



# **Principal Facts for 300 Gravity Stations in the Vicinity of Los Angeles and Hollywood, California**

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**U.S. DEPARTMENT OF THE INTERIOR  
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## INTRODUCTION

During the summer of 1998, gravity surveys were conducted in the vicinity of Los Angeles and Hollywood to improve control of basement depth estimates, to better characterize the Hollywood Fault, and to resolve the extent of a small sedimentary basin at the base of the Santa Monica Mountains. Approximately 300 new gravity stations were sampled; many stations were occupied at least twice in order to minimize error. The Hollywood study area is located at the base of the south flank of the Santa Monica Mountains, in the northern extent of the Los Angeles Basin. The boundaries of the study area are  $34^{\circ} 00'$  to  $34^{\circ} 08'$  N latitude and  $118^{\circ} 25'$  to  $118^{\circ} 12'$  W longitude. A map showing the location of the study area and station locations is shown in figure 1. An index map of the study area is shown in figure 2. The gravity base station used for control for these surveys, PB0104, is located at the Griffith Observatory, directly in front of the statue of Sir Isaac Newton, and is illustrated in figure 3. This base was established by the U. S. Geological Survey (USGS) prior to these field operations. The observed gravity of this station was calculated based on multiple ties to other high precision base stations in the region.

## GRAVITY REDUCTION

Conversion of meter readings to milligals was made using factory calibration constants and a calibration factor which varies with each gravity meter and has been determined by multiple gravity readings over the Mt. Hamilton calibration loop east of San Jose, CA (Barnes et al, 1969). Observed gravity values were based on an assumed linear drift between successive base readings. Horizontal control was mostly provided by a small portable Global Positioning System (GPS). Error in the horizontal locations calculated by GPS was usually less than  $\pm 3$  m. Vertical control was provided by City of Los Angeles, Department of Public Works, Survey Division, and theodolite total station surveys conducted by the USGS. Vertical error for the data provided by the Los Angeles Survey Division was  $\pm 0.002$  m. In contrast the error associated with the USGS theodolite survey is about  $\pm 0.015$  m. This data set includes five closely spaced profiles; four trend north-south, crossing the Hollywood Fault, and one runs east-west, along the axis of the Hollywood Basin. All profile stations were occupied at least twice.

These data were processed through an isostatic reduction program (Jachens and Roberts, 1981) in order to suppress the effects of deep density distributions that buoyantly support the topography. The following corrections were used in conjunction with this program. Field terrain corrections were made in the field, which calculates the effect of local terrain from the

station to a radial distance of 68 m; inner terrain corrections from 68 m to 0.59 km were calculated using 30 m digital elevation models (DEM's) of the area. Terrain corrections were computed for the area from a radial distance of 0.59 km from the station to a radial distance of 166.7 km with a FORTRAN program (Plouff, 1977) and a digital terrain model. The isostatic reduction assumes an Airy-Heiskanen model with the following parameters from the station to 166.7 km: density of topography above sea level,  $2.67 \text{ g/cm}^3$ ; crustal thickness at sea level, 25 km; density contrast between the crust and mantle,  $0.4 \text{ g/cm}^3$ . From 166.7 km to a point on the opposite side of the Earth, isostatic and terrain corrections were taken off maps by Karki (1961). These corrections were added to the output of the isostatic reduction program of Jachens and Roberts (1981) to produce the isostatic correction. With the isostatically corrected values we have attempted to remove the effects of deeper sources, so the data primarily represent gravity and density changes occurring in the upper-middle crust.

Theoretical gravity at sea level is based on the Geodetic Reference System 1967 (GRS 67) (International Association of Geodesy, 1971) for the shape of the spheroid. The datum for the observed gravity is the International Gravity Standardization Net 1971 (IGSN 71); (Morelli, 1974). Observed gravity values were calculated by adding meter drift and earth-tide corrections to the milligal equivalent meter readings.

Free-air anomalies are calculated by subtracting the theoretical gravity from the observed gravity and adding the free-air correction as defined by Swick, 1942.

Simple Bouguer anomalies are calculated by subtracting the Bouguer correction, which accounts for the attraction of rocks between the station and sea level using a rock density of  $2.67 \text{ g/cm}^3$  from the free-air anomaly. Complete Bouguer anomalies are calculated by adding the terrain correction and the curvature correction to the simple Bouguer anomaly.

The isostatic residual anomaly is calculated by adding the isostatic correction to the complete Bouguer anomaly.

## **ACKNOWLEDGMENTS**

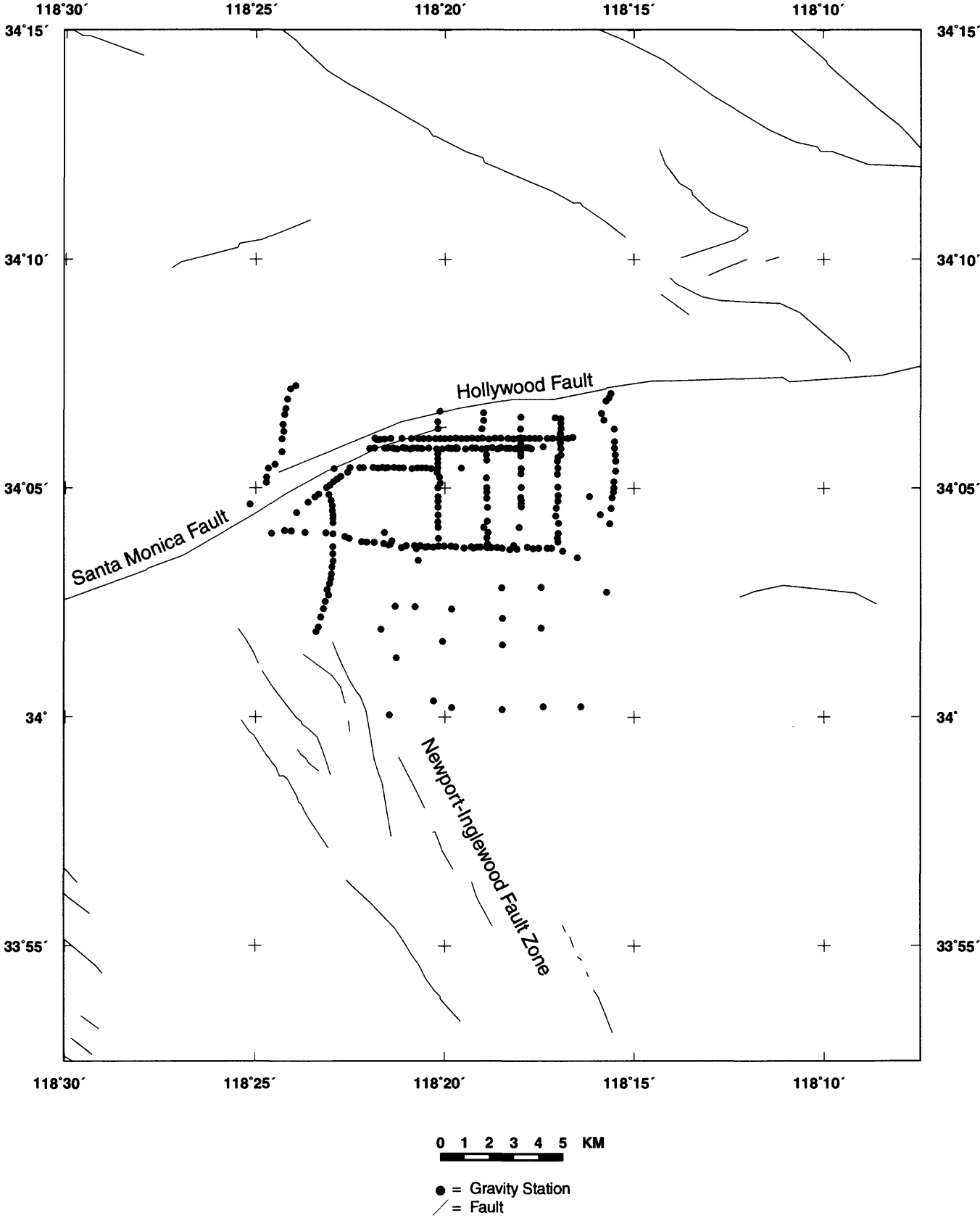
We wish to thank: Tom Hildenbrand (USGS) and Daniel Ponti (USGS) for their indispensable advice, suggestions, and consult. John Caudillo at the Los Angeles Survey Division, Bureau of Engineering, Department of Public Works for providing surveying records and elevation control. The personnel at the Los Angeles County Museum of Natural History at Hancock Park for granting access, and providing information on the location of previously drilled exploratory wells. Carter Roberts (USGS) for his assistance in data reduction, and Bob Morin (USGS) for providing the framework for this report.

