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UNITED STATES (DEPARTMENT OF THE INTERIOR)

GEOLOGICAL SURVEY

[Reports- Open file series]

Principal facts for a gravity survey of the Fly Ranch Extension

Known Geothermal Resource Area, Pershing County, Nevada

by

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PRINCIPAL FACTS FOR GRAVITY STATIONS

Explanation of the headings of the accompanying table of principal facts:

Sta. no.	Gravity station number.
Latitude	North latitude in degrees, minutes, and hundredths of minutes.
Longitude	West longitude in degrees, minutes, and hundredths of minutes.
Elev, f	Elevation in feet (to convert to meters, multiply by 0.3048).
Observed gravity	Observed gravity in milligals.
Standard gravity	Theoretical gravity in milligals.
Fr.-air correction	Free-air correction in milligals.
Bouguer correction	Bouguer and curvature correction in milligals.
Fr.-air anomaly	Free-air anomaly in milligals.
Bouguer anomaly	Bouguer anomaly in milligals.

During July 1977, forty-four gravity stations were obtained in the Fly Ranch Extension Known Geothermal Resource Area and vicinity, northwestern Nevada. Elevations for three stations were estimated from lake bed topographic contours. Horizontal and vertical positions for stations FREX33 through FREX43 were determined from plane-table surveying. Positions for the remaining stations were taken from benchmarks or spot elevations shown on U.S. Geological Survey topographic maps at scales of 1:24,000.

The gravity observations were made with a Worden gravimeter having a scale factor of about 0.5 milligal per division.^{1/} A base station was occupied at the beginning of each day, at mid-day, and at the end of the day.

No terrain corrections have been applied to these data. The earth tide correction was not used in drift reduction. The Geodetic Reference System 1967 formula (International Association of Geodesy, 1967) was used to compute theoretical gravity. Observed gravity is referenced to a base station in Gerlach, Nevada, having a value based on the Potsdam System of 1930 (fig. 1). A density of 2.67 g per cm³ was used in computing the Bouguer anomaly.

Reference

International Association of Geodesy, 1967, Geodetic Reference System, 1967: International Association of Geodesy Spec. Pub., no. 3, 74 p.

^{1/} Use of brand names in this report is for descriptive purposes only, and in no way constitutes endorsement by the U.S. Geological Survey.

