

This database includes analyses of Trans-Pecos Cenozoic igneous rocks made available in publications, theses, and dissertations from 1970 onward. That year was picked as the earliest for which meaningful trace-element data are regularly available in rock analyses from this magmatic province, although many analyses continued to be made without trace elements. Numbers at the end of each description are keyed to the list of references. When data for a sample have been published more than once, only the latest reference, commonly with augmented trace-element data, is cited. For some analyses no reference is cited because the analyses, made by the late G. Karl Hoops in The Department of Geological Sciences, the University of Texas at Austin, have never appeared in publications, theses, or dissertations.

Samples are grouped according to age (known or estimated) as 48-38Ma, 38-26Ma, and 26-17Ma. Within each age group they are listed in order of increasing SiO<sub>2</sub>' (SiO<sub>2</sub> calculated after major oxides are normalized to 100%, volatile-free). Alphanumeric sample descriptors are those of the original authors, with a few exceptions to avoid ambiguities. Analytical techniques and laboratories are so diverse that the cited reference must be consulted for these.

The abbreviation following the sample descriptor is the rock name assigned according to the total alkali-silica classification diagram (LeMaitre, R.W., ed., 1989, A Classification of Igneous Rocks and Glossary of Terms. Oxford, Blackwell, 193pp).

Te-bas = tephrite/basanite

PT = phonotephrite

TP = tephriphonolite

PH = phonolite

B = basalt

TB = trachybasalt

BTA = basaltic trachyandesite

TA = trachyandesite

T = trachyte

R = rhyolite

No analysis plots as foidite, basaltic andesite, andesite, or dacite. Most Trans-Pecos igneous rocks, even the intrusive ones, are fine-grained, so this classification was applied to all as a uniform compositional indicator. CIPW norms are not used here because in most newer analyses ferrous and ferric iron are not separately measured. Tephrite and basanite cannot be distinguished without normative or modal data, so these are lumped. Because the designations of hawaiite, mugearite, and benmoreite are

sensitive to Na/K ratios, these types are lumped with the more generic terms, respectively trachybasalt, basaltic trachyandesite, and trachyandesite. These arbitrary decisions reduce the number of instances in which different samples from the same rock body are given different rock names because of minor differences in analytical results for alkalis.

For most samples, ages (*from that unit*, not necessarily that sample) are given, without estimated uncertainties or dating methods. The referenced source must be consulted for these. Longitude and latitude (to decimal fractions of minutes) are given unless sample localities were too vague to estimate these. For some widespread pyroclastic flow deposits, the longitude and latitude of the vent area, not the sample location, are indicated with asterisks. Samples are not included in this data base if they are not specified as from a named intrusive body or stratigraphic unit *and* do not have a precise locality.

Weight percent oxides follow, then SiO<sub>2</sub>' and (Na<sub>2</sub>O + K<sub>2</sub>O)' (both coordinates for the total alkali-silica classification diagram). Trace elements (in ppm) follow. Aberrant values of oxides and trace elements are marked with asterisks. Some calculated trace-element ratios are included; rare earth element ratios Eu\* and Ce<sub>n</sub>/Yb<sub>n</sub> are normalized to average chondrite of Anders and Grevesse (1989). Finally, initial <sup>87</sup>Sr/<sup>86</sup>Sr ratios and measured ratios of Nd and Pb isotopes are listed. However, these entries are intended merely as indicators that isotopic data are available, and the original sources must be consulted for analytical conditions and uncertainties.

Inevitably there are errors of omission, transcription, and judgement in this compilation for which I alone am responsible. To offer corrections and new data, contact me at [danbarker@mail.utexas.edu](mailto:danbarker@mail.utexas.edu) I hope to post a revised version at least once a year.  
Dan Barker

### **48-38Ma, 40-52% SiO<sub>2</sub>'**

FM-011	Te-bas intrusive, Finlay Mountains. 43
FM-013	Te-bas intrusive, Finlay Mountains. 43
XTR-8	Te-bas intrusive, south side of Dogie Mountain along south side of Rough Run, about 2.1 km east of Maverick Mountain, BBNP. 63
J82-80	Te-bas intrusive, Nine Point Mesa. 10
8217	Te-bas intrusive, ESE of Hen Egg Mountain. 14
8214	Te-bas intrusive, conical hill in valley south of Packsaddle Mountain. 14
BB83-11	Te-bas intrusive, north of park road near Croton Spring, BBNP. 63
CF8518	B lava, Alamo Creek Basalt, 3010 ft hill, base of Punta de la Sierra, BBNP. 63
CF8516	B lava, Alamo Creek Basalt, base of Punta de la Sierra, BBNP. 63
FM-016	B intrusive, Finlay Mountains. 43
CF8551	B lava, Alamo Creek Basalt, 1.3 km west of western start of Chimneys Trail, BBNP. 63

SM84051 B intrusive plug, Sawmill Mountain area. 61  
 CF8517 B lava, Alamo Creek Basalt, base of Punta de la Sierra, BBNP. 64  
 CF8542 Tb lava, upper Alamo Creek Basalt flow unit on Dogie Mountain, BBNP. 64  
 PW84022 B dike, Payne's Waterhole area. 44  
 BB83-14 B lava, Alamo Creek Basalt, BBNP. 50  
 H86-138 Te-bas, intrusive. 29  
 H86-91 Te-bas, intrusive. 29  
 CF841 B lava, Alamo Creek Basalt, 1.9 km north of Tule Mountain, BBNP. 63  
 H86-92 TB lava, Devil's Graveyard Basalt. 29  
 H86-65 Te-bas, intrusive. 29  
 CF8541 B lava, lowest flow unit, Alamo Creek Basalt, near 3021 ft elev marker, Dogie Mountain, BBNP. 63  
 8210 Te-bas intrusive, 3m above base of sill, Adobe Walls Draw. 14  
 CF8544 B lava, Alamo Creek Basalt, south side of Black Mesa, BBNP. 63  
 7469 TB intrusive, black hill 2 miles NNW of Paint Mountain  
 CF8531 B lava, Alamo Creek Basalt, first large hill on Terlingua Abaja dirt road, 1.4 km from Maverick Rd, BBNP. 63  
  
 FM-003 Tb intrusive, Finlay Mountains. 43  
 H86-59 Te-bas intrusive. 29  
 BB83-21 TB lava, Alamo Creek Basalt, BBNP. 48  
 XM-103 TB intrusive, Christmas Mountains. 41  
 29 PT dike, east side of Dogie Mountain, BBNP. 39  
 WT 712 PT intrusive Cigar Mountain, Terlingua area. 16  
 S46 BTA. 66  
 H86-142 PT, intrusive. 29  
 CF8529 B lava, Alamo Creek Basalt, stream channel on east side of dirt road 4 km south of old Maverick Ranger Station, BBNP. 63  
  
 H86-90 BTA, sill in Adobe Walls Draw. 29  
 PW84008 TB, sill, Payne's Waterhole area. 42  
 FM-015 TB intrusive, Finlay Mountains. 43  
 SM84052 TB, large sill, Sawmill Mountain area. 61  
 H86-76 PT, intrusive. 29  
 K381 BTA, Huelster Formation, Davis Mtns. 13  
 8216 BTA, 6m sill on east side of Packsaddle Mountain. 12  
 LM20a PT intrusive, 30m above base of Leon Mountain, Terlingua area. 12  
 PW84083 PT sill, Payne's Waterhole area. 42  
 H86-70 PT, intrusive. 29  
 M7443 BTA intrusive, southern Yellow Hill quadrangle. 44  
 XM-12-3 BTA dike, Christmas Mountains. 4  
 XM16 BTA intrusive, Christmas Mountains. 41  
 84110 BTA clast, Huelster Formation, Davis Mtns. D. F. Parker, personal communication, 1989  
 DM 148 BTA clast, Huelster Formation, 6 km north of Star Mountain, Davis Mtns. 71  
 SM84007 BTA plug, Sawmill Mountain area. 61  
 28 PT dike, near Croton Springs Road, BBNP. 39  
 CM50 PT intrusion, border zone of Cigar Mountain, Terlingua area. 12

## 48-38Ma, 52-63%SiO<sub>2</sub>'

H86-118	PT intrusive. 29
RTD-A	BTA intrusive, Round Top, Sierra Blanca group. 43
CF3500	BTA lava, Alamo Creek Basalt, large road cut, Ross Maxwell Scenic Drive, BBNP. 63
LM392	TA intrusive, Leon Mountain, Terlingua area. 14
H86-144	TP, intrusive. 29
WT 768	TP lava, Alamo Creek Basalt, BBNP. 16
LM 21A	BTA, intrusive, Leon Mountain, Terlingua area. 16
BM-1	BTA lava, Alamo Creek Basalt, 1 mile north of Lajitas. 23
H86-143	TP, intrusive. 29
SM84010	TP plug, Sawmill Mountain area. 61
81030	BTA lava clast in Huelster Formation, Buckhorn Canyon, Davis Mtns. 55
XM56	TA intrusive, Christmas Mountains. 38
S35	BTA, 66
CF3540	TP lava, Alamo Creek Basalt, large roadcut, Ross Maxwell Scenic Drive, BBNP. 63
H91-62	BTA lava, Alamo Creek Basalt. 26
CF3532	TA lava, Alamo Creek Basalt, large roadcut, Ross Maxwell Scenic Drive, BBNP. 63
CF3524	TA lava, Alamo Creek Basalt, large roadcut, Ross Maxwell Scenic Drive, BBNP. 63
CF3516	TA lava, Alamo Creek Basalt, large roadcut, Ross Maxwell Scenic Drive, BBNP. 63
CF3508	TA lava, Alamo Creek Basalt, large roadcut, Ross Maxwell Scenic Drive, BBNP. 63
85615	TA, Huelster Formation, Davis Mtns. D. F. Parker, personal communication, 1989
CF8532	TP lava, Alamo Creek Basalt, small road cut north of Castolon Ranger Station housing, BBNP. 63
8213	TP intrusive, cylinder in sill in Adobe Walls Draw. 14
FM-021	BTA intrusive, Finlay Mountains. 43
XM13-4	TA intrusive, Christmas Mountains. 41
AC559	TA lava in Alamo Creek Basalt section, 6 miles north of Castolon on main park road, BBNP. 23
CF8533	TA lava, Alamo Creek Basalt, large road cut, Ross Maxwell Scenic Drive, BBNP. 63
CF8515	TA lava, Alamo Creek Basalt, first channel gauging station, River Road, BBNP. 63
SB-D	TA intrusive, Sierra Blanca Peak. 43
CF8508	TA lava, Alamo Creek Basalt, large road cut, Ross Maxwell Scenic Drive, BBNP. 63
XM-51	TA dike, Christmas Mountains. 38
DT-1	TA intrusive, Dyke Top, Sierra Blanca group. 43
FM-042	TA intrusive, Finlay Mountains. 43
77036	TA lava, Alamo Creek Basalt, BBNP. 4
SM84018	TA sill, Sawmill Mountain area. 61
86204	TA intrusive, area of Musquiz Dome, Davis Mtns. 21
FM-022	TA intrusive, Finlay Mountains. 43
7458	T, biotite-phyric dike, The Devil's Backbone
FM-036	T intrusive, Finlay Mountains. 43
Acorn-2A	TA, Coronado intrusion, El Paso area. 35
CR5E	TA enclave in trachyte intrusion, Sierra de Cristo Rey, El Paso area 8
SM84056	T intrusive, Sawmill Mountain. 61
CR69EN	TA enclave in trachyte intrusion, Sierra de Cristo Rey, El Paso area. 8