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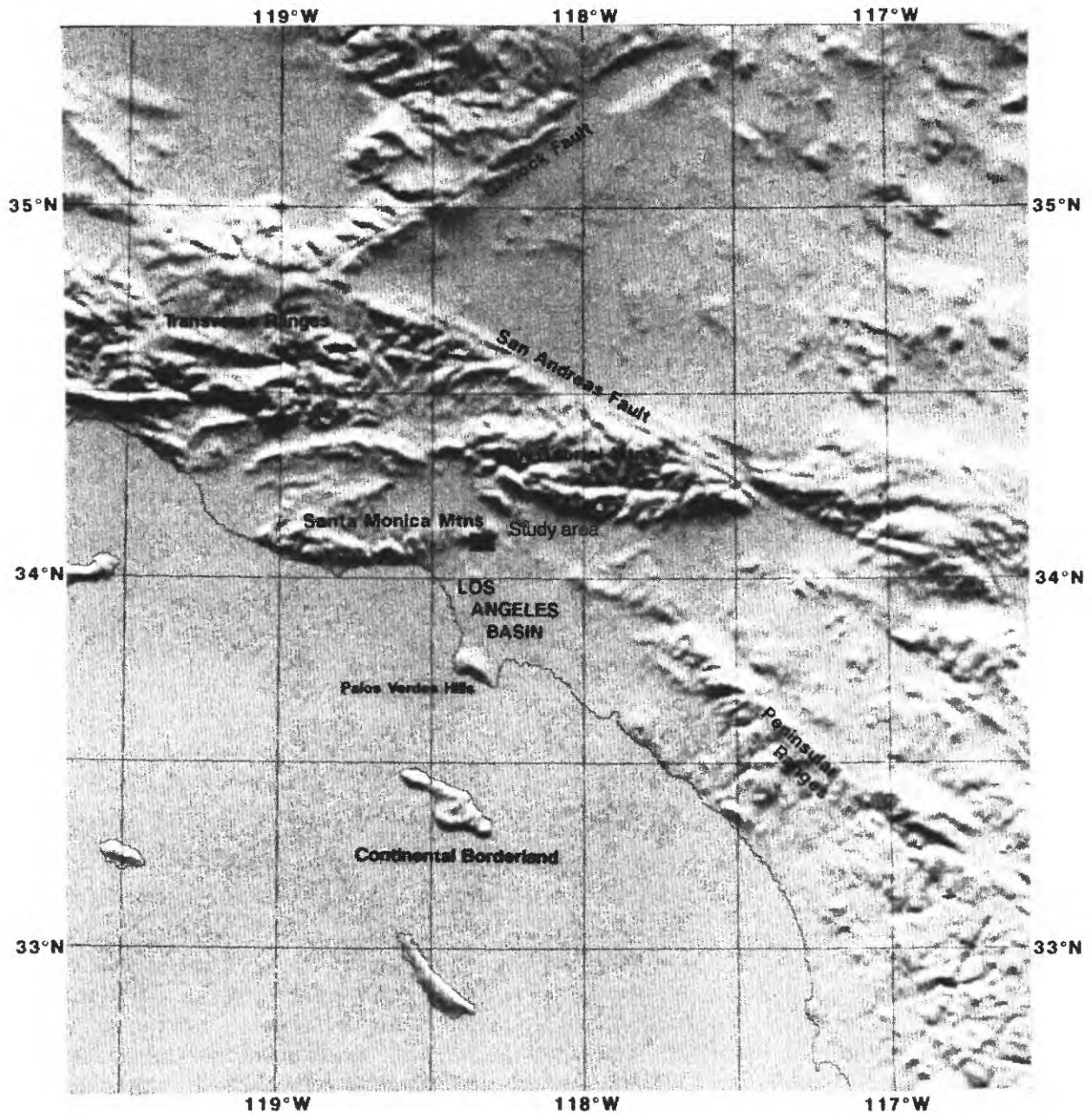
STUDY AREA AND STATION LOCATIONS

Figure 1.



## INDEX MAP OF STUDY AREA

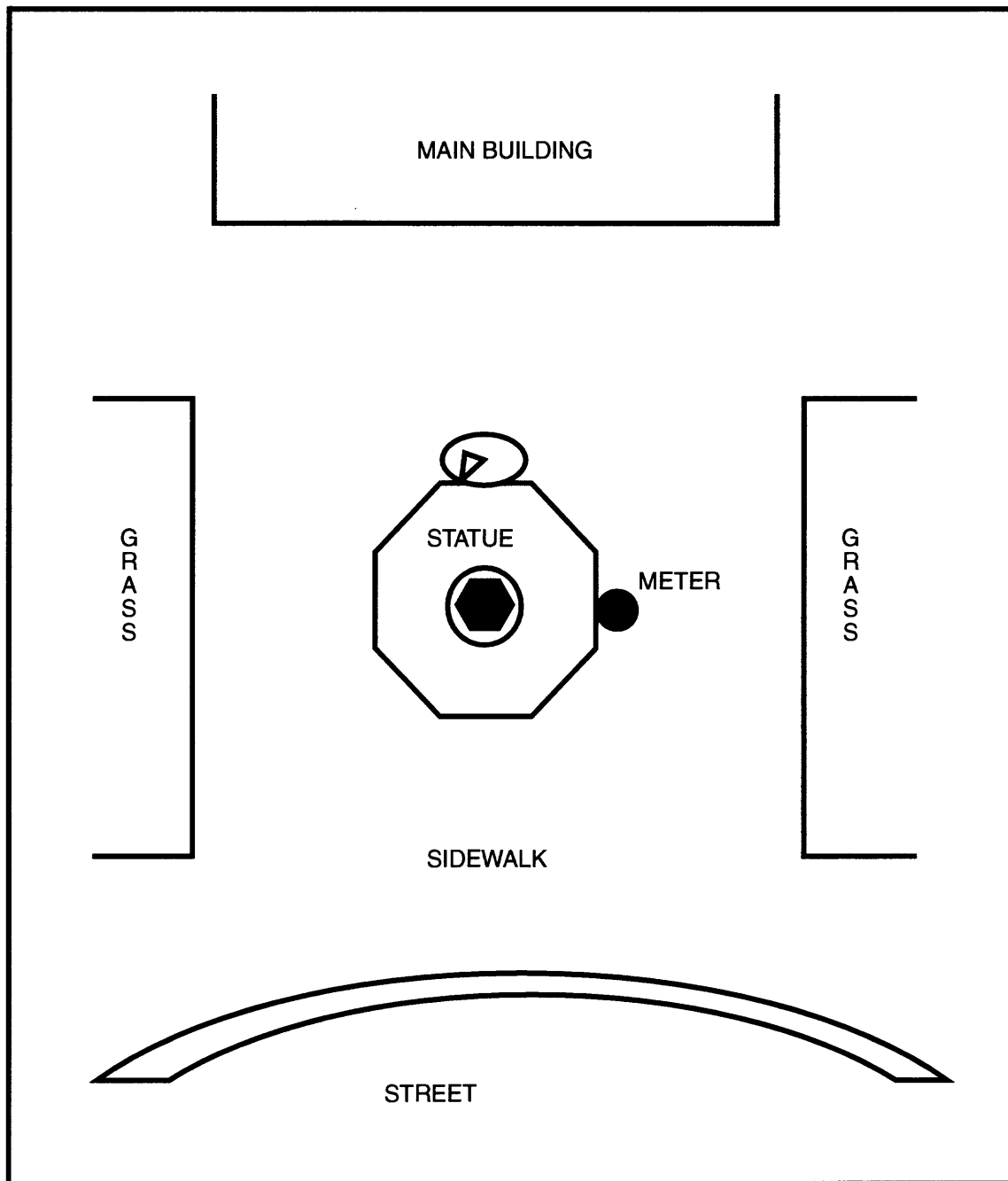
Figure 2.



