 1				DISK 2		
KEV		10	15	20	25	15	20	25
VCR SITE	1	9.439	6.718*OM	6.873	7.058	7.257	6.176*	6.271
	2		6.827	6.504	6.378*		5.852*	6.015
	3				5.864*		5.923	5.886*
	4				5.462			5.144*
	5		6.812	5.738*	6.520			5.141*
	6			5.865*	5.923		5.407*	6.158

DISK 1 MEAN VCR 5.861 DISK 2 MEAN VCR 5.486

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-H LAB ID NUMBER: 40MH

		DISK 1				DISK 2		
KEV		15	20	25	30	20	25	30
VCR SITE	1	6.110	5.214	5.148*		7.179	6.269	6.230*OM
	2		5.159*	5.300	5.259		5.767*	5.911
	3			5.815	5.208*	6.237	6.052	5.575*
	4			5.896	5.381*			5.866*
	5				5.178*	6.406	6.512	6.187*
	6			5.760	5.375*		5.770*	5.790

DISK 1 MEAN VCR 5.214 DISK 2 MEAN VCR 5.833

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-I LAB ID NUMBER: 40MI

		DISK 1			DISK 2	
KEV		10	15	20	15	20	25
VCR SITE	1	5.529*	9.011	9.860	5.281*	5.948	
	2	6.470*	9.975		6.350	6.198*	7.947
	3	11.013*OM	11.064			7.356*OM	7.781
	4	5.783*	9.824			5.436*	6.658
	5	5.955*			5.217*	6.134	
	6	8.913*	10.617		5.991*	6.536	

DISK 1 MEAN VCR 6.530 DISK 2 MEAN VCR 5.625

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: 22068502-J LAB ID NUMBER: 40MJ

		DISK 1			DISK 2	
KEV		20	25	30	15	20	25
VCR SITE	1	5.555	5.396*	5.603	5.295	4.885*	5.163
	2	6.418	5.933	5.453*	5.808	5.122*	
	3		5.289*		4.895*		
	4	6.058	5.922	5.901*OM		5.893	5.272*OM
	5	5.949	5.693*			5.048*	
	6		5.781*			5.186*	

DISK 1 MEAN VCR 5.522 DISK 2 MEAN VCR 5.027

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)

FIELD ID NUMBER: H100285-20 LAB ID NUMBER: 40MM

		DISK 1				DISK 2		
KEV		20	25	30	15	20	25	30
VCR SITE	1	3.624	3.365	3.217*		5.676*	6.009	5.892
	2			3.408*	7.699	6.483*OM	6.491	6.671
	3		3.588	3.558*OM		6.687	6.286*	6.312
	4		3.411	3.279*			5.281	5.174*
	5			3.347*			5.696	5.066*
	6			3.428*			4.904*	5.379

DISK 1 MEAN VCR 3.336 DISK 2 MEAN VCR 5.421

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: H100285-21 LAB ID NUMBER: 40MN

		DISK 1				DISK 2		
KEV		20	25	30	20	25	30	
VCR SITE	1	7.317*	7.7665	7.464		5.090*	5.866	
	2	7.280*	7.378			6.754	6.454*OM	
	3	12.651	9.435*OM				5.500*	5.808
	4		6.790*			5.006*		
	5		7.096*			5.019*		
	6		6.623*			6.014*		

DISK 1 MEAN VCR 7.021 DISK 2 MEAN VCR 5.326

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: H100285-22 LAB ID NUMBER: 40MO

KEV		DISK 1 20	DISK 1 25	DISK 1 30	DISK 2 15	DISK 2 20	DISK 2 25	DISK 2 30
VCR SITE	1	4.993	4.326*	4.686		4.082*	4.764	
	2	4.593*	4.829	5.236	5.122	4.867*	5.066	
	3		5.113*			5.966	5.889*OM	6.829
	4		4.671*		5.313	5.133*	5.646	
	5		4.601*			5.150	4.915*	
	6	5.342*OM	6.371	6.374			4.430*	

DISK 1 MEAN VCR 4.661 DISK 2 MEAN VCR 4.685

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: H100285-23 LAB ID NUMBER: 40MP

KEV		DISK 1 20	DISK 1 25	DISK 2 20	DISK 2 25
VCR SITE	1	3.702*	3.812	3.904	3.786*
	2	3.840	3.753*	3.378*	
	3		3.787*	4.031	3.780*
	4		3.701*		3.856*OM
	5		3.844*OM		3.818*
	6		3.372*		3.482*