SM84057 T intrusive, Sawmill Mountain. 61  
 THA TA, Thunderbird intrusion, El Paso area 35  
 SM84044 T intrusive, Sawmill Mountain. 61  
 CR40A TA enclave in trachyte intrusion, Sierra de Cristo Rey, El Paso area. 8  
 C8 T intrusive, Slickrock Mountain, BBNP. 34  
 Acorn-2B TA, Coronado intrusion, El Paso area. 35  
 FM-017 T intrusive, Finlay Mountains. 43  
 9911101 T enclave in Luna Vista sill. 56  
 SM-50 T intrusive, Sawmill Mountain. 14  
 CR6F T, intrusive, Sierra de Cristo Rey, El Paso area. 8  
 H86-67 T, intrusive. 29  
 SM84055 T intrusive, Sawmill Mountain. 61  
 H86-74 T, intrusive. 29

**48-38Ma, 63-69%SiO<sub>2</sub>'**

FM-037 T intrusive, Finlay Mountains. 43  
 4320-1A T intrusive, Luna Vista sill, Terlingua area. 14  
 FM-031 T, intrusive, Finlay Mountains. 43  
 C-7 T, intrusive, Slickrock Mountain, BBNP. 35  
 H86-128 T, intrusive. 29  
 C-14 T intrusive, Slickrock Mountain, BBNP. 34  
 C-5 T intrusive, Slickrock Mountain, BBNP. 33  
 SR3 T intrusive, Slickrock Mountain, BBNP. 34  
 CH-008 T intrusive, Cross Hill, Sierra Blanca. 43  
 SB-001 T, intrusive, town of Sierra Blanca. 43  
 CAMPA T intrusive, Campus Andesite body, El Paso area. 35  
 SB-004 T intrusive, town of Sierra Blanca. 43  
 CH-006 T, intrusive, Cross Hill, Sierra Blanca. 43  
 H86-83 T intrusive. 29  
 FM-008 T, intrusive, Finlay Mountains. 43  
 98611 T intrusive, Luna Vista sill, Terlingua area. 56  
 B52 T intrusive, Bee Mountain, Terlingua area. 14  
 SR-5 T intrusive, Slickrock Mountain, BBNP. 34  
 TM-011 T sill, Texan Mountain, Sierra Blanca. 43  
 84208 T, lava dome, Huelster Formation, Davis Mtns. D.F. Parker, personal communication, 1989  
 NN6a T intrusive, Indianhead Mountain, Terlingua area. 14  
 SM84009 T sill, Sawmill Mountain area, Terlingua area. 61  
 8208 T intrusive, Terlingua area. 14  
 H86-105 T tuff, caldera fill, Christmas Mountains. 29  
 H86-93 T intrusive. 29  
 MGD-405 T intrusive. 29  
 H86-53 T. 29

4320-7A T intrusive, Lake Ament plug, Terlingua area. 14  
 81-22 T intrusive. 29  
 WH76-2 T, intrusive, Wildhorse Mountain. 14  
 TM-001 T sill, Texan Mountain, Sierra Blanca area. 43  
 H86-85 T intrusive. 29

**48-38Ma, 69-80%SiO<sub>2</sub>'**

81-31 R intrusive. 29  
 XM-61 R dike, Christmas Mountains.  
 81-26 R intrusive. 29  
 81-19 R intrusive. 29  
 S64 R. 66  
 81-35 R intrusive. 29  
 H84-27 R intrusive. 29  
 81-30 R intrusive. 29  
 TM-003 R sill, Texan Mountain, Sierra Blanca area. 43  
 H86-79 R intrusive. 29  
 81-33 R intrusive. 29  
 S45 R. 66  
 H86-80 R intrusive. 29  
 W-150a R intrusive, Willow Mountain, Terlingua area. 14  
 81-25 R intrusive. 29  
 81-3 R intrusive. 29  
 MGD-788 R intrusive, North Adobe Mountain, Christmas Mountains. 62  
 81-109 R intrusive. 29  
 H90-74 R intrusive, Paisano Peak, Christmas Mountains. 62  
 AF2 R intrusive, Agua Fria Mountain. 14  
 H81-44 R intrusive, Adobe Mountain, Christmas Mountains. 62  
 H86-122 R intrusive. 29  
 81-108 R intrusive. 29  
 H86-120 R intrusive. 29  
 HE-3 R intrusive, Hen Egg Mountain. 14  
 Pinto-9 R lava dome, west flank of Organ Pipe Hill, Pinto Canyon

**38-26Ma, 40-52%SiO<sub>2</sub>'**

WT773 Te-bas intrusive, Bone Spring Sill, BBNP. 16  
 Mafic sill Te-bas intrusive, McKinney Hills, BBNP. 2  
 M-1 Te-bas intrusive, Slickrock Mountain, BBNP. 34  
 BB-2 Te-bas intrusive, 8 miles south of park headquarters on main park road, BBNP. 23  
 BB-1 Te-bas intrusive, 8 miles south of park headquarters on main park road, BBNP. 23  
 J81-225 Te-bas intrusive along contact with wall rock, Marble Canyon. 59  
 WT771 Te-bas intrusive, Bone Spring Sill, BBNP. 16  
 Cob-2 Te-bas intrusive. 4

WT772	Te-bas intrusive, Bone Spring Sill, BBNP. 16
R-4	Te-bas lava, Petan Basalt. 68
BP-901	Te-bas intrusive, Black Peak. 58
BP-902	Te-bas intrusive, Black Peak. 58
E90-19	TB lava, Las Burras Lavas, Rawls Formation. 24
Black Hill	TB intrusive, Black Hill west of Nine Point Mesa. 4
H90-68	Te-bas lava, Leyva Canyon Member, Rawls Formation. 24
H90-28	TB lava, Las Burras Lavas, Rawls Formation. 24
Tib-1	B intruding upper Rawls Formation. 37
H88-60	B lava. 25
SEL84-2	TB lava, Petan Basalt. 48
Tr-32	TB lava, Las Burras Lavas, Rawls Formation, top of section measured south of cave. 69
H88-61	Te-bas lava. 25
77024	TB lava, upper of two flows with vesicular tops, 5 miles SW of Marfa on Marfa-Ruidosa road
Sheep	B lava, Sheep Canyon Basalt. 36
DM-144	B lava, Jones Formation, single flow in roadcut on rte 166, Davis Mtns. 71
M7456	TB sill, Black Ridge, Yellow Hill quadrangle. 44
81-32	B, porphyritic lava, Van Horn Mountains caldera. 27
Tr-33	B lava, same flow as sample Tr-32 but below it. 69
H84-12	TB, aphyric lava, Van Horn Mountains caldera. 27
E90-31	TB. 37
H90-48	TB lava, Campo Javelina Basalt Member, Fresno Formation. 24
H84-10	TB, aphyric lava, Van Horn Mountains caldera. 27
Tr-34	TB lava, next flow below Tr 32 and Tr 33. 69
H91-173	TB lava, Campo Javelina Basalt Member, Fresno Formation. 24
H90-50	B lava, Bee Mountain Basalt. 24
H88-58	TB lava. 25
RS71-28	B lava, Jones Basalt, Davis Mtns. 48
82-92	TB lava, Van Horn Mountains caldera. 27
K	B lava, Member A, Puertacitas Formation. 40
1049	TB lava, Rawls Formation, Wire Gap Road. 23
H91-100	TB lava, Alazan Lavas Member, Rawls Formation. 24
H88-77	TB lava. 25
H91-50	TB lava, Saucedas Lavas Member, Rawls Formation. 24
H91-93	TB lava, Saucedas Lavas Member, Rawls Formation. 24
J-9	TB lava, Las Burras Lavas, Rawls Formation, near large cave. 69
30	TB dike near Johnson Ranch airstrip, BBNP. 39
84617	TB lava, lower basalt, Paradise Mountain system, roadcut on rte 166, Davis Mountains. 13
188/1	TB dike, 96 Ranch. 36
DML-10	B lava, Petan Basalt, Davis Mtns. 47
IB-C	B lava, Las Burras Lavas, Rawls Formation, below large cave; different flow than J 9. 69
BFB	TB, highly vesicular plagioclase-phyric lava "low in Rawls", Agua Fria quadrangle.
H84-8	TB, porphyritic dike, Van Horn Mountains caldera. 27

H91-102 TB lava, Alazan Lavas Member, Rawls Formation. 24

J-4 B lava, Las Burras Lavas, Rawls Formation, near spring in Las Burras Canyon. 69

IB-L B lava, Las Burras Lavas, Rawls Formation, elevation 2630 west of stream bed near small cave. 69

81-32 B, porphyritic lava, Van Horn Mountains caldera. 27

BM-6 TB lava, Rawls Formation, River Road, 4.5 miles NW of Big Hill. 23

H91-198 TB lava, Alazan Lavas Member, Rawls Formation. 24

H88-63 TB lava. 25

K332 TB lava, Cottonwood Springs Basalt. 13

84609 B intrusive, Madera Canyon, Buckhorn Caldera, Davis Mtns. 13

SR-6 TB intrusive, Slickrock Mountain, BBNP. 34

E90-23 B lava, Las Burras Lavas, Rawls Formation. 24

H89-158A TB lava, Blue Mountain, Davis Mtns. 25

Tr-35 TB lava, Las Burras Lavas, Rawls Formation, flow below Tr 34. 69

H92-74 TB lava, Campo Javelina Basalt Member, Fresno Formation. 24

H90-72 TB lava, Bee Mountain Basalt. 26

H86-35 BTA. 29

H91-105 BTA lava, Saucedo Lavas Member, Rawls Formation. 24

Tr-18 TB lava, Las Burras Lavas, Rawls Formation, elevation 3520 west of stream bed in Canyon east of Rancherias Canyon. 69

CF8512 B lava, Tule Mountain Trachyandesite, along west side of 5785 ft mountain, 0.6 km north of Cedar Spring, Blue Creek, BBNP. 63

H91-21 TB lava, Campo Javelina Basalt Member, Fresno Formation. 24

PP365 BTA lava, upper mafic unit, Paisano volcano. 13

H88-81 TB lava. 25

DM110 TB lava, Frazier Canyon Formation, lowermost flow, below DM 122, roadcut on rte 118 Davis Mtns. 71

H92-75 BTA lava, Campo Javelina Basalt Member, Fresno Formation. 24

H91-20 TB lava, Bee Mountain Basalt. 24

J81-208 PT intrusive, Marble Canyon. 59

E90-29 TB lava, Las Burras Lavas, Rawls Formation. 24

DM 117 TB lava, Frazier Canyon Formation, uppermost flow in roadcut, rte 118, Davis Mtns. 71

PP391 PT lava, upper mafic unit, Paisano volcano. 13

J81-207 BTA intrusive, Marble Canyon. 59

961201 TB, chilled margin of sill, Lajitas. 5

H91-49 BTA lava, Las Burras Lavas, Rawls Formation. 24

H82-57 BTA lava, Upper Trachyte, Chinati caldera. 28

RM-162 PT intrusive, central zone of Rattlesnake Mountain, BBNP. 14

SCA-3-1 TB, Sierra el Carino. 18

H92-71 BTA lava, Campo Javelina Basalt Member, Fresno Formation. 24

CF8539 B lava, approximate center of flow units of Bee Mountain Basalt, Cerro Castellan, BBNP. 63

SCA-3-2 TB, Sierra el Carino. 18

DM 122 TB lava, Frazier Canyon Formation, fourth flow from base of five exposed in roadcut, rte 118, Davis Mtns. 71



