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National Uranium Resource Evaluation

**NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY OF PORTIONS
OF NEW MEXICO, ARIZONA AND TEXAS**

FINAL REPORT

VOLUME II *c*

NEW MEXICO-CARLSBAD N113-II QUADRANGLE

CARSON HELICOPTERS, INC.

GEOSCIENCE DIVISION 32-H Blooming Glen Rd. Perkasie, Penna. 18944

September 1981

PREPARED FOR U.S. DEPARTMENT OF ENERGY
Grand Junction Office, Colorado

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PREPARED FOR U. S. DEPARTMENT OF ENERGY
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ABSTRACT

As part of the Department of Energy (DOE) National Uranium Resource Evaluation Program, a rotary-wing high sensitivity radiometric and magnetic survey was flown covering the Carlsbad Quadrangle of the State of New Mexico. The area surveyed consisted of approximately 1,732 line miles.

The survey was flown with a Sikorsky S58T helicopter equipped with a high sensitivity gamma ray spectrometer which was calibrated at the DOE calibration facilities at Walker Field in Grand Junction, Colorado, and the Dynamic Test Range at Lake Mead, Arizona. Instrumentation and data reduction methods are presented in Volume I of this report.

The reduced data is presented in the form of stacked profiles, standard deviation anomaly plots, histogram plots and microfiche listings. The results of the geologic interpretation of the radiometric data together with the profiles, anomaly maps and histograms are presented in this Volume II final report.

The survey was awarded to LKB Resources, Inc. which completed the data acquisition. In April, 1980 Carson Helicopters, Inc. and Carson Geoscience Company agreed to manage the project and complete delivery of this final report.

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1.0 GEOLOGY AND RADIOACTIVE MINERAL DEPOSITS

1.1 GENERAL STATEMENT

The Carlsbad 1° x 2° quadrangle is located in southernmost New Mexico. This region, situated to the southeast of the Colorado Plateau and to the west of the Great Plains, is located within the New Mexico Rockies.

1.2 GEOLOGY

Cambrian to Quaternary rocks are present in the study area, and although no Precambrian rocks are exposed in this region, the presence of Precambrian rocks in the adjoining mountain ranges suggests that basement rocks exist at relatively shallow depths beneath the surface. The oldest rocks, Mississippian to Cambrian cherty limestones, dolomites, shales and sandstones are exposed along the western flank of the Sacramento Mountains which are located in the NW part of the study area. Overlying these rocks is a thick sequence of Pennsylvanian and Permian marine sediments that contain dolomite, limestones, sandstone, shale, evaporites and conglomerates, that reflect both shallow marine environments and adjacent high areas. These rocks represent the remnants of the ancestral Rocky Mountains.

The Paleozoic section was once covered by Triassic to Cretaceous sediments that are mostly eroded from the study area. Today small outcropping of these rocks exist to the east of the town of Carlsbad, New Mexico.

At the end of the Cretaceous and continuing into the Tertiary the Laramide orogenic movements folded and faulted all of the sedimentary units along NS trending structures. During these movements the Sacramento Mountain Range was folded into an asymmetric anticline, the present mountain range being situated on the eastern limb of this anticlinal structure (Eardley, 1962).

By late Tertiary, the compressional orogenic movements which characterized the Laramide activity, gave way to extensional movements and rifting. Thus by late Cenozoic, the Tularosa Valley had been down dropped along high angle faults which form the western flank of the Sacramento Mountains. The low lying areas were also subject to Tertiary intrusions and the deposition of Quaternary alluvium.

1.3 STRUCTURE GEOLOGY

Today the general structure across the Carlsbad Quadrangle is relatively simple; the Paleozoic and Mesozoic section forms an asymmetric tilt block that dips gently towards the east and away from the Sacramento and Guadalupe Mountains. Along the west side of the Sacramento and Brokeoff Mountains motion along high angle normal faults down faulted the Tularosa Valley forming the salt basins to the west of the Carlsbad Quadrangle. This structure is evident on the magnetic total field map; i.e. two strong magnetic linears trend N45°W along the southwestern flank of the Sacramento Mountains and beneath Shiloh Draw to the northeast of the Cornudas Mountains. Another weaker subparallel linear follows the western flank of the Brokeoff Mountains. These magnetic linears are probably related to the late Cenozoic rifting.

A number of fairly strong NS magnetic linears are also present on the total field map. These linears parallel the 105°, 105°15' and 105°30' longitude lines and appear to be related to Laramide deformational trends, although these NS trending structures have probably been subject to late Cenozoic reactivation.

1.4 RADIOACTIVE MINERALS

There are no uranium mines in the Carlsbad Quadrangle but there are many potash mines and prospects in the eastern portion of the quadrangle within the Yates formation. Potash is the main source of potassium fertilizers and thus will most certainly increase the potassium response significantly.

2.0 DATA INTERPRETATION

2.1 GENERAL

The Carlsbad Quadrangle is dominated by NS and NW-SE trending ridges and alluviated valleys that are a product of block faulting and rifting along the above mentioned trends. In the Sacramento Mountains there is over 3000 feet of local relief and in the less rugged Guadalupe and Brokeoff Mountains there is about 1700 feet of local relief. In the Cornudas Mountains there are two peaks exceeding 1500 feet and the intervening lowlands are typified by only a few hundred feet of relief. In the mountains and in the western valleys the sedimentary units trend either NS or NW-SE parallel to mapped faults and the predominant magnetic lineations. In the eastern portions of the study area the sedimentary units trend NS and dip gently toward the east.