DISK 1 MEAN VCR 3.663 DISK 2 MEAN VCR 3.649

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: H100285-24 LAB ID NUMBER: 40MR

DISK 1 DISK 2

KEV		25	30	25	30
VCR SITE	1	4.439	4.122*	3.496	3.300*
	2	4.583*OM	4.596	3.799*	3.856
	3		4.218*	3.901*	4.055
	4	4.803	4.536*	4.553	4.467*OM
	5	4.747	4.524*		3.445
	6		4.431*		3.459*

DISK 1 MEAN VCR 4.366 DISK 2 MEAN VCR 3.581

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: H100285-25 LAB ID NUMBER: 40MS

		DISK 1			DISK 2			
KEV		15	20	25	15	20	25	30
VCR SITE	1	3.744*	4.027		8.974	7.576*OM	8.792	9.372
	2	3.883*	4.087			5.469	5.466	
	3	4.381*	4.749	4.569		4.616*		
	4	5.509*	5.678	6.331	5.066*	5.267		
	5	4.942	4.525*		8.135	7.451*OM	7.877	
	6	7.111	6.072*OM	6.082	7.374	5.530*	5.786	6.701
	7					6.297*	6.461	

DISK 1 MEAN VCR 4.408 DISK 2 MEAN VCR 5.395

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: H100285-26 LAB ID NUMBER: 40MT

DISK 1 DISK 2

KEV		15	20	25	15	20	25
VCR SITE	1	3.185*	3.210	3.312		3.820*	3.831
	2	3.261*	3.286				3.513*
	3	4.579	3.691*OM			3.758*	3.821
	4	3.447	3.279*		3.914*	4.233	
	5		2.941*		4.091*	4.184	
	6		3.164*		4.341	3.933*	

DISK 1 MEAN VCR 3.166 DISK 2 MEAN VCR 3.788

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: H100285-27 LAB ID NUMBER: 40MU

		DISK 1			DISK 2			
KEV		20	25	30	15	20	25	30
VCR SITE	1	4.264	4.248*OM			3.644*	3.759	
	2	4.008	3.826*		3.130*	3.436		
	3	4.395	4.186*		3.856	3.759	3.740*OM	
	4	4.248	3.937*		3.904	3.719*OM	3.746	
	5	4.557	4.327	4.153*			3.454*	3.580
	6		3.989	3.858*		4.023	3.702	3.656*
	7						3.791	3.686*

DISK 1 MEAN VCR 3.992 DISK 2 MEAN VCR 3.514

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

FIELD SITE: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C)
FIELD ID NUMBER: H100285-28 LAB ID NUMBER: 40MV

DISK 1 DISK 2

KEV	10	15	20	25	15	20	25
VCR SITE 1		3.411*	4.147	3.890	3.610	3.524*	
2		3.481*	3.575	3.993	3.923	3.828	3.531*
3		3.987	3.948*OM				3.594OM
4	3.821	3.795*	3.857				3.265*
5		3.419	3.316*			3.557	3.512
6		3.594*	3.932				3.452*

DISK 1 MEAN VCR 3.519 DISK 2 MEAN VCR 3.457

* = VCRS USED IN CALCULATING MEAN VCR
OM = OMIT = HIGHEST VCR OF * VCRS; OMITTED WHEN CALCULATING MEAN VCRS

TABLE OF DISK VCRS TO BE USED TO CALCULATE CATION RATIO FOR DEPOSIT: FORTYMILE WASH UPPER ALLUVIAL TERRACE (Q2C) CALIBRATION POINT (PUBLISHED IN TABLE 1, HARRINGTON AND WHITNEY, 1987, SCANNING ELECTRON MICROSCOPE METHOD FOR ROCK-VARNISH DATING: GEOLOGY, V. 15, p. 967-970).

