

Seismic Source Summary for All U.S. Below-Surface Nuclear Explosions

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Abstract A summary of information is presented for all U.S. nuclear tests detonated below the Earth's surface. The data include explosion times, locations, yields, and depths of burial, as well as geophysical information about working-point media, and, for the underground explosions, data about surface collapse (subsidence) phenomena. This summary is intended to furnish available and up-to-date data useful for studies of seismic and hydroacoustic sources, as well as for studies of the seismic and hydroacoustic transmission characteristics of the Earth.

Introduction

The importance to geophysicists of accurate seismic source information has been noted over the years. K. E. Bullen (1958), in his opening presidential address at the Eleventh General Assembly of the International Union of Geodesy and Geophysics (Toronto, Canada, September 3–14, 1957) entitled “Seismology in our Atomic Age,” made a plea for more data from nuclear explosions. According to Richter (1958), Bullen suggested as early as 1955 that nuclear explosions be used specifically for seismological purposes. Other scientists made similar suggestions (Perrett, 1958; Teller, 1963). Two earlier publications (Springer and Kinnaman, 1971, 1975) attempted to fill the information gap; however, in recent times, numerous investigators have requested a more up-to-date tabulation.

This publication updates the earlier ones and is more comprehensive: it includes all U.S. tests conducted up to the last test in September 1992 and incorporates early tests that were not covered previously. The recent policy of openness advocated and implemented by the U.S. Department of Energy (DOE) has also allowed more data to be listed than before. It is hoped that this document will help foster similar policies of openness and transparency in other countries regarding their nuclear explosion data. Accurate source information, as in this document, from all nuclear explosions around the world would be extremely useful for a better understanding of the physics of the Earth, including applications related to earthquake prediction and the monitoring of nuclear-test-ban treaties. Figure 1 shows the general locations of U.S. under-surface tests; Figure 2 shows details of the Nevada Test Site (NTS), where most of the underground tests were conducted.

The information in this report was gathered from all available official sources. These sources included both classified and unclassified reports by the DOE and its predecessors, other government agencies (e.g., the Defense Threat Reduction Agency, previously the Defense Special Weapons Agency and, before that, the Defense Nuclear Agency), the national nuclear weapons laboratories, and the contractors

involved in fielding and conducting the tests. When official sources disagreed, subjective judgments sometimes had to be made. For instance, because of the extensive research that produced them, data from the two previous publications (Springer and Kinnaman, 1971, 1975) were given more credence for earlier time periods than other sources. After those times and for all previously unannounced tests, Containment Program databases at Livermore (G. Pawloski, 1998, personal comm.) and Los Alamos (W. Brunish, 1995, personal comm.) were given more weight for tests conducted by each respective laboratory. Accurate record keeping of some parameters was minimal or nonexistent in the early years of testing because of the informal practices of the time. An accurate sense of the attitudes relevant to these issues can be found in a recent publication (Carothers *et al.*, 1995).

All reasonable effort has been expended to ensure the greatest possible accuracy of the data in this tabulation; however, even under the best circumstances, there will be some uncertainty in each of the parameters. When possible, we give a best judgment of the uncertainties, parameter by parameter. In addition, there will be the inevitable production errors in a tabulation of this magnitude (~20,000 entries).

Discussion of Source Data

Table 1 includes all U.S. underground and underwater nuclear explosions in chronological order. Included in this data set are the test name; date; time; yield (as announced); depth of burial; location; surface elevation; working point (detonation point); medium; water level depth; geophysical parameters—water content, density, gas porosity, and velocity; and subsidence crater data—diameter, depth, volume, and collapse time. Data are given in Système International units, with the exception of the yield and density parameters, which follow common usage. Blank spaces indicate that data are unavailable or nonexistent. For completeness, even tests with little or no nuclear yield have been included. (However, a number of safety tests with essentially no nuclear yield

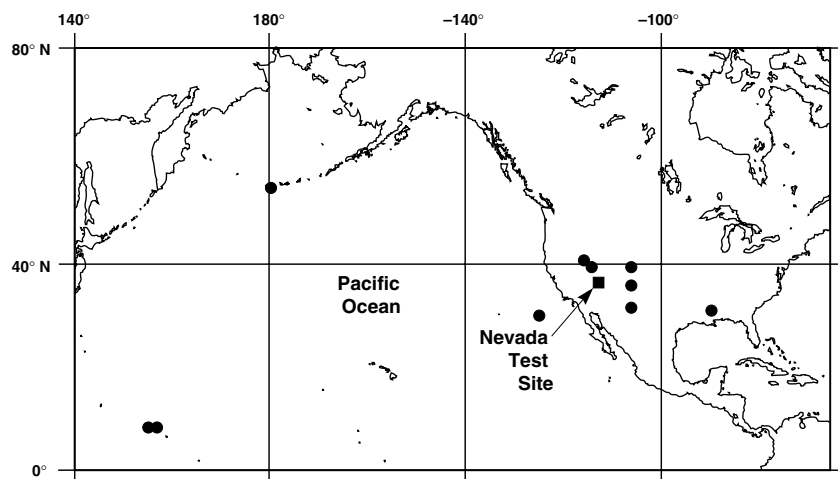


Figure 1. General locations of U.S. underground and underwater nuclear tests. Most tests were conducted at the Nevada Test Site.

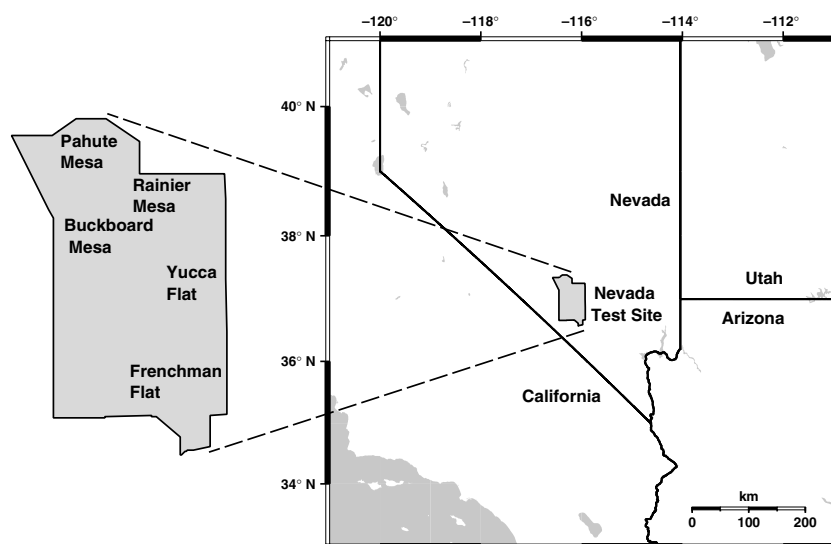


Figure 2. Schematic map of the Nevada Test Site (NTS). Most NTS tests were in the Yucca Flat area.

conducted at Los Alamos National Laboratory [LANL] in New Mexico during the nuclear test moratorium of 1958–1961 [Thorn and Westervelt, 1987; Carothers *et al.*, 1995] were not included.) A number of the underground explosions listed in Table 1 were detonated in non standard-emplacements; details of these emplacements are outside the scope of this report. Some of the data for the underwater tests are unavailable or not well known because of the nature of the tests. Tests in the atmosphere and space are outside the scope of this publication, as they are of no great interest to seismologists; readers interested in those topics are referred to Griggs and Press (1961), Glasstone (1964), and a recent U.S. DOE report (2000). The parameters and information given in Table 1 are described in the following sections.

Test Names, Dates, and Times

Test names have been checked for correctness and consistency (spelling, whether one word or two words, etc.) with numerous sources, including official listings from the U.S.

DOE. Unless there were compelling reasons to do otherwise, names used by the U.S. DOE and its predecessors were accepted for the cases where an event consisted of multiple detonations. The convention used for ordering the data of Table 1 was chronologically by date and time and then alphabetically by name.

Detonation dates and times are expressed in GMT. Time calibrations were obtained from the National Bureau of Standards WWV radio stations (National Bureau of Standards, 1969). When available, times are given to the nearest 0.01 sec (uncorrected for WWV propagation), even though 0.1-sec accuracy may be adequate for most uses. For tests during the earliest years of testing, some shot times were available only to the nearest second or even the nearest minute.

A word of caution to those who are inclined to count events, tests, detonations, and so forth: the count will be different for different definitions of these terms. In particular, so-called multiples (multiple explosions conducted as one test) are sometimes counted as separate tests.

(Text continues on page 1832.)

Table 1
Seismic Source Data for U.S. Below-Surface Nuclear Tests, 1946–1992

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/Remarks‡
					Latitude	Longitude			Water Level Depth (m)	Water Content (wt. %)	Density (g/cm ³)	Porosity (vol. %)	Gas Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m ³)	
BAKER-CROSSROADS	07/24/46	21:35:00.00	21	27	11.620	165.490		W									Bikini Atoll, Marshall Is., South Pacific
UNDE	11/29/51	20:00:00.00	1.2	5	37.168	-116.043	1,283	A						76	16	27,500	Yucca
ESS	03/23/55	20:30:00.00	1	19	37.170	-116.045	1,280	A						87	27	76,400	Yucca
WIGWAM	05/14/55	20:00:00.00	30	610	28.733	-126.268		W									Pacific Ocean
PASCAL A	07/26/57	08:00:00.00	Slight§	152	37.052	-116.034	1,202	A									Yucca
SATUM	08/10/57	00:59:55.10	0	39	37.194	-116.034		T									Tunnel, Rainier Mesa
PASCAL B	08/27/57	22:35:00.00	Slight§	152	37.049	-116.035	1,201	A									Yucca
RAINIER	09/19/57	16:59:59.45	1.7	274	37.196	-116.204		T	930	15	2	2,515					Tunnel, Rainier Mesa
PASCAL C	12/06/57	22:15:00.00	Slight§	76	37.050	-116.032	1,202	A									Yucca
VENUS	02/22/58	01:00:00.00	Slight§	30	37.113	-116.115		T									Tunnel, Rainier Mesa
URANUS	03/14/58	22:00:00.00	Slight§	35	37.113	-116.115		T									Tunnel, Rainier Mesa
WAHOO	05/16/58	01:30:00.50	9	152	11.344	162.178		W									Enewetak Atoll, Marshall Is., South Pacific
UMBRELLA	06/08/58	23:15:00.00	8	45	11.380	162.218		W									Enewetak Atoll, Marshall Is., South Pacific
OTERO	09/12/58	20:00:00.00	0.038	146	37.050	-116.033	1,202	A									Yucca
BERNALILLO	09/17/58	19:30:00.00	0.015	139	37.050	-116.034	1,201	A									Yucca
LUNA	09/21/58	19:00:00.00	0.0015	148	37.049	-116.035	1,201	A									Yucca
MERCURY	09/23/58	22:00:00.00	Slight§	56	37.113	-116.121	2,021	T									Tunnel, Rainier Mesa
VALENCIA	09/26/58	20:00:00.00	0.002	148	37.050	-116.031	1,201	A									Yucca
MARS	09/28/58	00:00:00.00	0.013	38	37.193	-116.201	2,021	T									Tunnel, Rainier Mesa
COLFAX	10/05/58	16:15:00.00	0.0055	152	37.049	-116.035	1,201	A									Yucca
TAMALPAIS	10/08/58	22:00:00.13	0.072	101	37.195	-116.201	2,000	T		7	2.14						Tunnel, Rainier Mesa
NEPTUNE	10/14/58	18:00:00.00	0.115	30	37.194	-116.201	2,045	T		25	1.95			61	11	14,900	Tunnel, Rainier Mesa
LOGAN	10/16/58	06:00:00.14	5	253	37.184	-116.202		T			2.1						Yucca
SAN JUAN	10/20/58	14:30:00.00	0	71	37.050	-116.033	1,201	A									Yucca
EVANS	10/29/58	00:00:00.15	0.055	256	37.195	-116.206	2,000	T		7	2.14		2,515				Tunnel, Rainier Mesa
BLANCA	10/30/58	15:00:00.15	22	301	37.186	-116.203	2,145	T		18	1.84		1,420				Tunnel, Rainier Mesa
ANTLER	09/15/61	17:00:00.12	2.6	402	37.188	-116.209	2,254	T	634	14–18							Tunnel, Rainier Mesa
SHREW	09/16/61	19:45:00.12	<20	98	37.048	-116.034	1,200	A	488								Yucca
BOOMER	10/01/61	21:30:00.12	<20	101	37.048	-116.035	1,200	A	494								Yucca
CHENA	10/10/61	18:00:00.13	<20	255	37.194	-116.208	2,250	T	390	14	1.94		2,566				Tunnel, Rainier Mesa
MINK	10/29/61	18:30:00.13	<20	192	37.049	-116.032	1,201	A	497	21				15	2		Yucca
FISHER	12/03/61	23:04:59.63	13.4	364	37.046	-116.029	1,198	A	488					178	15	165,100	Yucca
GNOME	12/10/61	19:00:00.00	3	361	32.264	-103.866	1,013	Sa	158	<1							Yucca
MAD	12/13/61	18:00:00.16	0.5	181	37.127	-116.050	1,254	A	552								Yucca
RINGTAIL	12/17/61	16:35:00.13	<20	363	37.043	-116.026	1,196	A	488								Yucca

PLOWSHARE
multipurpose expt near
Carlsbad, NM; 18–24
by 50 m standing
cavity; see note # & ||

FEATHER	12/22/61	16:30:00.13	0.15	247	37.195	-116.209	2,242	T	390	14	1.94	2,566	Tunnel, Rainier Mesa
STOAT	01/09/62	16:30:00.14	5.1	302	37.045	-116.036	1,198	A	488				Yucca
AGOUTI	01/18/62	18:00:00.13	6.4	261	37.047	-116.035	1,200	A	497			2	6,900 0:26:24
DORMOUSE	01/30/62	18:00:00.13	<20	363	37.047	-116.040	1,200	A	488			13	76,500 0:07:33
STILLWATER	02/08/62	18:00:00.16	3.07	181	37.127	-116.054	1,259	A	553			4	28,289 0:28:18
ARMADILLO	02/09/62	16:30:00.13	7.1	240	37.044	-116.040	1,198	A	494			12	56,200 0:09:00
HARD HAT	02/15/62	18:00:00.10	5.7	287	37.226	-116.060	1,532	QM	187	2-3	2.65	11	61,200 0:13:12
													Climax Stock, N of
CHINCHILLA I	02/19/62	16:30:00.13	1.9	150	37.049	-116.030	1,201	A	488				Yucca subsurface
CODSAW	02/19/62	17:50:00.16	<20	212	37.127	-116.038	1,258	T	556		1.85	13	22,900 0:00:05
												3	7,300 0:00:11
CIMARRON	02/23/62	18:00:00.16	11.9	305	37.129	-116.049	1,256	A	553			11	56,500 0:38:18
PLATYPUS	02/24/62	16:30:00.13	<20	58	37.048	-116.033	1,200	A	488				Yucca
PAMPAS	03/01/62	19:10:00.09	9.5	363	37.041	-116.030	1,196	A	488			12	137,600 0:19:10
DANNY BOY	03/05/62	18:15:00.12	0.43	34	37.111	-116.366	1,641	B	>230			81	Excavation, Buckboard
												26	Mesa
ERMINE	03/06/62	16:30:00.13	<20	73	37.048	-116.035	1,201	A	488				Yucca
BRAZOS	03/08/62	18:00:00.21	8.4	256	37.122	-116.050	1,254	A	552			9	33,000 0:37:54
HOGNOSE	03/15/62	16:30:00.13	<20	240	37.044	-116.032	1,198	A	488			20	122,300 0:41:48
HOOSIC	03/28/62	18:00:00.16	3.4	187	37.124	-116.035	1,264	T	562			8	20,300 0:41:08
CHINCHILLA II	03/31/62	18:00:00.13	<20	137	37.047	-116.038	1,200	A	488			7	13,000 0:02:18
DORMOUSE PRIME	04/05/62	18:00:00.13	10.6	261	37.044	-116.024	1,197	A	488			30	229,400 0:08:35
PASSAIC	04/06/62	18:00:00.16	<20	233	37.118	-116.045	1,248	A	547			21	188,800 0:27:00
HUDSON	04/12/62	18:00:00.16	<20	151	37.127	-116.046	1,253	A				6	about 6y
PLATTE	04/14/62	18:00:00.13	1.85	191	37.222	-116.158	1,695	T		10-14	1.56		Tunnel, Rainier Mesa
DEAD	04/21/62	18:40:00.16	<20	193	37.119	-116.032	1,272	A	570			5	13,600 0:41:18
BLACK	04/27/62	18:00:00.16	<20	218	37.118	-116.039	1,259	A	556		1.61	22	83,300 0:21:00
PACA	05/07/62	19:33:00.14	<20	258	37.047	-116.026	1,199	A	468			19	84,100 0:15:36
ARIKAREE	05/10/62	15:00:00.16	<20	166	37.128	-116.049	1,254	A	552			2	1,500 0:09:00
SWORDFISH	05/11/62	20:02:12.00	<20	204	31.140	-124.130		W					Pacific
AARDVARK	05/12/62	19:00:00.10	40	434	37.065	-116.031	1,214	T	509	17	1.92	23	305,800 1:45:12
EEL	05/19/62	15:00:00.16	4.5	218	37.123	-116.048	1,253	A	552			4	7,500 0:19:42
WHITE	05/25/62	15:00:00.15	<20	193	37.125	-116.053	1,253	A	552			16	81,000 0:11:54
RACCOON	06/01/62	17:00:00.14	<20	164	37.046	-116.035	1,199	A	488			8	12,200 0:03:03
PACKRAT	06/06/62	17:00:00.12	<20	262	37.046	-116.040	1,199	A	488			14	74,200 0:07:04
DES MOINES	06/13/62	21:00:00.12	2.9	201	37.222	-116.163	1,896	T		10	1.84		Tunnel, Rainier Mesa
DAMAN I	06/21/62	17:00:00.13	<20	260	37.043	-116.031	1,197	A	488			28	198,800 0:09:48
HAYMAKER	06/27/62	18:00:00.12	67	408	37.042	-116.036	1,196	A	488			31	573,400 0:24:53
MARSHMALLOW	06/28/62	17:00:00.11	<20	311	37.009	-116.202	2,241	T	792	11			Yucca
SACRAMENTO	06/30/62	21:30:00.16	<20	149	37.117	-116.048	1,246	A	546			21	Shoshone Min.
SEDAN	07/06/62	17:00:00.15	104	194	37.177	-116.046	1,289	A	576	9	1.91	98	Yucca
													PLOWSHARE
													excavation, Yucca
JOHNNIE BOY	07/11/62	16:45:00.09	0.5	1	37.122	-116.334	1,544	A					Buckboard Mesa
MERRIMAC	07/13/62	16:00:00.15	20-200	413	37.055	-116.034	1,205	A	500			15	171,300 1:56:00
WICHITA	07/27/62	21:00:00.16	<20	150	37.130	-116.057	1,265	A	559			18	5,000 0:05:24
YORK	08/24/62	15:00:00.15	<20	226	37.119	-116.040	1,256	A	553		1.54	24	172,800 0:05:30
BOBAC	08/24/62	17:00:00.13	<20	206	37.046	-116.025	1,199	A	488			13	53,500 0:08:10

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burst (m)	Location		Surface Elevation (m)	Medium†	Water Level Depth (m)	Geophysical Parameters				Crater Information				Test Area/ Remarks‡
					Latitude	Longitude				Water Content (wt. %)	Density (g/cm ³)	Porosity (vol. %)	Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m ³)	Collapse Time (hr:ms)	
RARITAN	09/06/62	17:00:00.20	<20	157	37.130	-116.046	1,254	A	552					68	7	9,100	0:02:00	Yucca
HYRAX	09/14/62	17:10:00.12	<20	217	37.044	-116.022	1,197	A	488					155	30	183,500	0:07:54	Yucca
PBA	09/20/62	17:00:00.12	<20	241	37.055	-116.030	1,205	A	503					171	28	229,400	0:12:36	Yucca
ALLEGHENY	09/29/62	17:00:00.15	<20	211	37.117	-116.034	1,271	A	570	7.8				34	3	3,400	0:12:30	Yucca
MISSISSIPPI	10/05/62	17:00:00.16	115	494	37.139	-116.051	1,264	T	561					259	38	669,800	1:07:30	Yucca
ROANOKE	10/12/62	15:00:00.16	<20	155	37.049	-116.033	1,200	A	550					142	24	800	0:15:00	Yucca
WOLVERINE	10/12/62	17:00:00.12	<20	73	37.123	-116.052	1,252	A	494									Yucca
TIOGA	10/18/62	15:00:00.15	<20	59	37.129	-116.041	1,254	A	552									Yucca
BANDICOOT	10/19/62	18:00:00.08	12.5	241	37.039	-116.022	1,195	A	504					185	38	298,200	0:05:10	Yucca
SANTEE	10/27/62	15:00:00.15	<20	319	37.149	-116.054	1,270	A	564					122	6	29,800	0:35:00	Yucca
ST. LAWRENCE	11/09/62	18:00:00.16	<20	167	37.164	-116.074	1,309	A	600		2.07		1,887	183				Yucca
GUNDI	11/15/62	16:30:00.08	<20	241	37.042	-116.025	1,195	A	491					82	4	11,500	0:03:12	Yucca
ANACOSTIA	11/27/62	18:00:00.14	5.2	228	37.123	-116.030	1,274	T	572					140	19	95,600	0:23:30	Yucca, PLOWSHARE device development
TAUNTON	12/04/62	16:00:00.15	<20	227	37.128	-116.051	1,256	A	553					30	0		0:29:00	Yucca
TENDRAC	12/07/62	19:00:00.10	<20	303	37.052	-116.030	1,202	A	503					155	25	191,100	0:25:42	Yucca
MADISON	12/12/62	17:25:00.12	<20	402	37.172	-116.203	2,252	T		12	1.96		2,594					Tunnel, Rainier Mesa
NUMBAT	12/12/62	18:45:00.12	<20	232	37.046	-116.016	1,201	A	503					171	15	107,000	0:09:42	Yucca
MANALEE	12/14/62	18:00:00.16	<20	60	37.124	-116.041	1,254	A	552					136	22	116,200	0:23:00	Yucca
CASSELMAN	02/08/63	16:00:00.16	<20	303	37.126	-116.040	1,256	A	562									Yucca
HATCHIE	02/08/63	16:00:01.15	<20	61	37.058	-116.030	1,208	A	553									Yucca
FERREL	02/08/63	18:30:00.13	<20	326	37.149	-116.053	1,268	A	501									Yucca
ACUSHI	02/08/63	18:30:00.14	<20	261	37.046	-116.022	1,199	A	488					157	24	160,600	0:21:35	Yucca
CHIPMUNK	02/15/63	17:00:00.13	<20	59	37.049	-116.033	1,201	A	495									Yucca
KAWEAH	02/21/63	19:47:00.14	3	227	37.120	-116.047	1,249	A	549									Yucca, PLOWSHARE device development
CARMEL	02/21/63	19:47:08.63	<20	163	37.155	-116.081	1,311	A	604					45	12		5 yr 49 da	Yucca, sympathetic subsidence
JERBOA	03/01/63	19:00:00.12	<20	301	37.044	-116.027	1,197	A	492					169	32	246,200	0:35:18	Yucca
TOYAH	03/15/63	16:22:53.14	<20	131	37.126	-116.046	1,252	A	550					27	2	6,000	0:08:00	Yucca
GERBIL	03/29/63	15:49:00.12	<20	280	37.042	-116.019	1,196	A	488					168	15	130,700	0:08:52	Yucca
FERRET PRIME	04/05/63	17:52:00.13	<20	242	37.037	-116.025	1,193	A	488					144	35	160,600	0:13:28	Yucca
COYPU	04/10/63	16:01:30.12	<20	75	37.049	-116.031	1,201	A	495									Yucca
CUMBERLAND	04/11/63	16:03:00.16	<20	226	37.157	-116.072	1,299	A	591		2.13		2,072	140	19	77,200	0:22:00	Yucca
KOOTENAI	04/24/63	16:09:30.14	<20	182	37.121	-116.037	1,261	A	558		1.59			99	14	23,700	0:09:00	Yucca
PAISANO	04/24/63	16:09:30.14	<20	57	37.120	-116.037	1,261	A	559									Yucca
GUNDI PRIME	05/09/63	18:19:00.00	<20	272	37.049	-116.016	1,205	A	500					162	18	114,200	0:02:12	Yucca
HARKEE	05/17/63	14:55:00.00	<20	241	37.048	-116.033	1,200	A	495					116	8	28,100	0:12:42	Yucca
TEJON	05/17/63	14:55:00.00	<20	75	37.044	-116.017	1,199	A	494									Yucca
STONES	05/22/63	15:40:00.14	20-200	393	37.111	-116.040	1,257	T	555					260	27	561,900	1:13:12	Yucca
PLEASANT	05/29/63	15:03:30.16	<20	211	37.128	-116.043	1,253	A	549					49	2		0:09:30	Yucca
YUBA	06/05/63	17:00:00.12	3.1	243	37.197	-116.210	2,240	T		15								Tunnel, Rainier Mesa

