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Principal Facts, Gravity Profile, and Interpreted Geologic Model for 128 Gravity Stations along a Portion of a COCORP Seismic Profile on the Millett 1 by 2 Degree Quadrangle, Nevada

By

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ABSTRACT

During 1983, the Consortium for Continental Reflection Profiling (COCORP) conducted an east-west seismic reflection survey across central Nevada. The U.S. Geological Survey, in cooperation with COCORP, made a gravity profile consisting of 128 gravity measurements along a portion of COCORP line # 7. This report documents those measurements, lists the principal facts, base station description, location plots for gravity data, and a gravity model to interpret the data.

INTRODUCTION

During 1983, the Consortium for Continental Reflection Profiling (COCORP) conducted an east-west seismic reflection survey across Nevada (Fig. 1). The U.S. Geological Survey, in cooperation with COCORP, has utilized the elevation control for the seismic survey to make 128 gravity measurements along a portion of one of these profiles (COCORP line # 7). This report documents those measurements, providing the principal facts, base station description, and location plots for the gravity stations. These gravity stations are located in the Millett 1 by 2 degree quadrangle and are incorporated into the gravity data base for the state of Nevada (Saltus, 1988).

The gravity profile is located within the Basin-and-Range province. The profile and stations along the profile are shown in figure 2 (dashed area of fig. 1). The profile in figure 3 was constructed by projecting (D.A. Ponce, written commun., 1984) the gravity and elevation values perpendicularly onto a line joining AA' (fig 2).

The authors would like to acknowledge the cooperation of professor Sid Kaufman and Dr. Chris Potter of Cornell University and the members of the Petty-Ray Geophysics field crew for making coordination of seismic and gravity surveys possible.

GRAVITY METHODS

GENERAL

Standard gravity corrections were made on all the data and include: (a) Earth-tides, (b) instrument drift, (c) free-air, (d) Bouguer, (e) latitude, (f) Earth's curvature, and (g) terrain correction. Theoretical gravity is based on the Geodetic Reference System of 1967 (International Union of Geodesy and Geophysics, 1971) and observed gravity values are referenced to the International Gravity Standardization Net 1971 (IGSN 71) described by Morelli (1974, p. 18).

BASE STATIONS

An IGSN 71 gravity base station, Austin (Jablonski, 1974) with an adopted gravity value of g=979,514.90 mGal was used as the primary base station. The station is located on the steps of the Austin Federal Office Building, Austin, NV (Saltus and others, 1981, p. 11). Several temporary field bases were established during the survey to better determine gravity meter drift.

TERRAIN CORRECTIONS

Terrain corrections were made in a three-part process: (a) field correction, (b) inner-zone correction, and (c) outer-zone correction. The Hayford-Bowie system of zones and compartments was used to estimate terrain corrections (Hayford and Bowie, 1912). The field terrain correction was estimated from the station to a radial distance of 68 meters (zone B) using tables and charts or sketched and later estimated in the office.

The inner-zone terrain correction was made by placing a transparent template, made up of concentric rings and radial lines, on the largest scale topographic map available and centered at the gravity station. The template's rings divide the topography into lettered zones and the radial lines divide each zone into equal-size compartments. Terrain corrections were calculated by estimating *average* compartment elevations and using a program by Spielman and Ponce (1984). Inner-zone corrections were made from a radial distance of 68 to 590 m (zones C and D).

The outer-zone terrain correction from 0.59 km (zone E) to a radial distance of 166.7 km (zone O) was calculated using a computer program by Plouff (1977) that utilizes digital terrain data.

GRAVITY MODEL

A two-dimensional (Cady, 1980; Saltus and Blakely, 1983) gravity model was derived to approximate the distribution of density beneath the gravity stations (fig. 4; reduction density of 2.67 g/cm^3). A linear regional field, decreasing from 198 mgal at the west end of the profile to 189 mgal at the east end, was subtracted from the Bouguer gravity. Six homogeneous bodies were used to represent the gravity sources. Basin-filling alluvium was assigned a density of 2.0 g/cm^3. Three different densities were used to model the Paleozoic basement rocks exposed in the Shoshone and Simpson Park Mountains and the Toiyabe Range. The lower Paleozoic siliceous rocks were assigned densities of 2.70 g/cm^3 and 2.72 g/cm^3 in order to approximate the observed gravity anomalies. A density of 2.75 g/cm^3 was used to model carbonate rocks forming part of the Roberts Mountain thrust sheet in the Toiyabe Range where it overlies lower Paleozoic siliceous assemblage rocks (Stewart and Carlson, 1976). A sixth body, representing Jurassic granitic rocks intruding Paleozoic limestone, forms an outlier of mountains within Grass Valley and has an assigned density of 2.67 g/cm^3. The assigned densities are not well constrained by actual measurements; they are based on one density measurement on Paleozoic limestone of 2.72 g/cm^3.