After Biddle, 1991

## GRAVITY STATION PB0104

Figure 3.



### GRAVITY BASE STATION PB0104

PB0104: 34 07.13 118 17.97 979,551.385 mGal.

At Griffith Park Observatory at the base of the sculpture which stands in front of the main building. Meter read on concrete sidewalk at edge nearest sculpture, immediately in front of statue of Sir Isaac Newton. Read facing Newton. Leg holes not drilled and no gravity mark or station ID.



**Table 1.— Principal facts of gravity stations**

[DEG, degrees; MIN minutes; ELEV, elevation; FT, feet; MGAL, milligals; FAA, free-air anomaly; SBA, simple Bouguer anomaly; CBA, complete Bouguer anomaly]

GRAVITY STATION NAME	LATITUDE (DEG MIN)		LONGITUDE (DEG MIN)		ELEV (FT)	OBSERVED GRAVITY (MGAL)	FAA (MGAL)	SBA (MGAL)	TERRAIN CORRECTION INNER TOTAL (MGAL)		CBA (MGAL)	ISOSTATIC ANOMALY (MGAL)
98023	34	3.5	118	16.5	272.5	979573.64	-54.12	-63.42	0.03	0.68	-62.85	-39.12
98024	34	2.8	118	15.73	251	979568.7	-60.05	-68.61	0	0.62	-68.1	-45.26
98025	34	6.6	118	17.99	525.5	979582.66	-25.63	-43.55	0.13	1.29	-42.48	-13.6
98026	34	6.3	118	18	420	979582.11	-35.74	-50.06	0.12	1.2	-49.03	-20.69
98027	34	6.1	118	17.99	392.5	979582.39	-37.76	-51.15	0.01	1	-50.32	-22.38
98028	34	6	118	17.99	380.6	979582.69	-38.37	-51.35	0.01	0.93	-50.58	-22.94
98029	34	5.9	118	17.98	369.3	979583.04	-38.97	-51.57	0.01	0.91	-50.81	-23.32
98030	34	5.8	118	17.99	354.8	979583.59	-39.66	-51.76	0.01	0.89	-51.02	-23.72
98031	34	5.7	118	17.99	348.8	979583.56	-40.14	-52.04	0.01	0.87	-51.32	-24.19
98032	34	5.4	118	17.98	332.7	979583.38	-41.43	-52.78	0	0.8	-52.12	-25.57
98033	34	5.3	118	17.99	320.1	979583.48	-42.37	-53.28	0	0.79	-52.63	-26.3
98034	34	5	118	17.98	302.9	979583.01	-44.03	-54.36	0	0.75	-53.74	-28.01
98035	34	4.8	118	17.99	326.2	979580.57	-43.97	-55.1	0.05	0.77	-54.47	-29.18
98036	34	4.7	118	17.98	299	979582.29	-44.73	-54.93	0.03	0.74	-54.31	-29.15
98037	34	4.7	118	17.98	288.5	979582.61	-45.3	-55.14	0.02	0.73	-54.53	-29.51
98038	34	4.6	118	17.98	264.4	979583.78	-46.3	-55.32	0.02	0.73	-54.7	-29.82
98039	34	4.2	118	18.04	243	979582.05	-49.41	-57.7	0	0.66	-57.14	-33.2
98040	34	3.8	118	20.65	192.6	979578.59	-57.05	-63.62	0	0.63	-63.07	-41.71
98041	34	3.7	118	20.76	193.9	979578.37	-57.07	-63.68	0	0.63	-63.14	-41.98
98042	34	3.8	118	20.81	194.5	979578.22	-57.25	-63.88	0	0.63	-63.33	-42.08
98043	34	3.8	118	21.03	193	979577.48	-58.13	-64.71	0	0.63	-64.16	-43.06
98044	34	3.8	118	21.49	163.4	979578.98	-59.44	-65.01	0.01	0.66	-64.42	-43.59
98045	34	3.9	118	21.41	169.8	979579.07	-58.86	-64.65	0	0.66	-64.06	-43.03
98046	34	3.8	118	21.45	165	979579.08	-59.2	-64.83	0.01	0.66	-64.23	-43.36
98047	34	4	118	21.6	163.5	979579.37	-59.42	-64.99	0	0.7	-64.36	-43.08
98048	34	3.7	118	17.18	259.5	979577.38	-51.9	-60.75	0.01	0.65	-60.21	-36.57
98049	34	3.7	118	17.3	259.7	979576.79	-52.47	-61.33	0.01	0.64	-60.8	-37.24
98050	34	3.7	118	17.52	248.5	979577.48	-52.84	-61.31	0.01	0.64	-60.78	-37.36
98051	34	3.7	118	17.67	238.8	979578.34	-52.87	-61.02	0.01	0.64	-60.48	-37.19
98052	34	3.7	118	17.82	220.6	979579.68	-53.29	-60.81	0.01	0.65	-60.26	-37.01
98053	34	3.7	118	18.1	224	979579.32	-53.27	-60.91	0.01	0.63	-60.38	-37.41
98054	34	3.8	118	18.18	219	979579.67	-53.51	-60.97	0.01	0.64	-60.43	-37.35
98055	34	3.7	118	18.29	207	979580.21	-53.97	-61.03	0	0.62	-60.49	-37.66
98056	34	3.7	118	18.49	198	979580.58	-54.49	-61.24	0	0.63	-60.69	-37.95
98057	34	3.7	118	18.62	198.1	979580.98	-54.09	-60.85	0	0.63	-60.3	-37.63
98058	34	3.7	118	18.78	189.3	979581.25	-54.65	-61.11	0.01	0.64	-60.55	-37.99
98059	34	3.7	118	18.88	193.3	979580.98	-54.54	-61.14	0	0.63	-60.59	-38.09
98060	34	3.7	118	19.06	211.9	979579.63	-54.16	-61.38	0.01	0.63	-60.85	-38.47