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/Remarks‡	
					Latitude	Longitude			Water Level Depth (m)	Gas Porosity (vol. %)	Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m³)	Collapse Time (h:m:s)			
																Water Content (wt. %)		Density (g/cm³)
FADE	06/25/64	13:30:00.14	<20	205	37.111	-116.030	1,280	T	579	15	1.74			127	14	60,600	0:38:35	Yucca
DDUB	06/30/64	13:33:00.14	11.7	259	37.174	-116.057	1,282	A	568				2,286	106	27	60,200	0:51:00	Yucca, PLOWSHARE
BYE	07/16/64	13:15:00.15	20-200	394	37.182	-116.046	1,295	T	582	11	1.57	24	2,835	163	20	136,900	1:03:00	Yucca
CORMORANT	07/17/64	17:18:30.03	<20	272	37.018	-116.030	1,184	A	488									Yucca
LINKS	07/23/64	13:30:00.15	<20	120	37.114	-116.033	1,273	A	571		1.85							Yucca
TROGON	07/24/64	18:30:00.04	<20	193	37.046	-116.013	1,204	A	497									Yucca
ALVA	08/19/64	16:00:00.14	4.4	168	37.159	-116.084	1,320	A	614	8	2.1	12	1,887	76	8	12,400	0:07:05	Yucca
CANVASBACK	08/22/64	22:17:00.06	<20	448	37.065	-116.016	1,226	T	522									Yucca
PLAYER	08/27/64	14:30:00.15	<20	91	37.117	-116.042	1,254	A	552		1.68							Yucca
HADDOCK	08/28/64	17:06:00.04	<20	364	37.067	-116.023	1,222	T	520									Yucca
GUANAY	09/04/64	18:15:00.08	<20	261	37.018	-116.024	1,184	A	482					137	23	122,300	0:19:54	Yucca
SPOON	09/11/64	14:00:00.10	<20	180	37.114	-116.026	1,289	T		3.4	1.72			14	1		8 y 312 d	Yucca
COURSER	09/25/64	17:02:00.03	0	359	37.072	-116.016	1,237	T	541									Yucca
AUK	10/02/64	20:03:00.04	<20	452	37.078	-116.009	1,254	T	552									Yucca
PAR	10/09/64	14:00:00.12	38	404	37.151	-116.078	1,304	A	594	14	2	9.4	2,322	145	22	29,700	3:54:00	Yucca, PLOWSHARE
TURNSTONE	10/16/64	15:59:30.03	<20	126	37.033	-116.026	1,191	A	488									device development
BARBEL	10/16/64	15:59:30.04	<20	259	37.039	-116.017	1,194	A	485					144	15	94,800	0:10:16	Yucca
SALMON	10/22/64	16:00:00.00	5.3	828	31.142	-89.570	46	Sa										Nuclear test detection
GARDEN	10/23/64	15:00:00.94	<20	150	37.117	-116.032	1,274	T	571	6.6								expt near Hattiesburg, MS; see notes # & **
FOREST	10/31/64	17:04:58.61	<20	381	37.107	-116.033	1,270	T	570	16								Yucca
HANDCAR	11/05/64	15:00:00.11	12	403	37.174	-116.068	1,307	D	594	0.2	2.76	3	5,146					Yucca
CREPE	12/05/64	21:15:00.10	20-200	404	37.134	-116.071	1,280	T	549	9								Yucca, PLOWSHARE
DRILL SOURCE	12/05/64	21:15:00.16	3.4	219	37.134	-116.071	1,280	A	575					226	18	244,700	2:05:00	device development
(lower)														19	11	3,400	0:05:00	Yucca
DRILL TARGET	12/05/64	21:15:00.16	<20	188	37.114	-116.054	1,252	A	575		1.77			19	11	3,400	0:05:00	Yucca
(upper)																		
PARROT	12/16/64	20:00:00.04	1.3	180	37.040	-116.025	1,194	A	488					79	6	10,700	0:03:30	Yucca
CASSOWARY	12/16/64	20:00:00.07	<20	150	37.048	-116.034	1,200	A	488									Yucca
HOPOE	12/16/64	20:00:00.07	<20	70	37.035	-116.013	1,192	A	490									Yucca
MUDPACK	12/16/64	20:10:00.10	2.7	152	37.178	-116.068	1,310	T	594		2.22		1,735	77	6	14,500	0:21:06	Yucca
SULKY	12/18/64	19:35:00.09	0.092	27	37.083	-116.343	1,597	B	335				4,633	48	6	8,899		Buckboard Mesa, PLOWSHARE
WOOL	01/14/65	16:00:00.14	<20	215	37.119	-116.026	1,287	T	585									excavation
TEM	01/29/65	18:22:00.03	<20	211	37.045	-116.014	1,202	A	500					137	18	94,000	0:24:00	Yucca
CASHMERE	02/04/65	15:30:00.11	<20	232	37.131	-116.062	1,270	A	565		1.86		1,731	95	5	14,500	0:04:12	Yucca
ALLPACA	02/12/65	15:10:29.49	0.33	225	37.164	-116.077	1,315	A	607		2.07		1,999	110	14	41,400	0:17:06	Yucca

MERLIN	02/16/65	17:30:00.04	10.1	299	37,052	-116.025	1,203	A	500					155	17	130,000	0:19:19	Yucca
WISHBONE	02/18/65	16:18:47.15	<20	186	36,818	-115.950	913	A	213					91	30	126,900	0:06:35	Frenchman
SEERSUCKER	02/19/65	15:28:54.11	<20	144	37,117	-116.032	1,274	T	570									Yucca
WAGTAIL	03/03/65	19:13:00.03	20-200	750	37,064	-116.038	1,210	T	509	19	1.92	2,485						Yucca
SUEDE	03/20/65	15:23:49.00	<20	146	37,115	-116.027	1,286	T	582		1.68			280	56	290,500	0:55:12	Yucca
CUP	03/26/65	15:34:08.16	20-200	541	37,148	-116.044	1,267	T	553	13				137	3	14,500	1:03:16	Yucca
KESTREL	04/05/65	21:00:00.04	<20	447	37,026	-116.024	1,187	A	482					103	24	35,900		PLOWSHARE expt, Pahute Mesa
PALANQUIN	04/14/65	13:14:00.10	4.3	61	37,280	-116.524	1,861	R	669		2.61	4,633						
GUM DROP	04/21/65	22:00:00.03	<20	305	37,007	-116.203	1,931	T				2,606					0:00:07	Tunnel, Shoshone Mtn.
CHENILLE	04/22/65	13:39:00.10	<20	141	37,111	-116.031	1,276	A	576		1.77			95	15	42,000	0:00:06	Yucca
MUSCOVY	04/23/65	21:44:00.04	<20	180	37,017	-115.996	1,189	T	485					84	2	4,100	0:00:06	Yucca
TEE	05/07/65	15:47:11.15	7	190	37,140	-116.068	1,283	A	576					117	9	47,800	0:00:04	Yucca
BUTEO	05/12/65	18:15:00.10	<20	696	37,243	-116.432	1,960	T	661	16	1.94	0	2,850					Pahute Mesa
CAMBRIC	05/14/65	14:57:52.15	0.75	298	36,823	-115.968	929	A	213					174	4	72,600	1:14:18	Frenchman
SCAUP	05/14/65	17:32:36.23	<20	427	37,059	-116.011	1,222	T	515					192	45	666,700	0:42:06	Yucca
TWEED	05/21/65	13:08:52.11	<20	281	37,119	-116.029	1,281	T	579	11				88	5	7,300	0:03:42	Yucca
PETREL	06/11/65	19:45:00.04	1.3	181	37,043	-116.018	1,197	A	488					61	2	2,457	0:12:30	Yucca
ORGANDY	06/11/65	20:28:37.11	<20	173	37,116	-116.024	1,294	T			1.76			137	38	138,200	0:04:12	Frenchman
DILUTED WATERS	06/16/65	16:30:00.15	<20	195	36,818	-115.957	916	A	213									Climax Stock, N of
TINY TOT	06/17/65	17:00:00.09	<20	111	37,223	-116.058		Q	457			6,175						Yucca
IZZER	07/16/65	13:04:24.10	<20	164	37,115	-116.033	1,273	A	570					38	1	700	0:04:48	Yucca
PONGEE	07/22/65	13:21:08.11	<20	135	37,132	-116.068	1,274	A	568		1.66	1,712						Yucca
BRONZE	07/23/65	17:00:00.04	20-200	531	37,098	-116.034	1,257	T	555					320	23	604,000	7:43:00	Yucca
MAUVE	08/06/65	17:23:30.04	<20	321	37,018	-116.041	1,185	A	482					160	23	168,200	0:35:04	Yucca
TICKING	08/21/65	13:43:08.15	<20	210	37,113	-116.027	1,288	T	587	16	1.74			27	6		about 2y	Yucca
CENTAUR	08/27/65	13:51:13.11	<20	172	37,137	-116.071	1,283	A	578		1.81			107	10	29,000	0:07:24	Yucca
MOA	09/01/65	20:08:00.04	<20	194	37,037	-116.015	1,194	A	488					154	22	160,600	0:28:42	Yucca
SCREAMER	09/01/65	20:08:00.04	<20	302	37,023	-116.010	1,184	A	483					298	12	267,600	0:33:46	Yucca
CHARCOAL	09/10/65	17:12:00.03	20-200	455	37,078	-116.018	1,245	T	533					126	11	40,000	0:18:48	Yucca
ELKHART	09/17/65	15:08:23.10	<20	219	37,111	-116.035	1,267	T	565	7								Nuclear test detection expt, Amchitka, Aleutian Is, Alaska
LONG SHOT	10/29/65	21:00:00.08	~80	701	51,424	179.179	42	B/An	3									
SEPIA	11/12/65	18:00:00.05	<20	241	37,050	-116.023	1,202	A	498					139	12	65,700	0:09:01	Yucca
KERMET	11/23/65	18:17:32.10	<20	198	37,162	-116.072	1,304	A	597		2.07	1,887		29	9	12,800	1:00:12	Yucca
CORDUROY	12/03/65	15:13:02.10	20-200	682	37,165	-116.053	1,275	T	567	20	1.92	0	2,164	244	30	1,782,100	0:06:06	Yucca
EMERSON	12/16/65	15:39:18.15	<20	261	37,141	-116.064	1,280	A	576	13	1.97			76	7	20,000	0:32:17	Yucca
BUFF	12/16/65	19:15:00.04	20-200	500	37,073	-116.030	1,223	T	521					391	13	321,100	2:28:30	Yucca
MAXWELL	01/13/66	15:37:43.10	<20	183	37,116	-116.028	1,283	T	578		1.71							Yucca
LAMPBLACK	01/18/66	18:35:00.04	20-200	561	37,037	-116.019	1,193	T	565	14							0:58:00	Yucca; subsurface collapse
SIENNA	01/18/66	18:35:00.04	<20	275	37,092	-116.020	1,267	A	488					154	10	67,300	0:28:00	Yucca
DOVEKIE	01/21/66	18:28:00.04	<20	333	37,032	-116.017	1,189	A	488					141	5	29,100	0:35:18	Yucca
REO	01/22/66	15:17:19.10	<20	213	37,157	-116.040	1,283	A	571			1,829						Yucca
PLAID II	02/03/66	18:17:37.10	<20	270	37,126	-116.070	1,272	A	564					79	8	19,600	0:20:17	Yucca
REX	02/24/66	15:55:07.04	19	671	37,272	-116.435	1,971	T	642	14	2.07	0	3,150					Pahute Mesa
RED HOT	03/05/66	18:15:00.10	<20	405	37,174	-116.209	2,299	T	1,417	17		2,576						Tunnel, Rainier Mesa

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/ Remarks‡		
					Latitude	Longitude			Water Level Depth (m)	Density (g/cm ³)	Porosity (vol. %)	Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m ³)	Collapse Time (hr:m:s)			
CINNAMON	03/07/66	18:41:00.04	<20	120	37.035	-116.032	1,192	A	488						124	18	61,700	0:05:11	Yucca
FINFOOT	03/07/66	18:41:00.07	<20	196	37.037	-116.030	1,193	A	488						88	2		0:43:18	Yucca
CLYMER	03/12/66	18:04:13.11	<20	397	37.144	-116.053	1,266	A	561		1.86				140	12	63,500	1:03:36	Yucca
PURPLE	03/18/66	19:00:00.04	<20	333	37.009	-116.010	1,180	T	482						9	1		5-6y	Yucca, PLOWSHARE
TEMLAR	03/24/66	14:55:28.14	0.37	151	37.113	-116.032	1,275	T	573		1.67								device development
LIME	04/01/66	18:40:00.00	<20	561	37.103	-116.021	1,291	T	561	14					118	26	95,600	0:58:05	Yucca
STUTZ	04/06/66	13:57:17.10	<20	225	37.139	-116.142	1,458	T	420	16.3	1.54				134	4	19,100	0:17:03	Yucca
TOMATO	04/07/66	22:27:30.04	<20	226	37.017	-115.993	1,195	T	497										Pahute Mesa
DURVEA	04/14/66	14:13:43.10	70	544	37.243	-116.432	1,960	R	661		2.05				9	10	400	0:16:12	Yucca
FENTON	04/23/66	14:55:26.14	1.4	167	37.160	-116.084	1,321	A	613	8	2.1	9.9	1,887		101	5	25,100	0:04:30	Frenchman
PIN STRIPE	04/25/66	18:38:00.14	<20	296	36.887	-115.942	1,066	T	358		1.87				58	5	8,300	2:03:11	Yucca
OCHRE	04/29/66	13:33:00.04	<20	126	37.044	-116.023	1,196	A	494						165	17	122,300	0:29:54	Yucca
TRAVELER	05/04/66	13:32:17.09	<20	197	37.137	-116.138	1,430	A	387						91	7	31,700	0:04:42	Pahute Mesa
CYCLAMEN	05/05/66	14:00:00.04	12	305	37.051	-116.039	1,203	A	497					4,675	365	25	841,000	2:45:46	Yucca
CHARTREUSE	05/06/66	15:00:00.08	73	667	37.348	-116.323	2,064	R	662	7	2.35	0			366	32	1,552,000	1:40:48	Yucca
TAPESTRY	05/12/66	19:37:26.20	<20	247	37.134	-116.072	1,281	A	576						291	20	298,200	0:52:34	Yucca
PIRANHA	05/13/66	13:30:00.04	20-200	549	37.087	-116.034	1,237	T	533	17									Climax Stock, N of Yucca
DUMONT	05/19/66	13:56:28.14	20-200	671	37.111	-116.059	1,252	T	549										Yucca
DISCUS THROWER	05/27/66	20:00:00.04	22	337	37.178	-116.099	1,380	T	671										Yucca
PILE DRIVER	06/02/66	15:30:00.09	62	463	37.227	-116.056	1,525	G	457	2-3	2.67				415	21	841,000	1:31:48	Yucca
TAN	06/03/66	14:00:00.04	20-200	561	37.068	-116.036	1,213	T	512	17									Yucca
PUCE	06/10/66	14:30:00.04	<20	486	37.059	-116.040	1,208	A	503										Yucca
DOUBLE PLAY	06/15/66	17:00:04	<20	328	37.010	-116.204	1,954	T		12	1.96			1,570					Shoshone Mtn., subsurface collapse
KANKAKEE	06/15/66	18:02:47.13	20-200	455	37.171	-116.050	1,281	D	575						396	18	536,000	7:42:00	Yucca
VULCAN	06/25/66	17:13:00.07	25	322	37.155	-116.073	1,300	A	591		2.02		2,210		160	23	184,300	0:58:23	PLOWSHARE heavy element expt. Yucca
HALFBEAK	06/30/66	22:15:00.07	365	819	37.316	-116.300	2,043	R	645	3	2.49	0	3,540		396	11	463,300	3:18:40	Pahute Mesa
SAXON	07/28/66	15:33:30.13	1.2	152	37.140	-116.134	1,411	T	370						24	8		about 6mo	Yucca, PLOWSHARE
ROVENA	08/10/66	13:16:00.07	<20	195	37.169	-116.049	1,278	A	570		1.75		2,027		35	2	1,200	0:19:42	device development
TANGERINE	08/12/66	15:36:00.05	<20	88	37.046	-116.030	1,199	A	494										Yucca
DERRINGER	09/12/66	15:30:00.05	7.8	255	36.877	-115.951	1,013	A	335										Frenchman
DAIQUI	09/23/66	18:00:00.04	<20	561	37.103	-116.037	1,260	T	561	14					80	3	65,300	0:11:35	Yucca
NEWARK	09/29/66	14:45:30.09	<20	229	37.169	-116.047	1,279	A	570										Yucca
KHALD	10/15/66	19:00:00.04	<20	233	37.047	-116.018	1,202	A	501										Yucca
SIMMS	11/05/66	14:45:00.00	2.3	198	37.170	-116.048	1,279	A	572		1.75		2,027		58	5	10,400	0:16:12	Yucca, PLOWSHARE
AIAX	11/11/66	12:00:00.14	<20	238	37.134	-116.051	1,254	A	556						122	14	48,400	0:10:14	device development; see note #
																			Yucca

CERISE	11/18/66	15:02:00.04	<20	211	37.043	-116.011	1,202	A	482	138	15	75,700	0:13:04	Yucca
VIGIL	11/22/66	15:00:00.13	<20	91	37.169	-116.049	1,278	A	568					Yucca
STERLING	12/03/66	12:15:00.05	0.38	828	31.142	-89.570	46	Sal/air						Nuclear test detection expt in Salmon cavity**
SIDECAR	12/13/66	17:50:00.04	<20	240	37.035	-116.008	1,195	A	483	149	6	28,300	0:11:12	Yucca
NEW POINT	12/13/66	21:00:00.08	<20	244	36.877	-115.939	1,003	A	299	61	38	35,900	0:13:12	Frenchman
GREELEY	12/20/66	15:30:00.08	870	1,215	37.302	-116.409	1,945	T	616	11	2.19	0	2-11 mo	Pahute Mesa; multistage collapse
RIVET I	01/18/67	14:55:00.00	<20	152	37.165	-116.047	1,276	A	568				1d3m20s	Yucca
NASH	01/19/67	16:45:00.14	39	364	37.144	-116.136	1,425	D	428	152	55	651,400	0:23:54	Yucca
BOURBON	01/20/67	17:40:03.41	20-200	560	37.100	-116.005	1,306	Li	600	26	30	42,900	about 8 d 5 h	Yucca; see note ††
RIVET II	01/26/67	16:30:00.00	<20	198	37.165	-116.049	1,274	A	567	40	3		0:09:24	Yucca
WARD	02/08/67	15:15:00.13	<20	257	37.167	-116.048	1,277	A	567	79	9	69,300	0:15:24	Yucca
PERSIMMON	02/23/67	18:34:00.04	<20	299	37.017	-116.017	1,184	A	485	171	6	28,300	0:06:30	Yucca
AGILE	02/23/67	18:50:00.13	20-200	732	37.127	-116.067	1,270	T	564	274	12	544,400	2:21:30	Yucca
RIVET III	03/02/67	15:00:00.00	<20	271	37.166	-116.050	1,275	A	568	102	9	21,900	0:07:42	Yucca; see note #
MUSHROOM	03/03/67	15:19:00.04	<20	180	37.039	-116.011	1,198	A	492	102	9	21,900	0:07:42	Yucca
FIZZ	03/10/67	15:00:00.04	<20	118	37.046	-116.031	1,199	A	488					Yucca
OAKLAND	04/04/67	14:20:00.15	<20	166	37.162	-116.083	1,321	A	614					Yucca
HELLMAN	04/06/67	15:00:00.12	<20	153	37.137	-116.134	1,405	A	364					Yucca
FAWN	04/07/67	15:00:00.04	<20	271	37.054	-116.023	1,206	A	503	155	16	107,000	0:11:16	Yucca
CHOCOLATE	04/21/67	15:09:00.04	<20	240	37.019	-116.038	1,186	A	480	122	10	32,100	1:39:41	Yucca
EFFENDI	04/27/67	14:45:00.00	<20	219	37.139	-116.064	1,279	A	575	35	4	14,100	0:18:50	Yucca; see note #
MICKEY	05/10/67	13:40:00.04	20-200	500	37.078	-115.996	1,278	T	575	56	7		about 22 mo	Yucca
COMMODORE	05/20/67	15:00:00.20	250	744	37.130	-116.065	1,271	T	567	341	45		0:08:38	Yucca
SCOTCH	05/23/67	14:00:00.04	155	977	37.275	-116.371	2,034	T	672					Pahute Mesa
ABSINTHE	05/26/67	12:30:00.03	<20	119	37.045	-116.020	1,199	A	494	17	2.2	0	3,183	Yucca; subsurface collapse
KNICKERBOCKER	05/26/67	15:00:01.50	76	631	37.248	-116.481	1,878	R	632					Pahute Mesa
SWITCH	06/22/67	13:10:00.00	3.1	305	37.126	-116.030	1,277	T	572	6.1	1.71	4,102	0:38:37	Yucca, PLOWSHARE device development; see note #
MIDI MIST	06/26/67	16:00:00.08	<20	378	37.202	-116.209	2,200	T	459					Tunnel, Rainier Mesa
UMBER	06/29/67	11:25:00.04	10	310	37.029	-116.023	1,188	A	483	165	24	214,100	0:13:36	Yucca
VITO	07/14/67	13:30:00.08	<20	90	37.165	-116.046	1,278	A	570					Yucca
STANLEY	07/27/67	13:00:00.12	20-200	484	37.149	-116.049	1,265	T	561	13	2.0	427,800	1:21:13	Yucca
GIBSON	08/04/67	14:00:00.04	<20	241	37.024	-116.013	1,186	A	486	109	22	86,400	0:15:42	Yucca
WASHER	08/10/67	14:10:00.00	<20	465	37.157	-116.048	1,271	T	564				0:42:10	Yucca; subsurface collapse; see note #
BORDEAUX	08/18/67	20:12:30.04	<20	332	37.012	-116.037	1,183	A	480	159	22	126,900	2:26:20	Yucca
LEXINGTON	08/24/67	13:30:00.00	<20	226	37.163	-116.075	1,310	A	604	13	8		0:17:18	Yucca
DOOR MIST	08/31/67	16:30:00.04	<20	436	37.178	-116.210	2,295	T	<900	21.6	1.86	1,871		Tunnel, Rainier Mesa
YARD	09/07/67	13:45:00.00	20-200	521	37.153	-116.054	1,270	T	567	352	22	848,600	0:39:18	Yucca; see note #
GILROY	09/15/67	17:30:00.04	<20	241	37.035	-116.022	1,191	A	492					Yucca
MARVEL	09/21/67	20:45:00.00	2.2	174	37.166	-116.039	1,288	A	579	32-60	9	10,100	0:02:42	PLOWSHARE expt, Yucca; oblong collapse crater; see note #
ZAZA	09/27/67	17:00:00.04	20-200	667	37.099	-116.054	1,240	T	535	17		634,600	4:28:00	Yucca