The alluvial basins appear to have at least 1 km of alluvial fill. The basins are asymmetric; they are both deeper to the west. The range-bounding contacts, most likely faults, have shallow dips, ranging from 11° to 22°. For comparison, a dip of 28° was determined by seismic reflection by COCORP for the eastern boundary of Grass Valley (Potter and others, 1987); this slope was determined in our gravity model to be 22°. Reese River Valley appears to have east-dipping steps in its subsurface topography that may be fault-controlled, whereas in the middle of Grass Valley there is a buried ridge which corresponds to a outlier of basement rocks exposed to the south.

Further improvements in the model could be obtained by making additional rock density measurements and by using the isostatic residual gravity anomaly values to better approximate regional effects (removal of longer wavelengths).

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TABLE 1.–*Explanation of principal fact format*

Item	Explanation
STATION NAME	An alphanumeric combination of up to 8 characters used for station identification
LAT	Latitude in degrees and minutes, to 0.01 minute
LON	Longitude in degrees and minutes, to 0.01 minute
ELEV	Elevation, to 0.1 feet
OG	Observed gravity, to 0.01 mGal
AC	Four digit code describing the general location, elevation, latitude, and observed gravity accuracy
FAA	Free-air anomaly to 0.01 mGal
SBA	Simple Bouguer anomaly reduced for a density of 2.67 g/cm^3, to 0.01 mGal
ITC	Inner-zone terrain correction for a density of 2.67 g/cm^3, to 0.01 mGal, followed by a letter denoting the extent of the correction in the Hayford-Bowie system of zones.
TC	Total terrain correction from 0.0 to 166.7 km for a density of 2.67 g/cm^3, to 0.01 mGal
CBA1	Complete Bouguer anomaly reduced for a density of 2.67 g/cm^3, to 0.01 mGal
CBA2	Complete Bouguer anomaly reduced for a density of 2.50 g/cm^3, to 0.01 mGal