DEPOSIT	DISK 1 VCR	DISK 2 VCR
40MA	3.671	3.603
40MB	5.318	5.222
40MC	6.474**	7.020**
40MD	1.783	1.816
40ME	4.482	4.111
40MF	2.986	3.645
40MG	5.861	5.486
40MH	5.214	5.833
40MI	6.530**	5.625
40MJ	5.522	5.027
40MM	3.336	5.421
40MN	7.021**	5.326
40MO	4.661	4.685
40MP	3.663	3.649
40MR	4.366	3.581
40MS	4.408	5.395
40MT	3.166	3.788
40MU	3.992	3.514
40MV	3.519	3.457

MEAN VCR FOR FORTYMILE WASH
UPPER ALLUVIAL TERRACE (Q2C) 4.34+/-1.04

In the samples collected from the Q2C terrace, several samples appeared to show abrasion of the varnish and revarnishing. A larger group of samples were collected to provide a calibration VCR of greater reliability. Samples showing anomalous VCRs (high) and evidence of partial or total stripping of varnish from the clast by abrasion (Samples marked **; 40MC and disk 1 from 40MI and 40MN) were not used to calculate the mean VCR for the Q2C terrace.

TABLE OF VCRS TO BE USED TO CALCULATE CATION RATIO FOR DEPOSIT: RED CONE LAVA FLOWS (RC) CALIBRATION POINT (PUBLISHED IN TABLE 1, HARRINGTON AND WHITNEY, 1987, SCANNING ELECTRON MICROSCOPE METHOD FOR ROCK-VARNISH DATING: GEOLOGY, V. 15, p. 967-970).

CATION RATIO DATA FOR CALIBRATION OF ROCK VARNISH DATING CURVE FOR YUCCA MOUNTAIN AREA

FIELD SITE: RED CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: H100385-20 LAB ID NUMBER: RCM

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	3.273OM	3.197
	2	3.627OM	3.245
	3	3.041	3.456OM
	4	3.162	3.103
	5	2.703	3.324
	6	3.258	3.188
	7	3.118	3.462OM

DISK 1 MEAN VCR 3.056 DISK 2 MEAN VCR 3.211

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: RED CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: H100385-21 LAB ID NUMBER: RCN

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.423	2.258
	2	2.409	2.105
	3	2.228	2.222
	4	2.505OM	2.391OM
	5	2.270	2.228
	6	2.324	2.237

DISK 1 MEAN VCR 2.331 DISK 2 MEAN VCR 2.210

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: RED CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: H100385-22 LAB ID NUMBER: RCO

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.422	2.121
	2	2.449OM	2.076
	3	2.373	2.211
	4	2.115	2.249OM
	5	2.185	2.266OM
	6	2.139	2.095
	7	2.469OM	2.126

DISK 1 MEAN VCR 2.247 DISK 2 MEAN VCR 2.127

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: RED CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: H100385-23 LAB ID NUMBER: RCP

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	3.089	2.304
	2	3.296OM	2.421OM
	3	2.887	2.101
	4	2.731	2.265
	5	3.091	2.403
	6	3.099	2.256
	7	3.174OM	2.405OM

DISK 1 MEAN VCR 3.101 DISK 2 MEAN VCR 2.266

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: RED CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: H100385-24 LAB ID NUMBER: RCT

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.495OM	2.700OM
	2	2.552OM	2.557
	3	2.202	2.333
	4	2.764OM	2.579OM
	5	2.421OM	2.435
	6	2.697OM	2.427
	7	2.443OM	2.379
	8	2.179	2.580OM
	9	2.365	
	10	2.084	
	11	2.352	

DISK 1 MEAN VCR 2.236 DISK 2 MEAN VCR 2.426

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK
DISKS FROM RCT HAD CONSIDERABLE TOPOGRAPHIC IRREGULARITIES AND A LARGER NUMBER OF ANALYSES WERE DONE THAN FOR A SMOOTHER DISK.

FIELD SITE: RED CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: H100385-25 LAB ID NUMBER: RCU

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.610OM	3.146OM
	2	2.556	2.748OM
	3	2.710OM	2.916OM
	4	2.714OM	2.383
	5	2.478	2.243
	6	2.582	2.583
	7	2.672OM	2.552
	8	2.600	2.677OM
	9	2.347	3.332OM
	10	2.851OM	2.665OM
	11	2.522	2.412

DISK 1 MEAN VCR 2.497 DISK 2 MEAN VCR 2.435

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK
DISKS FROM RCT HAD CONSIDERABLE TOPOGRAPHIC IRREGULARITIES AND A LARGER NUMBER OF ANALYSES WERE DONE THAN FOR A SMOOTHER DISK.