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Geophysical Parameters					Crater Information				Test Area/ Remarks‡
					Medium†			Water Level Depth (m)	Water Content (wt. %)	Density (g/cm³)	Porosity (vol. %)	Gas Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m³)	Collapse Time (h:m:s)	
					Latitude	Longitude											
LANPHER	10/18/67	14:30:00.08	20–200	714	37.116	–116.059	1,255	T	552	15			299	15	362,400	9:55:00	Yucca
SAZERAC	10/25/67	14:30:00.06	<20	301	37.032	–116.027	1,191	A	491				160	15	91,700	0:13:01	Yucca
COGNAC	10/25/67	14:30:00.14	<20	240	37.050	–116.040	1,202	A	501							0:23:24	Yucca
WORTH	10/25/67	14:45:00.08	<20	187	37.156	–116.049	1,269	A	564								Yucca
COBBLER	11/08/67	15:00:00.04	<20	667	37.092	–116.037	1,242	T	556							3:37:47	Yucca; subsurface collapse
POLKA	12/06/67	13:00:00.00	<20	190	37.159	–116.054	1,273	A	567	8.7							Yucca; see note #
GASBUGGY	12/10/67	19:30:00.14	29	1,292	36.678	–107.209	2,179	Sh		3.5		4,216					POWSHARE gas-stimulation expt, near Dulce, NM
STILT	12/15/67	15:00:00.04	<20	333	37.037	–116.003	1,204	T	503							4:24:20	Yucca; subsurface collapse
HUPMOBILE	01/18/68	16:30:00.13	7.4	247	37.146	–116.067	1,287	A	582	1.99		1,873	77	10		0:21:21	Yucca
STACCATO	01/19/68	15:00:00.00	20–200	443	38.634	–118.133	1,834	A	567				268	17	368,700	2:08:30	Yucca; see note #
FAULTLESS	01/19/68	18:15:00.08	200–1,000	975	37.156	–116.055	1,272	T	152	2.26			1,219			16:13:00	Seismic calibration expt, Hot Creek Valley, NV
BRUSH	01/24/68	15:00:00.04	<20	118	37.043	–116.015	1,199	A	498							0:06:06	Yucca
CABRIOLET	01/26/68	16:00:00.11	2.3	52	37.281	–116.515	1,862	R	610	2.34			109	36	137,600		POWSHARE excavation expt, Pahuta Mesa
MALLET	01/31/68	15:30:00.04	<20	240	37.001	–116.010	1,177	A	482				131	20	87,900	0:31:00	Yucca
TORCH	02/21/68	15:00:00.04	<20	241	37.042	–116.003	1,210	T	507								Yucca
KNOX	02/21/68	15:30:00.00	20–200	645	37.117	–116.055	1,253	T	549				335	34	1,595,927	1:04:06	Yucca; see note #
DORSAL FIN	02/29/68	17:08:30.04	<20	410	37.185	–116.212	2,260	T	867	20.3	1.86	2,399				17:57:00	Tunnel, Rainier Mesa
RUSSET	03/05/68	15:30:00.04	<20	120	36.970	–116.057	1,170	A	466								Yucca
BUGGY A	03/12/68	17:04:00.11	1.08	41	37.007	–116.371	1,560	B	442	1.86			132	39			POWSHARE excavation expt, Buckboard Mesa
BUGGY B	03/12/68	17:04:00.11	1.08	41	37.008	–116.371	1,560	B	442	1.86			77	21			
BUGGY C	03/12/68	17:04:00.11	1.08	41	37.008	–116.372	1,561	B	442	1.86			77	21			
BUGGY D	03/12/68	17:04:00.11	1.08	41	37.008	–116.372	1,560	B	442	1.86			77	21			
BUGGY E	03/12/68	17:04:00.11	1.08	41	37.008	–116.373	1,560	B	442	1.86			77	21			
POMMARD	03/14/68	15:19:00.06	1.5	209	37.048	–116.012	1,208	A	497				88	2	3,700	0:03:54	Yucca
STINGER	03/22/68	15:00:00.04	20–200	668	37.333	–116.312	2,035	T	640	17			284	7	122,300	5:28:18	Pahute Mesa
MILK SHAKE	03/25/68	18:44:27.04	<20	265	36.872	–115.932	993	A	293				34	5	14,640	0:20:54	Frenchman
BEVEL	04/04/68	15:02:00.04	<20	241	37.052	–116.022	1,205	A	504								Yucca
NOOR	04/10/68	14:00:00.00	20–200	381	37.157	–116.083	1,316	A	604	13			158	11	117,400	9:00:00	Yucca; see note #
THROW	04/10/68	14:00:00.00	<20	229	37.154	–116.080	1,310	A	594				5	43		0:31:00	Yucca; see note #
SHUFFLE	04/18/68	14:05:00.00	20–200	493	37.152	–116.038	1,279	T	575	1.77		2,531	213	21	443,700	0:25:00	Yucca; see note #
SCROLL	04/23/68	17:01:30.08	<20	229	37.338	–116.376	2,032	T	635	1.47		2,850					Pahute Mesa

BOXCAR	04/26/68	15:00:00.07	1,300	1,158	37,295	-116,457	1,914	R	580	9	2.12	0	4,450	305	67	1:45:00	Pahute Mesa
HALCHET	05/03/68	16:00:00.04	<20	241	37,029	-116,021	1,188	A	488					160	14	0:10:30	Yucca
CROCK	05/08/68	14:10:00.00	<20	182	37,157	-116,036	1,289	A	579	7.5				99	8	0:24:48	Yucca; see note #
CLARKSMOBILE	05/17/68	13:00:00.00	20-200	473	37,120	-116,060	1,259	T	553					235	21	1:11:23	Yucca; see note #
ADZE	05/28/68	14:45:00.04	<20	240	37,009	-115,996	1,188	T	489					126	9	0:15:06	Yucca
WEMBLEY	06/05/68	14:21:30.04	<20	238	37,035	-116,017	1,191	A	490					122	8		Yucca; see note #
TUB A	06/06/68	21:30:00.00	<20	189	37,167	-116,043	1,282	A	575	8-9				107	11	0:09:48	Yucca; see note #
TUB B	06/06/68	21:30:00.00	<20	189	37,165	-116,044	1,279	A	571	8-9						0:10:06	Yucca; see note #
TUB C	06/06/68	21:30:00.00	<20	189	37,165	-116,042	1,283	A	575							0:10:12	Yucca; see note #
TUB D	06/06/68	21:30:00.00	<20	273	37,167	-116,046	1,278	A	570							0:26:18	Yucca; see note #
TUB F	06/06/68	21:30:00.00	<20	189	37,167	-116,043	1,282	A	575							8:30:00	Pahute Mesa
RICKEY	06/15/68	13:59:59.97	20-200	683	37,265	-116,316	2,116	T	713		2.15			167	8	0:06:30	Yucca
FUNNEL	06/25/68	15:30:00.04	<20	119	37,046	-116,031	1,199	A	497								Yucca
SEVILLA	06/25/68	15:30:00.04	<20	359	37,042	-115,993	1,226	T	526								Yucca
CHALEAUGAY	06/28/68	12:22:00.08	20-200	607	37,245	-116,484	1,876	T	632		1.86		4,154	118	3	0:27:42	Pahute Mesa
SPUD	07/17/68	14:00:00.04	<20	240	37,001	-116,000	1,178	T	482								Yucca
TANYA	07/30/68	13:00:00.00	20-200	381	37,117	-116,083	1,271	A	562								Yucca; see note #
IMP	08/09/68	13:00:00.00	<20	179	37,162	-116,078	1,314	A	607					5	6	0:26:00	Yucca; see note #
RACK	08/15/68	17:00:00.00	<20	200	37,124	-116,049	1,254	A	552	8				67	6	0:18:36	Yucca; see note #
DIANA MOON	08/27/68	16:30:00.04	<20	242	36,877	-115,932	1,004	A	305					101	5	0:06:08	Frenchman
SLED	08/29/68	22:45:00.04	20-200	729	37,250	-116,348	2,057	T	667	24	1.81	0	1,950			3:38:49	Pahute Mesa; subsurface collapse
NOGGIN	09/06/68	14:00:00.13	20-200	582	37,136	-116,048	1,259	T	558					122		0:45:42	Yucca
KNIFE A	09/12/68	14:00:00.04	<20	332	37,032	-116,012	1,190	T	491							1:25:12	Yucca
STODDARD	09/17/68	14:00:00.04	31	468	37,120	-116,128	1,370	T	600					208	22	0:34:00	Yucca, PLOWSHARE device development
HUDSON SEAL	09/24/68	17:05:00.87	<20	344	37,205	-116,207	2,168	T	914	19.4	1.79		2,579			2:05:48	Tunnel, Ramier Mesa
WELDER	10/03/68	14:00:00.04	<20	118	37,046	-116,031	1,199	A	488								Yucca
KNIFE C	10/03/68	14:29:00.04	<20	301	37,026	-115,994	1,201	T	500					140	2	1:14:35	Yucca
VAT	10/10/68	14:30:00.00	<20	192	37,133	-116,043	1,256	A	553					106	11	0:14:24	Yucca
HULA	10/29/68	15:36:00.09	<20	201	37,113	-116,042	1,254	A	553					61	1	0:05:00	Yucca
BIT A	10/31/68	18:30:00.04	<20	148	37,047	-116,030	1,199	A	497								Yucca
BIT B	10/31/68	18:30:00.04	<20	118	37,047	-116,030	1,199	A	497								Yucca
FILE	10/31/68	18:30:00.04	<20	229	37,017	-116,037	1,185	A	471					137	14	0:44:30	Yucca
CREW	11/04/68	15:15:00.09	20-200	604	37,130	-116,087	1,287	A	579		1.82			122	18	0:01:36	Yucca
CREW 2nd	11/04/68	15:15:00.09	<20	360	37,130	-116,087	1,287		579					122	18	0:01:36	Yucca
CREW 3rd	11/04/68	15:15:00.09	<20	360	37,130	-116,087	1,287		579					122	18	1:35:57	Yucca
AUGER	11/15/68	15:30:00.04	<20	240	37,048	-116,001	1,222	T	518							0:24:30	Yucca
KNIFE B	11/15/68	15:45:00.04	<20	363	37,026	-116,034	1,188	A	480					126	2	1:08:05	Yucca
MING VASE	11/20/68	18:00:00.03	<20	308	37,010	-116,207	1,931	T		12	1.96		2,532			0:09:45	Tunnel, Shoshone Mm.; subsurface collapse
TINDERBOX	11/22/68	16:19:00.04	<20	440	37,140	-116,043	1,261	T	556							1:35:30	Yucca
SCHOONER	12/08/68	16:00:00.14	30	111	37,343	-116,567	1,668	T	274		2.38		3,410	259	61	244,600	PLOWSHARE excavation expt., Pahute Mesa
BAY LEAF	12/12/68	15:00:00.04	<20	130	37,047	-116,031	1,199	A	494								Yucca
TYG A	12/12/68	15:10:00.08	<20	228	37,121	-116,081	1,273	A	564					15	34	>2y5m	Yucca
TYG B	12/12/68	15:10:00.08	<20	251	37,118	-116,080	1,270	A	561					56	28	48,068	Yucca
TYG C	12/12/68	15:10:00.08	<20	228	37,118	-116,078	1,268	A	561					53	7	0:33:00	Yucca

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location			Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/ Remarks‡
					Latitude	Longitude	Water Level Depth (m)			Water Content (wt. %)	Density (g/cm³)	Porosity (vol. %)	Gas Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m³)	Collapse Time (h:m:s)	
TYG D	12/12/68	15:10:00.08	<20	207	37.121	-116.079	1,272	A	564					46	8		>2y5m	Yucca
TYG E	12/12/68	15:10:00.08	<20	198	37.120	-116.077	1,270	A	564					78	9		0:13:00	Yucca
TYG F	12/12/68	15:10:00.08	<20	265	37.119	-116.083	1,273	A	564					57	38		1:18:18	Yucca
SCISSORS	12/12/68	15:20:00.04	<20	241	37.004	-116.040	1,181	A	480					120	13		0:27:18	Yucca
BENHAM	12/19/68	16:30:00.04	1150	1,402	37.231	-116.474	1,887	T	641	6	2.3	0	3,050				4:53:00	Pahute Mesa; subsurface collapse
PACKARD	01/15/69	19:00:00.07	10	247	37.148	-116.067	1,288	A	582	10	1.99		1,873	107	15		0:16:45	Yucca
WINESKIN	01/15/69	19:30:00.04	20-200	518	37.209	-116.226	2,263	T	884		2.09					152,300	1d21h	Rainier Mesa
SHAVE	01/22/69	15:00:00.04	<20	241	37.015	-115.995	1,191	T	491					135	9	45,100	0:45:24	Yucca
WISE	01/30/69	15:00:00.04	20-200	454	37.053	-116.030	1,204	T	503					268	3	17,000	4:40:24	Yucca
BIGGIN	01/30/69	15:17:00.12	<20	242	37.133	-116.041	1,257	T	555									Yucca
NIPPER	02/04/69	15:00:00.04	<20	241	37.003	-116.010	1,178	A	482					87	3	6,900	0:31:48	Yucca
WINCH	02/04/69	15:00:00.04	<20	241	37.009	-116.043	1,185	A	483								0:19:48	Yucca
CYPRESS	02/12/69	16:18:20:88	<20	411	37.169	-116.212	2,265	T		15.4	1.88		2,569				2:51:36	Tunnel, Rainier Mesa
VALISE	03/18/69	14:30:00.12	<20	91	37.139	-116.042	1,261	A	556									Yucca
CHATTY	03/18/69	14:40:00.43	<20	195	37.162	-116.077	1,312	A	607					8	2	7,700	0:17:30	Yucca
BARAC	03/20/69	18:12:00.04	<20	304	37.022	-116.031	1,187	A	486					162	23	167,200	0:55:25	Yucca
COFFER	03/21/69	14:30:00.41	<100	465	37.133	-116.088	1,291	A	585					148	39	163,500	4:35:00	Yucca
GOURD AMBER	04/24/69	13:04:00.14	<20	181	37.164	-116.081	1,320	A	613					38	4	10,700	0:16:00	Yucca
GOURD BROWN	04/24/69	13:04:00.14	<20	227	37.160	-116.082	1,317	A	610									Yucca
BLENTON	04/30/69	17:00:00.04	20-200	558	37.081	-116.015	1,255	T	553								3:34:48	Yucca; subsurface collapse
THISTLE	04/30/69	17:00:00.04	20-200	560	37.090	-116.007	1,281	T	578								1:24:20	Yucca; subsurface collapse
PURSE	05/07/69	13:45:00.04	20-200	599	37.283	-116.502	1,828	T	601									collapse
ALIMENT	05/15/69	18:00:00.04	<20	240	37.012	-115.986	1,207	T	506					137	18	163,600	2:33:00	Pahute Mesa
IPECAC A	05/27/69	14:00:00.04	<20	124	37.015	-116.003	1,181	A	482								0:15:48	Yucca
IPECAC B	05/27/69	14:00:00.04	<20	124	37.015	-116.001	1,182	A	483									Yucca
TORRIDO	05/27/69	14:15:00.04	20-200	515	37.075	-115.996	1,270	T	568					306	3	45,900	1:33:54	Yucca
TAPPER	06/12/69	14:00:00.04	<20	303	37.009	-116.031	1,181	A	482					158	29	221,700	0:22:30	Yucca
BOWL-1	06/26/69	16:00:00.13	<20	198	37.162	-116.079	1,316	A	607					67	6	12,300	0:50:00	Yucca
BOWL-2	06/26/69	16:00:00.13	<20	229	37.161	-116.080	1,315	A	607					84	6	12,600	0:44:18	Yucca
ILDRIM	07/16/69	13:02:30.04	20-200	410	37.119	-116.056	1,256	T	553					152	9	73,200	1:27:48	Yucca
HUTCH	07/16/69	14:55:00.04	20-200	549	37.139	-116.088	1,300	A	600					274	61	1,360,900	2:56:06	Yucca
SPIDER A	08/14/69	14:30:00.04	<20	213	37.160	-116.064	1,292	A	587					9	12	381	0:15:00	Yucca
SPIDER B	08/14/69	14:30:00.04	<20	228	37.158	-116.065	1,291	A	587								7:00:00	Yucca
HOREHOUND	08/27/69	13:45:00.04	<20	332	36.993	-115.996	1,174	T	477								5:30:00	Yucca
PLIERS	08/27/69	13:45:00.04	<20	239	37.021	-116.039	1,187	A	486					123	15	52,000	0:22:30	Yucca
RULISON	09/10/69	21:00:00.01	40	2,568	39.356	-107.949	2,469	Sn	244									PLOWSHARE gas-stimulation expt near Rulison, CO

MINUTE STEAK	09/12/69	18:02:20.42	<20	265	36,877	-115.929	1,007	A	302	14	2.03	0	3,300	37	3	0:23:17	Frenchman
JORUM	09/16/69	14:30:00.04	<1000	1159	37,314	-116.462	1,898	T	556					162	8	713,800	Pahute Mesa
KYACK A	09/20/69	14:30:00.04	<20	192	37,159	-116.069	1,296	A	597					73	9	6,200	Yucca
KYACK B	09/20/69	14:30:00.04	<20	186	37,157	-116.067	1,293	A	597					56	9	6,500	Yucca
SEAWEEED C	10/01/69	14:30:00.04	<20	119	37,011	-115.999	1,184	A	485								Yucca
SEAWEEED D	10/01/69	14:30:00.04	<20	118	37,010	-116.000	1,183	A	485								Yucca
SEAWEEED E	10/01/69	14:30:00.04	<20	124	37,014	-115.999	1,184	A	485								Yucca
MILROW	10/02/69	22:06:00.04	~1000	1,217	51,403	179.179	40	An	4					610	5	688,100	Seismic calibration expt, Amchitka, Alaska
PIPKIN	10/08/69	14:30:00.14	200-1000	624	37,257	-116.442	1,965	R	643					192	17	95,200	Pahute Mesa
SEAWEEED B	10/16/69	14:00:00.04	<20	119	37,013	-115.999	1,185	A	485				4,022				Yucca
CRUEL	10/29/69	19:30:00.04	11	264	37,121	-116.129	1,372	T	600					104	6	122,000	Yucca
POD A	10/29/69	20:00:38.38	<20±±	267	37,140	-116.131	1,397	T	357								Yucca
POD B	10/29/69	20:00:00.04	<20±±	249	37,140	-116.143	1,464	T	424								Yucca
POD C	10/29/69	20:00:00.04	<20±±	171	37,136	-116.141	1,448	A	407								Yucca
POD D	10/29/69	20:00:00.04	<20±±	312	37,135	-116.137	1,424	T	384					85	10	41,200	Yucca
CALABASH	10/29/69	22:01:51.04	110	625	37,143	-116.065	1,283	T	578					272	23	1,131,500	Yucca
SCUTTLE	11/13/69	15:15:00.13	1.7	165	37,165	-116.076	1,312	A	604					22	13		Yucca
PICCALILLI	11/21/69	14:52:00.04	20-200	394	37,031	-116.003	1,195	T	491					224	19	259,900	Yucca
PLANER	11/21/69	14:52:00.08	<20	378	37,015	-116.024	1,183	A	479								Yucca
DIESEL TRAIN	12/05/69	17:00:00.04	<20	419	37,180	-116.212	2,207	T	1,018	11	2.18		2,761				Tunnel, Rainier Mesa
CULANTRO A	12/10/69	15:00:00.04	<20	134	37,015	-116.004	1,181	A	482								Yucca
CULANTRO B	12/10/69	15:00:00.04	<20	149	37,015	-116.002	1,182	A	482								Yucca
TUN A	12/10/69	15:30:00.07	<20	200	37,168	-116.080	1,323	A	614					15	12	5,200	Yucca
TUN B	12/10/69	15:30:00.07	<20	194	37,169	-116.080	1,324	T	611					54	7	9,300	Yucca
TUN C	12/10/69	15:30:00.07	<20	194	37,168	-116.078	1,319	T	617					40	5	11,500	Yucca
TUN D	12/10/69	15:30:00.07	<20	256	37,169	-116.078	1,320	T	613					78	9	25,300	Yucca
GRAPE A	12/17/69	15:00:00.04	20-200	551	37,083	-116.002	1,274	T	568					336	14	359,600	Yucca
LOVAGE	12/17/69	15:15:00.04	<20	378	37,007	-116.024	1,181	A	475					193	37	421,300	Yucca
TERRINE WHITE	12/18/69	19:00:00.04	20-200	457	37,120	-116.036	1,264	T	567					258	18	369,400	Yucca
TERRINE YELLOW	12/18/69	19:00:00.04	20-200	418	37,121	-116.029	1,277	T	573					122	7	82,690	Yucca
FOB BLUE	01/23/70	16:30:00.21	<20	101	37,141	-116.034	1,273	T	570								Yucca
FOB GREEN	01/23/70	16:30:00.21	<20	244	37,141	-116.038	1,266	T	564								Yucca
FOB RED	01/23/70	16:30:00.21	<20	266	37,137	-116.038	1,263	T	561			1,909					Yucca
AJO	01/30/70	17:00:00.04	<20	304	37,031	-116.036	1,191	A	488					175	24	180,300	Yucca
GRAPE B	02/04/70	17:00:00.04	20-200	554	37,098	-116.027	1,269	T	565					442	21		Yucca
BELEN	02/04/70	17:00:00.07	20-200	421	37,055	-116.040	1,206	A	504					261	27	350,900	Yucca
LABIS	02/05/70	15:00:00.04	25	442	37,164	-116.040	1,286	T	579		1.65			244	8	133,000	Yucca
DIANA MIST	02/11/70	19:15:00.04	<20	402	37,201	-116.206	2,229	T		17.6	1.87		2,661				Tunnel, Rainier Mesa
CUMARIN	02/25/70	14:28:38.04	20-200	408	37,037	-115.999	1,206	T	504					219	30	431,200	Yucca
YANNIGAN BLUE	02/26/70	15:30:00.04	20-200	364	37,114	-116.067	1,258	A	555					207	34		Yucca
YANNIGAN RED	02/26/70	15:30:00.04	20-200	392	37,116	-116.062	1,258	A	549					218	44	452,200	Yucca
YANNIGAN WHITE	02/26/70	15:30:00.04	20-200	395	37,118	-116.067	1,261		559					220	32		Yucca
CYATHUS	03/06/70	14:24:00.94	8.7	294	37,173	-116.093	1,353	T	640					61	9	20,700	Yucca
ARABIS BLUE	03/06/70	15:00:00.21	<20	101	37,140	-116.038	1,265	T	575					113	6		Yucca
ARABIS GREEN	03/06/70	15:00:00.21	<20	259	37,142	-116.035	1,270		568								Yucca
ARABIS RED	03/06/70	15:00:00.21	<20	250	37,140	-116.032	1,276		564		1.6		1,888	94	6		Yucca
JAL	03/19/70	14:03:30.04	<20	301	37,001	-116.024	1,178	A	474					139	11	62,700	Yucca
SHAPER	03/23/70	23:05:00.04	20-200	560	37,086	-116.022	1,252	T	549					335	20	691,900	Yucca