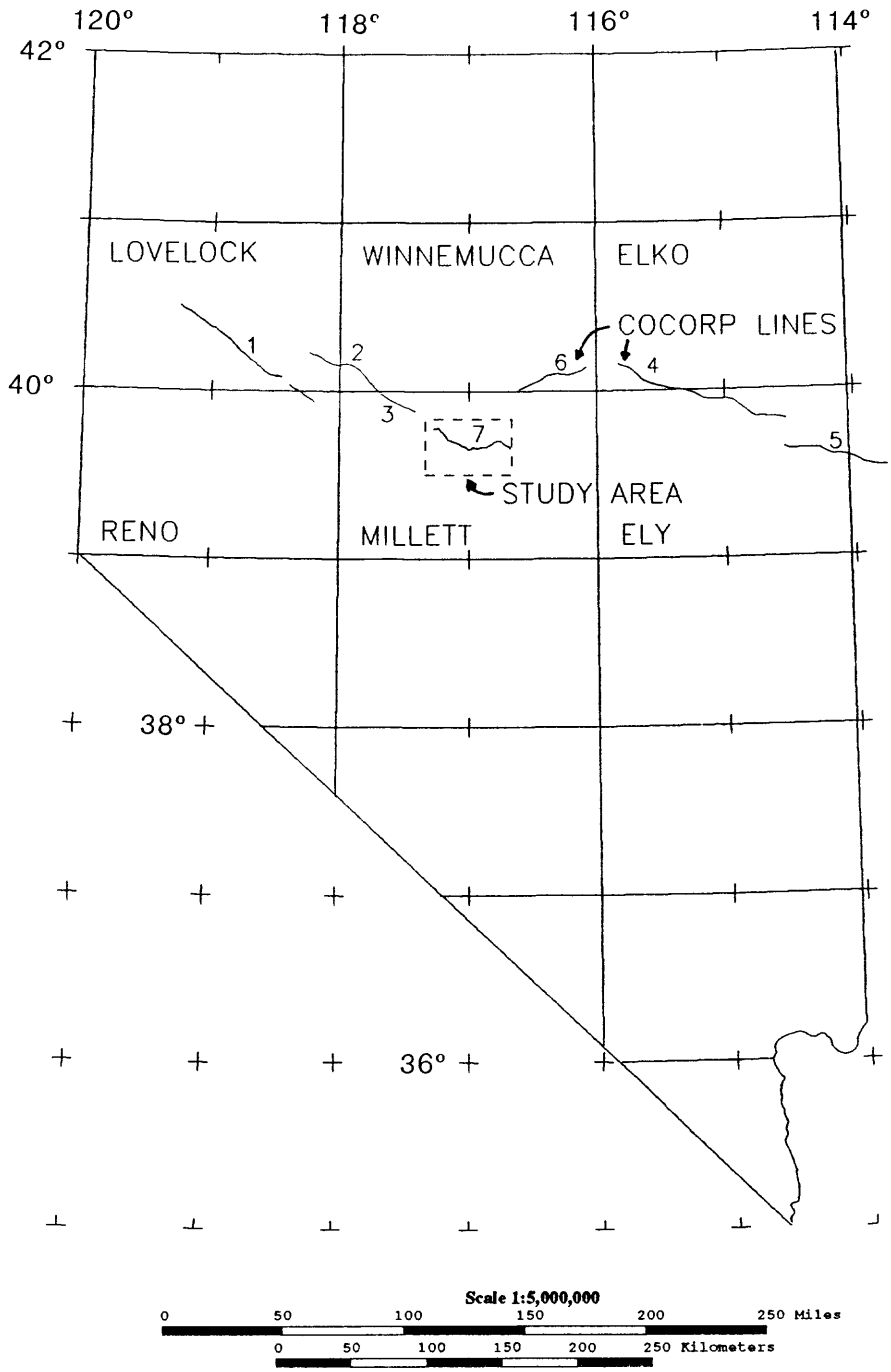

Figure 1. Location of COCORP seismic reflection profiles in Nevada (D.B. Snyder, written commun., 1983), numbers are COCORP line numbers. Dashed line indicates area of Figure 2. Names are 1x2 degree quadrangles crossed by COCORP lines.