566 TB lava, Tule Mountain Trachyandesite, 1.5 miles NW of Lajitas on River Road. 23  
H91-22 BTA lava related to Rawls Formation. 24  
560 B lava, Bee Mountain Basalt, 1 mile NW of Lajitas on River Road. 23  
H82-58 BTA lava, Upper Trachyte, Chinati caldera. 28  
CF8550 PTlava, Ash Spring Basalt, west side of Black Mesa in stream channel, 1.6 km north of Pena Spring, BBNP. 63  
BM-4 B lava, Bee Mountain Basalt, 4 miles SE of Big Hill on River Road. 23  
K343 TB lava, Frazier Canyon Formation, Davis Mountains. 13  
H90-42 B lava, Bee Mountain Basalt. 24  
Chin-232 BTA at Aguja Peak, Chinati Mountains. 17  
DM 119 TB lava, Frazier Canyon Formation, middle flow of 3 in roadcut, rte 118, Davis Mtns. 71  
PP-165 BTA lava, Upper Mafic Unit, Paisano volcano. 54  
H91-91 PT, post-caldera fill intrusion, Solitario. 24  
J-8 BTA lava, Saucedas Lavas Member, Rawls Formation, NW of large cave, across arroyo. 69  
CF8415 BTA lava of unknown stratigraphic assignment, 0.8 km NW of Ward Spring, BBNP. 63  
TPC-435 B lava, Bee Mountain Basalt, BBNP 4  
Puerto PT intruding Mitchell Mesa Rhyolite, west end of Puerto Portrillo, Jordan Gap quadrangle.  
H91-103 BTA lava, Saucedas Lavas Member, Rawls Formation. 24  
QM-112 BTA intrusive, Quitman Mountains. 65  
J84-16 PT intrusive, Marble Canyon. 59

### **38-26Ma, 52-59%SiO<sub>2</sub>'**

961202 BTA intrusive, matrix of xenolith-rich interior of sill, Lajitas. 5  
CF8548 BTA lava, Bee Mountain Basalt, east side of Kit Mountain 0.3 km from road, BBNP. 63  
PN 16A BTA intrusive, Pena Sill, BBNP. 16  
PP400 BTA lava, Paisano volcano. 37  
CF8530 BTA lava, Ash Spring Basalt, stream channel on east side of dirt road, 4 km south of old Maverick Ranger Station, BBNP. 63  
J81-212 BTA intrusive, Marble Canyon. 59  
CF8534 BTA lava, Ash Spring Basalt, 0.9 km south of Burro Spring, BBNP. 63  
WT721A BTA intrusive, Yellow Jacket Spring Sill, BBNP. 16  
J81-216 BTA intrusive, Marble Canyon. 59  
RM 178B BTA intrusive, lower border zone, Rattlesnake Mountain sill, BBNP. 14  
Tr-31 BTA lava, Saucedas Lavas Member, Rawls Formation, elevation 2440 near Rte 170, in Arroyo across from river access. 69  
S2 BTA intrusive, West Chinati Stock. 28  
CF847 BTA lava, Bee Mountain Basalt, in stream channel 1.2 km NNW of Blue Creek Ranch, BBNP. 63  
BB83-13a TP lava, Ash Spring Basalt, BBNP. 46  
CF845 BTA lava, Bee Mountain Basalt, 0.2 km north of water tank, Blue Creek Ranch, BBNP. 63  
31 BTA dike near Johnson Ranch airstrip, BBNP. 39  
Tr4-49 BTA lava, Saucedas Lavas member, Rawls Formation, above and to the north of large cave. 69  
J84-9 BTA intrusive, hybrid rock, Marble Canyon. 59

RM-180A TA intrusive, central zone, Rattlesnake Mountain sill, BBNP. 15  
 CF8501 BTA lava, Ash Spring Basalt, 1.4 km west of CF8418, hill east of road, BBNP. 63  
 Qbols-1 BTA intrusive plug, Hueco Bolson. Same body as QB-1?? 65  
 CF8546 BTA lava, Bee Mountain Basalt, north side of western portion of Kit Mountain, BBNP. 63  
 RM57c TA intrusive, upper border zone, Rattlesnake Mountain sill, BBNP. 14  
 CF8536 BTA lava, Bee Mountain Basalt, west side of road at Blue Creek Ranch trailhead, BBNP. 63  
 A TA lava, Cottonwood Springs Formation, Davis Mtns. 40  
 H91-104 TA lava, Saucedo Lavas Member, Rawls Formation. 24  
 QB-1 BTA intrusive plug, Quitman Bolson. 3  
 CF8513 BTA lava, Bee Mountain Basalt, 0.5 km northwest of Cedar Spring and 1.5 km southeast of Ward Spring, BBNP. 63  
  
 K376 BTA lava, lower mafic unit, Paisano volcano. 13  
 CF8527 TA lava, Bee Mountain Basalt, north end of Burro Mesa, in stream channel near 3763 ft hill, BBNP. 63  
 E90-18 BTA lava, Saucedo Lavas Member, Rawls Formation. 24  
 H92-78 TA lava, Rancherias Lavas Member, Fresno Formation. 24  
 MV-10 TP intrusive, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22  
 L TA lava, Cottonwood Springs Formation, Davis Mtns. 40  
 Tr-26 BTA lava, Saucedo Lavas Member, Rawls Formation, elevation 2950, near main ranch road. 69  
 CF8524 BTA lava, Tule Mountain Trachyandesite, northernmost point on very sharp bend on River Road, between benchmarks 2304 and 2294, BBNP. 63  
  
 K336 BTA lava, Cottonwood Springs Basalt, Davis Mountains. 13  
 BB5 BTA, lava Bee Mountain Basalt, SE end of Burro Mesa, BBNP. 23  
 CF848 BTA lava, Bee Mountain Basalt, 0.3 km NNW of water tank, Blue Creek Ranch, BBNP. 63  
 E90-1a TA, 37  
 MGF007 BTA lava, Upper Trachyte, Chinati Mountains. 28  
 AS-2 TA intrusive, low outcrop east of Deer Mountain, Chess Draw, Cornudas Mountains. 58  
 H89-156 TA lava, Blue Mountain, Davis Mtns. 25  
 DM 112 BTA intrusive, roadcut on rte17, Wild Rose Pass, Davis Mtns. 71  
 J84-2 TP dike in gabbo, Marble Canyon. 59  
 H TA lava, Member B, Puertacitas Formation. 40  
 BB84-4a BTA lava, Bee Mountain Basalt, BBNP. 52  
 J-7 TA lava, Saucedo Lavas Member, Rawls Formation, north of Rte 170, 0.6 km west of Tapada Creek bridge. 69  
  
 BB84-4b TA lava, Bee Mountain Basalt, BBNP. 48  
 CF8538 TA lava, near top of Bee Mountain Basalt, Cerro Castellan, BBNP. 63  
 84113 TA intrusive, Buckhorn caldera. Roadcut on rte 17 at Wild Rose Pass. D. F. Parker, pers comm, 1989  
 CF8504 TA lava, Ash Spring Basalt, hill southeast of Burro Mesa Pouroff Road, BBNP. 63  
 CF8514 BTA lava, Bee Mountain Basalt, 0.1 km south of CF8513, BBNP. 63  
 H88-62 TA lava. 25  
 RM 190 TP intrusive, central zone, Rattlesnake Mountain sill, BBNP. 15  
 J81-211 TA intrusive, hybrid rock, Marble Canyon. 59  
 H90-43 TA lava, Alazan Lavas Member, Rawls Formation. 24  
 H92-65 TA intrusion related to Rawls Formation. 24  
 AS-5 TP intrusive, low outcrop in Chess Draw east of Deer Mountain, Cornudas Mtns. 58  
 D TA lava, member B, Puertacitas Formation. 40

CF8505 TA lava, Ash Spring Basalt, hill east of intersection of main park rd and Burro Mesa Pouroff rd, BBNP. 64

WT725 TA intrusive, Wax Factory Laccolith, Terlingua area. 16

CF8418 TA lava, Ash Spring Basalt, near 4540 foot hill, 1.7 km southwest of Blacktail Peak, BBNP. 63

BB-4 TA lava, Ash Spring Basalt, east side of Burro Mesa, BBNP. 23

RM185a TP intrusive, Rattlesnake Mountain sill, BBNP. 14

H91-179 TA lava, Alazan Lavas Member, Rawls Formation. 24

E90-21 TA lava, Saucedo Lavas Member, Rawls Formation. 24

E90-30 TA lava, Las Burras Lavas, Rawls Formation. 24

H91-115 TA intrusion related to Rawls Formation. 24

H90-45 TA lava, Alazan Lavas Member, Rawls Formation. 24

CF8547 TP lava, Ash Spring Basalt, 0.4 km west of Ross Maxwell Scenic Drive on the Chimneys trail, BBNP. 63

Tr8-5 TA lava, Alazan Lavas Member, Rawls Formation, elevation 4080, middle of Cerro de las Burras. 69

H91-219 TA lava, Saucedo Lavas Member, Rawls Formation. 24

Tr-36B TA lava, in same section as Tr35, probably not the same member. 69

H91-96 TA intrusion related to Rawls Formation. 24

J81-217 TA intrusive, hybrid rock, Marble Canyon. 59

Tr-30B TA lava, Saucedo Lava Member, Rawls Formation, elevation 2560 near river access on Rte 170. 69

H86-87 TA, intrusive. 29

DE-12 PH intrusive, groundmass of porphyritic dike, Deer Mountain, Cornudas Mtns. 7

H92-70 TA lava, Rancherias Lavas Member, Fresno Formation. 24

Chin 430 TA lava, Upper Trachyte, Tinaja Prieta Canyon, Chinati Mountains. 28

J84-1 PH dike, Marble Canyon. 58

CS-3 PH intrusive, Cornudas Station intrusion, Diablo Plateau. 7

CH-1 PH intrusive, Chattfield Mountain, Cornudas Mtns.. 58

J81-191 TA intrusive, West Chinati stock at San Antonio Mine. 28

DC-1b T intrusive, Dell City, Diablo Plateau. 7

Tr-60 T lava, Alazan Lavas Member, Rawls Formation, on Cerro de las Burras at benchmark 4345. 69

DE-1 PH intrusive, Deer Mountain, Cornudas Mtns. 58

H84-23 TA, intrusive. 29

DE-4 PH, glassy dike, Deer Mountain, Cornudas Mtns. 7

J82-100 PH dike, Marble Canyon. 59

WS-1 PH intrusive, Washburn Mountain, Cornudas Mtns. 7

H91-202 TA lava, Segundo Lavas Member, Rawls Formation. 24

Tr-56 T lava, Alazan Lavas Member, Rawls Formation, elevation 4130, saddle E of Cerro de las Burras. 69

DE-5 PH intrusive, Deer Mountain, Cornudas Mtns. 7

SA-1 PH intrusive, San Antonio Mountain, Cornudas Mtns. 7

S56 TA. 66

DM901 T intrusive, Dove Mountain. 58

J84-6 TA intrusive, hybrid rock, Marble Canyon. 59

SA-12 PH, glassy dike, San Antonio Mountain, Cornudas Mtns. 58

EM 19 PH intrusive, East Mountain, Sierra Tinaja Pinta. 22

H91-129 TA lava, Rancherias Lavas Member, Fresno Formation. 24

J82-103 PH dike, Marble Canyon. 59

H90-60 TA lava, Tule Mountain Trachyandesite, Solitario. 26

EM8	PH intrusive, East Mountain, Sierra Tinaja Pinta. 22
89209	PH intrusive, Baldy Mountain, Davis Mtns. 58
MV4	PH intrusive, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22
Z-2	PH, intrusive xenolith-rich plug, Chess Draw, Cornudas Mountains. 58
Tr-61	T lava, Alazan Lavas Member, Rawls Formation, elevation 4260 E of benchmark 4345. 69
Chin 67	TA intrusive, West Chinati stock. 28
F-2	T lava, Alazan Lavas Member, Rawls Formation, elevation 4320, saddle E of Cerro de las Burras. 69
DM902	PH intrusive, Dove Mountain. 58