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Medium†	Water Level Depth (m)	Geophysical Parameters				Crater Information				Test Area/ Remarks‡
					Latitude	Longitude				Water Content (wt. %)	Density (g/cm ³)	Porosity (vol. %)	Gas Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m ³)	Collapse Time (h:ms)	
HANDLEY	03/26/70	19:00:00.20	>1000	1,209	37.300	-116.535	1,772	T	387	12	2.2	0	3,160	396	12	2,706,400	23:42:00	Pahute Mesa
SNUBBER	04/21/70	14:30:00.04	12.7	344	37.055	-115.989	1,253	T	550					144	4	16,100	0:48:32	Yucca
CAN GREEN	04/21/70	15:00:00.04	20-200	274	37.112	-116.083	1,266		558		2.09			94	9		0:10:00	Yucca
CAN RED	04/21/70	15:00:00.04	20-200	399	37.116	-116.081	1,268	T	561		1.7			176	26	200,900	1:00:00	Yucca
BEEBALM	05/01/70	14:13:00.04	<20	390	37.059	-116.029	1,209	T	503					276	1	10,700	1:27:18	Yucca
HOD A (GREEN)	05/01/70	14:40:00.17	<20	241	37.138	-116.032	1,276	T	564		1.64		1,895	136	21	112,255	0:15:42	Yucca
HOD B (RED)	05/01/70	14:40:00.17	<20	265	37.136	-116.035	1,268	T	561		1.76		2,031	169	13	84,000	0:09:12	Yucca
HOD C (BLUE)	05/01/70	14:40:00.17	<20	101	37.133	-116.035	1,266	T	571									Yucca
MINT LEAF	05/05/70	15:30:00.17	<20	405	37.216	-116.185	2,094	T	904	15	1.93		2,640				1:02:14	Tunnel, Rainier Mesa
DIAMOND DUST	05/12/70	14:00:00.04	<20	270	37.010	-116.203	1,899	T										Nuclear test detection
CORNICE GREEN	05/15/70	13:30:00.17	20-200	443	37.162	-116.040	1,286	T	576					241	48	829,002	0:01:50	expt, Mine Mtn. tunnel
CORNICE YELLOW	05/15/70	13:30:00.17	20-200	390	37.166	-116.036	1,293	T	584		1.58			237	35	604,735	0:27:06	Yucca
MANZANAS	05/21/70	14:00:00.04	<20	241	37.012	-115.993	1,194	T	491									Yucca
MORRONES	05/21/70	14:15:00.03	20-200	483	37.071	-116.014	1,237	T	527								0:32:48	Yucca; subsurface
HUDSON MOON	05/26/70	14:16:00.17	<20	422	37.183	-116.214	2,274	T										collapse
FLASK GREEN	05/26/70	15:00:00.05	105	529	37.113	-116.063	1,251	T	552	17.7	1.8		1,920	297	49		3:45:00	Tunnel, Rainier Mesa
FLASK RED	05/26/70	15:00:00.05	0.035	152	37.116	-116.068	1,259	A	558									Yucca
FLASK YELLOW	05/26/70	15:00:00.05	0.09	335	37.118	-116.064	1,259	A	558									Yucca
PITON C	05/28/70	11:45:00.20	<20	101	37.138	-116.031	1,279	T	565		1.56		1,544					Yucca
PITON A	05/28/70	12:00:00.16	<20	236	37.144	-116.033	1,274	T	570		1.56		1,544	53	3	3,700	0:42:00	Yucca
PITON B	05/28/70	12:00:00.16	<20	230	37.141	-116.035	1,270	T	565		1.56		1,544	31	14	23,150	0:41:00	Yucca
AMICA VIOLET	06/26/70	13:00:00.04	<20	264	37.117	-116.085	1,272	A	564					152	30	207,100	1:20:00	Yucca
AMICA YELLOW	06/26/70	13:00:00.04	<20	309	37.114	-116.087	1,270	A	562		1.81			40	2		0:20:46	Yucca
SCREE ACAJOU	10/13/70	15:05:00.02	<20	249	37.137	-116.035	1,269	T	564					62	6			Yucca
SCREE	10/13/70	15:05:00.02	<20	192	37.134	-116.032	1,273	T	568									
ALHAMBRA																		
SCREE CHAMOIS	10/13/70	15:05:00.02	<20	101	37.137	-116.032	1,275	T	570									Yucca
TIERAS	10/14/70	14:30:00.04	20-200	561	37.071	-116.006	1,249	T	543					306	53		0:52:18	Yucca
TRUCHAS	10/28/70	14:30:00.03	<20	118	37.014	-116.019	1,182	A	479									Yucca
CHACON																		
TRUCHAS	10/28/70	14:30:00.04	<20	118	37.014	-116.018	1,182	A	479									Yucca
CHAMISAL																		
TRUCHAS	10/28/70	14:30:00.04	<20	266	37.015	-116.020	1,183	A	479					132	9	42,800	0:25:36	Yucca
RODARTE																		
ABEYAS	11/05/70	15:00:00.04	20-200	393	37.029	-116.013	1,188	T	488					222	29	370,800	1:01:42	Yucca
PENASCO	11/19/70	15:00:00.04	<20	271	37.015	-116.017	1,183	A	479					141	15	76,500	0:23:48	Yucca
CARRIZOZO	12/03/70	15:07:00.00	<20	279	37.006	-116.041	1,183	A	479									Yucca
CORAZON	12/03/70	15:07:00.04	<20	241	37.002	-116.039	1,180	A	480								0:29:42	Yucca
CANIJON	12/16/70	16:00:00.05	<20	302	37.072	-116.026	1,227	T	524									Yucca

ARTESIA	12/16/70	16:00:00.09	20-200	485	37.100	-116.009	1,302	T	599		274	31	600,200	0:15:30	Yucca
AVENS ALKERMES	12/16/70	16:00:00.17	<20	306	37.137	-116.039	1,262	T	558						Yucca
AVENS ANDORRE	12/16/70	16:00:00.17	<20	380	37.142	-116.040	1,264	T	559		187	9		0:13:00	Yucca
AVENS ASAMITE	12/16/70	16:00:00.17	<20	306	37.134	-116.036	1,264	T	559		123	8		0:16:00	Yucca
AVENS CREAM	12/16/70	16:00:00.17	<20	294	37.143	-116.035	1,271	T	567		174	21		0:32:00	Yucca
CARPETBAG	12/17/70	16:05:00.16	220	661	37.129	-116.084	1,284	T	576		335	30		0:15:48	Yucca
BANEBERRY	12/18/70	15:30:00.20	10	278	37.173	-116.100	1,367	T	643	24-30	142	24		0:16:30	Yucca
EMBUDO	06/16/71	14:50:00.04	<20	303	37.033	-116.015	1,191	A	486	10.4	157	24	153,700	0:33:12	Yucca
DEXTER	06/23/71	14:00:00.04	<20	120	37.013	-116.017	1,182	A	479						Yucca
LAGUNA	06/23/71	15:30:00.04	20-200	455	37.022	-116.024	1,186	T	482	12.5	188	6	59,600	2:52:12	Yucca
HAREBELL	06/24/71	14:00:00.16	20-200	519	37.147	-116.068	1,287	T	585	16.6	305	24		0:39:48	Yucca
CAMPBOR	06/29/71	18:30:00.16	<20	424	37.177	-116.212	2,289	T		19					Tunnel, Rainier Mesa
DIAMOND MINE	07/01/71	14:00:00.04	<20	266	37.011	-116.204	1,896	T		14					Tunnel, Shoshone Mtn.
MINIATA	07/08/71	14:00:00.08	83	529	37.110	-116.052	1,247	T	491	20.9	247	31	1d20h20m		Yucca, PLOWSHARE device development
BRACKEN	07/09/71	14:00:00.16	<20	305	37.164	-116.034	1,297	T	588	18					Yucca
APODACA	07/21/71	13:33:00.05	<20	241	37.014	-115.993	1,195	T	491	18			0:19:36		Yucca
BARRANCA	08/04/71	13:30:00.04	<20	271	37.026	-116.020	1,187	A	483	11					Yucca
NAMA AMARYLIS	08/05/71	18:07:45.20	<20	273	37.145	-116.034	1,273	T	570	12					Yucca
NAMA MEFHISTO	08/05/71	18:07:45.20	<20	244	37.141	-116.032	1,276	T	571	6					Yucca
BALTIC	08/06/71	14:31:00.16	<20	412	37.138	-116.042	1,260	T	556	15					Yucca
ALGODONES	08/18/71	14:00:00.03	20-200	528	37.057	-116.037	1,206	T	501	17.6	262	10	178,500	0:27:30	Yucca
FRIJOLAS DEMING	09/22/71	14:00:00.04	<20	150	37.022	-116.020	1,166	A	480	11					Yucca
FRIJOLAS	09/22/71	14:00:00.04	<20	149	37.023	-116.017	1,186	A	482	11.2					Yucca
ESPUELA															
FRIJOLAS GUAJE	09/22/71	14:00:00.04	<20	257	37.024	-116.016	1,186	A	482	12.7				0:11:10	Yucca
FRIJOLAS PETACA	09/22/71	14:00:00.04	<20	226	37.022	-116.017	1,185	A	482	9.8	24	1	100	0:11:10	Yucca
PEDERNAL	09/29/71	14:00:00.04	<20	379	37.011	-116.008	1,180	T	477	8.1				2:43:30	Yucca
CHANTILLY	09/29/71	14:30:00.14	<20	331	37.124	-116.088	1,280	A	573	13				0:10:44	Yucca
CATHAY	10/08/71	14:30:00.15	<20	378	37.114	-116.038	1,261	T	568	18	256	8		1:04:00	Yucca
LAGOON	10/14/71	14:30:00.16	<20	305	37.180	-116.054	1,286	A	576	14	60	23		1:13:00	Yucca
CANNIKIN	11/06/71	22:00:00.06	<5000	1,791	51.456	179.102	63	B	3	5	1,128	17	1d13h54m		Amchitka, Aleutian Is., Alaska
DIAGONAL LINE	11/24/71	20:15:00.17	<20	264	36.879	-115.936	1,010	A	302		114	29		0:14:30	Frenchman
PAMASSIA	11/30/71	15:45:00.15	<20	331	37.160	-116.071	1,302	T	594	14.7	154	19		0:55:36	Yucca
CHAENACTIS	12/14/71	21:09:59.16	20-200	331	37.124	-116.090	1,281	A	568	12	113	12		0:39:48	Yucca
YERBA	12/14/71	21:10:00.04	<20	332	37.023	-116.060	1,202	A	479	12	112	17	56,600	1:38:30	Yucca
HOSPAP	12/14/71	21:10:01.04	<20	302	37.026	-116.030	1,188	A	483	8.6	159	14	92,500	0:28:06	Yucca
MESCALERO	01/05/72	15:10:00.04	<20	120	37.046	-116.030	1,198	A	494	15					Yucca
COWLES	02/03/72	21:45:00.04	<20	302	37.001	-116.020	1,178	A	472	16	157	10	62,700	0:29:18	Yucca
DIANTHUS	02/17/72	19:02:00.16	<20	305	37.166	-116.057	1,279	A	562	10.6	147	10		0:07:12	Yucca
SAPPHO	03/23/72	18:50:00.16	<20	198	37.113	-116.082	1,266	A	558	7.5					Yucca
ONAJA	03/30/72	21:00:00.04	<20	279	37.005	-116.021	1,180	A	475	11	137	22	109,300	0:27:48	Yucca
OCATE	03/30/72	21:00:00.08	<20	210	37.004	-116.016	1,179				95	8		0:24:00	Yucca
LONGCHAMPS	04/19/72	16:32:00.16	<20	326	37.122	-116.085	1,276	A	564	12.3	47	22		0:01:59	Yucca
JICARILLA	04/19/72	16:42:00.05	<20	148	37.007	-116.017	1,180	A	475	11				0:01:54	Yucca
MISTY NORTH	05/02/72	19:15:00.04	<20	376	37.208	-116.210	2,199	T		18.6					Tunnel, Rainier Mesa
KARA	05/11/72	14:00:00.16	<20	259	37.112	-116.085	1,267	A	558	9.8					Yucca
ZINNIA	05/17/72	14:00:00.16	<20	323	37.121	-116.089	1,277	A	568	11	99	15		2:19:00	Yucca

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/ Remarks‡	
					Latitude	Longitude			Water Level Depth (m)	Water Content (wt. %)	Density (g/cm³)	Porosity (vol. %)	Gas Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m³)		Collapse Time (h:m:s)
MONERO	05/19/72	17:00:00.05	<20	537	37.065	-116.003	1,245	T	526	18	1.9	1.8	2,841				4:15:30	Yucca
MERIDA	06/07/72	15:20:00.16	<20	204	37.116	-116.086	1,271	A	564	8	2.2	7	1,524	46	6		0:16:48	Yucca
CAPTAN	06/28/72	14:41:00.19	<20	134	36.993	-116.023	1,175	A	471	11	1.72	12	1,253					Yucca
TAJQUE	06/28/72	16:30:00.07	<20	332	37.070	-115.993	1,274	T		13.1	1.65	19	1,905				0:33:24	Yucca
HAPLOPAPPUS	06/28/72	16:30:03.16	<20	184	37.135	-116.036	1,264	T	550	14	1.8	21	1,372					Yucca
DIAMOND SCULLS	07/20/72	17:16:00.16	<20	424	37.214	-116.184	2,113	T		14	2.04		2,549					Tunnel, Rainier Mesa
ATARQUE	07/25/72	13:30:00.06	<20	294	37.012	-116.016	1,182	A	472	9.4	1.65	23	1,798	120	5	19,100	0:23:06	Yucca
CEBOLLA	08/09/72	13:31:10.04	<20	287	37.007	-116.020	1,180	A	475	12	1.6	19	1,646					Yucca
CUCHILLO	08/09/72	13:31:10.04	<20	198	37.004	-116.020	1,179	A	475	13.4	1.6	21	1,509					Yucca
SOLANO	08/09/72	13:31:10.04	<20	134	37.003	-116.018	1,179	A	472	9.1	1.6	30	1,338					Yucca
OSCURO	09/21/72	15:30:00.19	20-200	560	37.082	-116.037	1,225	T	521	18	1.86	4	2,499	411	27		2:42:12	Yucca
DOLPHINIUM	09/26/72	14:30:00.16	15	296	37.121	-116.087	1,276	A	564	11	2.1	5	2,134	118	16		0:56:00	Yucca
AKBAR	11/09/72	15:15:00.16	<20	267	37.162	-116.034	1,295	T	573	16	1.8	9	1,585	120	5		0:24:00	Yucca
ARSENATE	11/09/72	18:15:00.16	<20	250	37.121	-116.033	1,268	T	561	10	1.6	24	1,859				0:15:00	Yucca
CANNA LIMOGES	11/17/72	18:00:00.16	<20	213	37.140	-116.033	1,273	T	555	14	1.7	13	1,219				0:12:30	Yucca
CANNA	11/17/72	18:00:00.16	<20	183	37.140	-116.033	1,273	T	555	16	1.7	15	1,219				0:12:30	Yucca
UMBRINUS																		
TUJOSO	12/12/72	16:30:00.04	<20	271	37.031	-116.022	1,189	A	482	9.2	1.75	22	1,585				0:16:00	Yucca
SOLANUM	12/14/72	15:30:00.16	<20	201	37.138	-116.036	1,267	T	547	15	1.5	23	1,189				0:00:12	Yucca
FLAX BACKUP	12/21/72	20:15:00.24	<20	445	37.140	-116.084	1,296	T	577					178	28		3:37:00	Yucca
FLAX SOURCE	12/21/72	20:15:00.24	<20	688	37.140	-116.084	1,296	T	577					178	28		3:37:00	Yucca
FLAX TEST	12/21/72	20:15:00.24	20-200	436	37.140	-116.084	1,296	T	577	12.3	1.85	8	2,042	178	28		3:37:00	Yucca
ALUMROOT	02/14/73	15:30:00.16	<20	183	37.147	-116.051	1,264	A	564	13	1.9	8	1,524					Yucca
MIERA	03/08/73	16:10:00.19	20-200	569	37.104	-116.028	1,279	T	553	17.1	1.82	7.5	2,697	340	12	376,200	0:41:06	Yucca
GAZOOK	03/23/73	20:15:00.17	<20	326	37.117	-116.088	1,274	A	564	11.6	2	9	2,347					Yucca
NALOMA	04/05/73	14:50:00.16	<20	244	37.178	-116.055	1,283	A	572	7.9	2.2	3	2,134					Yucca
ANGUS	04/25/73	22:25:00.03	<20	453	37.005	-116.029	1,180	A	472	14.3	1.66	19.3	1,814				1:19:42	Yucca
VELARDE	04/25/73	22:25:00.07	<20	277	36.994	-116.022	1,176	A	466	15.3	1.63	21	1,463	138	27		1:57:42	Yucca
COLMOR	04/26/73	15:15:00.04	<20	246	37.012	-116.021	1,182	A	472	8.6	1.74	22	1,539	70	3	3,800	0:21:30	Yucca
STARWORT	04/26/73	17:15:00.17	90	564	37.123	-116.059	1,261	T	525	19	1.86	4	2,469	351	38		3:49:00	Yucca
MESITA	05/09/73	13:30:00.04	<20	149	37.006	-116.017	1,180	A	475	10.2	1.62	26	1,481					Yucca
RIO BLANCO 1	05/17/73	16:00:00.12	33	1,780	39.793	-108.368	2,005	Sn	14	1.7	2.5		4,176					PLOWSHARE gas-stimulation expt., Piceance Basin, CO
RIO BLANCO 2	05/17/73	16:00:00.12	33	1,899	39.793	-108.367	2,005	Sn	14	2.1	2.5		4,298					
RIO BLANCO 3	05/17/73	16:00:00.12	33	2,039	39.793	-108.368	2,005	Sn	14	1.3	2.4		4,420					
CABRESLO	05/24/73	13:30:00.04	<20	198	37.078	-116.032	1,228	A	518	6.7	1.66	9	1,567					Yucca
KASHAN	05/24/73	13:30:00.16	<20	265	37.162	-116.057	1,277	A	562	10.9	2	28	1,981	143	7		0:16:00	Yucca
DIDO QUEEN	06/05/73	17:00:00.17	<20	391	37.185	-116.216	2,247	T	1,001	15	1.91		2,490					Tunnel, Rainier Mesa
ALMENDRO	06/06/73	13:00:00.08	200-1000	1,064	37.245	-116.347	2,069	T/R	686	12	2.19	0	4,298					Pahute Mesa
POTNILLO	06/21/73	14:45:00.08	20-200	567	37.092	-116.028	1,255	T	544	18.2	1.95	1	2,682	332	13	380,000	1:25:00	Yucca
PORTULACA	06/28/73	19:15:12.40	20-200	466	37.148	-116.087	1,311	A	591	15.7	1.9	10	1,951	184	35		15:05:00	Yucca

SILENE	06/28/73	19:45:00.16	<20	198	37.115	-116.042	1,254	A	552	11	1.7	21	1,524	Yucca
POLYGONUM	10/02/73	14:30:00.17	<20	213	37.159	-116.074	1,304	A	533	10	2	9	1,920	Yucca
WALLER	10/02/73	15:15:00.16	<20	311	37.154	-116.069	1,294	A	586	13	1.9	9	2,012	Yucca
HUSKY ACE	10/12/73	17:00:00.08	<20	413	37.200	-116.204	2,238	T	839	19.4	1.9		2,801	Tunnel, Rainier Mesa
BERNAL	11/28/73	15:30:00.08	<20	283	37.011	-116.025	1,183	A	457	11.4	1.77	18	1,454	Yucca
PAJARA	12/12/73	19:00:00.10	<20	278	36.991	-116.025	1,175	A	471	15	1.62	22	1,341	Yucca
SEAFOAM	12/13/73	15:17:00.17	<20	198	37.161	-116.074	1,306	A	600	9	2.1	5	1,966	Yucca
SPAR	12/19/73	17:30:00.04	<20	149	37.006	-116.020	1,180	A	475	10.2	1.62	16	1,481	Yucca
ELIDA	12/19/73	19:16:00.11	<20	381	37.001	-116.032	1,178	A	469	13	1.76	26	1,646	Yucca
PINEDROPS	01/10/74	15:38:00.17	<20	213	37.174	-116.052	1,283	A	573	7.5	1.8	19	1,737	Yucca
BAYOU														
PINEDROPS SLOAT	01/10/74	15:38:00.17	<20	343	37.174	-116.052	1,283	T	573	13	1.8	4	1,737	Yucca
PINEDROPS	01/10/74	15:38:00.17	<20	282	37.174	-116.052	1,283	A	573	15.3	1.8	9	1,737	Yucca
TAWNY														
LATIR	02/27/74	17:00:00.09	20-200	641	37.104	-116.054	1,243	T	503	15.4	1.93	3.3	2,225	Yucca
HULSEA	03/14/74	17:00:00.17	<20	195	37.155	-116.065	1,289	A	582	12	1.8	15	1,829	Yucca
SAPELLO	04/12/74	15:15:00.08	<20	181	37.015	-116.045	1,189	A	472	11.4	1.9	12	1,494	Yucca
POTRERO	04/23/74	15:13:00.16	<20	210	37.160	-116.077	1,310	A	541	9	2	12	1,911	Yucca
PLOMO	05/01/74	14:02:00.21	<20	149	37.031	-115.986	1,227	T	503	12.5	1.43	26	1,634	Yucca
JIB	05/08/74	16:55:00.09	<20	180	37.001	-116.002	1,177	T	463	8.5	1.48	31	1,497	Yucca
GROVE	05/22/74	14:15:00.17	<20	314	37.115	-116.076	1,264	T	571			6	1,829	Yucca
JALLON	05/23/74	13:38:30.16	20-200	466	37.124	-116.080	1,276	A	558	11	2	9	1,890	Yucca
FARRA	06/06/74	14:40:00.08	<20	378	37.004	-116.024	1,180	A	457	12.6	1.7	22	1,615	Yucca
MING BLADE	06/19/74	16:00:00.08	<20	388	37.210	-116.208	2,212	T	909	18	1.91		2,771	Tunnel, Rainier Mesa
ESCABOSA	07/10/74	16:00:00.09	20-200	639	37.075	-116.033	1,223	T	545	19.8	1.84	2.7	2,405	Yucca
CRESTLAKE	07/18/74	14:00:01.20	<20	374	37.119	-116.086	1,274	A	561	8	2.2	7	2,225	Yucca
BRIAR														
CRESTLAKE	07/18/74	14:00:01.20	<20	272	37.119	-116.086	1,274	A	561	12	2.2	6	1,951	Yucca
TANSAN														
PUYE	08/14/74	14:00:00.11	<20	430	37.023	-116.037	1,188	A	483	11.4	1.73	20	2,063	Yucca
PORTMANTEAU	08/30/74	15:00:00.16	20-200	655	37.152	-116.084	1,313	T	585	22	1.8	5	2,499	Yucca
PRATT	09/25/74	14:00:00.08	<20	314	37.012	-116.031	1,183	A	477	14	1.9	11	1,576	Yucca
TRUMBULL	09/26/74	14:30:00.16	<20	263	37.093	-116.096	1,269	A	541	15	1.8	11	2,175	Yucca
TANYAN	09/26/74	15:05:00.17	20-200	573	37.133	-116.069	1,275	T	553	13	2.1	1	2,286	Yucca
ESTACA	10/17/74	17:13:00.12	<20	320	37.006	-116.016	1,180	T	468	13.9	1.8	12	2,012	Yucca
HYBLA FAIR	10/28/74	15:00:00.17	<20	404	37.201	-116.205	2,227	T	874	16	2.03		2,525	Tunnel, Rainier Mesa
TEMESCAL	11/02/74	15:30:00.16	<20	263	37.093	-116.093	1,263	A	541	13	1.8	14	1,975	Yucca
PUDDLE	11/26/74	15:00:00.90	<20	184	37.001	-116.012	1,169	A	466	14.3	1.74	15	1,219	Yucca
KEEL	12/16/74	17:30:00.09	<20	305	37.011	-116.018	1,182	A	472	9.5	1.7	23	1,826	Yucca
PORTOLA LARKIN	02/06/75	15:30:00.16	<20	274	37.178	-116.052	1,285	A	576	10.8	2	10	2,200	Yucca
PORTOLA	02/06/75	15:30:00.17	<20	198	37.178	-116.052	1,285	A	576	6.4	2.2	10	2,350	Yucca
TELEME	02/06/75	16:13:00.17	<20	305	37.114	-116.022	1,300	T	564	17	1.8	12	2,300	Yucca
BILGE	02/19/75	20:10:00.22	<20	318	37.002	-116.025	1,179	A	469	12.8	1.72	18	1,720	Yucca
TOPGALLANT	02/28/75	16:15:00.00	20-200	713	37.106	-116.057	1,245	T	515	22.5	1.9	0	2,588	Yucca
CABRILLO	03/07/75	16:00:00.17	20-200	600	37.134	-116.085	1,288	A	567	22	1.9	-1	2,200	Yucca
DINING CAR	04/05/75	19:45:00.19	<20	383	37.188	-116.215	2,238	T	983	19	1.92		2,563	Tunnel, Rainier Mesa
EDAM	04/24/75	14:10:00.17	20-200	412	37.116	-116.088	1,272	T	570	15.7	1.6	19	2,260	Yucca
OBAR	04/30/75	15:00:00.90	20-200	569	37.109	-116.030	1,279	T	521	17.4	1.96		2,549	Yucca
TYBO	05/14/75	14:00:00.16	200-1000	765	37.221	-116.475	1,880	T	630	14	2.1	0	3,625	Pahute Mesa