**Table 1.— Principal facts of gravity stations (continued)**

[DEG, degrees; MIN minutes; ELEV, elevation; FT, feet; MGAL, milligals; FAA, free-air anomaly; SBA, simple Bouguer anomaly; CBA, complete Bouguer anomaly]

GRAVITY STATION NAME	LATITUDE (DEG MIN)		LONGITUDE (DEG MIN)		ELEV (FT)	OBSERVED GRAVITY (MGAL)	FAA (MGAL)	SBA (MGAL)	TERRAIN CORRECTION INNER TOTAL (MGAL)		CBA (MGAL)	ISOSTATIC ANOMALY (MGAL)
98061	34	3.7	118	19.15	202.8	979580.11	-54.53	-61.45	0	0.62	-60.92	-38.6
98062	34	3.7	118	19.24	195.7	979580.4	-54.88	-61.56	0	0.62	-61.02	-38.8
98063	34	3.7	118	19.3	199.1	979580.21	-54.8	-61.59	0	0.62	-61.05	-38.82
98064	34	3.7	118	19.49	202	979579.67	-55.02	-61.91	0	0.62	-61.38	-39.33
98065	34	3.7	118	19.71	194.6	979580.04	-55.39	-62.03	0	0.62	-61.49	-39.55
98066	34	3.7	118	19.84	204.1	979579.16	-55.39	-62.35	0	0.62	-61.82	-39.95
98067	34	3.7	118	20.02	214.2	979578.12	-55.48	-62.78	0.01	0.63	-62.24	-40.49
98068	34	3.7	118	20.31	194	979578.87	-56.6	-63.22	0	0.62	-62.68	-41.16
98069	34	3.7	118	20.45	197	979578.72	-56.48	-63.2	0	0.62	-62.66	-41.2
98070	34	3.7	118	20.52	196.6	979578.39	-56.84	-63.54	0	0.63	-63	-41.62
98071	34	5.9	118	17.4	388.5	979581.13	-39.12	-52.37	0.02	0.91	-51.63	-23.67
98072	34	5.9	118	17.71	377.5	979582.16	-39.07	-51.94	0.02	0.91	-51.19	-23.53
98073	34	5.9	118	17.78	378	979582.3	-38.91	-51.8	0.02	0.92	-51.04	-23.39
98074	34	5.9	118	17.84	375.7	979582.54	-38.89	-51.7	0.01	0.91	-50.95	-23.35
98075	34	5.9	118	18.07	369.5	979583.15	-38.86	-51.46	0.01	0.92	-50.7	-23.26
98076	34	5.9	118	18.14	370.1	979583.09	-38.84	-51.46	0	0.9	-50.72	-23.37
98077	34	5.9	118	18.28	367	979583.47	-38.76	-51.28	0.01	0.91	-50.52	-23.25
98078	34	5.9	118	18.37	363.5	979583.68	-38.88	-51.28	0.01	0.92	-50.52	-23.32
98079	34	5.9	118	18.52	358.6	979584.12	-38.91	-51.15	0.01	0.93	-50.37	-23.25
98080	34	5.9	118	18.61	358.9	979584.34	-38.62	-50.87	0.01	0.92	-50.1	-23.1
98081	34	5.9	118	18.75	361.8	979584.29	-38.44	-50.78	0.02	0.93	-50	-23.04
98082	34	5.9	118	19.02	358.4	979584.83	-38.18	-50.41	0.01	0.91	-49.65	-22.95
98083	34	5.9	118	19.18	355.3	979585.44	-37.89	-50.01	0.01	0.92	-49.24	-22.61
98084	34	5.9	118	19.28	350.4	979585.97	-37.82	-49.77	0.01	0.92	-49	-22.44
98085	34	5.9	118	19.45	345.2	979586.47	-37.78	-49.56	0.01	0.92	-48.78	-22.38
98086	34	5.9	118	19.67	350.1	979586.47	-37.34	-49.28	0.01	0.92	-48.5	-22.23
98087	34	5.9	118	19.72	355	979586.33	-37.02	-49.12	0.01	0.92	-48.35	-22.12
98088	34	5.9	118	19.69	356	979586.35	-36.93	-49.07	0.01	0.92	-48.3	-22.01
98089	34	5.9	118	19.83	354.1	979586.64	-36.79	-48.87	0.01	0.93	-48.09	-21.95
98090	34	5.9	118	19.91	352.6	979586.96	-36.63	-48.65	0.01	0.94	-47.86	-21.75
98091	34	5.9	118	20.07	346.2	979587.6	-36.56	-48.37	0.01	0.95	-47.56	-21.61
98092	34	5.9	118	20.43	344.1	979589.64	-34.74	-46.48	0.02	1.02	-45.61	-19.86
98093	34	5.9	118	20.61	349.4	979590.62	-33.25	-45.17	0.02	1.04	-44.28	-18.68
98094	34	5.9	118	20.73	351.2	979591.09	-32.63	-44.61	0.02	1.07	-43.68	-18.14
98095	34	5.9	118	20.85	350.1	979591.77	-32.05	-43.99	0.03	1.11	-43.03	-17.57
98096	34	5.9	118	20.92	345	979592.03	-32.24	-44.01	0.03	1.12	-43.03	-17.66
98097	34	5.9	118	21.04	344.4	979592.83	-31.53	-43.27	0.03	1.17	-42.24	-16.91
98098	34	5.9	118	21.11	352.4	979592.84	-30.78	-42.8	0.02	1.18	-41.76	-16.46

**Table 1.**— Principal facts of gravity stations (continued)

[DEG, degrees; MIN minutes; ELEV, elevation; FT, feet; MGAL, milligals; FAA, free-air anomaly; SBA, simple Bouguer anomaly; CBA, complete Bouguer anomaly]