### 38-26Ma, 59-61%SiO<sub>2</sub>'

WB8335	PH intrusive, interior of West Black Hill. 20
87103	PH intrusive, El Muerto Peak, Davis Mtns.. 58
DM-3	PH intrusive, Dog Mountains, Diablo Plateau. 7
89206	PH intrusive, Horseshoe Butte, Davis Mtns 58
DML-13	T intrusive, Point of Rocks, Davis Mountains. 47
CF8522	TA lava, Tule Mountain Trachyandesite, on River Road at Sierra de Chino, BBNP. 63
Corn 33	PH intrusive, Wind Mountain, Cornudas Mtns. 46
RM191	T intrusive, central zone, Rattlesnake Mountain sill, BBNP. 15
WB8332	PH intrusive, chilled margin, West Black Hill. 20
Muerto	PH intrusive, El Muerto Peak, Davis Mtns.
MV9	T, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22
SP-22	PH, chilled top, Sierra Prieta intrusion, Diablo Plateau. 58
Tr8-1	T lava, Alazan Lavas Member, Rawls Formation, elevation 4200. Peak N of benchmark 4345. 69
J81-199	TA intrusive, West Chinati stock at Burney Mine. 28
MV5	PH, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22
76001	TA lava NW of Puertacitas Hills. 4
WBH908	T intrusive, West Black Hill. 58
GM-1	T intrusive, Granite Mountain, Diablo Plateau. 58
MV863	PH, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22
WB8333	T dike, West Black Hill. 20
WBH901	T intrusive, West Black Hill. 58
DM 158	T lava, Eppenhauer Ranch Formation, outcrop on Observatory Rd, Davis Mtns. 71
WN-11	T intrusive, Wind Mountain, Cornudas Mtns. 58
Paint Mtn	T lava flow, top of Paint Mountain
H91-200	T intrusion related to Rawls Formation. 24
Tnsp-1	PH intrusive, Wind Mountain, Cornudas Mtns. 46
H81-165	T. 28
WT763	T lava, Tule Mountain Trachyandesite, BBNP. 16
EM7	PH, East Mountain intrusion, Sierra Tinaja Pinta. 22
4 May	T, Mayfield Valley intrusion, Sierra Tinaja Pinta. 58
3 May	T, Mayfield Valley intrusion, Sierra Tinaja Pinta. 58
Tr-40	T lava, Alazan Lavas Member, Rawls Formation, elevation 4360in peaks E of Cerro de las Burras. 69
82-90	TA lava, porphyritic, Van Horn Mountains caldera. 27
J84-10	T intrusive, hybrid rock, Marble Canyon. 59

MB8338 PH intrusive, interior, Middle Black Hill. 20  
 MV15 T, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22  
 EM13 PH, East Mountain intrusion, Sierra Tinaja Pinta. 22  
 MM4 T, Miller Mountain intrusion, Sierra Tinaja Pinta. 22  
 WBH907 T intrusive, West Black Hill. 58  
 MV12 PH, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22  
 MBH904 T intrusive, Middle Black Hill. 58  
 SP 23 PH, Sierra Prieta intrusion, Diablo Plateau.. 7  
 R-156-8 TA lava, Petan Basalt, Davis Mtns. 68  
 MV13 PH, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22  
 MM914-1 PH, Miller Mountain intrusion, Sierra Tinaja Pinta. 22  
 H91-199 T lava, Alazan Lavas Member, Rawls Formation. 24  
 Tr-58 T lava, Alazan Lavas Member, Rawls Formation, elevation 4180, east arm of Cerro de las Burras. 69  
 PP-314 T lava, McIntyre Ranch, Paisano volcano. 54.  
 MV16 T, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22  
 MM913-1 PH, Miller Mountain intrusion, Sierra Tinaja Pinta. 22  
 MB8336 T intrusive, chilled zone, Middle Black Hill. 20  
 H91-85 T lava, post-caldera fill, Solitario. 24  
 AI-11 PH intrusive, Alamo Mountain, Cornudas Mtns. 58  
 MB8342 T intrusive, interior, Middle Black Hill. 20  
 MB8344 T intrusive, interior, Middle Black Hill. 20  
 CD914-2 PH, Cerro Diablo intrusion, Sierra Tinaja Pinta.. 22  
 H91-18 T lava, Rancherias Lavas Member, Fresno Formation. 24  
 CD10 PH, Cerro Diablo intrusion, Sierra Tinaja Pinta. 22  
 WB8334 T dike, West Black Hill. 20  
 MBH901 T intrusive, Middle Black Hill. 58  
 MM5 T, Miller Mountain intrusion, Sierra Tinaja Pinta. 22  
 CD15 T, Cerro Diablo intrusion, Sierra Tinaja Pinta. 22  
 MV14 T, Mayfield Valley intrusion, Sierra Tinaja Pinta.. 22  
 EM863 T, East Mountain intrusion, Sierra Tinaja Pinta. 22  
 MBH905 T intrusive, Middle Black Hill. 58  
 RH-1 T, Red Hills intrusion, Diablo Plateau. 7  
 82-91 TA lava, porphyritic, Van Horn Mountains caldera. 27  
 BB81-12 T lava?, Boot Rock Member, Big Bend National Park. 48  
 SP-20f PH, chilled base, 1m above contact, Sierra Prieta intrusion, Diablo Plateau. 58  
 H91-203 T lava, Saucedo Lavas Member, Rawls Formation. 24  
 EM861 T, East Mountain intrusion, Sierra Tinaja Pinta. 22  
 84611 T, Point of Rocks intrusion, Davis Mtns. 57  
 EM15 T, East Mountain intrusion, Sierra Tinaja Pinta. 22  
 81-196 TA lava, porphyritic, Van Horn Mountains caldera. 27  
 Tspf2 PH intrusive, Wind Mountain, Cornudas Mtns. 46  
 Tspfg1 T intrusive, Wind Mountain, Cornudas Mtns. 46  
 J84-12 T intrusive, hybrid rock, Marble Canyon. 59  
 CD914-1 PH, Cerro Diablo intrusion, Sierra Tinaja Pinta. 22  
 MM3 T, Miller Mountain intrusion, Sierra Tinaja Pinta. 22

Tr-59 T lava, Alazan Lavas Member, Rawls Formation, elevation 4280 W of Tr 58. 69  
 Corn 34 PH intrusive, Wind Mountain, Cornudas Mtns. 46  
 DM-5 PH intrusive, Dog Mountains, Diablo Plateau. 58

**38-26Ma, 61-62%SiO<sub>2</sub>'**

RM145A T intrusive, central zone, Rattlesnake Mountain sill, BBNP. 15  
 PP331 T lava, Paisano Volcano. 54  
 May-1b T, chilled roof, Mayfield Valley intrusion, Sierra Tinaja Pinta. 58  
 MM913-3 T, Miller Mountain intrusion, Sierra Tinaja Pinta. 22  
 H90-67 T lava, Rancherías Lavas Member, Fresno Formation. 24  
 SP-28 T, Sierra Prieta intrusion, Diablo Plateau. 58  
 SP-39 PH, chilled contact, Sierra Prieta intrusion, Diablo Plateau. 58  
 H81-177 T, intrusive, Infiernito caldera. 28  
 MM913-2 PH, Miller Mountain intrusion, Sierra Tinaja Pinta. 22  
 Tspfg3 T intrusive, Wind Mountain, Cornudas Mtns. 46  
 H91-123 T lava, Alazan Lavas Member, Rawls Formation. 24  
 16M-2 T intrusive, Sixteen Mountains, Diablo Plateau. 58  
 Tr-62 T lava, Alazan Lavas Member, Rawls Formation, elevation 4280, middle of Cerro de las Burras. 69  
 EM21 T, East Mountain intrusion, Sierra Tinaja Pinta. 22  
 Al-10 PH intrusive, Alamo Mountain, Cornudas Mtns. 58  
 RM173c PH, Rattlesnake Mountain sill, BBNP. 14  
 CD914-1A T, Cerro Diablo intrusion, Sierra Tinaja Pinta. 22  
 EM23 T, East Mountain intrusion, Sierra Tinaja Pinta. 22  
 CO-1 T intrusive, Cornudas Mountain. 7  
 Need-1 T, Needle Peak intrusion.  
 SP-20b PH, basal chilled zone, 6 inches above contact, Sierra Prieta intrusion, Diablo Plateau. 58  
 H91-131 T lava, Alazan Lavas Member, Rawls Formation. 24  
 CD-7' T, Cerro Diablo intrusion, Sierra Tinaja Pinta. 22  
 CD-7 T, Cerro Diablo intrusion, Sierra Tinaja Pinta. 58  
 EB8349 T, interior, East Black Hill intrusion. 20  
 SP-3 T, Sierra Prieta intrusion, Diablo Plateau. 58  
 H91-44 T ash-flow tuff, Rancho Viejo Tuff Member, Rawls Formation. 24  
 EB8303-1 T, interior, East Black Hill intrusion. 20  
 DM 150 T, intrusive, small rolling hills at base of Mt Locke, Davis Mtns. 71  
 Tspfg4 T, intrusive, Wind Mountain, Cornudas Mtns 46  
 Dav-5 T, intrusive, west end of Sawtooth Peak pluton, western Davis Mountains.  
 GM-5 T, Granite Mountain intrusion, Diablo Plateau. 7  
 SP-1 T, Sierra Prieta intrusion, Diablo Plateau. 7  
 Tr-13 T lava, Alazan Lavas Member, Rawls Formation, elevation 4280, east cliff in Rancherías Canyon. 69  
 CD-11 T, Cerro Diablo intrusion, Sierra Tinaja Pinta.=. 22  
 EB8350 T, chilled margin, East Black Hill intrusion. 20  
 EB8303-3 T, chilled margin, East Black Hill intrusion. 20  
 RP-2 T, intrusive, Ranger Peak, Paisano volcano. 58  
 J81-247 T, Ojo Bonito intrusion, Infiernito caldera. 28

QM-74	T lava, Square Peak Volcanic Series, Quitman Mountains. 65
EBH902	T, East Black Hill intrusion. 58
Corn 31	T intrusive, Wind Mountain, Cornudas Mtns. 46
DML-11	T lava, Merrill Formation, Davis Mtns. 47
PP-159	T, Hunter's Cabin intrusion, Paisano Volcano. 58
EM903	T, Elephant Mountain intrusion. 58