sta. no.	latitude	location longitude	elev. f	observed gravity	standard gravity	corrections fr.-air bouguer		anomalies fr.-air bouguer	
FREX01	40 51.39	-119 12.49	3908.0	979885.36	-980245.44	367.47	-134.53	7.39	-127.14
FREX02	40 52.10	-119 12.99	3919.0	979885.77	-980246.50	368.50	-134.91	7.77	-127.14
FREX03	40 51.89	-119 13.70	3919.0	979886.02	-980246.19	368.50	-134.91	8.33	-126.58
FREX04	40 52.06	-119 14.69	3948.0	979884.47	-980246.44	371.23	-135.90	9.26	-126.64
FREX05	40 52.01	-119 15.48	3989.0	979884.32	-980246.37	375.08	-137.31	13.03	-124.28
FREX06	40 52.07	-119 16.17	3981.0	979878.75	-980246.46	374.33	-137.04	6.62	-130.42
FREX07	40 52.12	-119 17.04	3980.0	979867.88	-980246.53	374.23	-137.00	-4.42	-141.42
FREX08	40 52.13	-119 18.20	3985.0	979862.18	-980246.55	374.71	-137.17	-9.66	-146.83
FREX09	40 53.00	-119 18.49	4012.0	979862.89	-980247.85	377.24	-138.10	-7.72	-145.82
FREX10	40 53.00	-119 20.50	4059.0	979859.43	-980247.85	381.66	-139.71	-6.76	-146.47
FREX11	40 54.73	-119 19.67	4071.0	979854.25	-980250.43	382.79	-140.12	-13.39	-153.51
FREX12	40 54.73	-119 17.96	4039.0	979862.62	-980250.43	379.78	-139.03	-8.03	-147.06
FREX13	40 54.74	-119 17.09	4027.0	979866.57	-980250.44	378.65	-138.61	-5.22	-143.83
FREX14	40 54.77	-119 16.43	4032.0	979868.44	-980250.49	379.12	-138.79	-2.93	-141.72
FREX15	40 54.71	-119 16.01	4112.0	979869.74	-980250.40	386.64	-141.53	5.98	-135.55
FREX16	40 54.94	-119 45.25	4351.0	979860.02	-980250.74	409.11	-149.72	18.39	-131.33
FREX17	40 52.56	-119 12.79	3929.0	979886.07	-980247.19	369.44	-135.25	8.32	-126.93
FREX18	40 53.83	-119 12.86	3942.0	979888.60	-980249.08	370.66	-135.70	10.18	-125.52
FREX19	40 54.57	-119 12.46	3959.0	979884.57	-980250.19	372.26	-136.28	6.64	-129.64
FREX20	40 55.78	-119 11.24	3969.0	979883.54	-980251.99	373.20	-136.63	4.75	-131.88
FREX21	40 54.03	-119 13.99	3970.0	979883.54	-980249.38	373.30	-136.66	7.46	-129.20
FREX22	40 53.97	-119 14.51	3975.0	979883.34	-980249.29	373.77	-136.83	7.82	-129.01
FREX24	40 52.49	-119 15.98	3979.0	979879.91	-980247.08	374.14	-136.97	6.97	-130.00
FREX25	40 53.02	-119 16.37	3995.0	979879.98	-980247.88	375.65	-137.52	7.75	-129.77
FREX26	40 53.70	-119 16.62	4065.0	979874.67	-980248.89	382.22	-139.92	8.00	-131.92
FREX27	40 53.19	-119 15.52	3983.0	979883.40	-980248.13	374.52	-137.11	9.79	-127.32
FREX28	40 53.85	-119 15.09	3992.0	979882.51	-980249.11	375.36	-137.41	8.76	-128.65
FREX29	40 54.51	-119 8.82	3905.0	979865.52	-980250.10	367.18	-134.43	-17.40	-151.83
FREX30	40 54.48	-119 9.15	3905.0	979869.30	-980250.05	367.18	-134.43	-13.57	-148.00
FREX31	40 54.44	-119 9.48	3905.0	979872.35	-980249.99	367.18	-134.43	-10.46	-144.89
FREX32	40 54.41	-119 9.82	3905.0	979874.90	-980249.95	367.18	-134.43	-7.87	-142.30
FREX33	40 54.36	-119 10.22	3905.0	979877.87	-980249.88	367.18	-134.43	-4.83	-139.26
FREX34	40 54.30	-119 10.52	3905.0	979880.57	-980249.79	367.18	-134.43	-2.04	-136.47
FREX35	40 54.23	-119 10.88	3905.0	979884.06	-980249.68	367.18	-134.43	1.56	-132.87
FREX36	40 54.21	-119 11.00	3905.0	979884.75	-980249.65	367.18	-134.43	2.28	-132.15
FREX37	40 54.16	-119 11.31	3922.0	979885.26	-980249.58	368.78	-135.01	4.46	-130.55
FREX38	40 54.11	-119 11.54	3923.0	979886.24	-980249.50	368.88	-135.05	5.62	-129.43
FREX39	40 54.03	-119 11.77	3926.0	979886.46	-980249.38	369.16	-135.15	6.24	-128.91
FREX40	40 54.00	-119 11.94	3929.0	979886.71	-980249.34	369.44	-135.25	6.81	-128.44
FREX41	40 53.93	-119 12.15	3931.0	979887.40	-980249.23	369.63	-135.32	7.80	-127.52