The washes in the area either follow the structural trends or flow down dip of the easternly dipping sedimentary units.

2.2 COMMENTARY ON RADIOMETRIC PROFILES

There is an increase in the potassium response in the eastern part of the quadrangle due in all probability to the Potash deposits that are located in this region. As previously discussed, Potash mining for fertilizer products is an active industry in the area. It is expressed in the K^{40} response as an increase from west to east and peaks over the Yates formation where a mine is located.

Near the western end of lines 36, 38, and 40, a strong thorium anomaly peaking at fiducials 36950, 41180, and 42270, respectively has been recorded. The anomaly is located in the Abo formation. The mean for this unit is above 4.3ppm thorium, the high point is 5 sigma suggesting that the thorium content is between 13 and 14ppm.

2.3 URANIUM HISTOGRAMS

The high eU occurrences are concentrated in Quaternary alluvian Permian sediments and Tertiary intrusives. The above sedimentary units contain an average of about 2.0 ppm uranium and the Tertiary intrusive a mean of 4.8 ppm uranium. The Tertiary intrusive histogram appears to be bimodal, and is skewed toward high values and terminates at about 6.0 ppm uranium. However, only 26 records were collected over the intrusions.

Another abnormally high unit is the lower Cretaceous erosional remnants of Washita age that appear to rim the Tertiary intrusives. This unit was recorded 14 times and has a mean of 4.8 ppm uranium.

2.4 URANIUM ANOMALY MAPS

Selected and Preferred Anomalies

A total of 150 statistically significant eU anomalies were found in the Carlsbad Quadrangle. Of the 150 significant eU anomalies 24 have been selected as preferred anomalies as they show relative enrichment of eU over eTh and K, and exhibit uranium response of over 3 standard deviations (sigma) relative to their individual lithologic units. These preferred anomalies occur primarily in Quaternary alluvium, in Permian sedimentary rocks, and in or near Tertiary intrusive rocks.

Preferred Anomalies

Quaternary alluvium	7
Tertiary intrusives	3
Lower Cretaceous erosional remnants	1
Permian sediments	13
	24

These preferred anomalies appear to have high potential of indicating true uranium enrichment, and thus warrant additional investigation. This selection has taken into account statistical adequacy of the sampling.

Anomaly 53

Anomaly 53 is located in Quaternary alluvium between two outcrops of the Abo formation of shale, siltstones, arkose and conglomerate. The anomaly is situated on the eastern edge of the down dropped Tularosa Valley.

Anomaly 58

Anomaly 58 is in the Permian Tansill formation of carbonates and evaporites. It exhibits a maximum response of 6.2 standard deviation (sigma) for this lithologic unit.

Anomaly 68, 100 and 145

These anomalies are in Quaternary alluvium, and lie within a high eU zone that parallels the western flank of the Guadalupe and Brokeoff Mountains. This NS trending zone appears to be down faulted along the western flank of these mountains.

Anomaly 63

Anomaly 63 is in Quaternary alluvium and has a response of 3.1 (sigma).

Anomaly 92 and 114

Anomalies 92 and 114 lie above a strong NW trending magnetic linear within the Yeso and San Andres formations, respectively. Both of these lithologic units contain limestone and gypsum. Anomaly 114 has a response of 4.3 sigma.

Anomaly 101 and 122

Anomalies 101 and 122 occur at the contact of the Quaternary alluvium and the San Andreas formation of limestone and gypsum. These anomalies may be related to anomalies 68, 100, and 145 and appear to occupy a down dropped region between a NW trending magnetic linear and the NW trending faults exposed in the Brokeoff Mountains. Anomaly 122 has a maximum response of 4.70 sigma.

Anomaly 104, 106, 107, 146, and 147

These anomalies occur very near the faults that bound the western flank of the Brokeoff Mountains. Anomalies only occur along the westernmost faults which trend NW and NS through alluvium and the San Andreas and Grayburg formations. Anomaly 147 has a maximum response of 5.6 sigma.

The above anomalies and anomalies 68, 100, 101, 122, and 145 may be related to the NW and NS trending faults that are exposed in the Brokeoff Mountains.

Anomaly 120 and 130

These two anomalies have a sigma variance between 2.1 and 2.8, but contain a Bi peak that rises above low background values. Although these anomalies do not fit our preferred criteria the above mentioned Bi relationships may warrant further investigation.

Anomalies 132, 133, 134, 135, 136, and 137

These anomalies are clustered along a zone of Tertiary intrusive plugs that straddle a strong NS trending magnetic linear. The anomalies appear to be concentrated in a contact zone that rims the Tertiary plugs and in the Permian sedimentary units between the plugs.

In the "Geology of the Carlsbad Quadrangle" (Mineral Resources Development, Inc.) the apparent contact zone is defined as a lower Cretaceous erosional remnant of Wishita age. If correct, these strange age relationships complicate what would otherwise be a simple and straight forward geologic description of this area. This region contains the largest eU anomalies within the study area, reaching maximum amplitude of 6.0 to 10.4 sigma.

Anomaly 142 and 143

This region to the east of the Tertiary plugs lies between two NW trending magnetic linears, beneath the San Andreas formation. To the NW of these anomalies outcrops of Quaternary alluvium suggest that the entire area has been down-dropped along NW trending basement structures. Anomaly 143 has a maximum response of 4.1 sigma.