GRAVITY STATION NAME	LATITUDE (DEG MIN)		LONGITUDE (DEG MIN)		ELEV (FT)	OBSERVED GRAVITY (MGAL)	FAA (MGAL)	SBA (MGAL)	TERRAIN CORRECTION INNER TOTAL (MGAL)		CBA (MGAL)	ISOSTATIC ANOMALY (MGAL)
98099	34	5.9	118	21.26	362.9	979592.5	-30.09	-42.47	0.02	1.17	-41.45	-16.32
98100	34	5.9	118	21.34	371	979592.72	-29.12	-41.77	0.02	1.19	-40.74	-15.64
98101	34	5.9	118	21.37	373.9	979592.99	-28.59	-41.34	0.02	1.2	-40.3	-15.2
98102	34	5.9	118	21.52	377.2	979593.66	-27.61	-40.48	0.02	1.25	-39.39	-14.39
98103	34	5.9	118	21.59	384.2	979593.82	-26.79	-39.9	0.03	1.27	-38.79	-13.83
98104	34	5.9	118	21.86	414.5	979594.52	-23.24	-37.38	0.12	1.45	-36.1	-11.34
98105	34	5.9	118	21.99	401.1	979596.96	-22.05	-35.73	0.37	1.81	-34.09	-9.43
98106	34	6.1	118	16.61	464.3	979578.29	-35.12	-50.96	0.36	1.25	-49.9	-20.93
98107	34	6.1	118	16.74	387.9	979583.06	-37.51	-50.74	0.23	1.2	-49.71	-20.87
98108	34	6.1	118	16.89	408.7	979581.51	-37.11	-51.05	0.03	0.96	-50.25	-21.53
98109	34	6.1	118	16.98	414.1	979581.08	-37.03	-51.15	0.02	0.95	-50.38	-21.73
98110	34	6.1	118	17.15	425.8	979580.17	-36.84	-51.36	0.01	0.93	-50.61	-22.09
98111	34	6.1	118	17.29	428.5	979579.82	-36.93	-51.55	0.01	0.93	-50.8	-22.38
98112	34	6.1	118	17.5	420.1	979580.23	-37.31	-51.64	0.01	0.94	-50.88	-22.61
98113	34	6.1	118	17.61	410.7	979580.83	-37.6	-51.61	0.04	0.99	-50.79	-22.6
98114	34	6.1	118	17.76	406	979581.26	-37.61	-51.46	0.01	0.97	-50.66	-22.57
98115	34	6.1	118	17.91	396	979581.99	-37.82	-51.33	0.01	0.99	-50.51	-22.53
98116	34	6.1	118	18.05	393.4	979582.29	-37.77	-51.18	0.01	0.99	-50.36	-22.48
98117	34	6.1	118	18.18	402.2	979581.76	-37.45	-51.17	0.01	0.98	-50.36	-22.6
98118	34	6.1	118	18.33	402	979582.11	-37.14	-50.85	0.02	0.99	-50.02	-22.34
98119	34	6.1	118	18.52	391.1	979583.12	-37.15	-50.49	0.01	0.99	-49.66	-22.11
98120	34	6.1	118	18.67	391.7	979583.44	-36.77	-50.13	0.01	0.99	-49.31	-21.87
98121	34	6.1	118	18.83	396.7	979583.63	-36.09	-49.62	0.02	0.97	-48.81	-21.54
98122	34	6.1	118	19.01	395.8	979584.31	-35.52	-49.02	0.01	0.97	-48.22	-21.03
98123	34	6.1	118	19.13	393	979584.94	-35.14	-48.54	0.01	0.97	-47.74	-20.66
98124	34	6.1	118	19.28	384.2	979586.23	-34.69	-47.79	0.02	0.99	-46.97	-19.97
98125	34	6.1	118	19.42	375.5	979587.07	-34.65	-47.46	0.02	1	-46.62	-19.73
98126	34	6.1	118	19.56	376.8	979587.41	-34.19	-47.04	0.02	1	-46.2	-19.41
98127	34	6.1	118	19.71	385	979587.14	-33.71	-46.84	0.01	0.99	-46.01	-19.31
98128	34	6.1	118	19.86	383.7	979587.85	-33.1	-46.19	0.01	1	-45.36	-18.79
98129	34	6.1	118	20	379.2	979588.51	-32.87	-45.8	0.01	1.02	-44.94	-18.48
98130	34	6.1	118	20.12	376.8	979589.42	-32.18	-45.03	0.01	1.04	-44.15	-17.78
98131	34	6.1	118	20.42	387.4	979590.77	-29.84	-43.05	0.03	1.11	-42.1	-15.93
98132	34	6.1	118	20.57	385.8	979591.27	-29.49	-42.64	0.05	1.18	-41.62	-15.56
98133	34	6.1	118	20.7	393.4	979591.91	-28.13	-41.55	0.07	1.23	-40.48	-14.5
98134	34	6.1	118	20.89	422.3	979591.13	-26.19	-40.6	0.1	1.27	-39.5	-13.65
98135	34	6.1	118	21.14	398.7	979594.32	-25.22	-38.82	0.15	1.46	-37.52	-11.84
98136	34	6.1	118	21.43	404.9	979596.39	-22.57	-36.38	0.19	1.59	-34.96	-9.47

**Table 1.— Principal facts of gravity stations (continued)**

[DEG, degrees; MIN minutes; ELEV, elevation; FT, feet; MGAL, milligals; FAA, free-air anomaly; SBA, simple Bouguer anomaly; CBA, complete Bouguer anomaly]

GRAVITY STATION NAME	LATITUDE (DEG MIN)		LONGITUDE (DEG MIN)		ELEV (FT)	OBSERVED GRAVITY (MGAL)	FAA (MGAL)	SBA (MGAL)	TERRAIN CORRECTION INNER TOTAL (MGAL)		CBA (MGAL)	ISOSTATIC ANOMALY (MGAL)
98137	34	6.1	118	21.6	401.8	979597.81	-21.43	-35.13	0.43	1.9	-33.4	-8.05
98138	34	6.1	118	21.72	428.8	979597.29	-19.39	-34.02	0.5	1.95	-32.25	-7.01
98139	34	6.1	118	21.8	451.4	979597.14	-17.42	-32.81	0.49	1.93	-31.07	-5.89
98140	34	6.1	118	21.85	462.6	979596.91	-16.64	-32.41	0.83	2.31	-30.3	-5.1
98141	34	6.7	118	18.97	475.9	979591.22	-21.86	-38.09	0.48	1.69	-36.6	-8.25
98142	34	6.5	118	18.97	459.3	979589.03	-25.37	-41.04	0.12	1.23	-40	-11.99
98143	34	6.3	118	19.02	432	979585.78	-30.94	-45.67	0.03	1.05	-44.8	-17.19
98144	34	5.9	118	18.9	361.4	979584.38	-38.36	-50.69	0.01	0.91	-49.93	-23.12
98145	34	5.7	118	18.9	340.8	979585.32	-39.17	-50.79	0	0.87	-50.06	-23.53
98146	34	5.6	118	18.89	317.4	979585.87	-40.65	-51.47	0.01	0.87	-50.74	-24.44
98147	34	5.2	118	18.9	302.3	979585.37	-42.02	-52.33	0	0.78	-51.68	-26.17
98148	34	5	118	18.89	279.3	979585.62	-43.63	-53.16	0	0.75	-52.52	-27.44
98149	34	4.9	118	18.89	279.7	979585.07	-44	-53.54	0	0.73	-52.93	-28.06
98150	34	4.8	118	18.89	264.1	979585.15	-45.21	-54.22	0	0.72	-53.61	-29
98151	34	4.6	118	18.88	268.8	979583.6	-46.04	-55.2	0.01	0.7	-54.61	-30.39
98152	34	4.3	118	18.88	237	979584.4	-47.81	-55.89	0.01	0.68	-55.31	-31.7
98153	34	4.3	118	18.88	228.1	979584.03	-49.02	-56.8	0	0.67	-56.22	-32.61
98154	34	4.2	118	18.97	214	979583.67	-50.52	-57.82	0.01	0.67	-57.23	-33.94
98155	34	4	118	18.86	205.5	979583.21	-51.63	-58.64	0.01	0.67	-58.05	-34.9
98156	34	3.9	118	18.89	202.6	979582.11	-52.83	-59.74	0	0.64	-59.18	-36.29
98157	34	3.8	118	18.87	190.7	979581.61	-54.26	-60.76	0.01	0.65	-60.19	-37.55
98158	34	6.7	118	20.13	484.1	979596.97	-15.38	-31.89	0.29	1.57	-30.53	-2.97
98159	34	6.5	118	20.19	442	979595.76	-20.23	-35.3	0.2	1.41	-34.08	-7.02
98160	34	6.3	118	20.18	414.9	979592.56	-25.77	-39.92	0.11	1.24	-38.85	-12.08
98161	34	6.1	118	20.25	378.5	979589.85	-31.59	-44.5	0.02	1.07	-43.59	-17.3
98162	34	5.9	118	20.22	343.9	979588.41	-35.97	-47.69	0.01	0.97	-46.87	-21.02
98163	34	5.8	118	20.19	331.4	979587.98	-37.42	-48.72	0.01	0.93	-47.93	-22.28
98164	34	5.7	118	20.19	316.4	979587.79	-38.86	-49.66	0.01	0.9	-48.89	-23.45
98165	34	5.6	118	20.19	305.6	979587.66	-39.87	-50.29	0	0.87	-49.55	-24.31
98166	34	5.5	118	20.19	297.3	979587.57	-40.6	-50.74	0	0.85	-50.02	-24.98
98167	34	5.3	118	20.2	286.3	979587.78	-41.27	-51.04	0	0.83	-50.33	-25.51
98168	34	5.2	118	20.14	279.8	979587.78	-41.74	-51.29	0	0.81	-50.6	-25.93
98169	34	5.1	118	20.12	268.5	979588.31	-42.1	-51.25	0	0.78	-50.58	-26.15
98170	34	5	118	20.19	262.2	979588.16	-42.7	-51.64	0	0.77	-50.98	-26.8
98171	34	4.8	118	20.19	256.7	979586.53	-44.58	-53.34	0	0.74	-52.71	-28.92
98172	34	4.7	118	20.18	250.8	979585.31	-46.2	-54.76	0	0.72	-54.14	-30.57
98173	34	4.6	118	20.18	242.3	979584.25	-47.88	-56.14	0	0.71	-55.54	-32.23
98174	34	4.4	118	20.18	230.4	979583.19	-49.82	-57.68	0	0.69	-57.09	-34.14