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location			Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/ Remarks‡
					Water		Gas			Diameter (m)	Depth (m)	Volume (m³)	Collapse Time (h:ms)					
					Depth (m)	Content (wt. %)	Density (g/cm³)							Porosity (vol. %)	Velocity (m/sec)			
ST'ILT'ON	06/03/75	14:20:00.17	20–200	732	37.340	–116.524	1,667	R	280	8	2.32	0	2,615	254	33	550,500	0:30:00	Pahute Mesa
M'IZZEN	06/03/75	14:40:00.11	20–200	637	37.095	–116.037	1,247	T	515	23.3	1.93	0	2,469					Yucca
ALVISO	06/11/75	13:00:00.17	<20	183	37.112	–116.075	1,261	A	575	7.5	2	15	2,070					Yucca
FUTLOCK	06/18/75	11:49:00.09	<20	186	37.066	–116.023	1,221	A	512	10.2	1.61	26	1,328					Yucca
MAST	06/19/75	13:00:00.09	200–1000	911	37.350	–116.321	2,068	R	666	4	2.45	0	4,200					Pahute Mesa
CAMEMB'ERT	06/26/75	12:30:00.16	200–1000	1,311	37.279	–116.369	2,033	T	668	11	2.24	0	3,350					Pahute Mesa
MARSH	09/06/75	17:00:00.11	<20	427	37.024	–116.029	1,187	A	480	13.6	1.89	10	1,976	217	10	124,000	1:21:42	Yucca
HUSKY PUP	10/24/75	17:11:26.09	<20	328	37.222	–116.181	2,036	T	748	22	1.82		2,575					Tunnel, Rainier Mesa
KASSERI	10/28/75	14:30:00.16	200–1000	1,265	37.290	–116.412	1,957	T	628	12	2.17	0	3,110					Pahute Mesa
DECK	11/18/75	15:30:00.11	<20	326	37.020	–116.022	1,185	A	460	11	1.67	23	1,946	183	16	137,900	0:52:42	Yucca
INLET	11/20/75	15:00:00.09	200–1000	818	37.225	–116.368	2,025	R	703	6.4	2.29	0	3,720					Pahute Mesa
LEYDEN	11/26/75	15:30:00.16	<20	326	37.117	–116.020	1,303	T	613	15.2	1.85	11	2,210	180	6		1:05:40	Yucca
CHIBERT'A	12/20/75	20:00:00.16	20–200	716	37.128	–116.062	1,264	T	536	24.2	1.85	0	2,560	344	35		0:51:24	Yucca
MUENSTER	01/03/76	19:15:00.16	200–1000	1,452	37.297	–116.334	2,082	T	676	10	2.28	0	3,770					Pahute Mesa
KEELSON	02/04/76	14:20:00.11	20–200	640	37.069	–116.031	1,218	T	498	18.8	1.9	1.3	2,660	360	11		5:49:18	Yucca
ESROM	02/04/76	14:40:00.16	20–200	655	37.107	–116.038	1,258	T	523	23.1	1.84	2	2,750	218	52	95,700	2d14h48m	Yucca
FONTINA	02/12/76	14:45:00.16	200–1000	1,219	37.271	–116.489	1,837	T	595	10.5	2.19	0	3,310	254	6		2d13h5m	Pahute Mesa
CHESHIRE	02/14/76	11:30:00.16	200–500	1,167	37.243	–116.421	1,947	R	625	7	2.36	0	3,780					Pahute Mesa
SHALLOW'S	02/26/76	14:50:00.09	<20	244	37.028	–116.017	1,188	A	475	9.1	1.75	20	1,524	138	11	55,900	0:18:18	Yucca
ESTUARY	03/09/76	14:00:00.09	200–500	857	37.310	–116.365	2,025	R	627	11.7	2.14	0	3,295	200	13	136,200	2:55:06	Pahute Mesa
COLBY	03/14/76	12:30:00.16	500–1000	1,273	37.306	–116.472	1,904	T	571	21.6	1.91	0	2,840	256	14		2:55:06	Pahute Mesa
POOL	03/17/76	14:15:00.09	200–500	879	37.256	–116.329	2,076	T	690	10.9	2.18	0	3,470				1d18h2m	Pahute Mesa; subsurface collapse
STRAIT	03/17/76	14:45:00.09	200–500	780	37.107	–116.053	1,243	T	506	22.3	1.93	0	2,809	210	41	473,700	0:46:44	Yucca
MIGHTY EPIC	05/12/76	19:50:00.17	<20	398	37.209	–116.213	2,224	T	918	16	1.92	2.2	2,410					Tunnel, Rainier Mesa
RIVOLI	05/20/76	17:30:00.16	<20	200	37.137	–116.067	1,279	A	560	7	2.05	13	1,825				0:02:30	Yucca
BILLET	07/27/76	20:30:00.08	20–150	636	37.075	–116.045	1,222	T	503	23.7	1.84	0	2,681				6d15h29m	Yucca
BANON	08/26/76	14:30:00.17	20–150	536	37.125	–116.083	1,275	A	548	14.7	1.88	9.6	2,204	246	26		1:57:00	Yucca
GOUDA	10/06/76	14:30:00.16	<20	200	37.135	–116.063	1,272	A	561	9.7	1.98	11.7	1,725				0:06:42	Yucca
SPRIT	11/10/76	14:58:00.08	<20	183	37.036	–116.018	1,192	A	465	12.7	1.6	24	1,555				0:30:00	Yucca
CHEVRE	11/23/76	15:15:00.16	<20	317	37.172	–116.054	1,278	A	568	14.8	1.65	20	1,433	72	3		0:56:00	Yucca
REDMUD	12/08/76	14:49:30.08	<20	427	37.079	–116.002	1,269	T	550	18.4	1.75	8	2,169	83	2		0:20:18	Yucca
ASIAGO	12/21/76	15:09:00.17	<20	331	37.124	–116.068	1,265	A	544	11.7	1.87	13.5	1,800	134	13		5:54:00	Yucca
SUTTER	12/21/76	15:58:00.16	<20	200	37.152	–116.064	1,287	A	561	14.8	1.89	7.1	1,895				0:24:30	Yucca
RUDDER	12/28/76	18:00:00.08	20–150	639	37.100	–116.037	1,255	T	520	21.2	1.9		2,722	362	14		2:29:30	Yucca
OARLOCK	02/16/77	17:53:00.07	<20	318	37.013	–116.029	1,183	A	460	11	1.65	24	1,750	164	20		0:53:30	Yucca
COVE	02/16/77	17:53:00.16	<20	335	37.007	–116.032	1,181	A	472	11.1	1.64	24	1,670	131	10		2:54:24	Yucca
DOLINO	03/08/77	14:24:00.16	<20	183	37.176	–116.054	1,283	A	550	6.7	2.10	11.8	2,002					Yucca
DOLINO LAWTON	03/08/77	14:24:00.16	<20	282	37.176	–116.054	1,283	A	550	13.8	1.84	12.8	2,284					Yucca
MARSILLY	04/05/77	15:00:00.17	20–150	690	37.120	–116.063	1,259	T	541	21.4	1.98	–2	2,235	334	28		1:57:00	Yucca
BULKHEAD	04/27/77	15:00:00.08	20–150	594	37.095	–116.029	1,259	T	532	21.5	1.89	0	2,364	271	6		1:05:18	Yucca
CREWLINE	05/25/77	17:00:00.08	20–150	564	37.094	–116.046	1,237	T	503	19.7	1.97	0	2,730				10d15m	Yucca

FOREFOOT	06/02/77	17:15:00.10	<20	194	37.055	-116.026	1,207	A	494	13.8	1.68	18	1,686				Yucca
CAMELIAN	07/28/77	14:07:00.16	<20	208	37.098	-116.092	1,265	A	535	15.1	1.8	12.8	1,752	65	11	0:19:00	Yucca
STRAKE	08/04/77	16:40:00.07	20-150	518	37.087	-116.008	1,273	T	541	21.4	1.74	6	2,430	219	12	0:30:00	Yucca
GRUYERE	08/16/77	14:41:00.16	<20	207	37.145	-116.050	1,263	A	531	12.5	1.56	27	1,407			0:05:35	Yucca
GRADINO	08/16/77	14:41:00.16	<20	320	37.145	-116.050	1,263	A	531	12.6	1.5	29	1,310			0:05:35	Yucca
FLOTOST	08/16/77	15:49:00.17	<20	275	37.147	-116.064	1,284	A	557	11.5	1.94	10.4	1,962	34	12	42d	Yucca
SCUPPER	08/19/77	17:32:00.10	<20	450	37.018	-116.032	1,185	A	480	13	1.76	16	2,012				Yucca
SCANTLING	08/19/77	17:55:00.08	20-150	701	37.110	-116.055	1,246	T	511	24.2	1.86	0	2,600	276	29	2:11:30	Yucca
EBBLIDE	09/15/77	14:36:30.08	<20	379	37.033	-116.044	1,194	A	488	11.5	1.91	14	2,117	127	11	2:40:24	Yucca
COULOMMIERS	09/27/77	14:00:00.16	20-150	530	37.151	-116.068	1,292	T	580	17.1	1.54	21	1,981	233	28	2:48:00	Yucca
BOBSTAY	10/26/77	14:15:00.08	<20	381	37.008	-116.018	1,180	T	469	11.8	1.7	20	1,972	186	13	1:34:30	Yucca
HYBLA GOLD	11/01/77	18:06:00.07	<20	385	37.188	-116.214	2,239	T	985	20.6	1.88	0.8	2,046				Tunnel, Rainier Mesa
SANDREEF	11/09/77	22:00:00.08	20-150	701	37.072	-116.051	1,221	T	503	24.3	1.88	0	2,680	230	14	5:22:48	Yucca
SEAMOUNT	11/17/77	19:30:00.08	<20	370	37.021	-116.026	1,186	A	479	12	1.73	19	1,700	211	17	1:09:24	Yucca
RIB	12/14/77	15:00:00.07	<20	213	37.018	-116.019	1,184	A	472	11.4	1.66	23	1,501	91	6	0:09:48	Yucca
FARALLONES	12/14/77	15:30:00.17	20-150	668	37.136	-116.087	1,290	A	554	21.9	1.9	0	2,486	305	26	0:10:36	Yucca
CAMPOS	02/13/78	21:53:00.16	<20	320	37.126	-116.033	1,269	A	558	17.1	1.54	20.6	1,694	71	2	0:45:00	Yucca
REBLOCHON	02/23/78	17:00:00.16	20-150	658	37.124	-116.065	1,261	T	540	18.8	1.96	0	2,708	343	28	7:09:00	Yucca
KARAB	03/16/78	15:00:00.07	<20	331	37.085	-116.082	1,247	T	535	14.4	1.65	19	1,880	121	8	0:53:00	Yucca
TOPMAST	03/23/78	16:30:00.11	<20	457	37.099	-116.020	1,282	T	553	20.5	1.86	1	2,307				Yucca
ICEBERG	03/23/78	16:30:00.20	20-150	640	37.102	-116.052	1,239	T	507	17.6	1.95	1	2,535	277	24	2d2h23m	Yucca
FONDUTTA	04/11/78	15:30:00.16	20-150	633	37.300	-116.328	2,072	T	668	5.4	2.3	3.4	2,719			3:55:00	Pahute Mesa
BACKBEACH	04/11/78	17:45:00.07	20-200	672	37.233	-116.369	2,040	R	715	11.9	2.06	1	3,507			9:57:00	Pahute Mesa
ASCO	04/25/78	14:35:00.16	<20	183	37.155	-116.036	1,285	T	553	14.4	1.68	16.2	1,454				Yucca
TRANSOM	05/10/78	15:00:00.07	0	640	37.088	-116.053	1,231	T	507	18.4	1.9	3	2,688				Yucca
JACKPOTS	06/01/78	17:00:00.08	<20	304	37.021	-116.033	1,186	A	482	10.9	1.71	21	1,714			1:18:18	Yucca
SATZ	07/07/78	14:00:00.17	<20	315	37.112	-116.078	1,263	T	536	12.6	1.87	11.5	2,436	69	9	0:37:00	Yucca
LOWBALL	07/12/78	17:00:00.08	20-150	564	37.079	-116.045	1,225	T	501	22.7	1.91	0	2,649	274	23	2d13h1m	Yucca
PANIR	08/31/78	14:00:00.16	20-150	681	37.276	-116.358	2,013	R	645	9.8	2.13	0	3,424				Pahute Mesa
DIABLO HAWK	09/13/78	15:15:00.16	<20	388	37.209	-116.212	2,212	T	963	19.6	1.87	1.8	2,362				Tunnel, Rainier Mesa
CREMINO	09/27/78	16:30:00.17	<20	210	37.171	-116.088	1,341	A	569	9.5	2	11.6	1,587			0:29:42	Yucca
CREMINO	09/27/78	16:30:00.17	<20	420	37.171	-116.088	1,341	T	569	14.1	1.73	16.3	2,096			0:29:42	Yucca
CAERPHILLY																	
DRAUGHTS	09/27/78	17:00:00.07	20-150	442	37.074	-116.021	1,234	T	512	17.1	1.86	6	2,273	289	19	0:23:30	Yucca
RUMMY	09/27/78	17:20:00.08	20-150	640	37.080	-116.052	1,226	T	504	19.6	1.96	0	2,520	391	16	1:50:42	Yucca
EMENTHAL	11/02/78	15:25:00.17	<20	576	37.288	-116.298	2,104	R	680	4.3	2.36	6.5	2,210			4:40:00	Pahute Mesa
QUARGEL	11/18/78	19:00:00.17	20-150	542	37.127	-116.085	1,275	T	539	23.1	1.78	4.5	2,455	240	26	1:25:00	Yucca
CONCENTRATION	12/01/78	17:07:30.07	<20	247	37.030	-116.025	1,189	A	480	11.2	1.7	21	1,539	101	5	0:23:54	Yucca
FARM	12/16/78	15:30:00.16	20-150	689	37.273	-116.411	1,979	T	649	10.3	2.17	2.5	3,582				Pahute Mesa
BACCARAT	01/24/79	18:00:00.10	<20	326	37.105	-116.013	1,311	T	573	17.6	1.81	7	2,085	96	3	0:17:00	Yucca
QUINELLA	02/08/79	20:00:00.09	20-150	579	37.102	-116.056	1,241	T	512	19.8	1.9	0.4	2,421	300	30	4:24:06	Yucca
KLOSTER	02/15/79	18:05:00.16	20-150	536	37.152	-116.073	1,297	T	582	9.7	1.77	18.2	2,518	225	16	1:06:00	Yucca
MEMORY	03/14/79	18:30:00.10	<20	365	37.028	-116.041	1,190	A	488	11.6	1.9	13	1,825	244	11	2:34:00	Yucca
FREEZEOUT	05/11/79	16:00:00.10	<20	335	36.998	-116.019	1,177	A	471	14.3	1.6	22	1,548	189	13	1:26:24	Yucca
PEPATO	06/11/79	14:00:00.17	20-150	681	37.290	-116.456	1,913	T	579	19.3	1.86	2.3	2,877				Pahute Mesa
CHESS	06/20/79	15:00:13.54	<20	335	37.108	-116.016	1,309	T	573	19.7	1.72	10	2,206			4:26:00	Yucca
FAJY	06/28/79	14:44:00.17	20-150	536	37.143	-116.088	1,303	A	579	16.5	1.82	9.8	2,221	255	39	16:09:00	Yucca
BURZET	08/03/79	15:07:30.16	20-150	450	37.084	-116.071	1,235	A	510	16	1.77	12.6	1,725	172	12	1:58:00	Yucca

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/ Remarks‡
					Latitude	Longitude			Water Level Depth (m)	Water Content (wt. %)	Density (g/cm ³)	Gas Porosity (vol. %)	Diameter (m)	Depth (m)	Volume (m ³)	Collapse Time (hr:m:s)	
OFFSHORE	08/08/79	15:00:00.11	20–150	396	37.015	–116.009	1,182	T	467	18.3	1.7	11	2,532	210	20	0:31:30	Yucca
NESSEL	08/29/79	15:08:00.17	20–150	464	37.121	–116.067	1,260	A	541	12.7	1.93	10.5	2,040	225	29	2:00:00	Yucca
HEARTS	09/06/79	15:00:00.09	140	640	37.088	–116.054	1,232	T	507	18.4	1.94	1	2,688	333	33	2:11:42	Yucca
PERA	09/08/79	17:02:00.09	<20	200	37.155	–116.039	1,280	T	553	13.6	1.65	19	1,627	79	5	0:12:00	Yucca
SHEEPSHEAD	09/26/79	15:00:00.09	20–150	640	37.229	–116.365	2,033	T	709	3.7	2.34	1	2,566			5:14:24	Yucca
BACKGAMMON	11/29/79	15:00:00.10	<20	229	36.994	–116.025	1,175	A	471	16.2	1.65	18	1,324	113	9	1:37:06	Yucca
AZUL	12/14/79	18:00:00.09	<20	205	37.137	–116.064	1,275	A	561	11.6	1.78	17.2	1,672			0:05:30	Yucca
TARKO	02/28/80	15:00:00.09	<20	369	37.127	–116.089	1,280	A	564	12.4	1.92	11.6	2,270	92	14	4:00:00	Yucca
NORBO	03/08/80	15:35:00.09	<20	271	37.180	–116.084	1,349	T	553	14.5	1.69	18.5	1,962	19	6	1y43d	Yucca
LIPTAUER	04/03/80	14:00:00.09	20–150	417	37.150	–116.083	1,304	A	581	13.5	1.92	10.6	1,757	203	21	15:25:00	Yucca
PYRAMID	04/16/80	20:00:00.09	20–150	579	37.101	–116.031	1,266	T	540	22	1.94	0	2,666	337	19	4:20:24	Yucca
COLWICK	04/26/80	17:00:00.08	20–150	633	37.248	–116.423	1,946	R	630	22.5	1.87	0	2,530				Pahute Mesa
CANFIELD	05/02/80	18:46:30.09	<20	351	37.056	–116.020	1,211	T	497	11.6	1.7	20	1,757	222	11	1:41:54	Yucca
FLORA	05/22/80	13:00:00.09	<20	335	37.003	–116.032	1,179	A	473	12.3	1.88	13	1,704			2:19:12	Yucca
KASH	06/12/80	17:15:00.09	20–150	645	37.282	–116.455	1,911	R	602	21.6	1.87	0	2,686	127	8	0:54:00	Pahute Mesa
HURON KING	06/24/80	15:10:00.07	<20	320	37.023	–116.035	1,187	A	483	11.8	1.89	13	1,830	144	27	0:50:36	Yucca
TAFI	07/25/80	19:05:00.08	20–150	680	37.256	–116.478	1,859	T	607	15.2	2.02	1.7	3,068	114	8	4:33:00	Pahute Mesa
VERDELLO	07/31/80	18:19:00.09	<20	366	37.013	–116.024	1,183	A	500	14.1	1.59	23	1,646	184	13	1:07:12	Yucca
BONARDA	09/25/80	14:45:00.09	20–150	381	37.056	–116.049	1,209	T	500	15.8	1.73	21	2,048	68	11	1:21:42	Yucca
RIOLA	09/25/80	15:26:30.08	1:07	424	37.116	–116.065	1,254	A	517	13.6	2.03	4.5	2,358				Yucca
DUTCHESS	10/24/80	19:15:00.12	<20	427	37.075	–116.000	1,265	T	532	21	1.7	11	2,038				Yucca
MINERS IRON	10/31/80	18:00:00.09	<20	390	37.211	–116.206	2,212	T	975	17.8	1.91	1.5	2,960				Tunnel, Rainier Mesa
DAUPHIN	11/14/80	16:50:00.08	<20	320	37.111	–116.020	1,306	T	580	16	1.65	17	2,010	144	13	0:27:30	Yucca
SERPA	12/17/80	15:10:00.09	20–150	573	37.325	–116.316	2,028	T	627	18	1.76	10	2,000				Pahute Mesa
BASEBALL	01/15/81	20:25:00.09	20–150	564	37.087	–116.046	1,232	T	512	20.7	1.98	0	2,830	216	18	6:23:54	Yucca
CLAIRETTE	02/05/81	18:00:00.12	<20	354	37.011	–116.033	1,182	A	474	14.4	1.79	14	1,797			1:04:48	Yucca
SECO	02/25/81	15:00:00.08	<20	200	37.182	–116.085	1,356	T	553	11.7	1.6	23	1,831				Yucca
VIDE	04/30/81	14:35:00.08	<20	323	37.177	–116.086	1,346	T	553	15	1.72	17	2,120				Yucca
ALIGOTE	05/29/81	16:00:00.09	<20	320	37.102	–116.005	1,311	T	605	17.3	1.8	8	2,020			0:14:24	Yucca
HARZER	06/06/81	18:00:00.08	20–150	637	37.303	–116.326	2,073	T	668	9.5	2.15	3	3,674				Pahute Mesa
NIZA	07/10/81	14:00:00.10	<20	341	37.129	–116.035	1,266	T	555	19	1.66	15.2	1,970	111	6	1:25:00	Yucca
PINEAU	07/16/81	15:00:00.10	<20	207	37.089	–116.020	1,259	T	535	7.8	1.6	29	1,530			0:15:00	Yucca
HAVARTI	08/05/81	13:41:00.09	<20	200	37.154	–116.036	1,283	T	553	14.4	1.57	20	1,143				Yucca
ISLAY	08/27/81	14:31:00.09	<20	294	37.160	–116.067	1,297	T	567	17	1.51	23	1,820	102	9	1:12:00	Yucca
TREBBIANO	09/04/81	15:00:00.10	<20	305	37.058	–116.049	1,211	T	498	13.4	1.61	22	1,850			1:49:48	Yucca
CEMADA	09/24/81	15:00:00.09	<20	213	37.008	–116.025	1,181	A	472	11	1.72	20	1,320	37	1	0:20:18	Yucca
PALIZA	10/01/81	19:00:00.10	20–150	472	37.082	–116.010	1,260	T	530	16.8	1.87	6	2,294	275	17	0:47:12	Yucca
TID	11/11/81	20:00:09.09	20–150	445	37.076	–116.069	1,232	A	494	16.1	1.83	10.1	2,140	220	21	1d2h13m	Yucca
ROUSANNE	11/12/81	15:00:00.10	20–150	517	37.108	–116.050	1,243	T	495	27.4	1.79	0	2,410	244	18	20:34:48	Yucca
AKAVI	12/03/81	15:00:00.10	20–150	494	37.148	–116.072	1,293	T	580	17.1	1.69	14	2,100	181	20	1:42:30	Yucca
CABOC	12/16/81	21:05:00.09	<20	335	37.114	–116.124	1,348	T	595	18	1.61	16	1,920	45	7	1:00:00	Yucca
JOMADA	01/28/82	16:00:00.10	139	639	37.091	–116.052	1,233	T	507	16.6	1.99	0	2,405	400	27	0:42:30	Yucca