Anomaly 150

This anomaly is within the evaporites of the Castile formation.

LEGEND
 □ STATISTICALLY SIGNIFICANT $\pm$ U ANOMALIES
 ■ PREFERRED ANOMALIES

SCALE 1:500 000

FIGURE 1 CARLSBAD QUADRANGLE

TABLE 1

DESCRIPTION OF MAP UNITS - CARLSBAD QUADRANGLE

Qal	Alluvium (QUATERNARY) Clay, silt, sand, gravel, and boulders, may include gravel of Tertiary age.
Qlc	Limestone conglomerate (QUATERNARY) Mesa caprock
QTP	Pediment gravels (QUATERNARY AND TERTIARY) Includes limestone conglomerate in places.
Ti	Intrusive rocks (TERTIARY) Dikes
Kw	Lower Cretaceous undifferentiated erosional remnants of Washita age.
Trd	DOCKUM GROUP (TRIASSIC) Maroon shale, siltstone, sandstone and conglomerate.
Pr	RUSTLER FORMATION (PERMIAN) Vesicular dolomite underlain by gypsum and silt.
Pcs	CASTILE FORMATION (PERMIAN) Anhydrite, gypsum, and silt.
Pt	TANSILL FORMATION (PERMIAN) Thin to medium bedded dolomite, limestone, and evaporites, with siltstone beds in upper parts.
Pya	YATES FORMATION (PERMIAN) Limestone, dolomite, and evaporites with sandstone and siltstone beds.
Pb	BERNAL FORMATION (PERMIAN) Equivalent to Tansill and Yates Formations.
Pcm/Pcb	CAPITAN LIMESTONE (PERMIAN) Pcm reef member. Pcb reef-talus member. Equivalent to Be-1 Canyon Formation in Delaware Basin
Psr	SEVEN RIVERS FORMATION (PERMIAN) Dolomite, limestone, and evaporites with sandstone and siltstone beds in lower part.

Pq	QUEEN FORMATION (PERMIAN) Dolomite interbedded with sandstone and siltstone.
Pgr	GRAYBURG FORMATION (PERMIAN) Yellowish fine grained dolomite with some sandstone.
Pgs	GOAT SHEEP DOLOMITE (PERMIAN) Equivalent to Queen and Grayburg Formations.
Pcc	CHERRY CANYON FORMATION (PERMIAN) Sandstone tongue; grades laterally into San Andres Fm.
Psa	SAN ANDRES FM AND GLORIETO (PERMIAN) Sandstone undifferentiated gray limestone with gypsum.
Py	YESO FORMATION (PERMIAN) Gray limestone and gypsum with tan and pink siltstone and shale.
Pa	ABO FORMATION (PERMIAN) Maroon shale, siltstone, sandstone, arkose, and conglomerate.
Ph	HUERCO LIMESTONE (PERMIAN) Gray, finely crystalline dolomite with red to gray shale and some sandstone.
P	PENNSYLVANIAN ROCKS Claystone with limestone, sandstone, and some siltstone and conglomerate.
MD	MISSISSIPPIAN AND DEVONIAN rocks undifferentiated, mainly shale and cherty limestone.
SOC	SILURIAN, ORDOVICIAN AND CAMBRIAN rocks undifferentiated mainly dolomite, shale and sandstone.

TABLE 2

COMPARISON OF GEOLOGIC MAP SYMBOLS WITH COMPUTER DESIGNATIONS

<u>Computer Code</u>	<u>MAP UNIT CODE</u>	<u>DATA CODE</u>
101	Qal	QAL
102	Qlc	QLC
103	QTP	QTP
104	Tl	TI
201	Kw	KW
202	Trd	TRD
301	Pr	PR
302	Pcs	PCS
303	Pt	PT
304	Pya	PYA
305	Pb	PB
306	Pcm	PCM
307	Pcb	PCB
308	Pbc	PBC
309	Psr	PSR
310	Pq	PQ
311	Pgr	PGR
312	Pgs	PGS
313	Psa	PSA
314	Poc	PCC
315	Py	PY
316	Pa	PA
317	Ph	PH
318	P	P
319	MD	MD
320	SOC	SOC

2.5 CONCLUSIONS

Of the 24 preferred anomalies, 20 appear to be directly associated with either mapped faults or magnetic linears. This indicates a structural control to the high eU occurrences. These structures trend NW-SE or NS across the study area and appear to be primarily related to the episode of late Cenozoic block and rift faulting. However, the high eU anomalies associated with the Tertiary intrusions may be related to fractures that formed during the Laramide compressional deformation.

2.6 SUGGESTIONS FOR FURTHER WORK

Further work can be considered in three general categories.

- (a) Airborne follow-up
- (b) Ground studies
- (c) Sub-surface studies

The airborne follow-up would be used to more accurately define certain areas in question. The areas in question in this quadrangle are along the Brokeoff Mountains and the Cornudas Mountains in the southern half of the quadrangle. This detailed survey would be used as a base for a ground reconnaissance and sub-surface study. The two approaches outlined above would certainly lead to what will probably be the most effective exploration tool, that is, drilling and sub-surface logging. A program to evaluate the radon gas content of both ground-water and soil would be of great value.