**Table 1.— Principal facts of gravity stations (continued)**

[DEG, degrees; MIN minutes; ELEV, elevation; FT, feet; MGAL, milligals; FAA, free-air anomaly; SBA, simple Bouguer anomaly; CBA, complete Bouguer anomaly]

GRAVITY STATION NAME	LATITUDE (DEG MIN)		LONGITUDE (DEG MIN)		ELEV (FT)	OBSERVED GRAVITY (MGAL)	FAA (MGAL)	SBA (MGAL)	TERRAIN CORRECTION INNER TOTAL (MGAL)		CBA (MGAL)	ISOSTATIC ANOMALY (MGAL)
98175	34	4.3	118	20.19	227.9	979582.05	-50.99	-58.76	0	0.67	-58.18	-35.54
98176	34	4.2	118	20.18	225.2	979580.95	-52.19	-59.87	0	0.66	-59.3	-36.86
98177	34	3.9	118	20.18	208.5	979579.68	-54.69	-61.8	0	0.63	-61.26	-39.29
98178	34	3.7	118	20.17	199.1	979578.98	-56.04	-62.83	0.01	0.63	-62.28	-40.63
98179	34	5.4	118	22.93	343.3	979600.99	-22.83	-34.54	0.23	1.56	-33.12	-9.98
98180	34	5.1	118	22.95	214	979599.31	-36.26	-43.56	0.05	1.26	-42.39	-19.84
98181	34	5.1	118	23.04	221.3	979597.72	-37.07	-44.62	0.05	1.18	-43.53	-21.17
98182	34	4.9	118	23.07	191.7	979594.33	-42.95	-49.49	0.03	1.04	-48.52	-26.6
98183	34	4.7	118	23.01	177	979592.34	-46.14	-52.18	0.02	0.97	-51.28	-29.57
98184	34	4.6	118	22.98	175.4	979590.68	-47.8	-53.78	0.03	0.92	-52.93	-31.43
98185	34	4.5	118	22.98	170.9	979589.32	-49.43	-55.26	0.01	0.86	-54.46	-33.18
98186	34	4.4	118	22.96	172.2	979587.7	-50.79	-56.66	0.01	0.83	-55.9	-34.81
98187	34	4.3	118	22.96	167.7	979587.31	-51.5	-57.22	0.01	0.81	-56.48	-35.54
98188	34	4.3	118	22.96	166.1	979586.2	-52.64	-58.3	0.01	0.79	-57.58	-36.82
98189	34	4	118	22.96	159.5	979583.92	-55.2	-60.64	0.01	0.74	-59.97	-39.68
98190	34	3.7	118	22.97	146.2	979582.46	-57.52	-62.51	0	0.69	-61.88	-42.14
98191	34	3.6	118	22.97	141.2	979581.57	-58.67	-63.49	0	0.67	-62.87	-43.42
98192	34	3.4	118	22.96	135	979580.75	-59.85	-64.46	0	0.65	-63.86	-44.71
98193	34	3.3	118	22.99	133.4	979580.06	-60.51	-65.06	0.01	0.65	-64.46	-45.58
98194	34	3.1	118	23	131.4	979579.33	-61.22	-65.7	0.02	0.65	-65.11	-46.51
98195	34	3	118	23.02	129.4	979578.92	-61.68	-66.09	0.01	0.63	-65.51	-47.12
98196	34	2.9	118	23.06	131.1	979578.33	-61.95	-66.42	0.02	0.63	-65.85	-47.69
98197	34	2.8	118	23.12	142.9	979576.86	-62.13	-67.01	0.02	0.61	-66.45	-48.58
98198	34	2.7	118	23.08	149.1	979575.94	-62.3	-67.39	0.07	0.65	-66.8	-49.12
98199	34	2.5	118	23.17	137	979576.15	-63.03	-67.71	0.04	0.62	-67.15	-49.8
98200	34	2.4	118	23.22	122.6	979576.54	-63.77	-67.96	0.01	0.58	-67.43	-50.42
98201	34	2.2	118	23.29	122.6	979575.99	-64.07	-68.25	0.01	0.57	-67.73	-51.12
98202	34	2	118	23.36	113.4	979576.04	-64.6	-68.46	0	0.55	-67.95	-51.78
98203	34	1.9	118	23.41	111.2	979575.98	-64.71	-68.5	0.01	0.56	-67.98	-52.05
98204	34	5.4	118	19.56	300	979587.13	-40.77	-51.01	0	0.83	-50.31	-24.85
98205	34	5.4	118	20.37	292.1	979588.18	-40.45	-50.42	0	0.86	-49.68	-24.8
98206	34	5.5	118	20.5	287.8	979588.83	-40.24	-50.05	0	0.88	-49.29	-24.46
98207	34	5.5	118	20.61	285	979589.1	-40.23	-49.95	0.01	0.9	-49.17	-24.42
98208	34	5.5	118	20.73	281.6	979589.56	-40.09	-49.69	0.01	0.92	-48.89	-24.23
98209	34	5.4	118	20.87	281.2	979589.66	-40	-49.59	0.01	0.92	-48.79	-24.26
98210	34	5.5	118	21.1	287.2	979589.79	-39.33	-49.13	0.01	0.95	-48.3	-23.89
98211	34	5.5	118	21.21	287.8	979589.95	-39.12	-48.93	0.01	0.96	-48.09	-23.75
98212	34	5.5	118	21.35	289.6	979590.29	-38.62	-48.5	0.01	0.99	-47.63	-23.36