FIELD SITE: RED CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068505-Z LAB ID NUMBER: RCZ

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.426	2.393
	2	2.690	2.481
	3	2.313	2.519
	4	2.434	2.224
	5	2.822OM	

DISK 1 MEAN VCR 2.466 DISK 2 MEAN VCR 2.404

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FOUR LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

TABLE OF DISK VCRS TO BE USED TO CALCULATE CATION RATIO FOR DEPOSIT: RED CONE LAVA FLOWS (RC) CALIBRATION POINT (PUBLISHED IN TABLE 1, HARRINGTON AND WHITNEY, 1987, SCANNING ELECTRON MICROSCOPE METHOD FOR ROCK-VARNISH DATING: GEOLOGY, V. 15, p. 967-970).

DEPOSIT FIELD ID#	LAB ID#	DISK 1 VCR	DISK 2 VCR
H100385-20	RCM	3.056**	3.211**
H100385-21	RCN	2.331	2.210
H100385-22	RCO	2.247	2.127
H100385-23	RCP	3.101**	2.266
H100385-24	RCT	2.236	2.426
H100385-25	RCU	2.497	2.435
23068505-Z	RCZ	2.466	2.404

MEAN VCR FOR RED CONE LAVA FLOW (RC) 2.33+/-0.11 [ONE STANDARD DEVIATION (Scr)AROUND THE MEAN CATION RATIO].

ALL SAMPLES WERE RUN AT 30KEV, THEREFORE ONLY ONE VCR WAS CALCULATED FOR A SINGLE ANALYTIC SITE. THE DISK VCR IN THE TABLE REPRESENTS THE MEAN VCR FOR ANALYTIC SITES ON THAT DISK.

SAMPLE RCM AND DISK 1 FROM SAMPLE RCP WERE NOT USED TO CALCULATE THE MEAN VCR BECAUSE OF THE SIGNIFICANTLY HIGHER CATION RATIOS OBTAINED FOR THESE DISKS.

TABLE OF VCRS TO BE USED TO CALCULATE CATION RATIO FOR DEPOSIT: BLACK CONE LAVA FLOWS (BC) CALIBRATION POINT (PUBLISHED IN TABLE 1, HARRINGTON AND WHITNEY, 1987, SCANNING ELECTRON MICROSCOPE METHOD FOR ROCK-VARNISH DATING: GEOLOGY, V. 15, p. 967-970).

CATION RATIO DATA FOR CALIBRATION OF ROCK VARNISH DATING CURVE FOR YUCCA MOUNTAIN AREA

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-A LAB ID NUMBER: BCA

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	1.928	2.107
	2	1.983	1.950
	3	2.235OM	2.128
	4	2.020	1.929
	5	1.980	1.684OM
	6	1.974	2.051

DISK 1 MEAN VCR 1.977 DISK 2 MEAN VCR 2.033

OM = OMIT = HIGHEST VCR FOR DISK 1; OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK 1: VCR OMITTED FOR DISK 2 WAS SIGNIFICANTLY LOWER THAN ALL OTHER ANALYSES WHICH WERE CONSISTENT WITHIN THE FIVE ANALYSES.

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-B LAB ID NUMBER: BCB

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.000	2.352
	2	2.055	2.216
	3	2.178OM	2.492
	4	1.890	1.874OM
	5	2.151	2.206
	6	1.964	2.252

DISK 1 MEAN VCR 2.012 DISK 2 MEAN VCR 2.304

OM = OMIT = HIGHEST VCR FOR DISK 1; OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK 1: VCR OMITTED FOR DISK 2 WAS SIGNIFICANTLY LOWER THAN ALL OTHER ANALYSES WHICH WERE CONSISTENT WITHIN THE FIVE ANALYSES.

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-C LAB ID NUMBER: BCC

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.166	1.474
	2	2.118	1.624OM
	3	2.409OM	1.618
	4	2.101	1.406
	5	1.909	1.521
	6	1.796	1.447

DISK 1 MEAN VCR 2.018 DISK 2 MEAN VCR 1.493

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-D LAB ID NUMBER: BCD

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.564	2.390
	2	2.896	2.432
	3	2.906OM	2.594
	4	2.641	2.326
	5	2.465	2.697OM
	6	2.239	2.421

DISK 1 MEAN VCR 2.561 DISK 2 MEAN VCR 2.433

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-E1 LAB ID NUMBER: BCE1

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.520	2.358OM
	2	2.478	1.973
	3	2.720OM	2.186
	4	2.624	2.350
	5	2.4321	2.130
	6	2.122	2.206

DISK 1 MEAN VCR 2.435 DISK 2 MEAN VCR 2.169

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-E2 LAB ID NUMBER: BCE2

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.231	2.082
	2	2.127	2.139
	3	2.060	2.108
	4	2.358OM	1.963
	5	2.493OM	2.145OM
	6	2.384OM	1.801
	7	2.305	2.249OM
	8	2.346	
	9	2.370OM	

DISK 1 MEAN VCR 2.214 DISK 2 MEAN VCR 2.003

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

BOTH DISKS HAD CONSIDERABLE SURFACE TOPOGRAPHIC IRREGULARITIES NECESSITATING MORE SMALLER ANALYTIC SITES ON THE DISKS.