MOLBO	02/12/82	14:55:00.08	20-150	638	37,224	-116.464	1,873	R	614	7.7	2.14	6	3,451		13:00:00	Pahute Mesa
HOSTA	02/12/82	15:25:00.09	20-150	640	37,348	-116.317	2,076	R	668	8	2.14	7.7	2,560		2:33:54	Pahute Mesa
TENAJA	04/17/82	18:00:00.09	<20	357	37,017	-116.011	1,177	T	468	16.5	1.74	12	2,344	11	1:00:30	Yucca
GIBNE	04/25/82	18:05:00.01	20-150	570	37,256	-116.423	1,937	T	610	8.9	1.97	9.3	2,800		8:03:00	Pahute Mesa
KRYDDOST	05/06/82	20:00:00.08	<20	335	37,117	-116.128	1,363	T	595	12.5	1.7	16.7	2,250		3:05:00	Yucca
BOUSCHET	05/07/82	18:17:00.11	20-150	564	37,069	-116.046	1,217	T	500	21.6	1.88	0	2,575	17	3d1h16m18s	Yucca
KESTI	06/16/82	14:00:00.08	<20	289	37,114	-116.017	1,312	T	580	12	1.74	15.7	1,670		1:01:42	Yucca
NEBBIOLO	06/24/82	14:15:00.09	20-150	640	37,236	-116.371	2,038	R	708	8	2.08	5	3,039		15:09:00	Pahute Mesa
MONTEREY	07/29/82	20:05:00.08	20-150	400	37,102	-116.076	1,253	T	497	13.2	1.64	18.9	2,120	7	1:33:00	Yucca
ATRISCO	08/05/82	14:00:00.09	138	640	37,084	-116.007	1,268	T	538	20.4	1.9	0	2,571	34	0:21:24	Yucca
QUESO	08/11/82	15:00:00.00	<20	216	37,190	-116.049	1,310	A	578	13.3	1.6	23.4	1,442			Yucca
CERRO	09/02/82	14:00:00.09	<20	229	37,020	-116.017	1,184	A	472	11.1	1.69	22	1,580	1	0:11:12	Yucca
DIAMOND ACE	09/23/82	16:00:00.09	<20	407	37,212	-116.208	1,824	T	983							Tunnel, Rainier Mesa
HURON LANDING	09/23/82	16:00:00.09	<20	408	37,212	-116.208	1,824	T	983	17.4	1.9	1.6	2,753			Tunnel, Rainier Mesa
FRISCO	09/23/82	17:00:00.09	20-150	451	37,175	-116.089	1,347	T	565	12.8	1.79	17.1	2,430	5	0:30:00	Yucca
BORREGO	09/29/82	13:30:00.10	<150	563	37,091	-116.046	1,234	T	501	17.2	1.97	0	2,620		2d1h1m48s	Yucca
SEYVAL	11/12/82	19:17:00.10	<20	366	37,024	-116.033	1,187	A	482	13	1.71	18	1,790	8	0:56:30	Yucca
MANTECA	12/10/82	15:20:00.09	20-150	413	37,080	-116.073	1,236	A	529	14.8	1.85	11.8	2,250	14	2:43:00	Yucca
COALORA	02/11/83	16:00:00.10	<20	274	37,056	-116.046	1,210	T	501	11	1.57	25	1,870		1:01:48	Yucca
CHEEDAM	02/17/83	17:00:00.09	<20	343	37,163	-116.064	1,293	T	579	10.8	1.7	19.7	1,900	10	1:08:00	Yucca
CABRA	03/26/83	20:00:00.09	20-150	542	37,301	-116.461	1,907	R	571	3.5	2.19	5.4	2,856		9:04:00	Yucca
TURQUOISE	04/14/83	19:05:00.12	<150	533	37,073	-116.047	1,219	T	500	22	1.87	0	2,445	15	0:47:24	Yucca
ARMADA	04/22/83	13:53:00.08	<20	265	37,111	-116.023	1,296	T	579	17.3	1.65	16.4	1,625	8	0:24:00	Yucca
CROWDIE	05/05/83	15:20:00.08	<20	390	37,146	-116.090	1,309	A	579	13.2	2.02	5.9	2,030	13	9:15:00	Yucca
MINI JADE	05/26/83	14:30:00.09	<20	379	37,209	-116.206	1,828	T	958	17.6	1.93	1.5	3,105			Tunnel, Rainier Mesa
FAHADA	05/26/83	15:00:00.09	<20	384	37,103	-116.007	1,312	T	600	12.6	1.83	12	2,070	8	0:25:18	Yucca
DANABLU	06/09/83	17:10:00.09	<20	320	37,158	-116.090	1,327	A	584	9.9	1.97	12.5	1,963	10	7:07:00	Yucca
LABAN	08/03/83	13:33:00.10	<20	326	37,119	-116.090	1,276	A	569	7.6	2.04	10.9	2,334	47	1:23:00	Yucca
SABADO	08/11/83	14:00:00.12	<20	320	36,998	-116.004	1,175	T	460	14.4	1.72	16	2,153	102	1:25:00	Yucca
JARLSBERG	08/27/83	14:00:00.09	<20	200	37,193	-116.035	1,318	T	519	17.1	1.68	16.2	1,754	83	0:15:00	Yucca
CHANCELLOR	09/01/83	14:00:00.08	143	624	37,273	-116.356	2,013	R	647	3.4	2.22	6.6	3,320	7	20:30:00	Pahute Mesa
TOMME/	09/21/83	15:00:00.09	<20	405	37,210	-116.210	2,230	T	980	19.6	1.88	2.2	2,770		0:35:00	Tunnel, Rainier Mesa
MIDNIGHT																
ZEPHYR																
BRANCO	09/21/83	16:25:00.08	<20	293	37,121	-116.056	1,256	A	541	12.7	1.86	11.6	1,843	10	1:28:00	Yucca
BRANCO	09/21/83	16:25:00.08	<20	427	37,121	-116.056	1,258	T	541					10	1:28:00	Yucca
HERKIMER																
TECHADO	09/22/83	15:00:00.12	<150	532	37,106	-116.050	1,241	T	500	23	1.84	0	2,290			Yucca
NAVATA	09/29/83	15:00:00.09	<20	183	37,053	-116.021	1,207	A	491	12.2	1.74	21	1,524		8:22:42	Yucca
MUGGINS	12/09/83	16:00:00.11	<20	244	37,013	-116.047	1,188	T	481	15.8	1.65	17	1,925	11	0:57:12	Yucca
ROMANO	12/16/83	18:30:00.09	20-150	515	37,140	-116.073	1,287	T	563	16.2	1.7	17	2,435	43	5:31:00	Yucca
GORBEA	01/31/84	15:30:00.08	20-150	388	37,113	-116.123	1,344	T	595	18.6	1.76	10	1,713	6		Yucca
MIDAS MYTH/	02/15/84	17:00:00.11	<20	361	37,221	-116.182	2,044	T	800	18.8	1.91	1.2	2,645	113	3:13:48	Tunnel, Rainier Mesa
MILAGRO																
TORTUGAS	03/01/84	17:45:00.09	20-150	639	37,066	-116.047	1,216	T	497	22.7	1.85	0	2,257	20	2:02:30	Yucca
AGRINI	03/31/84	14:30:00.08	<20	320	37,146	-116.085	1,304	A	579	11.5	1.97	10	2,071	13	1:47:42	Yucca
MUNDO	05/01/84	19:05:00.09	20-150	566	37,106	-116.023	1,292	T	558	21.6	1.95	0	2,740	368	1:01:48	Yucca
ORKNEY	05/02/84	13:50:00.09	<20	210	37,198	-116.055	1,351	A	578	8.9	2.02	12	2,300	21		Yucca
BELLOW	05/16/84	16:00:00.08	<20	207	37,092	-116.094	1,266	A	535	11.5	1.79	17	1,675	46	0:16:00	Yucca

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/ Remarks‡	
					Latitude	Longitude			Water Level Depth (m)	Water Content (wt. %)	Density (g/cm³)	Porosity (vol. %)	Gas Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m³)		Collapse Time (h:m:s)
CAPROCK	05/31/84	13:04:00.10	20–150	600	37.103	–116.049	1,237	T	500	21.4	1.87	0	2,315	249	50		4:58:00	Yucca
DUORO	06/20/84	15:15:00.09	20–150	381	37.000	–116.044	1,180	T	480	17.2	1.69	14	1,980	179	36		0:55:00	Yucca
NOMANNA	07/12/84	14:00:00.09	<20	200	37.192	–116.035	1,315	T	519	18.4	1.67	15	1,474	108	9		0:06:54	Yucca
KAPPELI	07/25/84	15:30:00.08	20–150	640	37.268	–116.412	1,982	R	652	8.3	2.14	5.9	2,931				14:22:00	Pahute Mesa
CORREO	08/02/84	15:00:00.09	<20	334	37.017	–116.009	1,182	T	470	15.3	1.75	13	2,065	188	27		0:27:30	Yucca
WEXFORD	08/30/84	14:45:00.00	<20	314	73.144	–116.126	1,376	T	434	15.6	1.69	15.5	1,822	40	4		0:27:30	Yucca
DOLCETTO	08/30/84	14:45:00.10	<20	365	37.090	–116.000	1,291	T	555	18.9	1.67	12	2,130	120	5		0:21:18	Yucca
BRETON	09/13/84	14:00:00.00	20–150	483	37.087	–116.072	1,238	T	505	16.8	1.84	9.9	2,347	208	24		7:02:00	Yucca
VERMEJO	10/02/84	18:14:00.10	<20	350	37.085	–116.054	1,229	T	509	13.8	1.67	18	2,204	51	3		1:33:54	Yucca
VILLITA	11/10/84	16:40:00.09	<20	372	37.000	–116.018	1,177	A	465	14.6	1.65	20	1,810	93	32		0:39:00	Yucca
EGMONT	12/09/84	19:40:00.09	20–150	546	37.270	–116.498	1,839	T	590	19.4	1.81	9	2,634				0:46:12	Pahute Mesa
TIENA	12/15/84	14:45:00.00	20–150	640	37.281	–116.306	2,118	R	696	3.1	2.28	8.5	3,048				10:19:00	Pahute Mesa
MINERO	12/20/84	16:20:00.11	<20	244	37.012	–116.046	1,187	T	485	17.7	1.66	15	1,900	109	12		0:25:48	Yucca
VAUGHN	03/15/85	16:31:00.10	20–150	426	37.058	–116.046	1,211	T	498	17.7	1.87	11	2,360				1:26:18	Yucca
COTTAGE	03/23/85	18:30:00.08	20–150	515	37.180	–116.090	1,362	T	570	17.7	1.91	5.4	2,460	273	39		0:18:12	Yucca
HERMOSA	04/02/85	20:00:00.09	20–150	640	37.095	–116.033	1,251	T	506	21	1.89	0	2,455	385	46		0:39:06	Yucca
MISTY RAIN	04/06/85	23:15:00.09	<20	389	37.201	–116.208	2,212	T	964	20.2	1.86	1.2	2,701					Tunnel, Rainier Mesa
TOWANDA	05/02/85	15:20:00.08	20–150	660	37.253	–116.326	2,085	T	614	18	2	0	3,085				2:39:00	Pahute Mesa
SALUT	06/12/85	15:15:00.06	20–150	608	37.248	–116.490	1,873	R	622	6.2	2.14	4	3,717				10:19:00	Pahute Mesa
VILLE	06/12/85	17:30:00.09	<20	293	37.088	–116.085	1,250	T	535	18.6	1.53	22.3	1,918	120	17		0:28:00	Yucca
MARIBO	06/26/85	18:03:00.08	<20	381	37.124	–116.123	1,352	T	550	17.1	1.55	22.5	2,008				1:16:00	Yucca
SERENA	07/25/85	14:00:00.09	20–150	597	37.297	–116.439	1,942	R	607	7.3	2.17	6.8	3,150				12:06:00	Pahute Mesa
CERBERO	08/14/85	13:00:00.08	<20	183	37.111	–116.015	1,316	T	560	11.4	1.32	40	1,551					Yucca
CHAMITA	08/17/85	16:25:00.09	<20	332	37.002	–116.044	1,181	T	477	15.1	1.68	16	1,950	152	21		1:10:24	Yucca
PONL	09/27/85	14:15:00.08	<20	365	37.090	–116.003	1,284	T	550	18.3	1.72	10	2,455	111	3		0:20:42	Yucca
MILL YARD	10/09/85	21:40:00.13	<20	371	37.209	–116.206	2,203	T	950	20.2	1.85	1.8	2,575					Tunnel, Rainier Mesa
DIAMOND BEECH	10/09/85	23:20:00.09	<20	404	37.210	–116.211	2,230	T	980	16.7	1.89	1.7	2,447					Tunnel, Rainier Mesa
ROQUEFORT	10/16/85	21:35:00.09	20–150	415	37.110	–116.122	1,341	T	590	22.2	1.45	23.6	2,175	134	9		1:36:00	Yucca
ABO	10/30/85	16:00:00.09	<20	196	37.051	–116.037	1,202	A	497	11.4	1.83	14	1,565					Yucca
KINIBITO	12/05/85	15:00:00.07	20–150	579	37.053	–116.046	1,208	T	485	16	1.99	0	2,640	216	11		4:06:53	Yucca
GOLDSTONE	12/28/85	19:01:00.09	20–150	549	37.238	–116.474	1,887	R	596	4.1	2.07	11.8	3,653					Pahute Mesa
GLENCOE	03/22/86	16:15:00.08	29	610	37.083	–116.067	1,233	T	522	17.3	1.98	0	2,695				1d21h13m	Yucca
MIGHTY OAK	04/10/86	14:08:30.10	<20	394	37.218	–116.184	2,084	T	834	18.7	1.92	1.2	2,731					Tunnel, Rainier Mesa
MOGOLLON	04/20/86	15:12:30.07	<20	259	37.012	–116.047	1,187	T	480	13.6	1.68	18	1,820	88	5		0:51:00	Yucca
JEFFERSON	04/22/86	14:30:00.09	20–150	609	37.264	–116.441	1,955	R	625	8.5	2.05	4.4	3,448				2:25:00	Pahute Mesa
PANAMINT	05/21/86	13:59:00.08	<20	480	37.125	–116.061	1,259	T	530	9.6	1.9	15.1	2,219				0:18:36	Yucca
TAJO	06/05/86	15:04:00.06	20–150	518	37.098	–116.016	1,289	T	554	17.5	1.82	5	2,580	297	31		0:20:10	Yucca
DARWIN	06/25/86	20:27:45.09	20–150	549	37.265	–116.500	1,849	T	574	20.3	1.88	3.4	2,401	103	11		14:25:48	Pahute Mesa

CYBAR	07/17/86	21:00:00.06	119	627	37,279	-116.356	2,017	R	645	6	2.14	4	2,835	138	17	8:30:40	Pahute Mesa
COMUCOPIA	07/24/86	15:05:00.09	<20	381	37,143	-116.072	1,287	A	561	16.3	1.8	11.4	1,903			8:59:12	Yucca
GALVESTON	09/04/86	16:09:00.06	<20	487	37,240	-116.369	2,018	R	695	2	2.17	8	3,160			17:02:59	Pahute Mesa
ALEMAN	09/11/86	14:57:00.11	<20	503	37,069	-116.051	1,218	T	500	20	1.9	0	2,880				Yucca
LABQUARK	09/30/86	22:30:00.10	20-150	616	37,300	-116.308	2,100	R	641	7.3	2.2	5.1	3,046			3:51:18	Pahute Mesa
BELMONT	10/16/86	19:25:00.09	20-150	605	37,220	-116.463	1,871	T	613	21.6	1.86	4.1	2,562			1:27:00	Pahute Mesa
GASCON	11/14/86	16:00:00.07	20-150	593	37,100	-116.049	1,236	T	505	20	1.91	0	2,500	288	33	4:02:42	Yucca
BODIE	12/13/86	17:50:05.09	20-150	635	37,263	-116.413	1,991	T	652	10.8	2.08	5.5	3,346			11:47:00	Pahute Mesa
HAZEBROOK	02/03/87	15:20:00.08	<20	262	37,181	-116.049	1,291	A	570	15.7	1.86	10.4	1,911				Yucca
APRICOT																	
(ORANGE)																	
HAZEBROOK	02/03/87	15:20:00.08	<20	226	37,181	-116.049	1,291	A	570	11.7	2.09	5.2	2,006				Yucca
CHECKERBERRY																	
(RED)																	
HAZEBROOK	02/03/87	15:20:00.08	<20	186	37,181	-116.049	1,291	A	570	11.2	2.10	5.6	2,231				Yucca
EMERALD																	
(GREEN)																	
TOMERO	02/11/87	16:45:00.07	<20	298	37,011	-116.046	1,186	T	480	15	1.7	15	2,100	133	9	0:21:50	Yucca
MIDDLE NOTE	03/18/87	18:28:00.09	<20	399	37,210	-116.209	2,223	T	575	18.8	1.89	1.2	2,513				Tunnel, Rainier Mesa
DELAMAR	04/18/87	13:40:00.00	20-150	544	37,248	-116.510	1,875	T	580	16	1.99	3.6	2,838	180	19	10:49:00	Pahute Mesa
PRESIDIO	04/22/87	15:00:00.09	<20	320	36,983	-116.005	1,171	T	457	17	1.66	15	2,190			1:42:47	Yucca
HARDIN	04/30/87	13:30:00.09	20-150	625	37,233	-116.424	1,943	T	633	21.7	1.85	2.6	3,221			2:01:00	Pahute Mesa
BRIE	06/18/87	15:20:00.08	<20	203	37,194	-116.036	1,318	T	519	18.1	1.69	14	1,327	108	10	0:17:00	Yucca
MISSION GHOST	06/20/87	16:00:00.18	<20	321	37,220	-116.179	2,017	T	761	20	1.9	0	2,500				Tunnel, Rainier Mesa
PANCHUELA	06/30/87	16:05:00.10	<20	320	36,999	-116.044	1,179	A	428	11	1.85	15	1,770	167	21	0:18:26	Yucca
MIDLAND	07/16/87	19:00:00.08	20-150	487	37,104	-116.024	1,284	T	556	16	1.83	8	2,770	213	4	0:23:30	Yucca
TAHOKA	08/13/87	14:00:00.09	20-150	639	37,061	-116.046	1,212	T	493	21.5	1.88	0	2,260	315	23	2:25:45	Yucca
LOCKNEY	09/24/87	15:00:00.06	20-150	614	37,228	-116.376	2,045	T	721	2	2.26	5	4,500			5:46:12	Pahute Mesa
BORATE	10/23/87	16:00:00.09	20-150	542	37,142	-116.080	1,294	A	567	16.3	1.87	8.8	2,004	208	26	2:34:00	Yucca
WACO	12/01/87	16:30:00.09	<20	183	36,996	-116.005	1,176	A	460	9	1.71	22	1,740				Yucca
MISSION CYBER	12/02/87	16:30:00.08	<20	271	37,235	-116.164	1,926	T	675	18.6	1.9	1.8	2,990				Tunnel, Rainier Mesa
KERNVILLE	02/15/88	18:10:00.09	20-150	542	37,314	-116.472	1,899	T	561	22.5	1.74	6	1,951	122	12	0:26:06	Pahute Mesa
ABILENE	04/07/88	17:15:00.08	<20	245	37,013	-116.045	1,187	T	482	11	1.75	17	1,905	97	8	0:14:52	Yucca
SHELLBOURNE	05/13/88	15:35:00.11	<150	463	37,124	-116.073	1,268	A	541	15.4	1.92	7.1	2,269	219	29	3:12:57	Yucca
LAREDO	05/21/88	22:30:00.14	<150	351	37,032	-115.988	1,220	T	510	13	1.65	18	2,110	34	8		Yucca
CORNSTOCK	06/02/88	13:00:00.09	<150	620	37,260	-116.442	1,960	R	626	7.2	2.18	0	3,653	55	9	2:48:00	Pahute Mesa
NIGHTINGALE	06/22/88	14:00:00.08	<150	238	37,166	-116.073	1,309	A	572	22	1.59	16	1,673				Yucca
RHYOLITE	06/22/88	14:00:00.08	<150	207	37,166	-116.073	1,309	A	572	14.6	1.84	11.3	1,747				Yucca
ALAMO	07/07/88	15:05:30.07	<150	622	37,252	-116.378	1,964	R	624	4.5	2.28	9.5	3,270	98	4	7:46:48	Pahute Mesa
KEARSARGE	08/17/88	17:00:00.09	100-150	616	37,297	-116.307	2,102	R	700	8	2.14	7.3	3,863			5:15:00	Pahute Mesa
HARLINGEN A	08/23/88	18:30:00.08	<20	290	36,991	-116.019	1,175	A	461	14	1.67	20	1,500	122	11	4:22:12	Yucca
HARLINGEN B	08/23/88	18:30:00.08	<20	290	36,989	-116.019	1,175	A	461	14	1.67	20	1,500	182	12	2:33:50	Yucca
BULLFROG	08/30/88	18:00:00.09	<150	489	37,086	-116.069	1,236	T	500	15.8	1.96	3.6	2,474			1:03:30	Yucca
DALHART	10/13/88	14:00:00.08	<150	640	37,089	-116.050	1,229	T	508	18.3	1.95	0	2,180			2:18:07	Yucca
MONAHANS A	11/09/88	20:15:00.08	<20	290	36,991	-116.022	1,175	A	461	11.8	1.73	19	1,590			2:48:15	Yucca
MONAHANS B	11/09/88	20:15:00.08	<20	290	36,989	-116.022	1,174	A	461	11.8	1.73	19	1,590			3:50:25	Yucca
KAWICH BLUE	12/09/88	15:15:00.08	<20	384	37,175	-116.093	1,357	T	540								Yucca
KAWICH WHITE	12/09/88	15:15:00.08	<20	369	37,175	-116.093	1,357	T	540								Yucca
MISTY ECHO	12/10/88	20:30:00.06	<150	400	37,199	-116.210	2,232	T	975	19.1	1.91	1.4	2,860			0:42:29	Tunnel, Rainier Mesa

(continued)

Table 1
(Continued)