TABLE 3

EQUIVALENT URANIUM ANOMALIES - CARLSBAD OUADRANGLE NL 13-11

Anom. No.	F.L. No.	Geo. FM.	Number of Points															Sigma
			1	2	eU 3	1	eTh 2	3	1	K 2	3	1	eU/eTh 2	3	1	eU/K 2	3	
1	36	Pa	1	1	1	-	1	2	2	1	-	-	-	-	-	-	-	
2	36	Psa	2	3	1	-	-	-	1	-	-	1	1	2	2	1	1	
3	38	Psa	1	-	1	1	-	-	1	-	-	-	-	-	-	-	-	
4	38	Pb	6	1	-	2	-	-	-	-	-	4	-	-	3	2	-	
5	38	Pya	2	1	1	-	3	1	1	3	-	-	-	-	-	-	-	
6	40	Psa	4	-	-	-	2	1	-	3	-	-	-	-	-	-	-	
7	40	Psa	4	-	-	1	3	-	3	1	-	-	-	-	-	-	-	
8	40	Psa	2	1	-	3	-	-	1	-	-	-	-	-	-	-	-	
9	42	MD,P	1	2	-	-	-	-	-	-	-	-	-	-	-	-	1	
10	42	Psa	2	2	-	-	-	-	-	-	-	-	-	-	4	-	-	
11	42	Psa	3	2	-	-	-	-	-	-	-	-	-	-	1	-	-	
12	42	Psa	4	-	-	-	-	-	-	-	-	1	-	-	2	-	-	
13	42	Psa	4	-	-	3	-	-	2	-	-	-	-	-	-	-	-	
14	42	Psa	6	2	-	3	5	-	5	-	-	-	-	-	-	-	-	
15	42	Psa	2	1	-	-	2	1	2	1	-	-	-	-	-	-	-	
16	42	Psa	2	1	-	-	-	-	-	-	-	2	-	-	2	1	-	
17	42	Psa	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	
18	42	Psa	9	-	-	5	-	-	1	-	-	-	-	-	-	-	-	
	212																	
19	42	Psa	2	1	-	2	1	-	3	-	-	-	-	-	-	-	-	
20	42	Psa	4	1	-	-	-	-	-	-	-	3	1	-	1	2	-	
21	42	Psa	4	-	-	-	-	-	-	-	-	1	1	-	-	2	-	
22	42	Psa	3	1	-	1	2	-	3	1	-	-	-	-	-	-	-	
23	42	Qal	2	1	-	3	-	-	2	-	-	-	-	-	-	-	-	
24	42	Qal	6	2	-	5	-	-	3	-	-	-	-	-	1	-	-	
25	42	Qal	3	1	-	2	-	-	-	-	-	-	-	-	1	-	-	
26	44	Psa	2	1	-	-	-	-	-	-	-	-	-	-	1	-	-	

TABLE 3 - EQUIVALENT URANIUM ANOMALIES

Anom. No.	F.L. No.	Geo. Fm.	Number of Points															Sigma
			1	2	eU 3	1	eTh 2	3	1	K 2	3	1	eU/eTh 2	3	1	eU/K 2	3	
27	44	Psa	4	-	-	1	-	-	1	-	-	-	-	-	-	-	-	
28	44	Psa	4	-	-	3	1	-	-	4	-	-	-	-	-	-	-	
29	44	Psa	7	4	1	-	-	-	-	-	-	2	1	-	1	2	-	
30	44	Psa	4	-	-	2	-	-	2	-	-	1	-	-	1	-	-	
31	44	Pgr	1	2	3	1	5	-	-	4	1	-	-	-	-	-	-	
32	44	Pgr,Pq	8	9	2	6	7	1	5	4	-	1	-	-	2	1	-	
33	44	Qal	5	-	-	-	-	-	1	-	-	-	-	-	-	-	-	
34	44	Qal	3	2	-	2	-	-	1	-	-	1	-	-	-	-	-	
35	44	Psr	-	1	1	1	-	-	1	1	-	-	-	-	-	-	-	
36	46	Pa	-	2	-	-	-	-	-	-	-	1	1	-	-	1	1	
37	46	Psa	4	-	-	1	1	-	-	-	-	-	-	-	1	-	-	
38	46	Py	3	2	-	-	-	-	-	-	-	-	1	3	-	1	3	
39	216	Pgl	2	2	-	3	1	-	2	1	-	-	-	-	1	-	-	
40	48	Pq	2	1	-	2	-	-	3	-	-	-	-	-	-	-	-	
41	48	Psa	1	2	-	-	-	-	-	-	-	-	1	1	-	2	-	
42	48	Qal	4	-	-	-	-	-	-	-	-	1	-	1	1	1	1	
43	48	Py,Psa	6	1	-	-	-	-	-	-	-	-	1	2	-	2	1	
44	48	Pq	2	2	-	-	-	-	-	-	-	3	1	-	2	1	-	
45	48	Pq	2	1	-	1	-	-	-	-	-	1	-	-	1	-	-	
46	48	Pya	3	2	-	1	-	-	1	-	-	2	1	-	2	-	-	
47	48	Pya	1	2	-	2	-	-	-	2	-	1	-	-	1	-	-	
48	48	Pya,Pt	4	1	-	2	-	-	1	1	-	-	1	-	-	-	-	
49	48	Pt	4	2	-	2	3	-	2	3	-	1	-	-	-	-	-	
50	48	Pt	2	2	-	-	-	-	1	-	-	1	2	-	-	1	1	