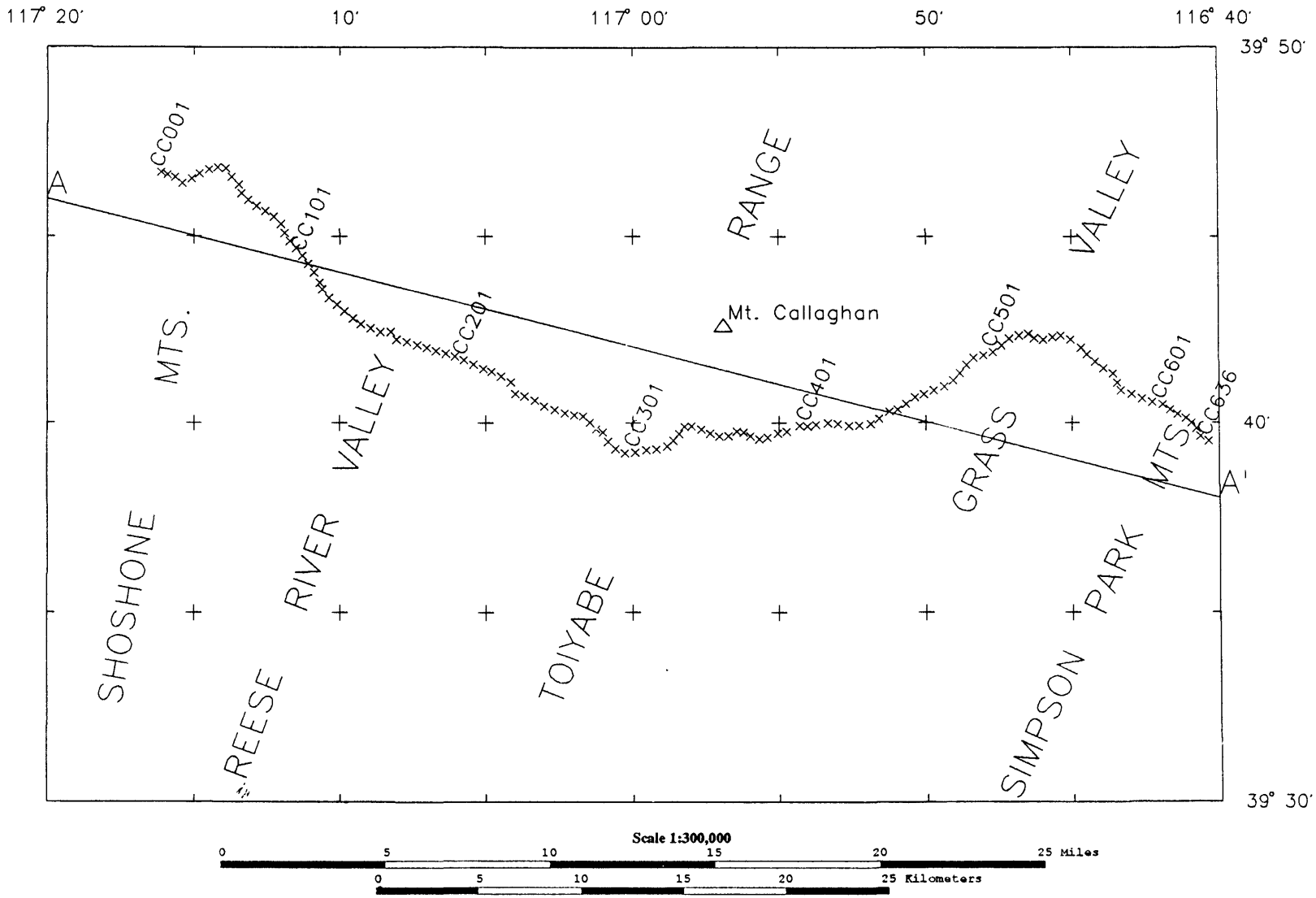

Figure 2. Location of gravity data listed in this report. Station locations are indicated by "x" signs. Names starting with "CC" are selected station locations.

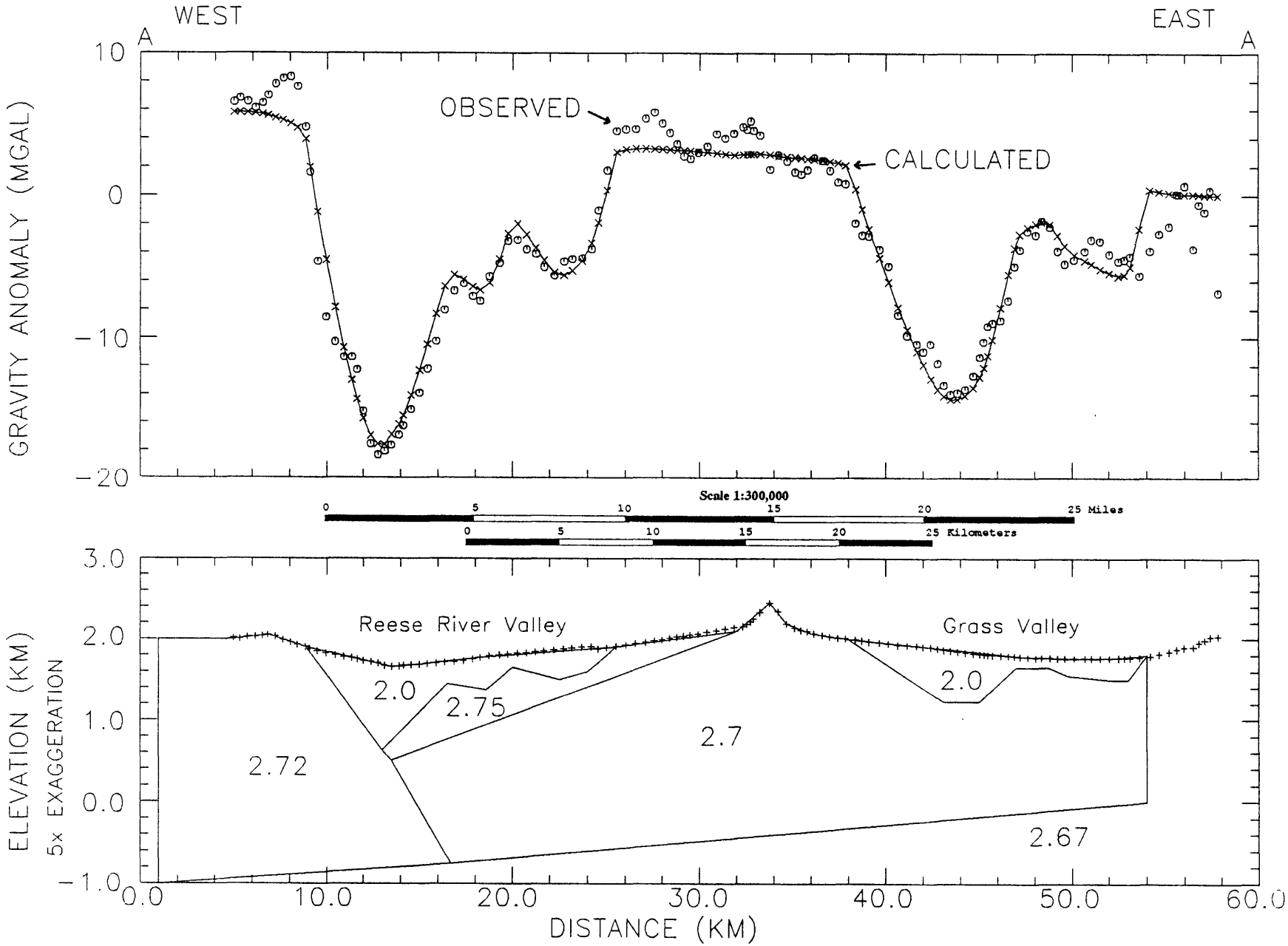

Figure 3. Observed gravity anomaly (reduction density of 2.67) and the calculated gravity anomaly for the two-dimensional model in lower half of figure. Numbers within bodies are densities (g/cm). Plus signs in lower half of figure indicate locations of gravity stations.