**Table 1.— Principal facts of gravity stations (continued)**

[DEG, degrees; MIN minutes; ELEV, elevation; FT, feet; MGAL, milligals; FAA, free-air anomaly; SBA, simple Bouguer anomaly; CBA, complete Bouguer anomaly]

GRAVITY STATION NAME	LATITUDE (DEG MIN)		LONGITUDE (DEG MIN)		ELEV (FT)	OBSERVED GRAVITY (MGAL)	FAA (MGAL)	SBA (MGAL)	TERRAIN CORRECTION INNER TOTAL (MGAL)		CBA (MGAL)	ISOSTATIC ANOMALY (MGAL)
98213	34	5.5	118	21.51	289.9	979590.82	-38.05	-47.94	0.02	1.02	-47.04	-22.9
98214	34	5.4	118	21.58	289	979591.19	-37.75	-47.61	0.02	1.03	-46.7	-22.63
98215	34	5.5	118	21.65	281	979591.74	-37.98	-47.56	0.02	1.07	-46.61	-22.54
98216	34	5.4	118	21.77	284.4	979592.56	-36.81	-46.51	0.02	1.08	-45.55	-21.61
98217	34	5.5	118	21.9	281.3	979593.64	-36.05	-45.64	0.03	1.15	-44.61	-20.71
98218	34	5.5	118	22.16	261.9	979596.85	-34.65	-43.58	0.03	1.29	-42.41	-18.71
98219	34	5.5	118	22.25	255.6	979597.84	-34.25	-42.97	0.04	1.35	-41.72	-18.09
98220	34	5.5	118	22.51	263	979600.73	-30.67	-39.64	0.11	1.52	-38.23	-14.77
98221	34	5.4	118	22.57	238.3	979600.48	-33.1	-41.23	0.08	1.42	-39.91	-16.69
98222	34	5.3	118	22.75	217.4	979601.13	-34.29	-41.71	0.08	1.39	-40.4	-17.48
98223	34	5.2	118	22.85	210.3	979600.67	-35.34	-42.51	0.07	1.35	-41.25	-18.51
98224	34	5	118	23.13	224.7	979596.57	-37.82	-45.48	0.03	1.11	-44.46	-22.28
98225	34	4.9	118	23.34	226.7	979594.62	-39.38	-47.11	0.03	1.02	-46.19	-24.43
98226	34	4.8	118	23.44	229	979593.65	-40.05	-47.86	0.02	0.98	-46.98	-25.41
98227	34	4.7	118	23.62	239.7	979591.35	-41.18	-49.35	0.02	0.91	-48.54	-27.32
98228	34	4.5	118	23.93	255	979587.92	-42.86	-51.56	0.01	0.82	-50.85	-30.27
98229	34	4	118	24.59	271	979582.18	-46.48	-55.72	0	0.72	-55.11	-35.83
98230	34	4.1	118	24.24	248.5	979582.75	-48.1	-56.57	0.01	0.74	-55.94	-36.33
98231	34	4.1	118	24.06	239.5	979581.96	-49.72	-57.89	0.01	0.74	-57.25	-37.54
98232	34	4	118	23.7	214.4	979582.82	-51.18	-58.49	0.01	0.73	-57.85	-37.96
98233	34	4	118	23.16	172	979583.79	-54.18	-60.05	0.01	0.74	-59.38	-39.18
98234	34	4	118	22.64	139.7	979584.1	-56.8	-61.56	0	0.72	-60.9	-40.5
98235	34	3.9	118	22.53	137.2	979583.53	-57.55	-62.23	0	0.71	-61.57	-41.17
98236	34	3.8	118	22.2	140	979582.18	-58.54	-63.31	0	0.69	-62.68	-42.19
98237	34	3.8	118	22.07	143.7	979581.8	-58.56	-63.46	0	0.68	-62.84	-42.28
98238	34	3.8	118	21.87	150.5	979580.91	-58.79	-63.93	0	0.67	-63.32	-42.64
98239	34	3.8	118	21.62	164.4	979579.22	-59.15	-64.75	0	0.66	-64.16	-43.36
98240	34	3.7	118	21.15	188	979577.53	-58.49	-64.9	0	0.64	-64.34	-43.4
98241	34	7.1	118	15.61	409.3	979592.49	-27.44	-41.4	0	1.09	-40.48	-8.78
98242	34	7	118	15.66	403.9	979591.83	-28.48	-42.26	0.01	1.09	-41.34	-9.87
98243	34	6.9	118	15.74	391.2	979591.66	-29.75	-43.09	0.01	1.1	-42.16	-10.89
98244	34	6.7	118	15.85	392.5	979588.52	-32.39	-45.78	0.22	1.26	-44.68	-14.05
98245	34	6.5	118	15.79	446.7	979584.94	-30.66	-45.9	0.06	1.01	-45.07	-14.71
98246	34	6.3	118	15.52	406.6	979587.29	-31.82	-45.68	0.16	1.13	-44.73	-14.56
98247	34	6	118	15.51	434.6	979584.12	-31.95	-46.77	0.11	1.02	-45.93	-16.35
98248	34	5.9	118	15.51	475.3	979580.29	-31.75	-47.96	0.11	0.99	-47.18	-17.89
98249	34	5.7	118	15.49	525.2	979575.93	-31.21	-49.12	0.18	1.04	-48.31	-19.32
98250	34	5.6	118	15.48	512.7	979575.83	-32.29	-49.78	0.13	0.97	-49.02	-20.31

**Table 1.— Principal facts of gravity stations (continued)**

[DEG, degrees; MIN minutes; ELEV, elevation; FT, feet; MGAL, milligals; FAA, free-air anomaly; SBA, simple Bouguer anomaly; CBA, complete Bouguer anomaly]