* PREFERRED ANOMALIES

TABLE 3 - EQUIVALENT URANIUM ANOMALIES

Number of Points																		
Anom.	F.L.		eU			eTh			K			eU/eTh			eU/K			
No.	No.	Geo. Fm.	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Sigma
51	48	Pt	5	3	1	2	-	-	1	-	-	-	1	3	2	-	4	
52	210	P	-	-	1	-	-	-	-	-	-	-	1	-	-	1	-	
53*	50	Qal	-	1	1	-	-	-	-	-	-	2	-	-	2	-	-	
54	50	Py	4	-	-	-	-	-	-	-	-	2	2	-	1	3	-	
55	50	Py	2	3	-	-	-	-	-	-	-	-	-	-	1	-	-	
56	50	Py, Psa	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	
57	50	Psa	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
58*	50	Pt, Qal	1	-	3	-	-	-	-	-	-	-	-	2	-	-	2	
59	50	Py, Qal	8	4	-	-	-	-	-	-	-	2	1	1	5	2	-	
60	50	Qal, Qtp	8	3	1	2	-	-	6	-	-	3	-	-	2	-	-	
61	50	QTP	3	1	-	-	-	-	3	-	-	2	-	-	-	-	-	
62	218	Qal	7	10	-	-	-	-	-	-	-	8	2	-	10	3	-	
63*	218	Qal	6	9	1	1	-	-	-	-	-	4	-	-	5	-	-	
64	212	Psa	3	2	-	-	-	-	-	-	-	5	-	-	3	1	-	
65	52	Qal	2	1	-	-	-	-	-	-	-	-	1	-	1	-	-	
66	52	Psa	4	-	-	-	-	-	-	-	-	-	2	1	2	1	1	
67	52	Psa	4	2	-	1	-	-	1	1	-	2	-	1	-	3	-	
68*	52	Qal	14	7	2	16	-	-	10	-	-	-	-	-	2	-	-	
69	52	Qal	11	2	-	3	-	-	3	-	-	1	-	-	-	-	-	
70	52	Qal	4	-	-	-	-	-	-	-	-	4	-	-	4	-	-	
71	52	Qal	6	-	-	-	-	-	-	-	-	-	4	-	1	3	2	
72	52	QTP	6	-	-	5	-	-	6	-	-	-	-	-	-	-	-	
73	52	QTP	5	-	-	4	-	-	5	-	-	-	-	-	-	-	-	
74	52	QTP	4	-	-	1	-	-	-	-	-	1	-	-	-	-	-	
75	218	QTP	3	1	-	-	-	-	1	-	-	-	-	-	-	-	-	

* PREFERRED ANOMALIES

TABLE 3 - EQUIVALENT URANIUM ANOMALIES

Number of Points																		
Anom. No.	F.L. No.	Geo. Fm.	1	2	eU 3	1	eTh 2	3	1	K 2	3	1	eU/eTh 2	3	1	eU/K 2	3	Sigma
76	218	QTP	5	-	-	1	-	-	3	-	-	-	-	-	-	-	-	
77	218	Pr	7	1	-	4	1	1	2	2	-	-	-	-	2	1	-	
78	54	Ph	3	3	-	-	-	-	-	-	-	2	1	2	-	5	-	
79	54	Ph	5	2	-	-	-	-	-	-	-	4	-	-	4	-	-	
80	54	Ph	3	1	-	1	-	-	2	-	-	-	-	-	-	-	-	
81	54	Py	1	2	-	-	-	-	-	-	-	1	1	-	2	-	-	
82	54	Py	5	-	-	-	-	-	-	-	-	-	1	1	1	2	-	
83	54	Py	3	3	-	-	-	-	-	-	-	1	-	-	2	-	-	
84	54	Py	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
85	54	Py	13	19	-	-	-	-	-	-	-	9	12	2	11	7	2	
86	54	Py	-	5	-	4	1	-	5	-	-	-	-	-	-	-	-	
87	54	Py	1	2	-	-	-	-	-	-	-	1	-	-	-	-	-	
88	54	Qal, Psa	4	6	-	2	-	-	3	2	-	-	-	-	-	-	-	
89	54	Psa	8	4	-	5	1	-	7	4	-	-	-	-	-	-	-	
90	54	Psa	3	2	-	-	-	-	3	-	-	-	-	-	-	-	-	
91	54	Psa, Py	2	2	-	-	-	-	1	-	-	3	-	1	-	1	1	
92*	54	Py	1	3	1	2	-	-	1	-	-	-	-	-	-	-	-	
93	54	Psa	5	-	-	-	1	-	1	1	-	1	-	-	-	-	-	
94	54	Psa	2	1	-	-	-	-	-	-	-	-	2	1	-	1	2	
95	54	Psa	2	1	-	-	-	-	-	-	-	1	1	1	-	1	1	
96	54	Psa	4	-	-	-	-	-	1	-	-	1	-	-	-	-	-	
97	54	Psa	5	1	-	2	-	-	1	2	-	2	1	-	1	-	-	
98	54	Psa	3	-	1	-	-	-	-	-	-	-	1	-	-	-	3	
99	54	Psa, Qal	3	2	-	-	-	-	-	-	-	2	-	-	2	1	-	
100*	54	Qal	19	20	4	23	-	-	13	-	-	4	1	-	6	-	-	