### 38-26Ma, 62-63%SiO<sub>2</sub>'

H89-194	T, Ojo Bonito intrusion, Infiernito caldera. 28
EB8351	T, chilled margin, East Black Hill intrusion. 20
CD6	T, Cerro Diablo intrusion, Sierra Tinaja Pinta. 7
Tr-22	T lava, Alazan Lavas Member, Rawls Formation, elevation 4400, east cliff in Rancherías Canyon. 69
CD12	T, Cerro Diablo intrusion, Sierra Tinaja Pinta 22
BB83-12	T lava, Tule Mountain Trachyandesite, BBNP. 48
81-97D	T lava, postcaldera, Infiernito caldera. 32
89207	T intrusive, Brushy Mountain, Davis Mtns. 58
SP903	T, intrusive, Sosa Peak. 58
MM1	T, Miller Mountain intrusion, Sierra Tinaja Pinta. 22
PP358	T, Ranger Peak intrusion, Paisano volcano. 58
EM906	T, intrusive, Elephant Mountain. 58
SP901	T, intrusive, Sosa Peak. 58
H81-82	T lava, postcaldera, Infiernito caldera. 32
CD-4	T, Cerro Diablo intrusion, Sierra Tinaja Pinta. 22
P-3	T, intrusive, Puff's Peak. 58
PP-158	T, intrusive, Ranger Peak, Paisano volcano. 59
Gor-1a	T lava, Puertacitas Hills
Mil-2	T, Miller Mountain intrusion, Sierra Tinaja Pinta. 58
Ht-1	T, intrusive, Heart Mountain. 58
Ht-2	T, intrusive, Heart Mountain. 58
QM-142	T, Pinnacle Peak, Quitman Mountains. 65
MH 14	T intrusive, main phase, 0.4 km north of Roy's Peak, McKinney Hills, BBNP. 2
H81-172	T, Infiernito caldera. 28
85202	T intrusive, El Muerto Peak, Davis Mtns. D.F. Parker, personal communication, 1989
89208	T intrusive, Brushy Mountain, Davis Mtns. 58
H81-71	T lava, sparsely porphyritic, Infiernito caldera. 28
BM904	T, Black Mesa intrusion. 58
CD-6'	T, Cerro Diablo intrusion, Sierra Tinaja Pinta. 22
MV11FG	T, Mayfield Valley intrusion, Sierra Tinaja Pinta. 22
MM2	T, Miller Mountain intrusion, Sierra Tinaja Pinta. 22
GSL-71	T, intrusive, Government Spring laccolith, BBNP. 73
PP-312	T lava flow, Decie Formation, Paisano volcano. 13
GSL-94	T, dike cutting Government Spring laccolith, BBNP. 73
81-97c	T lava, postcaldera, Infiernito caldera. 32

### 38-26Ma, 63-66%SiO<sub>2</sub>'

MH 13	T intrusive, main phase, least evolved, 1 km north of Roy's Peak, McKinney Hills intrusion, BBNP. 2
GSL-17	T, dike cutting Government Spring laccolith, BBNP. 73
RH-3	T, Red Hills intrusion, Diablo Plateau. 7
BM901	T intrusive, Black Mesa. 58
UP904	T intrusive, unnamed peak on Pope Ranch. 58
GSL-55	T intrusive, Government Spring laccolith, BBNP. 73
UP907	T intrusive, unnamed peak on Pope Ranch. 58
MH 15	T intrusive, main phase, 0.3 km north of Roy's Peak, McKinney Hills intrusion, BBNP. 2
H92-59	T intrusive, Bofecillos vent. 24
Bof-2	T intrusive, Bofecillos vent. 24
F3D	T dike crossing ranch road in Three Dike Hill area. 69
J83-22	T, Nine Point Mesa sill. 10
Mil-1	T, Miller Mountain intrusion, Sierra Tinaja Pinta. 7
Snt-3	T intrusive, Santiago Peak. 58
QM 223	T, Quitman Mountains. 65
MH 16	T, main phase, Roy's Peak, McKinney Hills intrusion, BBNP. 2
H91-180	T ash-flow tuff, Rancho Viejo Tuff Member, Rawls Formation. 24
MS-1	T dome, dome on Weston Ranch, Davis Mtns
Chin 448	T lava, Middle Trachyte, Chinati Mountains caldera. 28
MH 221	T, northeast flank of intrusion, McKinney Hills, BBNP. 2
PP3	T, intrusive, Paisano Peak, Paisano volcano. 58
DP-142	T, lava, Fox Canyon Formation, Little Aguja Canyon, Davis Mtns. 57
DML-1	T intrusive, Barillos dome, Davis Mtns. 47
H91-190	T lava, Segundo Lavas Member, Rawls Formation. 24
GSL-80	T dike cutting Government Spring laccolith, BBNP. 73
RS71-8a	T lava, Mt Locke Formation, Davis Mtns. 48
J81-206	T dike, Marble Canyon. 59
H91-191	T lava, Leyva Canyon Member, Rawls Formation. 24
BB83-8a	T, ring dike, BBNP. 48
Tr-10	T lava, Saucedo Lavas Member, Rawls Formation, elevation 4520 N of Tr5-9. 69
UP905	T intrusive, unnamed peak on Pope Ranch. 58
PP-122	T, intrusive, Paisano Peak, Paisano volcano. 58
MH 79	T, intermediate facies of main phase, McKinney Hills intrusion, BBNP. 2
87116	T lava, Mount Locke Formation, roadcut, rte 118, Mt Locke, Davis Mtns. 13
H91-211	T lava, Leyva Canyon Member, Rawls Formation. 24
DM157	T, intrusive, Baldy Peak, Mt Livermore, Davis Mtns. 71
MH 173	T, intermediate facies of main phase, McKinney Hills intrusion, BBNP. 2
DML-7	T lava, Mt Locke Formation, Davis Mtns. 47
CO-4	T intrusive, Cornudas Mountain. 7
Alp-6	T, intrusive, south of Lane ranchhouse east of Alpine.
UP906	T intrusive, unnamed peak on Pope Ranch. 58
H92-76	T lava, Rancherías Lavas Member, Fresno Formation. 24



J82-95 T, intrusive, McKinney Hills, BBNP. 10  
 BM902 T intrusive, Black Mesa. 58  
 ST-15 T, margin of intrusion, Sawtooth Mountain, Davis Mtns. 70  
 MH 11 T, intermediate facies of main phase, McKinney Hills intrusion, BBNP. 2  
 GSL-59 T, intrusive, Government Spring laccolith, BBNP. 73  
 Rb-1 T lava, Paisano volcano. 54  
 GSL-70 T intrusive, Government Spring laccolith, BBNP. 73  
 CF842 T lava, Tule Mountain Trachyandesite, top of Tule Mountain, BBNP. 63  
 W96-27 T lava, Leyva Canyon Member, Rawls Formation. 72  
 Bof-1 T intrusive, Bofecillos vent.  
 TPC-305 T dike, head of Juniper Canyon, BBNP. 6  
 I18-5 T lava, postcaldera, Infiernito caldera. 32  
 GSL-29 T intrusive, Government Spring laccolith, BBNP. 73  
 Hut-2 T, Hueco Tanks intrusion.  
 DM 151 T lava, Mt Locke Formation, gentle hills north of horsetrack, Davis Mtns 71  
 81020 T lava, Fox Canyon Formation, Davis Mtns. 13  
 YM901 T intrusive, YE Mesa. 58  
 H92-32 T lava, Leyva Canyon Member, Rawls Formation. 24  
 MMM52 T intrusive, Maverick Mountain, BBNP. 12  
 81-113 T, late lava, High Lonesome Peak, Van Horn Mountains caldera. 27  
 GSL-04 T intrusive, Government Spring laccolith, BBNP. 73  
 U94-R121 T lava, Leyva Canyon Member, Rawls Formation. 72  
 Tr-5-9 T lava, Saucedo Lavas Member, Rawls Formation, elevation 4000 W of Panther Creek. 69  
 H89-189 T. 28  
 Tr-11 T lava, Saucedo Lavas Member, Rawls Formation, elevation 4420 N of Tr5-9. 69  
 GSL-68 T, intrusive, Government Spring laccolith, BBNP. 73  
 Tr-67 T lava, Leyva Canyon Member, Rawls Formation  
 GSL-01 T intrusive, Government Spring laccolith, BBNP. 73  
 H89-94 T, Ojo Bonito intrusion, Infiernito caldera. 62  
 GSL-09 T intrusive, Government Spring laccolith, BBNP. 73  
 MH172 T, intermediate facies of main phase, McKinney Hills intrusion, BBNP. 2  
 GSL-79 T intrusive, Government Spring laccolith, BBNP. 73  
 GSL-84 T, dike cutting Government Spring laccolith, BBNP. 73  
 Tr-12 T lava, Saucedo Lavas Member, Rawls Formation, elevation 4200 N of Tr5-9. 69  
 GSL-90 T intrusive, Government Spring laccolith, BBNP. 73  
 DM 125 T intrusive, Sawtooth Mtn, roadcut on rte 166 near HO Hill, Davis Mtns. 71  
 J81-201 T intrusive, West Chinati stock. 28  
 H89-155 T, lava of Casket Mountain, Davis Mountains. 25  
 H89-127 T. 28  
 MH 102 T, intermediate facies of main phase, McKinney Hills intrusion, BBNP. 2  
 J81-213 T dike, Marble Canyon. 59  
 DM 126 T intrusive, in contact with DM 125, Sawtooth Mtn, roadcut on rte 166 near HO Hill., Davis Mtns. 71  
 ST-122 T intrusive, "The Rock Pile", Davis Mtns. 70  
 81045 T intrusive, Puertacitas Hills.  
 H91-225 T lava, Leyva Canyon Member, Rawls Formation. 24

Cob-1	T intrusive, Nine Point Mesa quadrangle.
ST-135	T intrusive, interior of Sawtooth Mountain, Davis Mtns. 70
DM 154	T lava, Mt Locke Formation, north flank of Brown Mtn, Davis Mtns. 71
Tr-75	T lava, Leyva Canyon Member, Rawls Formation, north of main ranch road, across from benchmark 4218. 69
H91-37	T, ash-flow tuff, Solitario. 24
Altuda	T intrusive, Altuda Ranch
H81-80	T, coarsely porphyritic lava. 28
SB-1e	T, intrusive, Study Butte. 14
MH 604	T, intermediate facies of main phase, McKinney Hills intrusion, BBNP. 2
H89-96	T, postcaldera lava, Infiernito caldera. 28
QM27	T intrusive, Quitman Mountains. 65
DM 146	T lava, mid to lower Star Mountain Formation, near gate of Buffalo Trail Scout Ranch, Davis Mtns. 71
DM 140	T lava, Fox Canyon Formation, eastern slope in Madera Canyon, near Bear Mountain, Davis Mtns. 71
16M-5	T intrusive, Sixteen Mountains, Diablo Plateau. 7
83312	T, vitrophyre, Star Mountain Formation, Indian Cave Canyon, Davis Mtns. 30
U94-R107	T lava, Leyva Canyon Member, Rawls Formation. 72
MGE800	T, post-caldera, Infiernito caldera. 32
MGE770	T, coarsely porphyritic lava. 28
DML-9	T intrusive, related to Sawtooth Mountain, Davis Mtns. 47

### **38-26Ma, 66-69%SiO<sub>2</sub>'**

U94-R105	T lava, Leyva Canyon Member, Rawls Formation. 72
MGE 794	T, Ojo Bonito intrusion, Infiernito caldera. 62
TPC-402	T, densely welded ash-flow tuff, Lost Mine Member, BBNP. 6
W97-36	T lava, Leyva Canyon Member, Rawls Formation. 72
H92-29	T lava, Segundo Lavas Member, Rawls Formation. 24
BB83-10b	T intrusive, Paint Gap Hills, BBNP. 48
H92-31	T lava, Leyva Canyon Member, Rawls Formation. 24
H91-125	T lava, Saucedo Lavas Member, Rawls Formation. 24
H92-33	T lava, Leyva Canyon Member, Rawls Formation. 24
3H-2	T intrusive, NW end of northwesternmost of Three Hills
H92-5	T lava, Leyva Canyon Member, Rawls Formation. 24
TPC-418	T, basal part of Panther laccolith in Hannold Draw, BBNP. 6
PP-208	T, intrusive, Lizard Ridge east of Paisano volcano. 53
H88-12	T intrusive, Solitario Peak. 24
W97-37	T lava, Leyva Canyon Member, Rawls Formation. 72
DP-140	T, Star Mountain Rhyolite, Little Aguja Canyon, Davis Mtns. 57
MN30	T lava, Paisano volcano. 45
MGE768	T, coarsely porphyritic lava. 28
BB83-19	T intrusive, Grapevine Hills, BBNP. 48
J85-64A	T vitrophyre, Bracks Rhyolite, central area (ZH Canyon). 30
GSL-45	T intrusive, Government Spring laccolith, BBNP. 73
U94-R108	T lava, Leyva Canyon Member, Rawls Formation. 72