GRAVITY STATION NAME	LATITUDE (DEG MIN)		LONGITUDE (DEG MIN)		ELEV (FT)	OBSERVED GRAVITY (MGAL)	FAA (MGAL)	SBA (MGAL)	TERRAIN CORRECTION INNER TOTAL (MGAL)		CBA (MGAL)	ISOSTATIC ANOMALY (MGAL)
98251	34	5.4	118	15.48	463.6	979577.17	-35.26	-51.07	0.23	1.06	-50.21	-21.94
98252	34	5.1	118	15.53	432.7	979576.98	-38.02	-52.78	0.16	0.98	-51.98	-24.24
98253	34	5	118	15.53	421.6	979577.07	-38.79	-53.17	0.1	0.91	-52.44	-24.97
98254	34	4.9	118	15.54	411.2	979576.96	-39.76	-53.78	0.06	0.87	-53.09	-25.81
98255	34	4.8	118	15.58	396.1	979576.93	-41.03	-54.53	0.04	0.83	-53.87	-26.88
98256	34	4.6	118	15.61	388.4	979575.73	-42.63	-55.88	0.03	0.77	-55.26	-28.77
98257	34	4.2	118	15.64	392.8	979572.92	-44.56	-57.96	0.05	0.74	-57.38	-31.58
98258	34	4.4	118	15.89	392	979574.31	-43.53	-56.9	0.06	0.77	-56.3	-30.27
98260	34	4.8	118	16.17	377	979577.13	-42.66	-55.52	0.03	0.78	-54.9	-28.26
98261	34	4.7	118	25.15	363	979591.01	-29.86	-42.24	0.01	0.84	-41.56	-21.41
98262	34	5.1	118	24.72	406.7	979597.6	-19.82	-33.69	0.03	0.98	-32.88	-11.54
98263	34	5.2	118	24.71	426	979599.19	-16.58	-31.11	0.05	1.04	-30.25	-8.67
98264	34	5.4	118	24.67	459.3	979600.33	-12.59	-28.25	0.09	1.17	-27.28	-5.27
98265	34	5.5	118	24.49	489.7	979599.37	-10.82	-27.52	0.16	1.28	-26.44	-4.14
98266	34	5.8	118	24.31	621.9	979593.12	-5.02	-26.23	0.31	1.49	-25	-2.05
98267	34	6.1	118	24.31	713	979588.82	-1.14	-25.46	0.29	1.53	-24.23	-0.72
98268	34	6.3	118	24.26	773.9	979585.43	0.96	-25.44	0.29	1.56	-24.2	-0.32
98269	34	6.4	118	24.28	823	979582.36	2.29	-25.77	0.32	1.57	-24.54	-0.38
98271	34	6.6	118	24.24	889.5	979578.11	3.99	-26.35	0.35	1.59	-25.12	-0.5
98272	34	6.8	118	24.21	923.4	979575.72	4.61	-26.88	0.39	1.62	-25.65	-0.76
98273	34	7	118	24.17	975.3	979572.08	5.56	-27.71	0.32	1.53	-26.58	-1.25
98274	34	7.2	118	24.09	1051	979566.28	6.53	-29.3	0.31	1.55	-28.18	-2.37
98275	34	7.3	118	23.95	1066	979564.15	5.71	-30.63	0.4	1.67	-29.39	-3.35
98276	34	3.4	118	20.71	180	979576.92	-59.48	-65.62	0	0.61	-65.09	-44.37
98277	34	2.4	118	20.8	143	979574.17	-64.3	-69.17	0.03	0.58	-68.65	-49.93
98278	34	2.4	118	21.32	98	979577.12	-65.59	-68.94	0	0.56	-68.42	-50.02
98279	34	1.9	118	21.7	91	979575.65	-67.01	-70.11	0	0.53	-69.61	-52.45
98280	34	1.3	118	21.29	99	979573.27	-67.77	-71.15	0	0.54	-70.65	-54.4
98282	34	0.1	118	21.47	424	979550.07	-58.64	-73.1	0.04	1.04	-72.24	-58.42
98283	34	0.4	118	20.3	179	979564.3	-67.87	-73.98	0.16	0.67	-73.38	-58.23
98284	34	0.2	118	19.82	132	979566.59	-69.81	-74.31	0.01	0.5	-73.87	-58.65
98285	34	0.2	118	18.49	137	979564.56	-71.3	-75.97	0	0.46	-75.57	-59.51
98286	34	0.2	118	17.4	160	979562.09	-71.7	-77.16	0.01	0.47	-76.75	-59.14
98287	34	0.2	118	16.4	172	979560.51	-72.15	-78.02	0	0.46	-77.63	-60.02
98288	34	1.6	118	18.48	147	979569.12	-67.8	-72.81	0.01	0.52	-72.35	-53.64
98289	34	2.2	118	18.48	210	979569.35	-62.45	-69.61	0.01	0.53	-69.17	-49.36
98290	34	2	118	17.46	189	979569.02	-64.46	-70.91	0	0.52	-70.47	-50.36
98291	34	2.9	118	17.46	224	979572.65	-58.78	-66.42	0	0.57	-65.95	-44.14

**Table 1.— Principal facts of gravity stations (continued)**

[DEG, degrees; MIN minutes; ELEV, elevation; FT, feet; MGAL, milligals; FAA, free-air anomaly; SBA, simple Bouguer anomaly; CBA, complete Bouguer anomaly]

GRAVITY STATION NAME	LATITUDE (DEG MIN)		LONGITUDE (DEG MIN)		ELEV (FT)	OBSERVED GRAVITY (MGAL)	FAA (MGAL)	SBA (MGAL)	TERRAIN CORRECTION INNER TOTAL (MGAL)		CBA (MGAL)	ISOSTATIC ANOMALY (MGAL)
98292	34	2.8	118	18.5	200	979574.52	-59.16	-65.98	0.01	0.57	-65.49	-44.41
98293	34	2.4	118	19.83	184	979571.07	-63.47	-69.74	0.01	0.55	-69.27	-49.98
98294	34	1.7	118	20.06	109	979572.92	-67.68	-71.4	0	0.53	-70.92	-53.14
98295	34	6.6	118	17.07	525.1	979579.39	-28.91	-46.82	0.04	1.06	-45.97	-16.48
98296	34	6.5	118	16.93	509	979578.84	-30.94	-48.3	0.11	1.12	-47.4	-17.85
98297	34	6.4	118	16.93	447.4	979581.29	-34.15	-49.41	0.12	1.14	-48.45	-19.11
98298	34	6.3	118	16.92	426.9	979581.49	-35.72	-50.28	0.07	1.07	-49.39	-20.26
98299	34	6.2	118	16.94	421	979581.39	-36.22	-50.58	0.03	0.99	-49.77	-20.87
98300	34	6.1	118	16.93	410.8	979581.25	-37.17	-51.18	0.02	0.95	-50.4	-21.72
98301	34	6	118	16.94	393	979581.75	-38.19	-51.59	0.03	0.95	-50.81	-22.35
98302	34	5.9	118	16.93	362.9	979582.78	-39.82	-52.2	0.03	0.95	-51.4	-23.18
98303	34	5.7	118	16.93	354.3	979582.5	-40.72	-52.8	0.02	0.91	-52.04	-24.1
98304	34	5.7	118	17.01	364.5	979581.68	-40.51	-52.94	0.01	0.87	-52.23	-24.44
98305	34	5.6	118	17.02	350.8	979582.08	-41.27	-53.23	0.01	0.86	-52.52	-24.93
98306	34	5.5	118	17.01	321.8	979583.13	-42.74	-53.71	0.03	0.88	-52.96	-25.66
98307	34	5.3	118	17.02	325.5	979582.28	-43.04	-54.15	0.07	0.88	-53.4	-26.39
98308	34	5	118	17.01	346.7	979579.49	-43.45	-55.27	0.06	0.81	-54.61	-28.16
98309	34	4.8	118	17	314	979580.94	-44.81	-55.52	0.02	0.76	-54.89	-28.82
98310	34	4.7	118	17.01	293.7	979581.86	-45.63	-55.65	0.01	0.75	-55.02	-29.19
98311	34	4.6	118	17.05	270.6	979582.57	-46.88	-56.11	0.12	0.86	-55.36	-29.89
98312	34	4.4	118	17.07	293.9	979580.5	-46.52	-56.55	0.01	0.71	-55.96	-30.86
98313	34	4.2	118	16.99	287.2	979580.11	-47.32	-57.12	0.02	0.71	-56.53	-31.69
98314	34	4	118	17	269.9	979580	-48.75	-57.96	0.03	0.71	-57.36	-32.97
98315	34	3.9	118	17.02	259.1	979579.76	-49.87	-58.7	0.02	0.69	-58.12	-33.94
98316	34	3.8	118	17.01	252.2	979579.41	-50.75	-59.36	0.02	0.69	-58.77	-34.74
98317	34	3.6	118	16.88	276.2	979575.45	-52.18	-61.6	0.01	0.65	-61.07	-37.34