* PREFERRED ANOMALIES

TABLE 3 - EQUIVALENT URANIUM ANOMALIES

			Number of Points																
Anom. No.	F.L. No.	Geo. Fm.	1	2	eU 3	1	eTh 2	3	1	2	3	1	eU/eTh			eU/K			Sigma
101*	54	Qal	6	1	1	-	-	-	-	-	-	1	1	1	-	1	2		
102	214	Psa	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-		
103	214	Psa,Pgr	6	2	-	-	-	-	-	-	-	-	-	-	-	-	-		
	54																		
104*	214	Psa,Pgr	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-		
105	214	Psa	-	2	-	-	-	-	-	-	-	-	-	-	-	-	1		
106*	214	Psa	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-		
107*	214	Pgr,Psa	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-		
108	54	Psr	4	1	-	-	-	-	-	-	-	2	-	-	1	1	-		
109	54	Pcm	3	1	-	-	-	-	-	-	-	1	-	-	1	-	-		
110	218	Pr	5	-	-	2	-	-	1	1	-	1	-	-	1	-	-		
111	54	Pr	5	1	-	5	1	-	4	2	-	-	-	-	-	-	-		
112	54	Pr	11	1	-	1	1	-	3	-	-	3	2	-	8	-	-		
113	212	Psa	4	-	-	1	-	-	3	-	-	-	-	-	-	-	-		
114*	56	Psa	10	6	4	9	5	-	6	6	2	-	2	-	2	-	-		
115	56	Psa	1	2	-	2	-	-	2	-	-	-	-	-	-	-	-		
116	56	Psa	3	1	-	3	-	-	3	1	-	-	-	-	-	-	-		
117	56	Psa	3	-	1	2	-	-	2	1	-	1	-	-	-	-	-		
118	56	Psa	2	2	-	-	-	-	-	-	-	-	-	3	-	1	2		
119	56	Psa	6	1	-	-	-	-	3	-	-	2	-	-	-	-	-		
120	56	Psa	8	6	-	-	-	-	3	-	-	3	1	4	1	1	3		
121	56	Psa	2	3	-	-	-	-	-	-	-	2	-	1	2	-	-		
122*	56	Psa,Qal	10	7	9	-	-	-	-	-	-	7	2	6	5	3	5		
123	56	Qal	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-		
124	56	Qal	4	1	-	-	-	-	-	-	-	2	1	2	1	1	3		
125	56	Psa	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

* PREFERRED ANOMALIES

TABLE 3 - EQUIVALENT URANIUM ANOMALIES

			Number of Points															
Anom.	F.L.		eU			eTh			K			eU/eTh			eU/K			
No.	No.	Geo. Fm.	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Sigma
126	56	Pgr	2	1	1	-	-	-	3	1	-	-	-	-	-	-	-	
127	56	QTp	6	-	-	-	-	-	-	-	-	3	-	-	4	1	-	
128	56	Pcs	3	1	-	3	1	-	2	2	-	-	-	-	-	-	-	
129	56	Pr	4	1	-	2	1	-	2	1	-	-	2	-	1	1	-	
130	56	Pr	-	3	-	1	-	1	1	-	-	1	-	-	2	-	-	
131	58	P	2	1	-	1	-	-	-	2	1	-	-	-	-	-	-	
132*	58	Kw	5	-	-	3	-	-	4	-	-	-	-	-	1	-	-	
133*	58	Qal, Ti	1	1	2	-	1	3	-	-	4	-	-	-	-	-	-	
134*	58	Qal, Ty	-	1	4	-	-	5	-	-	5	-	-	-	-	-	-	
135*	58	Ti, Ty	1	-	1	-	-	1	-	-	1	-	-	-	-	-	-	
136*	58	Py, Psa	2	2	2	-	-	6	-	-	6	-	-	-	-	-	-	
137*	58	Psa	3	2	2	-	-	7	-	-	7	-	-	-	-	-	-	
138	58	Qal	5	-	-	3	-	-	2	2	-	-	-	-	-	-	-	
139	58	Psg	7	1	-	1	6	1	1	4	3	-	-	-	-	-	-	
140	58	Psa	3	1	-	2	-	-	1	2	-	2	-	-	-	-	-	
141	58	Psa	5	-	-	-	-	-	1	1	-	1	-	-	-	-	-	
142*	58	Psa	2	5	1	-	-	-	-	-	-	2	2	1	2	3	1	
143*	58	Psa	6	2	6	-	-	-	-	-	-	1	4	3	3	3	5	
144	58	Qal	4	2	-	-	-	-	-	-	-	4	-	-	1	1	-	
145*	58	Qal	10	11	4	-	-	-	-	-	-	-	-	16	-	2	10	
146*	58	Qal	2	8	2	-	-	-	-	-	-	2	2	7	4	3	5	
147*	58	Qal	-	-	3	-	-	-	-	-	-	-	-	2	-	-	3	
148	58	Pcs	8	-	-	-	-	-	1	-	-	1	-	1	-	1	1	
149*	58	Pcs, Pr	3	13	4	2	-	-	12	1	-	13	2	1	5	2	1	
150	58	Qal, Pr	13	13	-	-	-	-	1	-	-	11	8	1	11	9	2	

* PREFERRED ANOMALIES

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**NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY**

NEW MEXICO-CARLSBAD NI13-II QUADRANGLE

FLIGHT LINE BASE MAP

1979

BY: CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN ROAD PERKASIE, PENNA. 18944

PREPARED FOR
DEPARTMENT OF ENERGY

EXPLANATION

INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES.

AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN ± 1 STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.

TRAVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE

ANOMALY MAP - URANIUM

1979

BY: CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN ROAD PERKASIE, PENNA. 18944

PREPARED FOR
DEPARTMENT OF ENERGY

EXPLANATION

INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES.

AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN ± 1 STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.

TRAVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE

ANOMALY MAP - THORIUM

1979

BY: CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN ROAD PERKASIE, PENNA. 18944

PREPARED FOR
DEPARTMENT OF ENERGY

EXPLANATION

INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES.

AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN ± 1 STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.

TRAVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.

**NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY**

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE

ANOMALY MAP - POTASSIUM

1979

BY: CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN ROAD PERKASIE, PENNA. 18944

PREPARED FOR
DEPARTMENT OF ENERGY

EXPLANATION

INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES.

AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN ± 1 STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.

INVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.

**NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY**

NEW MEXICO-CARLSBAD NI 13-II QUADRANGLE

ANOMALY MAP-URANIUM/THORIUM

1979

BY: CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN ROAD PERKASIE, PENNA. 18944

PREPARED FOR
DEPARTMENT OF ENERGY

EXPLANATION

INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES.

AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN ± 1 STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.

TRAVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE

ANOMALY MAP - URANIUM / POTASSIUM

1979

BY: CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN ROAD PERKASIE, PENNA. 18944

PREPARED FOR
DEPARTMENT OF ENERGY

EXPLANATION
INDIVIDUAL SAMPLES ARE PLOTTED AT 20 SAMPLE INTERVALS AND IDENTIFIED BY RECORD NUMBER AT INTERVALS OF 500 SAMPLES.
AVERAGED SAMPLES ARE ANNOTATED IF THE DEVIATION OF THE AVERAGED SAMPLE, FROM THE MEAN OF ITS CORRESPONDING ROCK UNIT, IS GREATER THAN ± 1 STANDARD DEVIATION. THE DEVIATION INTERVALS ANNOTATED ARE 1 TO 2, 2 TO 3, AND 3 OR GREATER.
TRAVERSE LINE DEVIATIONS ARE INDICATED BY SOLID CIRCLES AND TIE LINES BY SQUARES. NORTH OR EAST ARE POSITIVE AND SOUTH OR WEST ARE NEGATIVE.

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD N13-II QUADRANGLE
ANOMALY MAP - THORIUM/POTASSIUM
1979
BY: CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN ROAD PERKASIE, PENNA. 18944
PREPARED FOR
DEPARTMENT OF ENERGY

CONTOUR INTERVAL 50 GAMMAS

SCALE 1:500,000

CARLSBAD NI 13-II
MAGNETIC

CARLSBAD CAVERNS
NATIONAL PARK

CONTOUR INTERVAL 0.50 PPM

SCALE 1:500,000

CARLSBAD NI 13-11
URANIUM

CARLSBAD CAVERNS
NATIONAL PARK

CONTOUR INTERVAL 1.0 PPM

SCALE 1:500,000

CARLSBAD NI 13-II
THORIUM

CARLSBAD CAVERNS
NATIONAL PARK

CONTOUR INTERVAL .25%

SCALE 1:500,000

CARLSBAD NI 13-II
POTASSIUM

CONTOUR INTERVAL 0.10 UNITS

SCALE 1:500,000

CARLSBAD NI 13-11
URANIUM/THORIUM

CONTOUR INTERVAL 0.50 UNITS

SCALE 1:500,000

CARLSBAD NI13-11
URANIUM/POTASSIUM

CONTOUR INTERVAL 0.50 UNITS

SCALE 1:500,000

CARLSBAD N113-11
THORIUM/POTASSIUM

↑ FLOODED SAMPLE VALUES OF
N.U.: INDICATED DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979

BY CARSON HELICOPTERS, INC. 32-M BLOOMING GLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

SCALE 1:500,000

↑ FLAGGED SAMPLE VALUES OF
N.U.T. INDICATES DATA FAILED
STATISTICAL REGRESSION TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING OLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

+ FLOODED SAMPLE VALUES OF
N.U.T. INDICATED DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY
 NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
 1979
 BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944
 PREPARED FOR
 DEPARTMENT OF ENERGY

↑ FLOODED SAMPLE VALUES OF
N.U.T INDICATES DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

↑ FLOODED SAMPLE VALUES OF
N.U.I. INQUIRIES WITH FAILED
STATISTICAL FREQUENCY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD N1 13-11 QUADRANGLE RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING OLEN RD. PERKASIE, PA 18944
PREPARED FOR DEPARTMENT OF ENERGY

↑ FLOODED SAMPLE VALUES OF
R.U.T INDICATED DATA FAILED
STATISTICAL REGURNEY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

TL/K
1.00/DIV

BI/TL
0.20/DIV

BI/K
2.00/DIV

K
0.4 PERCENT/DIV

TL
1.0 PPM/DIV

BI
1.0 PPM/DIV

BI COR
1.0 PPM/DIV

TC
400.0 C/S/DIV

ALT
100 FT/DIV

MAG
100 GAMMAS/DIV

P 48

53644 53800 54000 54200 54400 54600 54800 55000 54800 54600 54400 54200 54000 53800 53600 53400 53200 53000 52800 52600 52400 52200 52000 51800 51615