J81-205 T intrusive, Marble Canyon. 59  
 H91-224 T lava, Leyva Canyon Member, Rawls Formation. 24  
 ST-198 T, interior, Sawtooth Mountain intrusion, Davis Mtns. 70  
 MH 220 T, marginal phase, McKinney Hills intrusion, BBNP. 2  
 H91-212 T lava, Leyva Canyon Member, Rawls Formation. 24  
 MGF047 T, Ojo Bonito intrusion, Infiernito caldera. 62  
 MN27 T lava, Paisano volcano. 45  
 U94-R100 T lava, Leyva Canyon Member, Rawls Formation. 72  
 DML-3 T lava, Limpia Formation, Davis Mtns. 47  
 H88-56 T lava, Crossen Trachyte. 25  
 MN29 T lava, Paisano volcano. 45  
 Tr-66 T lava, Leyva Canyon Member, Rawls Formation, elevation 4120, upslope from Tr 67. 69  
 W95-5 T lava, Leyva Canyon Member, Rawls Formation. 72  
 U94-R106 T lava, Leyva Canyon Member, Rawls Formation. 72  
 3H-1 T intrusive, east end of easternmost of Three Hills.  
 DM 133 T lava, Limpia Formation, roadcut on rte 17, Davis Mtns. 71  
 81737 T, intrusive, area of Pollard Dome, Davis Mtns. D.F. Parker, pers comm, 1989  
 U94-R116B T lava, Leyva Canyon Member, Rawls Formation. 72  
 MN24 T lava, Paisano volcano. 45  
 U94-R114B T lava, Leyva Canyon Member, Rawls Formation. 72  
 H91-197 T intrusive. 24  
 Dav-3 T sill, H-O Canyon, western Davis Mountains.  
 72-159 T, Casa Grande lava dome, BBNP. 9  
 87513 T, Point of Rocks intrusion, Davis Mountains. 13  
 MGE782 T, postcaldera, Infiernito caldera. 28  
 DM 109 T, upper Star Mountain Formation, roadcut on rte 17, Davis Mtns. 71  
 J84-14 T intrusive, Marble Canyon. 59  
 H92-26 T intrusive, Solitario Peak. 24  
 J81-215 T intrusive, Marble Canyon. 59  
 Alto-1 T intrusive, Cerro Alto  
 MGE569 T, postcaldera, Infiernito caldera. 32  
 U94-R101 T lava, Leyva Canyon Member, Rawls Formation. 72  
 Alp-2 T, arcuate dike east of Lizard Ridge, east flank of Paisano volcano  
 U94-R123 T lava, Leyva Canyon Member, Rawls Formation. 72  
 W96-29 T lava, Leyva Canyon Member, Rawls Formation. 72  
 MGE751 T, postcaldera lava, Infiernito caldera. 32  
 J84-15 T intrusive, Marble Canyon. 59  
 H87-168 T lava, Crossen Trachyte. 25  
 DM 137 T lava, Mount Locke Formation, above DM 136 in roadcut on Observatory Road, Davis Mtns. 71  
 U94-R102 T lava, Leyva Canyon Member, Rawls Formation. 72  
 Gor-2a T, in vent cutting unit of Gor-1  
 H87-202 T lava, Bracks Rhyolite. 31  
 QM32 T, Quitman Mountains. 65  
 F-1 T lava, Alazan Lavas Member, Rawls Formation, elevation 4620 on peak S of spring in Las Burras Canyon. 69

TPC-325 T, densely welded ash-flow tuff, Boot Rock Member, The Pinnacles, BBNP. 6  
 H87-169 T lava, Crossen Trachyte. 25  
 85602 T, Star Mountain Formation, Saddleback Mountain, Barrilla Mountains. 30  
 Locke T lava, Mt Locke Formation, roadcut, NE slope Mt Locke, Davis Mtns.  
 U94-R113 T lava, Leyva Canyon Member, Rawls Formation. 72  
 Tr-38 T lava, Alazan Lavas Member, Rawls Formation, elevation 4540 on peak S of spring in  
 Las Burras Canyon. 69  
  
 H81-166 T, coarsely porphyritic lava. 28  
 MN32 T lava, Paisano volcano. 45  
 MN28 T lava, Paisano volcano. 45  
 MH 33 T, marginal phase, McKinney Hills intrusion, BBNP. 2  
 MN13 T lava, Paisano volcano. 45  
 W95-3 T lava, Leyva Canyon Member, Rawls Formation. 72  
 DM 129 T, intrusive, Weston Ranch stock, roadcut on rte 118, Davis Mtns. 71  
 DM 162 T, intrusive, outcrop near T-P Lake spillway, Big Aguja Canyon, Davis Mtns.. 71  
 87114 T, Star Mountain Formation, middle unit, Wild Rose Pass, Davis Mtns.. 30  
 U94-R110 T lava, Leyva Canyon Member, Rawls Formation. 72  
 CG T, Casa Grande lava dome, BBNP. 14  
 H92-28 T lava, Segundo Lavas Member, Rawls Formation. 24  
 U94-R111 T lava, Leyva Canyon Member, Rawls Formation. 72  
 Tr-39 T lava, Alazan Lavas Member, Rawls Formation, elevation 4340 south of sample F 1. 69  
 PP87 T, dike, 2 miles east of Paisano Peak. 54  
 MN26 T lava, Paisano volcano. 45  
 PP27 T lava, platy brown felsite unit, Paisano volcano. 54  
 H91-195 T lava, Leyva Canyon Member, Rawls Formation. 24  
 W95-2 T lava, Leyva Canyon Member, Rawls Formation. 72  
 TPC329 T, feeder dike of Casa Grande lava dome, BBNP. 6  
 TPC313 T, densely welded ash-flow tuff, Lost Mine Member, top of Toll Mountain, BBNP. 6  
 Aguja-1 T, intrusive, Big Aguja Canyon, Davis Mountains. 13  
 H88-33 T lava, Bracks Rhyolite. 31  
 H87-195 T lava, Bracks Rhyolite. 31  
 H87-200 T lava, Bracks Rhyolite. 31  
 MGE752 T, postcaldera lava, Infiernito caldera. 32  
 TPC-317 T lava, Lost Mine Member, west edge of South Rim Mesa 300 m south of Emory Peak, BBNP. 6  
 TPC-315 T, Casa Grande lava dome, BBNP. 6  
 MN36 T, lava, Paisano volcano. 45  
 PP273 T, Gage Holland west ranch, Paisano volcano. 54  
 PP156 T, 1 mile west of west flank of Ranger Peak, Paisano volcano. 54  
 H87-198 T lava, Bracks Rhyolite. 31  
 H87-196 T lava, Bracks Rhyolite. 31  
 MH 22 T, marginal phase, McKinney Hills intrusion, BBNP. 2  
 Tr-44 T lava, Alazan Lavas Member, Rawls Formation, elevation 4420 near benchmark 4485. 69  
 MN20 T lava, Paisano volcano. 45

### 38-26Ma, 69-71%SiO<sub>2</sub>'

H87-201	R lava , Bracks Rhyolite. 31
81009	R lava, Star Mountain Formation, roadcut on rte 17, Davis Mtns. 55
H92-68	R lava, Leyva Canyon Member, Rawls Formation. 24
U94-R112	R lava, Leyva Canyon Member, Rawls Formation. 72
DML-5	R intrusive, Weston stock, Barrilla Mtns. 47
J81-214	R intrusive, Marble Canyon. 59
J85-76	R lava, Bracks Rhyolite. 31
R-41	R, Pantera (now High Lonesome) Ignimbrite. 68
H88-68	R lava, Star Mountain Formation. 25
H87-197	R lava, Bracks Rhyolite. 31
H87-199	R lava, Bracks Rhyolite. 31
DML-4	R ash-flow tuff, Sleeping Lion Formation, Davis Mtns. 47
Tr-73	R lava, Leyva Canyon Member, Rawls Formation, elevation 4400 near ranch road N of Papalote Escondido. 69
MN38	R lava, Paisano volcano. 45
PP8	R, ash-flow tuff, Morrow Tuff Member, Paisano volcano. 54
H87-203	R lava, Bracks Rhyolite. 31
DML-2	R lava, Star Mountain Formation. 47
87110	R lava, Star Mountain Formation, lower unit, Wild Rose Pass. 30
TH-7	R intrusive, Triple Hill, Sierra Blanca group.
PP92	R lava, platy brown felsite unit, Paisano volcano. 54
MH 82	R, dike, McKinney Hills intrusion, BBNP. 2
DM 141	R, pyroclastic flow deposit, Gomez Tuff, in creek bed, Madera Canyon, Davis Mtns. 71
PP189	R, intrusive, north of rest stop on US90, Paisano volcano. 54
H91-210	R lava, Leyva Canyon Member, Rawls Formation. 24
NCB6	R lava, Crossen Trachyte, roadcut on rte 118, 8km south of Alpine. 50
J85-72	R lava, Bracks Rhyolite. 31
J81-223	R, southern intrusion, Cave Peak near Marble Canyon. 59
DM 108	R lava, upper Star Mountain Formation, roadcut on rte 17. 71
TPC-414	R, basal unit of ash-flow tuff, Lost Mine Member, 0.4 km north of Boot Spring, BBNP. 6
H87-204	R lava, Bracks Rhyolite. 31
DM 155	R, pyroclastic flow deposit, tuff of Wild Cherry, northern flank of Brown Mountain, Davis Mtns. 71
DM 115	R lava, Adobe Canyon Formation, north flank of Forbidden Mountain, Davis Mtns. 71
QM247	R, Quitman Mountains. 65
H91-181	R lava dome, Rancherías Lavas Member, Fresno Formation. 24
R-157	R, Pantera Ignimbrite (now High Lonesome Tuff). 68
Tr-63	R lava, Leyva Canyon Member, Rawls Formation, elevation 4400 on knob S of main ranch road. 69
85601	R, vitrophyre in Star Mountain Formation, Saddleback Mountain, Barrilla Mountains. 14
TPC-428	R intrusive, central plug, Pine Canyon caldera, BBNP. 6
DM 160	R, intrusive, Cherry Canyon, Davis Mtns. 71
87601	R lava, upper flow unit, Barrel Springs Formation, Davis Mountains State Park. 57
H88-87	R, intrusive. 25

H82-61 R lava, Lower Rhyolite, Chinati caldera. 28  
 81-173 R, postcaldera lava, Infiernito caldera. 32  
 DM 106 R lava, Adobe Canyon Formation, uppermost flow on north flank of Forbidden Mountain., Davis Mtns 71  
 DM 111 R lava, upper Star Mountain Formation, roadcut on rte 17. 71  
 J81-204 R intrusive, West Chinati stock. 28  
 MS-2 R intrusive, Weston dome, pit 1/4 mile E of rte 118, 5.1 miles south of Fort Davis courthouse, Davis Mtns. 57  
  