TABLE 2.—*Principal Facts for Millett-COCORP Gravity Profile*

STATION NAME	LAT deg	LAT min	LON deg	LON min	ELEV ft	OG mGal	AC	FAA mGal	SBA mGal	ITC mGal	TC mGal	CBA1 2.67	CBA2 2.50
CC001	39	46.71	117	16.14	6606.6	979561.66	_	33.52	-191.81	0.21	1.89	-191.44	-177.11
CC006	39	46.64	117	15.93	6577.8	979563.42	_	32.68	-191.67	0.49	1.98	-191.21	-176.95
CC011	39	46.58	117	15.65	6656.2	979558.39	_	35.11	-191.91	0.32	1.91	-191.52	-177.09
CC016	39	46.41	117	15.41	6662.7	979557.26	_	34.84	-192.41	0.29	1.89	-192.03	-177.59
CC021	39	46.54	117	15.08	6693.6	979556.03	_	36.32	-191.98	0.14	1.75	-191.75	-177.23
CC026	39	46.67	117	14.83	6729.7	979554.54	_	38.03	-191.50	0.09	1.76	-191.26	-176.66
CC031	39	46.78	117	14.51	6663.7	979559.26	_	36.39	-190.89	0.32	1.89	-190.52	-176.07
CC036	39	46.84	117	14.19	6526.6	979567.89	_	32.04	-190.56	0.42	1.90	-190.18	-176.03
CC041	39	46.81	117	13.91	6423.6	979573.88	_	28.40	-190.69	0.60	2.08	-190.13	-176.21
CC046	39	46.58	117	13.72	6334.6	979577.28	_	23.78	-192.28	1.48	2.91	-190.88	-177.21
CC051	39	46.37	117	13.46	6247.0	979580.29	_	18.86	-194.21	0.57	1.92	-193.79	-180.25
CC056	39	46.15	117	13.37	6149.9	979582.80	_	12.57	-197.18	0.36	1.67	-197.01	-183.67
CC061	39	45.96	117	13.15	6062.3	979581.54	_	3.36	-203.40	0.38	1.60	-203.30	-190.15
CC066	39	45.80	117	12.87	5993.8	979581.41	_	-2.96	-207.39	0.50	1.62	-207.27	-194.26
CC071	39	45.67	117	12.55	5911.4	979584.53	_	-7.40	-209.02	0.37	1.42	-209.09	-196.25
CC076	39	45.51	117	12.26	5844.5	979587.35	_	-10.62	-209.96	0.22	1.21	-210.24	-197.53
CC081	39	45.32	117	12.01	5806.4	979589.47	_	-11.80	-209.84	0.09	1.01	-210.32	-197.68
CC086	39	45.09	117	11.88	5749.7	979591.65	_	-14.62	-210.72	0.05	0.94	-211.26	-198.74
CC091	39	44.87	117	11.71	5686.4	979592.13	_	-19.76	-213.70	0.05	0.91	-214.27	-201.89
CC096	39	44.68	117	11.48	5644.7	979591.98	_	-23.55	-216.07	0.07	0.89	-216.65	-204.36
CC101	39	44.47	117	11.27	5585.0	979594.36	_	-26.46	-216.95	0.10	0.91	-217.51	-205.35
CC106	39	44.25	117	11.08	5480.6	979600.39	_	-29.92	-216.84	0.13	1.02	-217.28	-205.35
CC111	39	44.02	117	10.89	5443.9	979602.73	_	-30.69	-216.37	0.02	0.91	-216.91	-205.06
CC116	39	43.75	117	10.69	5463.6	979601.91	_	-29.26	-215.61	0.02	0.82	-216.24	-204.34
CC121	39	43.56	117	10.59	5486.2	979600.96	_	-27.81	-214.92	0.02	0.76	-215.62	-203.67
CC126	39	43.33	117	10.36	5510.8	979600.28	_	-25.83	-213.79	0.03	0.72	-214.53	-202.51
CC131	39	43.16	117	10.10	5532.8	979599.85	_	-23.94	-212.65	0.03	0.69	-213.42	-201.36
CC136	39	42.98	117	9.85	5565.3	979599.25	_	-21.22	-211.04	0.11	0.73	-211.77	-199.64
CC141	39	42.79	117	9.57	5592.2	979599.31	_	-18.34	-209.08	0.08	0.69	-209.86	-197.66
CC146	39	42.63	117	9.30	5619.4	979599.51	_	-15.35	-207.02	0.16	0.77	-207.72	-195.47
CC151	39	42.53	117	8.96	5645.7	979599.15	_	-13.09	-205.65	0.04	0.67	-206.45	-194.14
CC156	39	42.43	117	8.62	5676.5	979597.49	_	-11.71	-205.32	0.14	0.77	-206.02	-193.65
CC161	39	42.43	117	8.27	5751.3	979592.12	_	-10.05	-206.21	0.11	0.70	-206.99	-194.45
CC166	39	42.22	117	8.06	5813.6	979587.71	_	-8.29	-206.58	0.10	0.68	-207.38	-194.71