Name	Date (GMT)	Time (GMT)*	Yield (kt)	Depth of Burial (m)	Location		Surface Elevation (m)	Medium†	Geophysical Parameters				Crater Information				Test Area/ Remarks‡	
					Latitude	Longitude			Water Level Depth (m)	Water Content (wt. %)	Density (g/cm³)	Porosity (vol. %)	Velocity (m/sec)	Diameter (m)	Depth (m)	Volume (m³)		Collapse Time (h:m:s)
TEXARKANA	02/10/89	20:06:00.06	20–150	503	37.077	–116.001	1,267	T	519	18.3	1.83	5	2,230	274	16		0:20:21	Yucca
KAWICH BLACK	02/24/89	16:15:00.08	<20	431	37.128	–116.123	1,352	T	530	17.7		1.2	1,905	28			1:10:00	Yucca
KAWICH RED	02/24/89	16:15:00.08	<20	370	37.128	–116.123	1,352	T	530	18.0	1.69	13	2,035	28			1:10:00	Yucca
INGOT	03/09/89	14:05:00.09	20–150	500	37.143	–116.068	1,280	T	565	13.3	1.92	8	2,459	276	12		0:45:00	Yucca
PALISADE 1	05/15/89	13:10:00.09	<20	335	37.108	–116.122	1,338	T	590	18.6	1.65	15.9	1,836	93	8		0:50:00	Yucca
PALISADE 2	05/15/89	13:10:00.09	<20	390	37.108	–116.122	1,338	T	590	18.6	1.65	15.9	1,836	93	8		0:50:00	Yucca
PALISADE 3	05/15/89	13:10:00.09	<20	404	37.108	–116.122	1,338	T	590	18.6	1.65	15.9	1,836	93	8		0:50:00	Yucca
TULJA	05/26/89	18:07:00.02	<20	398	37.086	–116.056	1,230	T	500	13.2	1.66	20	2,310				1:47:12	Yucca
CONTACT	06/22/89	21:15:00.08	20–150	544	37.283	–116.413	1,980	R	636	13.9	1.98	0.2	4,184				2:46:00	Pahute Mesa
AMARILLO	06/27/89	15:30:00.02	20–150	640	37.275	–116.354	2,019	R	649	4.4	2.23	3	2,995				20:06:42	Pahute Mesa
DISKO ELM	09/14/89	15:00:00.10	<20	261	37.236	–116.164	1,917	T	666	18.9		1.4	3,040					Tunnel, Rainier Mesa
HORNITOS	10/31/89	15:30:00.09	20–150	564	37.263	–116.492	1,846	T	569	23	1.88	0.7	2,339	164	17		9:10:00	Pahute Mesa
MULESHOE	11/15/89	20:20:00.12	<20	244	37.106	–116.014	1,311	T	575	12	1.6	23	1,790				0:13:29	Yucca
BAMWELL	12/08/89	15:00:00.09	20–150	601	37.231	–116.410	2,031	T	661	19.1	1.94	1.2	3,355				2:00:08	Pahute Mesa
WHITEFACE A	12/20/89	22:00:00.06	<20	197	37.026	–116.032		A	488	11.5	1.7	21	1,530					Yucca
WHITEFACE B	12/20/89	22:00:00.06	<20	183	37.026	–116.032		A	488	11.5	1.7	21	1,530					Yucca
METROPOLIS	03/10/90	16:00:00.08	20–150	469	37.112	–116.056	1,246	T	479	22.8	1.64	11.7	2,073	268	12		1:26:00	Yucca
BOWLE	04/06/90	17:00:00.04	<20	213	37.068	–116.993	1,271	T	540	14	1.6	21	1,750				0:11:00	Yucca
BULLION	06/13/90	16:00:00.09	20–150	674	37.262	–116.421	1,950	T	621	24.1	1.84	2.1	3,059				0:59:00	Pahute Mesa
AUSTIN	06/21/90	18:15:00.00	<20	350	36.993	–116.005	1,174	T	457	7	1.68	25	1,920				1:23:00	Yucca
MINERAL QUARRY	07/25/90	15:00:00.06	<20	389	37.207	–116.215	2,216	T	975	20.1	1.88	1.5	2,920					Tunnel, Rainier Mesa
RANDBURG	07/25/90	15:00:00.06	<20	389	37.207	–116.215	2,216	T	975	20.1	1.88	2	2,920					Tunnel, Rainier Mesa
SUNDOWN A	09/20/90	16:15:00.00	<20	270	37.038	–116.058	1,206	A	490	12.8	1.82	14	1,940					Yucca
SUNDOWN B	09/20/90	16:15:00.00	<20	256	37.038	–116.058	1,206	A	490	12.8	1.86	12	1,900					Yucca
LEDoux	09/27/90	18:02:46.00	<20	291	37.008	–116.059	1,191	A	500	8.6	1.94	15	1,890					Yucca
TENABO	10/12/90	17:30:00.08	20–150	600	37.248	–116.495	1,871	T	620	20.7	1.95	0	2,809				4:20:00	Pahute Mesa
HOUSTON	11/14/90	19:17:00.07	20–150	594	37.227	–116.372	2,031	T	707	2.3	2.31	4	4,160					Pahute Mesa
COSO BRONZE	03/08/91	21:02:45.08	<20	333	37.104	–116.075	1,254		495	8.6	1.93	11.7	2,222	90	10		0:36:00	Yucca
COSO GRAY	03/08/91	21:02:45.08	<20	442	37.104	–116.075	1,254		495	8.6	1.93	11.7	2,222	90	10		0:36:00	Yucca
COSO SILVER	03/08/91	21:02:45.08	<20	475	37.104	–116.075	1,254	T	495	8.6	1.93	11.7	2,222	90	10		0:36:00	Yucca
BEXAR	04/04/91	19:00:00.00	20–150	629	37.296	–116.314	2,118	R	705	10	2.13	4	3,470				5:41:00	Pahute Mesa
MONTELO	04/16/91	15:30:00.07	20–150	642	37.245	–116.443	1,961	T	650	18.9	1.95	0	3,339				4:09:30	Pahute Mesa
FLOYDADA	08/15/91	16:00:00.00	<20	503	37.087	–116.003	1,280	T	544	16	1.87	7	2,350				0:18:20	Yucca
HOYA	09/14/91	19:00:00.08	20–150	658	37.226	–116.429	1,951	T	675	23	1.83	0	2,546				1:35:49	Pahute Mesa

DISTANT ZENITH	09/19/91	16:30:00.07	<20	264	37.236	-116.167	1,921	T	669	19.2	1.89	1.4	2,976		Tunnel, Rainier Mesa
LUBBOCK	10/18/91	19:12:00.00	20-150	457	37.063	-116.046	1,213	T	503	19.2	1.84	4.5	2,340	4:08:00	Yucca
BRISTOL	11/26/91	18:35:00.07	<20	457	37.096	-116.070	1,246	T	500	22.8	1.87	2.6	2,366		Yucca
JUNCTION	03/26/92	16:30:00.00	20-150	622	37.272	-116.361	2,013	R	641	5.8	2.15	4	2,930		Pahute Mesa
DIAMOND	04/30/92	16:30:00.00	<20	236	37.234	-116.158	1,656	T	647	20.9	1.72	5.3	2,996		Tunnel, Rainier Mesa
FORTUNE															
VICTORIA	06/19/92	16:45:00.00	<20	244	37.005	-116.011	1,179	A	474	12.0	1.61	24	1,610		Yucca
GALENA GREEN	06/23/92	15:00:00.07	<20	400	37.124	-116.032	1,269	T	558	21.7	1.64	11.8	2,128	0:17:00	Yucca
GALENA ORANGE	06/23/92	15:00:00.07	<20	380	37.124	-116.032	1,269	T	558	21.7	1.64	11.8	2,128	0:17:00	Yucca
GALENA YELLOW	06/23/92	15:00:00.07	<20	290	37.124	-116.032	1,269	T	558	21.7	1.64	11.8	2,128	0:17:00	Yucca
HUNTERS TROPHY	09/18/92	17:00:00.08	<20	385	37.207	-116.211	1,827	T	960	18.4	1.94	1	2,608		Tunnel, Rainier Mesa
DIVIDER	09/23/92	15:04:00.00	<20	340	37.021	-115.989	1,208	T	483	17.0	1.73	10	2,140		Yucca

*Times are given in hundredths of a second where available; otherwise, a default value of 00.00 sec is used.

†A, alluvium; An, andesite; B, basalt; D, dolomite; G, granite; La, lava; U, limestone; Q, quartzite; QM, quartz monzonite; R, rhyolite; Sa, salt; Sh, shale; Sn, sandstone; T, tuff; W, water.

‡Test area locations are within the U.S. government's Nevada Test Site unless otherwise noted.

§Less than 0.001.

||Project PLOWSHARE was established by the U.S. Atomic Energy Commission to explore the use of nuclear explosives for peaceful purposes. Efforts focused on large-scale earth excavation and stimulation of natural gas production.

#From 1961 on, many shot times (e.g., GNOME, SALMON, SIMMS, etc.) are listed by "official" sources on "even" minutes or hours. Generally, actual detonation times were about 0.1 ± 0.06 sec later, due to signal transit time, relay closures, etc.

**SALMON produced a standing cavity in which the STERLING test was detonated.

††Official records still indicate a shot time of 17:40:04.41. However, a preponderance of seismic and free-field shock data support this earlier time.

‡‡Total POD yield = 16.7 kt. Only the sum of the individual yields has been declassified.

Yields

The yields reported are the best values of total underground energy release and deposition, as determined primarily by radiochemical means. On rare occasions, other means such as hydrodynamic- or seismic-yield estimates are given some weight in arriving at a final yield. However, radiochemical means is the primary method; how it produces total yield is described briefly as follows. Yields are expressed in kilotons (kt), where 1 kt is defined as 10^{12} calories. A certain amount of ambiguity is implicit in the definition of total underground (or below-surface) yield. The total energy release of every nuclear detonation may be considered to have three distinct components: the weapon (or device) yield, defined as the yield that would have been observed if the explosion had taken place in space (for these purposes, considered a vacuum); the enhancement of the weapon yield from fissions caused by neutrons that have been reflected from the environment into weapon materials; and the yield resulting from nuclear reactions with surrounding environmental media. The estimation of total yield derives from a combination of radiochemical analysis and computer simulation. These processes and measurements are subject to their particular sources of errors and therefore, uncertainties. For instance, radiochemical analysis of different samples of the explosion-produced melt-glass can be extremely consistent, giving a very high precision for these measurements (and therefore, of fission yield). However, there are uncertainties, both random and systematic, introduced by other factors such as emplacement geometry, type of device, mean-free-path calibration of high-energy neutrons, and computer code calibration. These factors affect estimates of the second and third components of total yield more than the first. Taking all of the uncertainties into account, the absolute accuracy of total-yield estimates is not precisely known, but it is generally assumed to be $\pm 10\%$ or less. All underground yields have been checked against recent recalculations supporting a radionuclide inventory for all U.S. underground tests.

Yield ranges are given in numerical form to avoid the confusion engendered by changing definitions (e.g., low, intermediate, etc.) but are consistent with ranges published by the U.S. DOE (2000). If unclassified, specific yield values are given.

Depth of Burial

Depth of burial is the distance from the ground reference elevation to the center of the device. Values in this tabulation depend on several factors: the definition of center of device, the method of measurement, differences between planned and as-built data, and so forth. These factors were subject to change over the years and varied with different sponsors (i.e., laboratory or agency). Generally, for shots emplaced at depths of <300 m, depths are accurate to ~ 1 m, except for older events, for which the uncertainty occasionally may be

as large as 2 m. For shots emplaced deeper than 300 m, depths are accurate to $\sim 2\text{--}3$ m.

Location and Surface Elevations

Latitude and longitude locations are the surface ground-zero location of the drill hole or other emplacement location. Elevations are predetonation ground reference elevations as surveyed above mean sea level.

Elevation and horizontal control at the NTS are based on bench marks established in southern Nevada by the U.S. Coast and Geodetic Survey using adjusted first-order triangulation and control leveling and are relative to the North American Datum (NAD) of 1927, NAD 27 (U.S. Department of Commerce, 1969). First- and second-order monumented points have been established throughout the NTS (U.S. Department of Commerce, 1963). Holmes and Narver, Inc., Las Vegas, Nevada, used standard survey techniques (A. Bobo, 1970, personal comm.) to determine locations and elevations in English units at the NTS. The elevations were taken on the ground surface at the drill-hole location and may vary by up to 1 m from the original ground surface because of site preparation. Data tabulations published in two previous reports (Springer and Kinnaman, 1971, 1975) were based on NAD 27. Data in this current report derive from transformation of NAD 27 data to the Department of Defense World Geodetic System 1984 (WGS 84) using formulas compiled by the Defense Mapping Agency (1987). According to Morgan (1987), WGS 84 is extremely consistent with the new NAD 1983: reference ellipsoids are the same, and differences of location between them are minor. A useful account of historical and current mapping methods and transformations can be found in an article by Snyder (1987).

Horizontal-location differences of up to 100 m exist among various official sources and databases. These differences are believed to be due to inaccurate record keeping, differences in definitions of location, and differences in computer algorithms used to convert data from the Nevada State Coordinate System to the standard geodetic system. Horizontal-location data are given to 0.001 degree of arc. Recently, some inconsistencies in surface elevation data for tests in Rainier Mesa tunnels have come to our attention. These data may have been determined at a mix of horizontal locations—the working point (the test device location), the ground surface point directly above the working point, or a point at the portal of the tunnel. For this article, it was too late to investigate these inconsistencies thoroughly.

The locations and elevations of the underground tests in Alaska and the underwater tests in the Pacific are more uncertain than those in the continental United States. We were unable to determine any information about the procedures used to survey the sites or the reference points used as the bases of those surveys. For tests in Alaska, we have corrected the latitudes and longitudes that were reported using “local geodetic system to WGS 84 datum transformation multiple-regression equations—NAD 27 (Alaska),” as re-

ported by the Defense Mapping Agency (1987), Table 20.31. These corrections are approximately -0.013 degrees latitude and -0.0065 degrees longitude, which correspond to 1–2 km of location change. Amchitka is outside the area from which the regression curves were developed, so we cannot be certain that these corrections improve the location. The same regressions suggest a very large change for the surface elevation and have been ignored. For underwater tests in the Pacific, the extrapolated corrections range from zero to 0.001 degrees. Because these corrections are smaller than the uncertainties, they were not applied.

Medium

The generalized lithologic terms describe the rock type (for underground tests) at the working point (the detonation center). Most of the rock at the NTS is volcanic, ranging from alluvium to zeolitized tuffs and rhyolites.

Water Level Depth

The depth of the static water-table level is defined as the depth from surface ground zero to the piezometric surface in pre-Tertiary rocks (Yucca Flat and Frenchman Flat areas) or the depth to the composite piezometric surface (Pahute Mesa, Buckboard Mesa, Rainier Mesa, and offsite areas). This surface is not necessarily the upper surface of saturated rock. Saturated (or near-saturated) rock can be found at shallower depths in the form of perched water that is trapped within or above relatively impermeable rock. Some static water levels represent an operational water level because insufficient time was allowed for the water level to stabilize before the hole was expended for a test. Many of the depths listed in the table are extrapolations of water-level data available at the time of the test and should be considered estimated regional static water levels.

It should be pointed out that water-table levels are not necessarily sharp discontinuities. Water content generally increases with depth until the 100% saturation point is reached. This is illustrated by Figure 3, which shows data for water content versus depth taken from an exploratory drill hole in the northern portion of Yucca Flat. The 100% saturation point is reached at about the 540-m depth; however, high saturations were encountered at shallower depths, for example, at slightly >400 m. This curve is not necessarily representative of other test areas at the NTS or elsewhere. For instance, Pahute Mesa geology is more layered, and perched aquifers can be encountered above the regional static water level. The Frenchman Flat area is different from Yucca in that the static water-table level is much shallower. As a matter of fact, the Yucca Flat alluvial basin is unique because of its deep water-table level. Most other test areas, including the Central Nevada test area, have much shallower water-table levels. This parameter therefore carries uncertainty both in its definition and in its method of measurement.

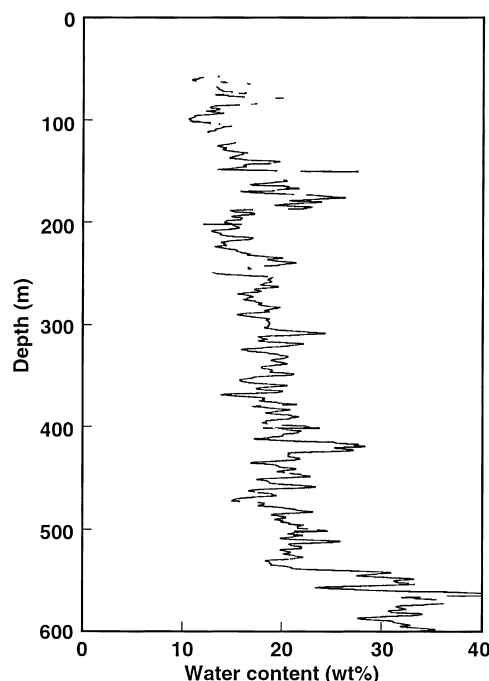


Figure 3. Data for water content versus depth, taken from an exploratory drill hole in the northern Yucca Flat area. These data illustrate the erratic but gradual increase of water content as depth of burial nears the so-called water table (in this case, ~ 540 m depth).

Geophysical Parameters

Average working-point water content, bulk density, gas porosity, and sonic velocity are included, when available, because of the high dependence of seismic coupling on these parameters (Springer, 1966). Generally, these data are presented as measured. The values represent an evolution of data-collection techniques and hence, accuracies over time. Early water content, bulk density, and velocity values may represent averages of a small number of measurements on samples. Later values represent averages of geophysical log measurements. Porosity values may be from laboratory measurements but were more commonly calculated from water content, bulk density, and grain density. Because of their evolutionary history, these parameters must be applied with caution.

Crater Information

Underground nuclear explosions may produce collapse craters at the ground surface. The size and shape of collapse craters are dependent on yield, depth of burial, and the physical properties of the overburden and detonation region. Collapse craters have been described as cookie cutter, dish, bowl, and stepped, among others. Collapse-crater depths are measurements at the deepest point of the crater referred to the original ground surface. Collapse-crater diameters are

usually averaged measurements of lip-to-lip diameters. The volumes of collapse craters are estimated to be accurate to $\pm 20\%$; however, the parameter was defined differently over time, which could detract from the accuracy. Arbitrarily, crater depths and diameters are given to the nearest 1 m and crater volumes to the nearest 100 m³. The aerial panoramic view of the Yucca Flat areas in Figure 4 illustrates the difficulty of determining crater lip boundaries exactly.

Test surface-collapse times (time interval after shot time) may contain uncertainty inherent in the collapse phenomenon as a point source and to the practical difficulties of measurement. The time interval to surface collapse varies from ~ 1 sec for short-term, dynamic events to as much as minutes, hours, or perhaps even days or years for slow-subsidence events. As viewed by close-in surface geophones, cavity collapse and other related events are heard before surface subsidence takes place. Some of the more significant subsurface collapses are given and identified in the Remarks column. Typically, local geophone activity drops to background after surface expression occurs. The time intervals listed in Table 1 are related to the surface subsidence as determined by geophone and television moni-

toring. These intervals are accurate to a few seconds for the first 2- to 3-hr period but become less reliable in the next several hours, with an uncertainty of perhaps 15 to 20 sec. After weeks and months, uncertainties become large enough that collapse dates may not be known. For many events, especially in the early years of testing, collapse times are unknown.

Additional Data

Table 2 is an alphabetical listing of the events in Table 1 for cross-referencing. Data presented in this report are intended to supersede those given in earlier documents. All practical effort was applied to ensure that the data given are the best currently available. Review of various sources revealed inconsistencies for some parameters—yield is a notable example. The reasons lie in the development of new information, revalidation and re-evaluation of existing data, slight differences in the definition of parameters, and sometimes, even errors in one or another source.

(Text continues on page 1840.)



Figure 4. Low-altitude aerial photo looking south from the north end of Yucca Flat. Most collapse craters have gradually sloping sides like these, illustrating the difficulties in defining crater boundaries (lips).

Table 2
Alphabetical List of Tests

Name	Date (GMT)	Name	Date (GMT)	Name	Date (GMT)
AARDVARK	05/12/62	BALTIC	08/06/71	BULKHEAD	04/27/77
ABEYAS	11/05/70	BANDICOOT	10/19/62	BULLFROG	08/30/88
ABILENE	04/07/88	BANEHERRY	12/18/70	BULLION	06/13/90
ABO	10/30/85	BANON	08/26/76	BUNKER	02/13/64
ABSINTHE	05/26/67	BARBEL	10/16/64	BURZET	08/03/79
ACE	06/11/64	BARNWELL	12/08/89	BUTEO	05/12/65
ACUSHI	02/08/63	BARRACUDA	12/04/63	BYE	07/16/64
ADZE	05/28/68	BARRANCA	08/04/71	CABOC	12/16/81
AGILE	02/23/67	BARSAC	03/20/69	CABRA	03/26/83
AGOUTI	01/18/62	BASEBALL	01/15/81	CABRESTO	05/24/73
AGRINI	03/31/84	BAY LEAF	12/12/68	CABRILLO	03/07/75
AHTANUM	09/13/63	BEEBALM	05/01/70	CABRIOLET	01/26/68
AJAX	11/11/66	BELEN	02/04/70	CALABASH	10/29/69
AJO	01/30/70	BELLOW	05/16/84	CAMBRIC	05/14/65
AKAVI	12/03/81	BELMONT	10/16/86	CAMEMBART	06/26/75
AKBAR	11/09/72	BENHAM	12/19/68	CAMPOR	06/29/71
ALAMO	07/07/88	BERNAL	11/28/73	CAMPOS	02/13/78
ALEMAN	09/11/86	BERNALILLO	09/17/58	CAN GREEN	04/21/70
ALGODONES	08/18/71	BEVEL	04/04/68	CAN RED	04/21/70
ALIGOTE	05/29/81	BEXAR	04/04/91	CANFIELD	05/02/80
ALIMENT	05/15/69	BIGGIN	01/30/69	CANJILON	12/16/70
ALLEGHENY	09/29/62	BILBY	09/13/63	CANNA LIMOGES	11/17/72
ALMENDRO	06/06/73	BILGE	02/19/75	CANNA UMBRINUS	11/17/72
ALPACA	02/12/65	BILLET	07/27/76	CANNIKIN	11/06/71
ALUMROOT	02/14/73	BIT A	10/31/68	CANVASBACK	08/22/64
ALVA	08/19/64	BIT B	10/31/68	CAPITAN	06/28/72
ALVISO	06/11/75	BITTERLING	06/12/64	CAPROCK	05/31/84
AMARILLO	06/27/89	BLACK	04/27/62	CARMEL	02/21/63
ANACOSTIA	11/27/62	BLANCA	10/30/58	CARNELIAN	07/28/77
ANCHOVY	11/14/63	BLENTON	04/30/69	CARP	09/27/63
ANGUS	04/25/73	BOBAC	08/24/62	CARPETBAG	12/17/70
ANTLER	09/15/61	BOBSTAY	10/26/77	CARRIZOZO	12/03/70
APODACA	07/21/71	BODIE	12/13/86	CASHMERE	02/04/65
APSHAPA	06/06/63	BOGEY	04/17/64	CASSELMAN	02/08/63
ARABIS BLUE	03/06/70	BONARDA	09/25/80	CASSOWARY	12/16/64
ARABIS GREEN	03/06/70	BONEFISH	02/18/64	CATHAY	10/08/71
ARABIS RED	03/06/70	BOOMER	10/01/61	CEBOLLA	08/09/72
ARIKAREE	05/10/62	BORATE	10/23/87	CEBRERO	08/14/85
ARMADA	04/22/83	BORDEAUX	08/18/67	CENTAUR	08/27/65
ARMADILLO	02/09/62	BORREGO	09/29/82	CERISE	11/18/66
ARNICA VIOLET	06/26/70	BOURBON	01/20/67	CEMADA	09/24/81
ARNICA YELLOW	06/26/70	BOUSCHET	05/07/82	CERRO	09/02/82
ARSENATE	11/09/72	BOWIE	04/06/90	CHAENACTIS	12/14/71
ARTESIA	12/16/70	BOWL-1	06/26/69	CHAMITA	08/17/85
ASCO	04/25/78	BOWL-2	06/26/69	CHANCELLOR	09/01/83
ASIAGO	12/21/76	BOXCAR	04/26/68	CHANTILLY	09/29/71
ATARQUE	07/25/72	BRACKEN	07/09/71	CHARCOAL	09/10/65
ATRISCO	08/05/82	BRANCO	09/21/83	CHARTREUSE	05/06/66
AUGER	11/15/68	BRANCO HERKIMER	09/21/83	CHATEAUGAY	06/28/68
AUK	10/02/64	BRAZOS	03/08/62	CHATTY	03/18/69
AUSTIN	06/21/90	BRETON	09/13/84	CHEEDAM	02/17/83
AVENS ALKERMES	12/16/70	BRIE	06/18/87	CHENA	10/10/61
AVENS ANDORRE	12/16/70	BRISTOL	11/26/91	CHENILLE	04/22/65
AVENS ASAMITE	12/16/70	BRONZE	07/23/65	CHESHIRE	02/14/76
AVENS CREAM	12/16/70	BRUSH	01/24/68	CHESS	06/20/79
AZUL	12/14/79	BUFF	12/16/65	CHEVRE	11/23/76
BACCARAT	01/24/79	BUGGY A	03/12/68	CHIBERTA	12/20/75
BACKBEACH	04/11/78	BUGGY B	03/12/68	CHINCHILLA I	02/19/62
BACKGAMMON	11/29/79	BUGGY C	03/12/68	CHINCHILLA II	03/31/62
BACKSWING	05/14/64	BUGGY D	03/12/68	CHIPMUNK	02/15/63
BAKER-CROSSROADS	07/24/46	BUGGY E	03/12/68	CHOCOLATE	04/21/67

(continued)

Table 2 (Continued)