 SL-2 R intrusive, West Chinati stock, 3 km SW of West Chinati Peak. 17  
 DM 121 R lava, Barrel Springs Formation, roadcut on rte 118. 71  
 J81-224 R dike, Marble Canyon. 59  
 DM 136 R lava, base of Mount Locke Formation, roadcut on rte 118 near Mt Locke, Davis Mtns. 71  
 77023 R, glassy dike cutting Paisano Rhyolite in roadcut, Paisano volcano.  
 H89-68 R lava, Star Mountain Formation. 25  
 PP111 R, dike in roadcut on powerline road SSE of Paisano Peak, Paisano volcano. 54  
 MN9 R lava, Paisano volcano. 45  
 PP359 R dike, McIntyre ranch, Paisano volcano. 54  
 DM 107A R, pyroclastic flow deposit, Gomez Tuff, roadcut in Pig Pen Canyon., Davis Mtns. 71  
 DM 138 R, pyroclastic flow deposit, tuff of Wild Cherry, summit of Mount Locke, Davis Mtns. 71  
 H89-1 R lava, Barrel Springs Formation., Davis Mtns 25  
 PP376 R, intrusive, Haystack Mountain. 53  
 MN35 R lava, Paisano volcano. 45  
 BSP R, Barrel Springs Formation, Davis Mtns  
 BB83-2 R, intrusive, Vernon Bailey Peak, BBNP. 48  
 W96-28 R lava, Leyva Canyon Member, Rawls Formation.. 72  
 H89-12 R lava of Casket Mountain, Davis Mtns. 25  
 W95-4 R lava, Leyva Canyon Member, Rawls Formation. 72  
 PP6 R, Big Dike, road to McIntyre ranch house, Paisano volcano. 54  
 H89-51 R lava of Casket Mountain., Davis Mtns 25  
 MN37 R lava, Paisano volcano. 45  
 MN8 R lava, Paisano volcano. 45  
 PP47 R lava, SE edge of small butte on NW side of upper Ranger Canyon, Paisano volcano. 54  
 C432 R dike intruding West Chinati stock, in San Antonio Canyon.  
 H88-71 R lava, Star Mountain Formation. 25  
 C487 R, Ojo Bonito intrusion, 4 km north of Cieneguita Ranch headquarters, Infiernito Caldera. 17  
 87864 R lava, Barrel Springs/Wild Cherry Formation, Davis Mountains. 13  
 DM 116 R, vitrophyre, Adobe Canyon Formation, clast in top breccia of uppermost lava flow exposed on north flank of Forbidden Mountain, Davis Mtns. 71  
  
 DM 143 R lava, Barrel Springs Formation, roadcut on rte 166, Davis Mtns. 71  
 DM 114 R lava, Adobe Canyon Formation, middle flow of three exposed on north flank of Forbidden Mountain. Davis Mtns. 71  
  
 DM 145 R, pyroclastic flow deposit, tuff of Wild Cherry, hill south of rte 118 near Beef Pasture Gap, Davis Mtns. 71  
  
 J87-67 R lava, Barrel Springs Formation, Davis Mtns. 25  
 H89-151 R, tuff of Wild Cherry, Davis Mtns. 25  
 DM 113 R lava, Barrel Springs Formation, roadcut on rte 17, Davis Mtns. 71

H92-21	R lava, Leyva Canyon Member, Rawls Formation.. 24
BS4	R, lava or rheomorphic tuff, Barrel Springs Formation, Seven Springs Ranch, Barrilla Mountains. 13
84205	R lava, Adobe Canyon Formation, Davis Mtns. D.F. Parker, pers comm, 1989
81-83	R, post-caldera lava, Infiernito caldera. 32
MGE799	R, post-caldera lava, Infiernito caldera. 32
88526	R lava, lower flow, Star Mountain Formation at Pollard Dome, Davis Mountains. 13
TPC-419	R, densely welded ash-flow tuff, Pine Canyon Rhyolite, BBNP. 6
W97-30	R lava, Leyva Canyon Member, Rawls Formation.. 72

### **38-26Ma, 71-74%SiO<sub>2</sub>'**

TPC376	R lava, Pine Canyon Rhyolite, at base of waterfall on Pine Canyon Trail, BBNP 6
DM 134	R lava, Sleeping Lion Formation, roadcut on rte 118, Davis Mtns. 71
PP112	R, east of Paisano Peak, Paisano volcano. 54
H89-47	R lava of Casket Mountain, Davis Mtns. 25
H89-153A	R lava of Casket Mountain, Davis Mtns. 25
Chin 209	R, Lower Rhyolite, Chinati Mountains caldera. 17
84326	R lava, Sleeping Lion Formation, roadcut on rte 118, Limpia Canyon, Davis Mtns. 30
J87-72	R intrusive, Round Top, Sierra Blanca group. 60
MH 23	R, marginal phase, McKinney Hills intrusion, BBNP. 2
MP4A	R, intrusive, Mitre Peak. D.F. Parker, personal communication, 1989
J87-65	R lava, Barrel Springs Formation, Davis Mtns. 25
87602	R, basal slightly welded tuff, Barrel Springs Formation, Davis Mountains State Park. 57
DM 120	R lava, Sleeping Lion Formation, above DM 134, roadcut on rte 118. 71
Trip-1	R intrusive, Triple Hill, Sierra Blanca group. 3
PP9	R, Big Dike, roadcut at Baptist Encampment, Paisano volcano. 54
J84-11	R dike, Marble Canyon. 59
56	R, Buckshot Ignimbrite. 1
DM 101	R lava, Tricky Gap Formation, White Mountain, Davis Mtns. 71
87509	R lava, Barrel Springs/Wild Cherry Formation, Davis Mtns. D.F. Parker, pers comm, 1989
PP406	R, Encampment Dike, railroad cut, Paisano Pass, Paisano volcano. 54
81-115	R, High Lonesome Tuff, Van Horn Mountains caldera. 27
J87-73	R intrusive, Round Top, Sierra Blanca group. 60
Mitre-1	R, intrusive, Mitre Peak
87511	R tuff, Barrel Springs/Wild Cherry Formation, Davis Mountains. 13
RT4-96	R intrusive, Round Top, Sierra Blanca group. 60
J81-222	R, southern intrusion at Cave Peak near Marble Canyon. 59
J87-66	R lava, Barrel Springs Formation. 25
H89-75	R lava, Star Mountain Formation.. 25
BB83-7	R, intrusive or lava dome?, Pulliam Peak, Chisos Mountains, BBNP. 48
PP77	R, ejected block near base of Paisano Tuff, 1.5 miles east of Paisano Peak, Paisano volcano. 54
RT3-130	R intrusive, Round Top, Sierra Blanca group. 60
BB83-23	R lava, Burro Mesa Rhyolite, BBNP. 48
59-173	R lava Barrel Springs Formation, west end of Barilla Mountains.

RT337-310 R intrusive, Round Top, Sierra Blanca group. 60  
DML-8 R, ash-flow tuff, Sheep Pasture Formation, Davis Mtns. 47  
PP191 R, dike, north of rest stop on US 90, Paisano volcano. 54  
83315 R, upper lava flow, Star Mountain Formation, Wild Rose Pass, Davis Mountains. 13  
DM 130 R lava, Tricky Gap Formation, outcrop on Forbidden Mountain, Davis Mtns. 71  
86010 R lava, Adobe Canyon Formation, Davis Mtns. D.F. Parker, pers comm, 1989  
RS71-40 R lava, Barrel Springs Formation, Davis Mtns. 48  
81-116 R, High Lonesome Tuff, Van Horn Mountains caldera. 27  
DML-12 R lava, Barrel Springs Formation, Davis Mtns. 47  
DML-6 R lava, Mount Locke Formation, Davis Mtns. 47  
WC-OBS R lava, Barrel Springs Formation, summit of Mt Locke at Macdonald Observatory, Davis Mtns  
J86-22 R lava, Barrel Springs Formation, Davis Mtns. 25  
86504 R, intrusive, Barillas Dome, Davis Mtns. D.F. Parker, pers comm, 1989  
H88-79 R lava Star Mountain Formation. 25  
RT336-200 R intrusive, Round Top, Sierra Blanca group. 60  
MN-1 R lava, Paisano volcano. 45  
H87-153 R lava, Crossen Trachyte. 25  
97412 R lava, Adobe Canyon Formation, Davis Mtns. 56  
LRT-E R intrusive, Little Round Top, Sierra Blanca group. 43  
H89-19 R lava, Adobe Canyon Formation, Davis Mtns. 25  
J87-41 R, tuff of Wild Cherry., Davis Mtns. 25  
J87-44 R, tuff of Wild Cherry, Davis Mtns. 25  
81019 R lava, Adobe Canyon Formation, Bootlegger Canyon, Davis Mtns. 13  
DM 128 R lava, Barrel Springs Formation, roadcut on rte 118, Davis Mtns. 71  
H89-37 R lava, Adobe Canyon Formation, Davis Mtns. 25  
QM-67 R, Quitman Peak. 65  
RT2-34 R intrusive, Round Top, Sierra Blanca group. 60  
92517 R, Lower Burro Mesa rhyolite, Horseshoe Canyon, Davis Mtns. 56  
DP141 R lava, Adobe Canyon Formation, Little Aguja Canyon, Davis Mtns. 57  
LBM-1 R intrusive, Little Blanca, Sierra Blanca group. 43  
Cien-1A R lava dome, Cienega Mountains.  
9910001 R lava, Adobe Canyon Formation, Davis Mtns. 56  
Pais-2 R lava dome, Paisano Rhyolite, Paisano volcano.  
RT283-182.5 R intrusive, Round Top, Sierra Blanca group. 60  
81-191b R, High Lonesome Tuff, Van Horn Mountains caldera. 27  
J88-14 R intrusive, Triple Hill, Sierra Blanca Group. 60  
RT5-169 R intrusive, Round Top, Sierra Blanca group. 60  
C-5 R, Gomez Tuff, Million Dollar Canyon, Davis Mtns. 57  
H88-85 R intrusion. 25  
H89-38 R lava, Adobe Canyon Formation, Davis Mtns. 25  
RT287-200 R intrusive, Round Top, Sierra Blanca group. 60  
RT201-355 R intrusive, Round Top, Sierra Blanca group. 60  
H89-23 R lava, Sheep Pasture Formation, Davis Mtns. 25  
RS71-3 R lava, Sheep Pasture Formation, Davis Mtns. 48  
DM 118 R, pyroclastic flow deposit, Sleeping Lion Formation, roadcut on rte 118, Davis Mtns. 71



Big Hill-1	R, vitrophyre, San Carlos Tuff, Big Hill. 18
92201	R, Lower Burro Mesa Rhyolite, Burro Mesa Pourroff, BBNP. 56
5-D	R, Sierra el Ocotillo Tuff. 18
H81-179	R, Infiernito caldera. 28
32-128	R, Burro Mesa Rhyolite at Cerro Castellan, BBNP. 9
BB83-1	R, intrusive, Barillas Dome, Davis Mtns. 48
81022	R, intrusive, stream cut in Cherry Canyon, Davis Mtns. 13
J85-55	R intrusive, Round Top, Sierra Blanca group. 60
86205	R, area of Musquiz Dome, Davis Mtns. 21
86206	R, area of Musquiz Dome, Davis Mtns. 21
BB32P	R, vitrophyre, San Carlos Tuff, across Rio Grande from Big Hill. 18
97408	R, Gomez Tuff, Davis Mtns. 56
X-1-1	R, Sierra el Ocotillo Tuff. 18
BD-1	R, intrusive, Barillas Dome, Davis Mtns.
126	R, Buckshot Ignimbrite. 1
SC-15c	R, vitrophyre, San Carlos Tuff, north face of Sierra el Mulato. 18
SB-1	R intrusive, Sierra Blanca laccolith. 60
Pais 1A	R lava dome, Paisano Rhyolite, Paisano volcano. 53