CC171	39	42.15	117	7.72	5885.2	979584.91	_	-4.26	-204.99	0.14	0.76	-205.72	-192.89
CC176	39	42.07	117	7.36	5919.3	979583.65	_	-2.20	-204.09	0.08	0.73	-204.85	-191.95
CC181	39	42.01	117	7.04	5953.1	979582.94	_	0.35	-202.69	0.11	0.78	-203.40	-190.43
CC186	39	41.92	117	6.71	5983.6	979581.02	_	1.44	-202.64	0.08	0.76	-203.38	-190.34
CC191	39	41.85	117	6.38	6010.5	979578.59	_	1.64	-203.36	0.05	0.75	-204.11	-191.01
CC196	39	41.77	117	6.05	6046.9	979575.83	_	2.42	-203.82	0.04	0.79	-204.53	-191.36
CC201	39	41.68	117	5.75	6079.7	979572.71	_	2.51	-204.85	0.04	0.84	-205.51	-192.26
CC206	39	41.55	117	5.41	6114.5	979569.70	_	2.97	-205.58	0.06	0.91	-206.17	-192.86
CC211	39	41.43	117	5.08	6155.2	979567.92	_	5.19	-204.75	0.06	0.97	-205.28	-191.88
CC216	39	41.36	117	4.79	6194.6	979565.50	_	6.58	-204.70	0.06	1.03	-205.18	-191.70
CC221	39	41.24	117	4.45	6238.8	979562.59	_	7.99	-204.79	0.04	1.10	-205.20	-191.63
CC226	39	41.09	117	4.13	6246.7	979562.27	_	8.64	-204.42	0.08	1.28	-204.64	-191.06
CC231	39	40.77	117	3.98	6160.8	979569.00	_	7.78	-202.35	0.26	1.89	-201.97	-188.61
CC236	39	40.71	117	3.67	6221.5	979567.70	_	12.27	-199.93	0.45	2.19	-199.25	-185.78
CC241	39	40.59	117	3.34	6277.9	979566.29	_	16.33	-197.79	0.79	2.76	-196.53	-182.98
CC246	39	40.44	117	3.02	6333.0	979562.56	_	18.00	-198.00	0.79	3.01	-196.50	-182.84
CC251	39	40.35	117	2.67	6387.8	979559.05	_	19.77	-198.09	0.58	3.04	-196.57	-182.79
CC256	39	40.25	117	2.32	6437.3	979555.52	_	21.05	-198.51	1.37	4.12	-195.90	-182.09
CC261	39	40.20	117	2.00	6495.1	979551.47	_	22.51	-199.02	2.12	5.00	-195.54	-181.65
CC266	39	40.17	117	1.71	6546.6	979547.24	_	23.15	-200.13	2.37	5.27	-196.38	-182.40
CC271	39	40.00	117	1.47	6597.4	979543.32	_	24.27	-200.75	2.32	5.16	-197.11	-183.01
CC276	39	39.83	117	1.25	6645.3	979540.95	_	26.65	-200.00	0.81	3.59	-197.93	-183.63
CC281	39	39.74	117	1.02	6682.1	979537.92	_	27.21	-200.70	0.62	3.36	-198.86	-184.46
CC286	39	39.50	117	0.85	6726.0	979534.67	_	28.43	-200.97	0.73	3.40	-199.09	-184.60
CC291	39	39.30	117	0.61	6766.7	979532.22	_	30.11	-200.69	0.68	3.49	-198.71	-184.14
CC296	39	39.19	117	0.29	6836.9	979527.88	_	32.53	-200.66	0.85	3.84	-198.34	-183.64
CC301	39	39.21	116	59.92	6902.2	979523.29	_	34.04	-201.37	2.05	5.35	-197.54	-182.79
CC306	39	39.27	116	59.56	6973.8	979519.04	_	36.43	-201.42	1.40	5.01	-197.93	-183.01
CC311	39	39.30	116	59.20	7028.9	979515.87	_	38.39	-201.34	1.13	5.22	-197.64	-182.61
CC316	39	39.37	116	58.83	7080.3	979512.33	_	39.58	-201.91	1.45	6.14	-197.28	-182.20
CC321	39	39.52	116	58.62	7164.4	979507.32	_	42.26	-202.10	1.47	6.11	-197.50	-182.24
CC326	39	39.70	116	58.42	7263.1	979502.03	_	45.97	-201.76	1.67	6.33	-196.94	-181.47
CC331	39	39.90	116	58.24	7380.2	979494.01	_	48.66	-203.06	2.12	6.94	-197.62	-181.94
CC336	39	39.91	116	57.99	7653.9	979478.83	_	59.18	-201.87	1.40	5.38	-197.99	-181.61
CC341	39	39.82	116	57.65	8019.7	979454.56	_	69.41	-204.12	0.74	5.11	-200.48	-183.29
CC346	39	39.72	116	57.35	7677.8	979474.99	_	57.87	-204.00	2.32	5.96	-199.53	-183.14