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-F LAB ID NUMBER: BCF

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	1.866	1.682
	2	2.056	1.755OM
	3	2.345OM	1.683
	4	1.912	1.534
	5	1.908	1.665
	6	1.935	1.745

DISK 1 MEAN VCR 1.935 DISK 2 MEAN VCR 1.662

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-H LAB ID NUMBER: BCH

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	2.742	2.519OM
	2	2.317	2.310
	3	2.409	1.917
	4	2.693	2.063
	5	2.789	2.359
	6	2.817OM	2.301

DISK 1 MEAN VCR 2.590 DISK 2 MEAN VCR 2.190

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

FIELD SITE: BLACK CONE LAVA FLOW, CRATER FLAT
FIELD ID NUMBER: 23068501-J LAB ID NUMBER: BCJ

		DISK 1	DISK 2
KEV		30	30
VCR			
SITE	1	3.025	1.842
	2	3.102	1.787
	3	3.417OM	2.256OM
	4	3.031	1.955
	5	2.818	1.689
	6	2.723	2.046

DISK 1 MEAN VCR 2.940 DISK 2 MEAN VCR 1.864

OM = OMIT = HIGHEST VCR(S); OMITTED WHEN CALCULATING MEAN VCRS; FIVE LOWEST VCRS USED TO CALCULATE MEAN VCR FOR DISK

TABLE OF DISK VCRS TO BE USED TO CALCULATE CATION RATIO FOR DEPOSIT: BLACK CONE LAVA FLOW (BC) CALIBRATION POINT (PUBLISHED IN TABLE 1, HARRINGTON AND WHITNEY, 1987, SCANNING ELECTRON MICROSCOPE METHOD FOR ROCK-VARNISH DATING: GEOLOGY, V. 15, p. 967-970).

DEPOSIT		DISK 1 VCR	DISK 2 VCR
FIELD ID#	LAB ID#		
23068501-A	BCA	1.977	2.033
23068501-B	BCB	2.012	2.304
23068501-C	BCC	2.018	1.493
23068501-D	BCD	2.561	2.433
23068501-E1	BCE1	2.435	2.169
23068501-E2	BCE2	2.214	2.003
23068501-F	BCF	1.935	1.662
23068501-H	BCH	2.590	2.190
23068501-J	BCJ	2.940	1.864

MEAN VCR FOR BLACK CONE LAVA FLOW (BC) 2.16+/-0.35 [ONE STANDARD DEVIATION (Scr)AROUND THE MEAN CATION RATIO].

ALL SAMPLES WERE RUN AT 30KEV, THEREFORE ONLY ONE VCR WAS CALCULATED FOR A SINGLE ANALYTIC SITE. THE DISK VCR IN THE TABLE REPRESENTS THE MEAN VCR FOR ANALYTIC SITES ON THAT DISK.

WBS: 1.2.5.3.6
QA: NA

GENISES Data Dictionary

BOULDER DEPOSIT SAMPLING AND C

File Id: bdss_dp71.pat

Description: POINT COVERAGE CONTAINING BOULDER DEPOSIT SAMPLING SITES AND FIELD CALIBRATION SITES. DATA DIGITIZED IN-HOUSE FROM LANL FIELD MAPS; CHUCK HARRRINGTON, LANL, PI.

Attribute	Description	Domain	Parameter No.
fld_id1	field identification, primary codes are unique	character	
fld_id2	field identification, secondary codes are unique	character	
lab_id1	laboratory identification, primary codes are unique	character	
lab_id2	laboratory identification, secondary codes are unique	character	
quad	Name of 7.5-minute usgs quadrangle. Possible entries include: Busted Butte, Buckboard Mesa, Spectre Range NW, Topopah Spring NW, Crater Flat	character	
sample	sample identification used in topical reports sample is unique, except for the use of a '9' 9=not a sample site, but rather a calibration site (no sample)	character	
type	type of site 1 = boulder deposit sampling site 9 = field calibration site	integer	