Name	Date (GMT)	Name	Date (GMT)	Name	Date (GMT)
CIMARRON	02/23/62	DANABLU	06/09/83	ESCABOSA	07/10/74
CINNAMON	03/07/66	DANNY BOY	03/05/62	ESROM	02/04/76
CLAIRETTE	02/05/81	DARWIN	06/25/86	ESS	03/23/55
CLARKSMOBILE	05/17/68	DAUPHIN	11/14/80	ESTACA	10/17/74
CLEARWATER	10/16/63	DEAD	04/21/62	ESTUARY	03/09/76
CLUB	01/30/64	DECK	11/18/75	EVANS	10/29/58
CLYMER	03/12/66	DELAMAR	04/18/87	FADE	06/25/64
COALORA	02/11/83	DELPHINIUM	09/26/72	FAHADA	05/26/83
COBBLER	11/08/67	DERRINGER	09/12/66	FAJY	06/28/79
CODSAW	02/19/62	DES MOINES	06/13/62	FALLON	05/23/74
COFFER	03/21/69	DEXTER	06/23/71	FARALLONES	12/14/77
COGNAC	10/25/67	DIABLO HAWK	09/13/78	FARM	12/16/78
COLBY	03/14/76	DIAGONAL LINE	11/24/71	FAULTLESS	01/19/68
COLFAX	10/05/58	DIAMOND ACE	09/23/82	FAWN	04/07/67
COLMOR	04/26/73	DIAMOND BEECH	10/09/85	FEATHER	12/22/61
COLWICK	04/26/80	DIAMOND DUST	05/12/70	FENTON	04/23/66
COMMODORE	05/20/67	DIAMOND FORTUNE	04/30/92	FERRET	02/08/63
COMSTOCK	06/02/88	DIAMOND MINE	07/01/71	FERRET PRIME	04/05/63
CONCENTRATION	12/01/78	DIAMOND SCULLS	07/20/72	FILE	10/31/68
CONTACT	06/22/89	DIANA MIST	02/11/70	FINFOOT	03/07/66
CORAZON	12/03/70	DIANA MOON	08/27/68	FISHER	12/03/61
CORDUROY	12/03/65	DIANTHUS	02/17/72	FIZZ	03/10/67
CORMORANT	07/17/64	DIDO QUEEN	06/05/73	FLASK GREEN	05/26/70
CORNICE GREEN	05/15/70	DIESEL TRAIN	12/05/69	FLASK RED	05/26/70
CORNICE YELLOW	05/15/70	DILUTED WATERS	06/16/65	FLASK YELLOW	05/26/70
CORNUCOPIA	07/24/86	DINING CAR	04/05/75	FLAX BACKUP	12/21/72
CORREO	08/02/84	DISCUS THROWER	05/27/66	FLAX SOURCE	12/21/72
COSO BRONZE	03/08/91	DISKO ELM	09/14/89	FLAX TEST	12/21/72
COSO GRAY	03/08/91	DISTANT ZENITH	09/19/91	FLORA	05/22/80
COSO SILVER	03/08/91	DIVIDER	09/23/92	FLOTOST	08/16/77
COTTAGE	03/23/85	DOFINO	03/08/77	FLOYDADA	08/15/91
COULOMMIERS	09/27/77	DOFINO LAWTON	03/08/77	FOB BLUE	01/23/70
COURSER	09/25/64	DOLCETTO	08/30/84	FOB GREEN	01/23/70
COVE	02/16/77	DOOR MIST	08/31/67	FOB YELLOW	01/23/70
COWLES	02/03/72	DORMOUSE	01/30/62	FONDUTTA	04/11/78
COYPU	04/10/63	DORMOUSE PRIME	04/05/62	FONTINA	02/12/76
CREMINO	09/27/78	DORSAL FIN	02/29/68	FORE	01/16/64
CREMINO CAERPHILLY	09/27/78	DOUBLE PLAY	06/15/66	FOREFOOT	06/02/77
CREPE	12/05/64	DOVEKIE	01/21/66	FOREST	10/31/64
CRESTLAKE BRIAR	07/18/74	DRAUGHTS	09/27/78	FREEZEOUT	05/11/79
CRESTLAKE TANSAN	07/18/74	DRILL SOURCE (lower)	12/05/64	FRIJOLES DEMING	09/22/71
CREW	11/04/68	DRILL TARGET (upper)	12/05/64	FRIJOLES ESPUELA	09/22/71
CREW 2nd	11/04/68	DRIVER	05/07/64	FRIJOLES GUAJE	09/22/71
CREW 3rd	11/04/68	DUB	06/30/64	FRIJOLES PETACA	09/22/71
CREWLINE	05/25/77	DUFFER	06/18/64	FRISCO	09/23/82
CROCK	05/08/68	DUMONT	05/19/66	FUNNEL	06/25/68
CROWDIE	05/05/83	DUORO	06/20/84	FUTTOCK	06/18/75
CRUET	10/29/69	DURYEA	04/14/66	GALENA GREEN	06/23/92
CUCHILLO	08/09/72	DUTCHESS	10/24/80	GALENA ORANGE	06/23/92
CULANTRO A	12/10/69	EAGLE	12/12/63	GALENA YELLOW	06/23/92
CULANTRO B	12/10/69	EBBTIDE	09/15/77	GALVESTON	09/04/86
CUMARIN	02/25/70	EDAM	04/24/75	GARDEN	10/23/64
CUMBERLAND	04/11/63	EEL	05/19/62	GASBUGGY	12/10/67
CUP	03/26/65	EFFENDI	04/27/67	GASCON	11/14/86
CYATHUS	03/06/70	EGMONT	12/09/84	GAZOOK	03/23/73
CYBAR	07/17/86	ELIDA	12/19/73	GERBIL	03/29/63
CYCLAMEN	05/05/66	ELKHART	09/17/65	GIBNE	04/25/82
CYPRESS	02/12/69	EMBUDO	06/16/71	GIBSON	08/04/67
DAQUIRI	09/23/66	EMERSON	12/16/65	GILROY	09/15/67
DALHART	10/13/88	EMMENTHAL	11/02/78	GLENCOE	03/22/86
DAMAN I	06/21/62	ERMINE	03/06/62	GNOME	12/10/61

(continued)

Table 2 (Continued)

Name	Date (GMT)	Name	Date (GMT)	Name	Date (GMT)
GOLDSTONE	12/28/85	HUNTERS TROPHY	09/18/92	KOHOCTON	08/23/63
GORBEA	01/31/84	HUPMOBILE	01/18/68	KOOTENAI	04/24/63
GOUDA	10/06/76	HURON KING	06/24/80	KRYDDOST	05/06/82
GOURD AMBER	04/24/69	HURON LANDING	09/23/82	KYACK A	09/20/69
GOURD BROWN	04/24/69	HUSKY ACE	10/12/73	KYACK B	09/20/69
GRAPE A	12/17/69	HUSKY PUP	10/24/75	LABAN	08/03/83
GRAPE B	02/04/70	HUTCH	07/16/69	LABIS	02/05/70
GREELEY	12/20/66	HUTIA	06/06/63	LABQUARK	09/30/86
GREYS	11/22/63	HYBLA FAIR	10/28/74	LAGOON	10/14/71
GROVE	05/22/74	HYBLA GOLD	11/01/77	LAGUNA	06/23/71
GRUNION	10/11/63	HYRAX	09/14/62	LAMPBLACK	01/18/66
GRUYERE	08/16/77	ICEBERG	03/23/78	LANPHER	10/18/67
GRUYERE GRADINO	08/16/77	ILDRIM	07/16/69	LAREDO	05/21/88
GUANAY	09/04/64	IMP	08/09/68	LATIR	02/27/74
GUMDROP	04/21/65	INGOT	03/09/89	LEDOUX	09/27/90
GUNDI	11/15/62	INLET	11/20/75	LEXINGTON	08/24/67
GUNDI PRIME	05/09/63	IPECAC A	05/27/69	LEYDEN	11/26/75
HADDOCK	08/28/64	IPECAC B	05/27/69	LIME	04/01/66
HALFBEAK	06/30/66	ISLAY	08/27/81	LINKS	07/23/64
HANDCAR	11/05/64	IZZER	07/16/65	LIPTAUER	04/03/80
HANDICAP	03/12/64	JACKPOTS	06/01/78	LOCKNEY	09/24/87
HANDLEY	03/26/70	JAL	03/19/70	LOGAN	10/16/58
HAPLOPAPPUS	06/28/72	JARA	06/06/74	LONG SHOT	10/29/65
HARD HAT	02/15/62	JARLSBERG	08/27/83	LONGCHAMPS	04/19/72
HARDIN	04/30/87	JEFFERSON	04/22/86	LOVAGE	12/17/69
HAREBELL	06/24/71	JERBOA	03/01/63	LOWBALL	07/12/78
HARKEE	05/17/63	JIB	05/08/74	LUBBOCK	10/18/91
HARLINGEN A	08/23/88	JICARILLA	04/19/72	LUNA	09/21/58
HARLINGEN B	08/23/88	JOHNNIE BOY	07/11/62	MACKEREL	02/18/64
HARZER	06/06/81	JORNADA	01/28/82	MAD	12/13/61
HATCHET	05/03/68	JORUM	09/16/69	MADISON	12/12/62
HATCHIE	02/08/63	JUNCTION	03/26/92	MALLET	01/31/68
HAVARTI	08/05/81	KANKAKEE	06/15/66	MANATEE	12/14/62
HAYMAKER	06/27/62	KAPPELI	07/25/84	MANTECA	12/10/82
HAZEBROOK APRICOT (ORANGE)	02/03/87	KARA	05/11/72	MANZANAS	05/21/70
HAZEBROOK CHECKERBERRY (RED)	02/03/87	KARAB	03/16/78	MARIBO	06/26/85
HAZEBROOK EMERALD (GREEN)	02/03/87	KASH	06/12/80	MARS	09/28/58
HEARTS	09/06/79	KASHAN	05/24/73	MARSH	09/06/75
HEILMAN	04/06/67	KASSERI	10/28/75	MARSHMALLOW	06/28/62
HERMOSA	04/02/85	KAWEAH	02/21/63	MARSILLY	04/05/77
HOD A (GREEN)	05/01/70	KAWICH BLACK (B)	02/24/89	MARVEL	09/21/67
HOD B (RED)	05/01/70	KAWICH BLUE (A)	12/09/88	MAST	06/19/75
HOD C (BLUE)	05/01/70	KAWICH RED (B)	02/24/89	MATACO	06/14/63
HOGNOSE	03/15/62	KAWICH WHITE (A)	12/09/88	MAUVE	08/06/65
HOOK	04/14/64	KEARSARGE	08/17/88	MAXWELL	01/13/66
HOPOE	12/16/64	KEEL	12/16/74	MEMORY	03/14/79
HOOSIC	03/28/62	KEELSON	02/04/76	MERCURY	09/23/58
HOREHOUND	08/27/69	KENNEBEC	06/25/63	MERIDA	06/07/72
HORNITOS	10/31/89	KERMET	11/23/65	MERLIN	02/16/65
HOSPAAH	12/14/71	KERNVILLE	02/15/88	MERRIMAC	07/13/62
HOSTA	02/12/82	KESTI	06/16/82	MESCALERO	01/05/72
HOUSTON	11/14/90	KESTREL	04/05/65	MESITA	05/09/73
HOYA	09/14/91	KHAKI	10/15/66	METROPOLIS	03/10/90
HUDSON	04/12/62	KINIBITO	12/05/85	MICKEY	05/10/67
HUDSON MOON	05/26/70	KLICKITAT	02/20/64	MIDAS MYTH/MILAGRO	02/15/84
HUDSON SEAL	09/24/68	KLOSTER	02/15/79	MIDDLE NOTE/GOURNAY	03/18/87
HULA	10/29/68	KNICKERBOCKER	05/26/67	MIDI MIST	06/26/67
HULSEA	03/14/74	KNIFE A	09/12/68	MIDLAND	07/16/87
		KNIFE B	11/15/68	MIERA	03/08/73
		KNIFE C	10/03/68	MIGHTY EPIC	05/12/76
		KNOX	02/21/68	MIGHTY OAK	04/10/86

(continued)

Table 2 (Continued)

Name	Date (GMT)	Name	Date (GMT)	Name	Date (GMT)
MILK SHAKE	03/25/68	OBAR	04/30/75	POD A	10/29/69
MILL YARD	10/09/85	OCATE	03/30/72	POD B	10/29/69
MILROW	10/02/69	OCHRE	04/29/66	POD C	10/29/69
MINERAL QUARRY	07/25/90	OCONTO	01/23/64	POD D	10/29/69
MINERO	12/20/84	OFFSHORE	08/08/79	POLKA	12/06/67
MINERS IRON	10/31/80	ONAJA	03/30/72	POLYGONUM	10/02/73
MING BLADE	06/19/74	ORGANDY	06/11/65	POMMARD	03/14/68
MING VASE	11/20/68	ORKNEY	05/02/84	PONGEE	07/22/65
MINI JADE	05/26/83	OSCURO	09/21/72	PONIL	09/27/85
MINIATA	07/08/71	OTERO	09/12/58	POOL	03/17/76
MINK	10/29/61	PACA	05/07/62	PORTMANTEAU	08/30/74
MINNOW	05/15/64	PACKARD	01/15/69	PORTOLA	02/06/75
MINT LEAF	05/05/70	PACKART	06/06/62	PORTOLA LARKIN	02/06/75
MINUTE STEAK	09/12/69	PAISANO	04/24/63	PORTULACA	06/28/73
MISSION CYBER	12/02/87	PAJARA	12/12/73	POTRERO	04/23/74
MISSION GHOST	06/20/87	PALANQUIN	04/14/65	POTRILLO	06/21/73
MISSISSIPPI	10/05/62	PALISADE 1	05/15/89	PRATT	09/26/74
MISTY ECHO	12/10/88	PALISADE 2	05/15/89	PRESIDIO	04/22/87
MISTY NORTH	05/02/72	PALISADE 3	05/15/89	PUCE	06/10/66
MISTY RAIN	04/06/85	PALIZA	10/01/81	PUDDLE	11/26/74
MIZZEN	06/03/75	PAMPAS	03/01/62	PURPLE	03/18/66
MOA	09/01/65	PANAMINT	05/21/86	PURSE	05/07/69
MOGOLLON	04/20/86	PANCHUELA	06/30/87	PUYE	08/14/74
MOLBO	02/12/82	PANIR	08/31/78	PYRAMID	04/16/80
MONAHANS A	11/09/88	PAR	10/09/64	QUARGEL	11/18/78
MONAHANS B	11/09/88	PARNASSIA	11/30/71	QUESO	08/11/82
MONERO	05/19/72	PARROT	12/16/64	QUINELLA	02/08/79
MONTELLO	04/16/91	PASCAL A	07/26/57	RACCOON	06/01/62
MONTEREY	07/29/82	PASCAL B	08/27/57	RACK	08/15/68
MORRONES	05/21/70	PASCAL C	12/06/57	RAINIER	09/19/57
MUDPACK	12/16/64	PASSAIC	04/06/62	RANDSBURG	07/25/90
MUENSTER	01/03/76	PEBA	09/20/62	RARITAN	09/06/62
MUGGINS	12/09/83	PEDERNAL	09/29/71	REBLOCHON	02/23/78
MULESHOE	11/15/89	PEKAN	08/12/63	RED HOT	03/05/66
MULLETT	10/17/63	PENASCO	11/19/70	REDMUD	12/08/76
MUNDO	05/01/84	PEPATO	06/11/79	REO	01/22/66
MUSCOVY	04/23/65	PERA	09/08/79	REX	02/24/66
MUSHROOM	03/03/67	PERSIMMON	02/23/67	RHYOLITE	06/22/88
MUSTANG	11/15/63	PETREL	06/11/65	RIB	12/14/77
NAMA AMARYLIS	08/05/71	PICCALILLI	11/21/69	RICKEY	06/15/68
NAMA MEPHISTO	08/05/71	PIKE	03/13/64	RINGTAIL	12/17/61
NARRAGUAGUS	09/27/63	PILE DRIVER	06/02/66	RIO BLANCO 1	05/17/73
NASH	01/19/67	PIN STRIPE	04/25/66	RIO BLANCO 2	05/17/73
NATCHES	08/23/63	PINEAU	07/16/81	RIO BLANCO 3	05/17/73
NATOMA	04/05/73	PINEDROPS BAYOU	01/10/74	RIOLA	09/25/80
NAVATA	09/29/83	PINEDROPS SLOAT	01/10/74	RIVET I	01/18/67
NEBBIOLO	06/24/82	PINEDROPS TAWNY	01/10/74	RIVET II	01/26/67
NEPTUNE	10/14/58	PIPEFISH	04/29/64	RIVET III	03/02/67
NESSSEL	08/29/79	PIPKIN	10/08/69	RIVOLI	05/20/76
NEW POI	12/13/66	PIRANHA	05/13/66	ROANOKE	10/12/62
NEWARK	09/29/66	PITON A	05/28/70	ROMANO	12/16/83
NIGHTINGALE	06/22/88	PITON B	05/28/70	ROQUEFORT	10/16/85
NIPPER	02/04/69	PITON C	05/28/70	ROUSANNE	11/12/81
NIZA	07/10/81	PLAID II	02/03/66	ROVENA	08/10/66
NOGGIN	09/06/68	PLANER	11/21/69	RUDDER	12/28/76
NOOR	04/10/68	PLATTE	04/14/62	RULISON	09/10/69
NORBO	03/08/80	PLATYPUS	02/24/62	RUMMY	09/27/78
NORMANNA	07/12/84	PLAYER	08/27/64	RUSSET	03/05/68
NUMBAT	12/12/62	PLEASANT	05/29/63	SABADO	08/11/83
OAKLAND	04/04/67	PLIERS	08/27/69	SACRAMENTO	06/30/62
OARLOCK	02/16/77	PLOMO	05/01/74	SALMON	10/22/64

(continued)

Table 2 (Continued)

Name	Date (GMT)	Name	Date (GMT)	Name	Date (GMT)
SALUT	06/12/85	ST. LAWRENCE	11/09/62	TOPMAST	03/23/78
SAN JUAN	10/20/58	STACCATO	01/19/68	TORCH	02/21/68
SANDREEF	11/09/77	STANLEY	07/27/67	TORNERO	02/11/87
SANTEE	10/27/62	STANYAN	09/26/74	TORNILLO	10/11/63
SAPELLO	04/12/74	STARWORT	04/26/73	TORRIDO	05/27/69
SAPPHO	03/23/72	STERLING	12/03/66	TORTUGAS	03/01/84
SARDINE	12/04/63	STILLWATER	02/08/62	TOWANDA	05/02/85
SATSOP	08/15/63	STILT	12/15/67	TOYAH	03/15/63
SATUM	08/09/57	STILTON	06/03/75	TRANSOM	05/10/78
SATZ	07/07/78	STINGER	03/22/68	TRAVELER	05/04/66
SAXON	07/28/66	STOAT	01/09/62	TREBBIANO	09/04/81
SAZERAC	10/25/67	STODDARD	09/17/68	TROGON	07/24/64
SCANTLING	08/19/77	STONES	05/22/63	TRUCHAS CHACON	10/28/70
SCAUP	05/14/65	STRAIT	03/17/76	TRUCHAS CHAMISAL	10/28/70
SHELLBOURNE	05/13/88	STRAKE	08/04/77	TRUCHAS RODARTE	10/28/70
SCHOONER	12/08/68	STURGEON	04/15/64	TRUMBULL	09/26/74
SCISSORS	12/12/68	STUTZ	04/06/66	TUB A	06/06/68
SCOTCH	05/23/67	SUEDE	03/20/65	TUB B	06/06/68
SCREAMER	09/01/65	SULKY	12/18/64	TUB C	06/06/68
SCREE ACAJOU	10/13/70	SUNDOWN A	09/20/90	TUB D	06/06/68
SCREE ALHAMBRA	10/13/70	SUNDOWN B	09/20/90	TUB F	06/06/68
SCREE CHAMMOIS	10/13/70	SUTTER	12/21/76	TULIA	05/26/89
SCROLL	/04/23/68	SWITCH	06/22/67	TULOSO	12/12/72
SCUPPER	08/19/77	SWORDFISH	05/11/62	TUN A	12/10/69
SCUTTLE	11/13/69	TAFI	07/25/80	TUN B	12/10/69
SEAFOAM	12/13/73	TAHOKA	08/13/87	TUN C	12/10/69
SEAMOUNT	11/17/77	TAJIQUE	06/28/72	TUN D	12/10/69
SEAWEED B	10/16/69	TAJO	06/05/86	TUNA	12/20/63
SEAWEED C	10/01/69	TAMALPAIS	10/08/58	TURF	04/24/64
SEAWEED D	10/01/69	TAN	06/03/66	TURNSTONE	10/16/64
SEAWEED E	10/01/69	TANGERINE	08/12/66	TURQUOISE	04/14/83
SECO	02/25/81	TANYA	07/30/68	TWEED	05/21/65
SEDAN	07/06/62	TAPESTRY	05/12/66	TYBO	05/14/75
SEERSUCKER	02/19/65	TAPPER	06/12/69	TYG A	12/12/68
SEPIA	11/12/65	TARKO	02/28/80	TYG B	12/12/68
SERENA	07/25/85	TAUNTON	12/04/62	TYG C	12/12/68
SERPA	12/17/80	TECHADO	09/22/83	TYG D	12/12/68
SEVILLA	06/25/68	TEE	05/07/65	TYG E	12/12/68
SEYVAL	11/12/82	TEJON	05/17/63	TYG F	12/12/68
SHALLOWS	02/26/76	TELEME	02/06/75	UMBER	06/29/67
SHAPER	03/23/70	TEMESCAL	11/02/74	UMBRELLA	06/08/58
SHAVE	01/22/69	TEMPLAR	03/24/66	UNCLE	11/29/51
SHEEPSHEAD	09/26/79	TENABO	10/12/90	URANUS	03/14/58
SHOAL	10/26/63	TENAJA	04/17/82	VALENCIA	09/26/58
SHREW	09/16/61	TENDRAC	12/07/62	VALISE	03/18/69
SHUFFLE	04/18/68	TEM	01/29/65	VAT	10/10/68
SIDECAR	12/13/66	TERRINE WHITE	12/18/69	VAUGHN	03/15/85
SIENNA	01/18/66	TERRINE YELLOW	12/18/69	VELARDE	04/25/73
SILENE	06/28/73	TEXARKANA	02/10/89	VENUS	02/22/58
SIMMS	11/05/66	THISTLE	04/30/69	VERDELLO	07/31/80
SLED	08/29/68	THROW	04/10/68	VERMEJO	10/02/84
SNUBBER	04/21/70	TICKING	08/21/65	VICTORIA	06/19/92
SOLANO (QUEMADO)	08/09/72	TIERRA	12/15/84	VIDE	04/30/81
SOLANUM	12/14/72	TIJERAS	10/14/70	VIGIL	11/22/66
SOLENDON	02/12/64	TILCI	11/11/81	VILLE	06/12/85
SPAR	12/19/73	TINDERBOX	11/22/68	VILLITA	11/10/84
SPIDER A	08/14/69	TINY TOT	06/17/65	VISE	01/30/69
SPIDER B	08/14/69	TIOGA	10/18/62	VITO	07/14/67
SPOON	09/11/64	TOMATO	04/07/66	VULCAN	06/25/66
SPRIT	11/10/76	TOMME/MIDNIGHT ZEPHYR	09/21/83	WACO	12/01/87
SPUD	07/17/68	TOPGALLANT	02/28/75	WAGTAIL	03/03/65

(continued)

Table 2 (Continued)

Name	Date (GMT)	Name	Date (GMT)	Name	Date (GMT)
WAHOO	05/16/58	WICHITA	07/27/62	YANNIGAN WHITE	02/26/70
WALLER	10/02/73	WIGWAM	05/14/55	YARD	09/07/67
WARD	02/08/67	WINCH	02/04/69	YARN	01/29/65
WASHER	08/10/67	WINESKIN	01/15/69	YERBA	12/14/71
WELDER	10/03/68	WISHBONE	02/18/65	YORK	08/24/62
WEMBLEY	06/05/68	WOLVERINE	10/12/62	YUBA	06/05/63
WEXFORD	08/30/84	WOOL	01/14/65	ZAZA	09/27/67
WHITE	05/25/62	WORTH	10/25/67	ZINNIA	05/17/72
WHITEFACE A	12/20/89	YANNIGAN BLUE	02/26/70		
WHITEFACE B	12/20/89	YANNIGAN RED	02/26/70		

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