TABLE 2.–*Principal Facts for Millett-COCORP Gravity Profile–Continued*

STATION NAME	LAT deg	LAT min	LON deg	LON min	ELEV ft	OG mGal	AC	FAA mGal	SBA mGal	ITC mGal	TC mGal	CBA1 2.67	CBA2 2.50
CC351	39	39.63	116	57.04	7190.0	979502.43	_	39.61	-205.62	2.32	7.11	-200.03	-184.77
CC356	39	39.65	116	56.73	7020.3	979511.88	_	33.08	-206.36	1.93	7.02	-200.86	-185.96
CC361	39	39.77	116	56.45	6930.1	979517.89	_	30.43	-205.93	1.33	6.39	-201.06	-186.32
CC366	39	39.74	116	56.22	6878.0	979520.81	_	28.50	-206.08	2.03	6.81	-200.79	-186.19
CC371	39	39.64	116	55.99	6794.3	979525.45	_	25.43	-206.31	3.06	7.82	-200.00	-185.65
CC376	39	39.57	116	55.68	6725.4	979530.18	_	23.79	-205.60	2.39	6.84	-200.27	-186.01
CC381	39	39.60	116	55.39	6672.6	979533.99	_	22.59	-204.99	1.40	5.50	-201.01	-186.77
CC386	39	39.71	116	55.04	6618.8	979537.00	_	20.39	-205.36	1.42	5.00	-201.88	-187.73
CC391	39	39.77	116	54.73	6592.2	979539.45	_	20.24	-204.60	1.00	4.04	-202.07	-187.92
CC396	39	39.92	116	54.29	6558.7	979540.39	_	17.82	-205.88	0.19	2.50	-204.90	-190.72
CC401	39	39.91	116	54.03	6510.5	979542.65	_	15.56	-206.49	0.12	2.21	-205.80	-191.70
CC406	39	39.94	116	53.75	6456.4	979545.98	_	13.76	-206.45	0.11	2.03	-205.93	-191.94
CC411	39	39.99	116	53.33	6424.9	979547.30	_	12.04	-207.09	0.05	1.66	-206.94	-193.00
CC416	39	39.97	116	52.99	6390.4	979548.20	_	9.73	-208.23	0.10	1.55	-208.19	-194.31
CC421	39	39.92	116	52.63	6323.5	979548.58	_	3.90	-211.77	0.21	1.58	-211.70	-197.98
CC426	39	39.93	116	52.27	6315.0	979547.83	_	2.34	-213.05	0.10	1.31	-213.25	-199.52
CC431	39	39.97	116	51.88	6296.9	979548.42	_	1.17	-213.60	0.10	1.21	-213.90	-200.21
CC436	39	40.11	116	51.59	6256.6	979550.55	_	-0.69	-214.09	0.05	1.11	-214.49	-200.87
CC441	39	40.30	116	51.24	6237.2	979552.47	_	-0.88	-213.61	0.11	1.11	-214.01	-200.44
CC446	39	40.36	116	50.96	6183.7	979554.41	_	-4.06	-214.97	0.05	1.03	-215.44	-201.98
CC451	39	40.51	116	50.67	6130.9	979556.20	_	-7.45	-216.56	0.03	1.01	-217.05	-203.71
CC456	39	40.68	116	50.36	6096.8	979557.82	_	-9.29	-217.23	0.03	0.99	-217.74	-204.47
CC461	39	40.77	116	50.06	6058.7	979560.29	_	-10.53	-217.17	0.02	0.97	-217.70	-204.51
CC466	39	40.88	116	49.72	6023.5	979562.80	_	-11.49	-216.94	0.02	0.93	-217.50	-204.39
CC471	39	40.97	116	49.37	5993.8	979565.63	_	-11.59	-216.02	0.02	0.90	-216.61	-203.56
CC476	39	41.13	116	49.06	5967.8	979568.71	_	-11.19	-214.73	0.02	0.89	-215.34	-202.34
CC481	39	41.33	116	48.84	5946.9	979571.34	_	-10.82	-213.65	0.01	0.88	-214.27	-201.31
CC486	39	41.54	116	48.61	5934.4	979573.46	_	-10.18	-212.59	0.02	0.88	-213.20	-200.27