### **38-26Ma, 74-80%SiO<sub>2</sub>**

58-172	R, lower flow, Burro Mesa Rhyolite at Burro Mesa Pourroff, BBNP. 9
87603	R glass, hydrated vitrophyre block, Barrel Springs Formation, Davis Mountains State Park. 30
63-177	R, Burro Mesa Rhyolite at Goat Mountain, BBNP. 9
LRT-2	R intrusive, Little Round Top, Sierra Blanca group. 3
RS71-23	R lava, Barrel Springs Rhyolite, Davis Mtns. 48
PP254	R lava dome, Paisano Rhyolite, Paisano volcano. 4
H89-142	R, tuff of Wild Cherry, Davis Mtns. 25
3-11	R, upper flow, Burro Mesa Rhyolite at Burro Mesa Pourroff, BBNP. 9
113	R, Buckshot Ignimbrite. 1
H88-20	R, Mule Ear Spring Tuff. 26
59-173	R, lower flow, Burro Mesa Rhyolite at Burro Mesa Pourroff, BBNP. 9
57-171	R, lower flow, Burro Mesa Rhyolite at Burro Mesa Pourroff, BBNP. 9
81036	R, Gomez Tuff, Davis Mountains. 13
84605	R, ejected block, Madera Canyon, Davis Mtns. 30
38-145	R, Burro Mesa Rhyolite at Kit Mountain, BBNP. 9
36-142	R, Burro Mesa Rhyolite at Kit Mountain, BBNP. 9
81-119	R, pre-caldera collapse intrusion, Garden of the Gods, Van Horn Mountains caldera. 27
RT1-230.5	R intrusive, Round Top, Sierra Blanca group. 60
R156-4	R ash-flow tuff, Mitchell Mesa Rhyolite. 68
55-169	R, upper flow, Burro Mesa Rhyolite at Burro Mesa Pourroff, BBNP. 9
RTX-1	R intrusive breccia, Round Top, Sierra Blanca Group. 43
INT-U	R intrusive, Sierra Azul granite. 18
H87-166	R lava dome. 25
SQ-3	R, basal vitrophyre of ash-flow tuff, Square Peak Volcanics, head of Calvert Canyon, Quitman

	Mountains.
61-175	R, Burro Mesa Rhyolite at Goat Mountain, BBNP. 9
97402	R, Gomez Tuff, basal vitrophyre, Davis Mtns. 56
H89-118	R, tuff filling Infiernito caldera. 28
M346	R, San Carlos Tuff, north end of Canyon La Parra. 23
GM-3b	R, Burro Mesa Rhyolite, Goat Mountain, BBNP. 67
TPC407	R, basal vitrophyre of upper unit on Emory Peak, BBNP. 6
551	R, upper flow, Burro Mesa Rhyolite at Burro Mesa Pouroff, BBNP. 9
BML-2b	R, lower unit, Burro Mesa Rhyolite, Burro Mesa Pouroff, BBNP. 67
4HR-1	R intrusive, Sierra Blanca group.
TPC420	R, basal vitrophyre of Pine Canyon Rhyolite on Pine Canyon trail, BBNP. 6
921102	R, upper Burro Mesa Rhyolite, west flank Burro Mesa, BBNP. 56
H92-64	R lava, Leyva Canyon Member, Rawls Formation. 24
81-60	R, Sierra Blanca laccolith. 60
H92-52	R, rim sill or related lava, Solitario. 24
H91-193	R lava, Leyva Canyon Member, Rawls Formation. 24
RT-1	R intrusive Round Top, Sierra Blanca group. 43
7-25	R, Burro Mesa Rhyolite at Goat Mountain, BBNP. 9
MGE781	R, tuff filling Infiernito caldera. 28
81-65	R, Little Blanca intrusion, Sierra Blanca group. 62
MGE783	R, ash-flow tuff, Infiernito caldera. 62
QM 152	R dike north of Pinnacle Peak, Quitman Mountains. 65
Chin 431F	R, Upper Rhyolite, Tinaja Prieta Canyon, Chinati caldera. 18
LBM2	R intrusive, Little Blanca, Sierra Blanca group. 60
MGE787	R, postcaldera, Infiernito caldera. 32
MGE776	R, Infiernito caldera. 28
951	R, Santana Tuff, on River Road 8 miles NW of Big Hill. 23
M358	R, Santana Tuff, Canon de Lobos. 23
Blanca-1	R intrusive, Sierra Blanca laccolith. 3
H88-101	R lava dome, Terneros Creek Rhyolite. 24
52-D	R, San Carlos Tuff. 18
Sant-2	R, Santana Tuff. 18
MGF 006	R ash-flow tuff, Mitchell Mesa Rhyolite, Cleveland Peak section. 28
70-187	R lava dome, similar to Burro Mesa Rhyolite, Emory Peak, BBNP. 9
M357	R, Santana Tuff, Canon de Lobos. 23
H88-97	R lava dome, Terneros Creek Rhyolite. 24
TPC 301	R, Hayes Ridge ring dike NW of Nugent Mountain, BBNP. 6
U94-R116A	R lava, Leyva Canyon Member, Rawls Formation. 72
MGE 798	R, Infiernito caldera. 28
H89-76	R lava, Star Mountain Formation, Davis Mtns. 25
953	R, Santana Tuff. 23
MGE 789	R, postcaldera, Infiernito caldera. 32
M356	R, Santana Tuff, Canon de Lobos. 23
H88-13	R lava dome, Terneros Creek Rhyolite. 24
4021	R, Santana Tuff. 23

561	R, Santana Tuff. 23
TPC 372	R, Chinese Wall dike, head of Juniper Canyon, BBNP. 6
LDA-X	R, vitrophyre, Santana Tuff. 18
TPC 324	R lava dome, upper unit, top of Emory Peak, BBNP. 6
H82-48	R lava dome, Fresno Formation. 24
H88-18	R lava dome, Terneros Creek Rhyolite. 24
H88-100	R lava dome, Terneros Creek Rhyolite. 24
RTR-1	R intrusive, Round Top, Sierra Blanca group. 43
MGE 621	R ash-flow tuff, Mitchell Mesa Rhyolite. 28
Mitch-3	R ash-flow tuff, Mitchell Mesa Rhyolite. 11
H81-81	R, Infiernito caldera. 28
W96-22	R lava, Leyva Canyon Member, Rawls Formation.. 72
MGE 620	R ash-flow tuff, Mitchell Mesa Rhyolite. 28
MGE 617	R ash-flow tuff, Mitchell Mesa Rhyolite. 28
W96-24	R lava, Leyva Canyon Member, Rawls Formation.. 72
MGE 619	R ash-flow tuff, Mitchell Mesa Rhyolite. 28
MGE 618	R ash-flow tuff, Mitchell Mesa Rhyolite. 28
Mitch 4	R ash-flow tuff, Mitchell Mesa Rhyolite. 12
H88-99	R lava dome, Terneros Creek Rhyolite. 24
MGF 038	R dike, Chinati Mountains. 28

### 26-16 Ma, 40-52%SiO<sub>2</sub>'

H82-76	Te-bas. 37
E90-19	TB lava, Las Burras Lavas, Rawls Formation. 24
H92-80	TB lava, Closed Canyon Formation. 24
H90-68	Te-bas lava, Leyva Canyon Member, Rawls Formation. 24
SI 8377	B, intrusion south of Black Hills. 19
DM 104	TB dike, Forbidden Mountain, Davis Mtns. 71
E90-28	TB lava, Las Burras Lavas, Rawls Formation. 24
E90-15	Te-bas. Closed Canyon Formation. 24
Tib-1	B intruding upper Rawls Formation. 37
E90-16	TB lava, Closed Canyon Formation. 24
H-1a	TB intrusive, same locality as 8204 and 8203. 49
8204	TB intrusive, containing ultramafic xenoliths, on county road north of Sawmill Mountain. 23
DM 102	TB, intrusive plug, Indian Cave Canyon. 71
H82-83	Te-bas. 37
H91-132	B lava, Closed Canyon Formation. 24
BM 10	TB lava, Closed Canyon Formation, 11.7 miles N of turnoff on road to Big Bend Ranch. 23
H91-127	TB lava, Closed Canyon Formation. 24
H-2	B intrusive, bearing ultramafic xenoliths, ~1km SSE of Pinks Peak. 49
SI 8374	TB intrusion south of Black Hills. 19
Tr 32	TB lava. Las Burras Lavas, Rawls Formation, top of section measured south of cave. 69
H92-19	Te-bas intrusive. 24
H91-133	Te-bas lava, Closed Canyon Formation. 24

8203	TB intrusive, same body as H-1a and 8204. 14
H85-38A	Te-bas. 20
Tr 33	B lava, Las Burras Lavas, Rawls Formation, same flow as sample Tr 32 but below it. 69
PW84002	TB dike, Payne's Waterhole area. 42
H85-40	TB. 29
H90-70	TB lava, Closed Canyon Formation. 24
Tr 34	TB lava, Las Burras Lavas, Rawls Formation, next flow below Tr 32 and Tr 33. 69
SI 8395	Te-bas intrusion south of Black Hills. 19
Ra 9-1	TB lava, Closed Canyon Formation. 37
H91-134	TB lava, Closed Canyon Formation. 24
1049	TB, Rawls Formation, Wire Gap Road. 23
H91-100	TB lava, Alazan Lavas Member, Rawls Formation. 24
H91-50	TB lava, Saucedo Lavas Member, Rawls Formation. 24
H82-85	PT. 37
H91-213	TB, intrusive. 24
H91-93	TB lava, Saucedo Lavas Member, Rawls Formation. 24
J 9	TB lava, Las Burras Lavas, Rawls Formation, near large cave. 69
H82-81	PT. 37
IB-C	B lava, Las Burras Lavas, Rawls Formation, below large cave; different flow than J 9. 69
H91-135	TB, intrusive. 24
Tr9-1	B lava, Closed Canyon Formation, hill south of rte 170, 3 km west of Panther Creek. 69
BFB	TB, highly vesicular plagioclase-phyric lava "low in Rawls section", Agua Fria quadrangle.
H92-79	TB lava, Closed Canyon Formation. 24
H91-102	TB lava, Alazan Lavas Member, Rawls Formation. 24
J 4	B lava, Las Burras Lavas, Rawls Formation, near spring in Las Burras Canyon. 69
IB-L	B lava, Las Burras Lavas member of Rawls Formation, elevation 2630 west of stream bed near small cave. 69
BM 6	TB lava, Rawls Formation, River Road, 4.5 miles NW of Big Hill. 23
H92-25	TB, intrusive. 24
MGD 566	TB lava, Closed Canyon Formation. 24
E90-20A	TB, intrusive. 24
H82-86	PT. 37
H91-198	TB lava, Alazan Lavas Member, Rawls Formation. 24
BM 5	TB lava, Closed Canyon Formation, on River Road 4 miles NW of Big Hill. 23
Tib 2	TB, dike cutting upper Rawls Formation on TX 170, opposite Colorado Mesa. 37
E90-23	B lava, Las Burras Lavas, Rawls Formation. 24
MGD 567	TB lava, Closed Canyon Formation. 24
H92-81	TB lava, Closed Canyon Formation. 24
Tr 35	TB lava, Las Burras Lavas, Rawls Formation, flow below Tr 34. 69
Tr 28	TB lava, Closed Canyon Formation, elevation 2600, near river access on rte 170. 69
H91-105	BTA lava, Saucedo Lavas Member, Rawls Formation. 24
Tr 18	TB lava, Las Burras Lavas, Rawls Formation, elevation 3520, west of stream bed in canyon east of Rancherías Canyon. 69
E90-29	TB lava, Las Burras Lavas, Rawls Formation. 24
CXMT-1	TB lava flow, top of Cox Mountain, near Sierra Blanca. 37

H91-49 BTA lava, Saucedá Lavas Member, Rawls Formation. 24  
77040 B lava, Black Gap  
77041 B lava, Black Gap  
77042 B lava, Black Gap. 37  
H91-22 BTA, related to Rawls Formation. 24  
J 8 BTA lava, Saucedá Lavas Member, Rawls Formation, northwest of large cave, across arroyo. 69  
H91-103 BTA lava, Saucedá Lavas Member, Rawls Formation. 24  
La Viuda PT intrusive plug, La Viuda, Tascotal Mesa quadrangle.