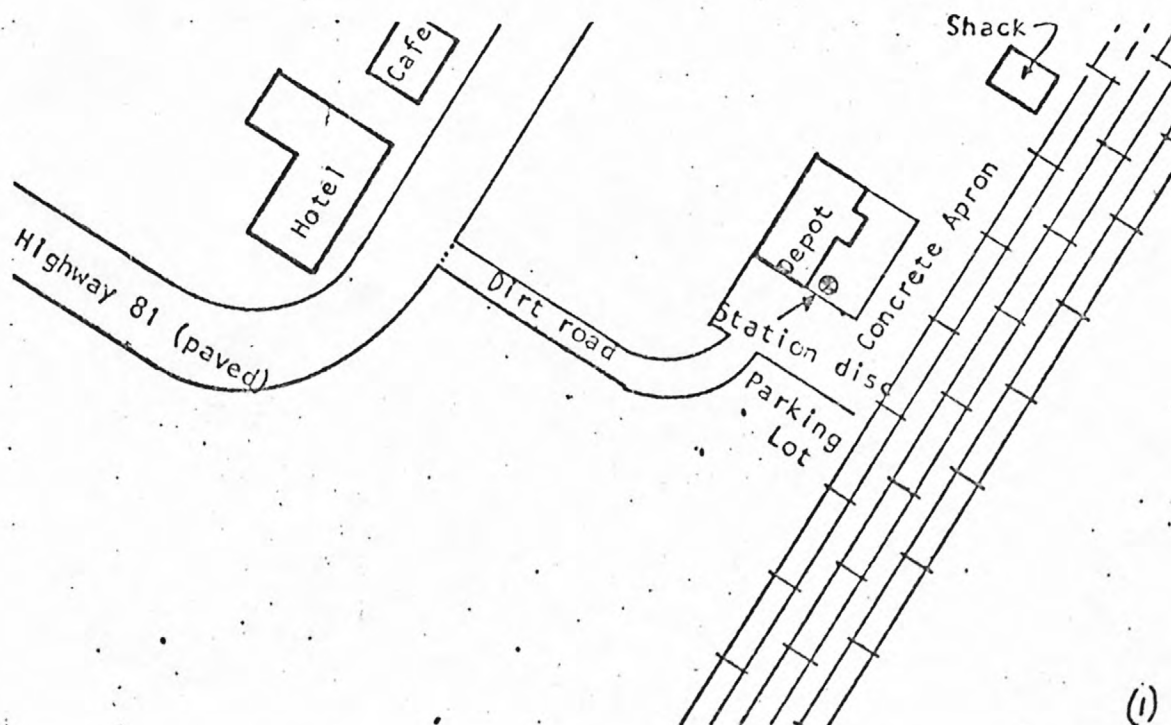
sta. no.	latitude	location		elev, f	observed gravity	standard gravity	corrections		anomalies	
		longitude					fr.-air	bouguer	fr.-air	bouguer
. FREX42	40 53.90	-119 12.38		3933.0	979888.21	-980249.19	369.82	-135.39	8.84	-126.55
. FREX43	40 53.85	-119 12.78		3939.0	979889.26	-980249.11	370.38	-135.60	10.53	-125.07
. FREX44	40 56.22	-119 7.95		3905.0	979866.60	-980252.65	367.18	-134.43	-18.87	-153.30

GRAVITY BASE STATION

LATITUDE 40° 39.1' N (1)		STATION DESIGNATION GERLACH	
LONGITUDE 119° 21.2' W (1)			
ELEVATION 1199 METERS (1)		COUNTRY/STATE USA/Nevada	
REFERENCE CODE NUMBERS		ADOPTED GRAVITY VALUE	
ACIC 2350-1		g = 979 829.16 mgals	
IGB 15609J			
		ESTIMATED ACCURACY	DATE
		+ 0.1 mgals	MONTH/YEAR Jan/1969

DESCRIPTION AND/OR SKETCH

Station is in Gerlach, on the east side of town, at the Western Pacific Railroad depot, which is 50 yds, southeast of Nevada Highway 81, and across the street from a cafe and a hotel. Station is outside the depot building, on the east side of it, (i.e. facing the tracks), and at the southeast corner of it, 0.5 ft. from the wall, on the concrete apron. Site is monumented with a standard "USAF Gravity Station" disc. (1)



REFERENCE SOURCE

(1) Personal Communication 1st GSS (23 Jan 69)



3 1818 00073183 4

STATION		DATE	
LOCATION		TIME	
EQUIPMENT		OBSERVER	
WIND DIRECTION		WIND VELOCITY	
WAVE DIRECTION		WAVE VELOCITY	
SEA STATE		SWELL	
CURRENT DIRECTION		CURRENT VELOCITY	
TIDE		MOON	
TEMPERATURE		PRESSURE	
HUMIDITY		VISIBILITY	
CLOUDS		WEATHER	
REMARKS		REMARKS	

Station is on the beach, on the east side of road, at the western end of the beach. The station is 100 yds. southeast of Highway 61, and 100 yds. from a well and a hotel. Station is within the zone of the beach, on the east side of the well, (i.e. facing the beach), and at the western end of the beach, on the east side of the well. Station is 100 yds. from the well, on the east side of the well.