CC491	39	41.74	116	48.36	5922.2	979574.67	_	-10.41	-212.40	0.02	0.88	-213.02	-200.12
CC496	39	41.80	116	48.02	5905.2	979575.88	_	-10.89	-212.30	0.03	0.90	-212.90	-200.03
CC501	39	41.89	116	47.69	5892.4	979578.14	_	-9.97	-210.95	0.02	0.89	-211.55	-198.71
CC506	39	42.07	116	47.39	5876.3	979581.69	_	-8.20	-208.62	0.02	0.91	-209.20	-196.40
CC511	39	42.24	116	47.12	5849.7	979584.58	_	-8.06	-207.58	0.01	0.96	-208.10	-195.37
CC516	39	42.33	116	46.79	5836.0	979586.76	_	-7.30	-206.35	0.04	1.01	-206.83	-194.12
CC521	39	42.36	116	46.47	5821.2	979587.34	_	-8.16	-206.70	0.04	1.02	-207.17	-194.50
CC526	39	42.26	116	46.27	5820.0	979588.22	_	-7.24	-205.75	0.06	1.01	-206.22	-193.55
CC531	39	42.21	116	45.97	5811.4	979588.18	_	-8.01	-206.22	0.03	0.97	-206.74	-194.09
CC536	39	42.28	116	45.65	5798.6	979587.37	_	-10.14	-207.91	0.02	0.92	-208.47	-195.85
CC541	39	42.32	116	45.36	5794.9	979586.74	_	-11.17	-208.81	0.01	0.87	-209.43	-196.80
CC546	39	42.22	116	45.03	5801.5	979586.43	_	-10.71	-208.58	0.01	0.85	-209.22	-196.58
CC551	39	42.01	116	44.68	5796.6	979586.86	_	-10.44	-208.14	0.03	0.92	-208.70	-196.08
CC556	39	41.82	116	44.48	5790.4	979587.63	_	-9.97	-207.46	0.02	0.98	-207.96	-195.36
CC561	39	41.63	116	44.20	5791.3	979587.06	_	-10.16	-207.69	0.01	1.04	-208.13	-195.53
CC566	39	41.45	116	43.91	5796.9	979585.40	_	-11.03	-208.75	0.01	1.13	-209.10	-196.49
CC571	39	41.32	116	43.60	5807.7	979583.91	_	-11.32	-209.40	0.01	1.21	-209.68	-197.05
CC576	39	41.07	116	43.46	5811.7	979583.19	_	-11.29	-209.51	0.02	1.38	-209.61	-196.98
CC581	39	40.86	116	43.32	5823.2	979582.18	_	-10.90	-209.52	0.03	1.56	-209.44	-196.80
CC586	39	40.77	116	42.98	5840.6	979579.41	_	-11.90	-211.11	0.02	1.75	-210.85	-198.18
CC591	39	40.66	116	42.62	5882.5	979578.07	_	-9.15	-209.79	0.07	2.07	-209.21	-196.47
CC596	39	40.56	116	42.29	5967.5	979573.67	_	-5.42	-208.95	0.15	2.36	-208.08	-195.18
CC601	39	40.49	116	41.93	6051.8	979568.46	_	-2.59	-209.00	0.37	2.86	-207.64	-194.59
CC606	39	40.35	116	41.68	6151.6	979563.80	_	2.33	-207.48	0.85	3.55	-205.44	-192.21
CC611	39	40.23	116	41.43	6237.5	979558.89	_	5.67	-207.07	0.82	3.65	-204.93	-191.52
CC616	39	40.11	116	41.15	6245.7	979552.60	_	0.33	-212.69	1.38	4.78	-209.42	-196.06
CC621	39	39.99	116	40.96	6430.8	979546.27	_	11.57	-207.77	0.25	2.93	-206.35	-192.48
CC626	39	39.84	116	40.79	6525.6	979539.60	_	14.03	-208.54	0.59	3.14	-206.91	-192.84
CC631	39	39.64	116	40.65	6663.1	979531.51	_	19.16	-208.10	1.79	4.17	-205.45	-191.14
CC636	39	39.51	116	40.37	6681.1	979523.86	_	13.39	-214.48	0.81	3.30	-212.70	-198.30