SCALE 1:500,000

↑ FLAGGED SAMPLE VALUES OF
N.U.T. INDICATES DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING OLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

P 50

↑ FLOODED SAMPLE VALUES OF
N.U.T INDICATES DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD N1 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING OLEN RD. PERKASIE, PA 18944
PREPARED FOR
DEPARTMENT OF ENERGY

TL/K
4.00/DIV

BI/TL
0.20/DIV

BI/K
2.00/DIV

K
0.4 PERCENT/DIV

TL
1.0 PPM/DIV

BI
1.0 PPM/DIV

BI COR
1.0 PPM/DIV

TC
400.0C/S/DIV

ALT
100 FT/DIV

MAG
100 GAMMAS/DIV

P 54

↑ FLOODED SAMPLE VALUES OF
N.U.T INDICATED DATA FAILED
STATISTICAL RECOVERY 1981

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979
BY CARSON HELICOPTERS, INC. 32-M BLOOMING GLEN RD. PERKASIE, PA 18944
PREPARED FOR
DEPARTMENT OF ENERGY

CARLSBAD
CAVERNS
NATIONAL
PARK

TL/K
4.00/DIV

BI/TL
0.20/DIV

BI/K
2.00/DIV

K
0.4 PERCENT/DIV

TL
1.0 PPM/DIV

BI
1.0 PPM/DIV

BI COR
1.0 PPM/DIV

TC
100.00/S/DIV

ALT
100 FT/DIV

MAG
100 GAMMA/DIV

P 56

↑ FLOODED SAMPLE VALUES OF
N.U.T INDICATES DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

CARLSBAD
CAVERNS
NATIONAL
PARK

P 58

⊕ FLOODED SAMPLE VALUES OF
N.U.T. INDICATED DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING OLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

↑ FLAGGED SAMPLE VALUES OF
N.U.T. INDICATES DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD N1 13-11 QUADRANGLE RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES 1979
BY CARSON HELICOPTERS, INC. 32-M BLOOMING OLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

⚡ FLAGGED SAMPLE VALUES OF
N.U.T INDICATES DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD N 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944
PREPARED FOR
DEPARTMENT OF ENERGY

↑ FLOODED SAMPLE VALUES OF
N.U.T. INDICATES DATA FAILED
STATISTICAL ADEQUACY TEST

NURE HERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944
PREPARED FOR
DEPARTMENT OF ENERGY

⊕ FLAGGED SAMPLE VALUES OF
N.U.T. INDICATES DATA FAILED
STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

* FLOODED SAMPLE VALUES OF
 N.U.T INDICATES DATA FAILED
 STATISTICAL ADEQUACY TEST

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE RADIOMETRIC MULTIPLE PARAMETER STACKED PROFILES 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

SCALE 1:500,000

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
MAGNETIC AND ANCILLARY STACKED PROFILE DATA
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

MAG
40 GAMMAS/DIV

DIURNAL
40 GAMMAS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MMHG/DIV

P 38

41558 41400 41200 41000 40800 40600 40400 40200 53600 53800 54000 54200 54400 54600 54800 55000 55200 55400 55600 55800 56000 56200 56400 56558

SCALE 1:500,000

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
MAGNETIC AND ANCILLARY STACKED PROFILE DATA
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944
PREPARED FOR
DEPARTMENT OF ENERGY

MAG
40 GAMMAS/DIV

DIURNAL
40 GAMMAS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MM/DIV

P 40

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUAKRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

SCALE 1:500,000

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD N1 13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-M BLOOMING GLEN RD. PERKASIE, PA 18944
PREPARED FOR DEPARTMENT OF ENERGY

MAG
40 GAUSS/DIV

DIURNAL
40 GAUSS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MM/DIV

P 4.4

EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

MAG
40 GAMMAS/DIV

DIURNAL
40 GAMMAS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MMHG/DIV

P 4R

5728 57200

57000

56800

56600

56400

56200

56000

55800

56400

56600

56800

57000

57200

57400

57600

57800

58000

58200

58400

58600

58800

59000

59275

SCALE 1:500,000

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
MAGNETIC AND ANCILLARY STACKED PROFILE DATA
1979

BY CARSON HELICOPTERS, INC. 32-M BLOOMING OLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

MAG
40 GAMMAS/DIV

DIURNAL
40 GAMMAS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MM/DIV

P 48

SCALE 1:500,000

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
MAGNETIC AND ANCILLARY STACKED PROFILE DATA
1979

BY CARSON HELICOPTERS, INC. 32-M BLOOMING GLEN RD. PERKASIE, PA 18944
PREPARED FOR
DEPARTMENT OF ENERGY

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD 13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

MAG
40 GAMMAS/DIV

DIURNAL
40 GAMMAS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MM/DIV

P 54

SCALE 1:500,000

NURE AERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
MAGNETIC AND ANCILLARY STACKED PROFILE DATA
1979

BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

CARLSBAD
CAVERNS
NATIONAL
PARK

MAG
40 GAMMAS/DIV

DIURNAL
40 GAMMAS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MMHG/DIV

SCALE 1:500,000

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI. 13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-M BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

CARLSBAD
CAVERNS
NATIONAL
PARK

MAG
40 GAMMAS/DIV

DIURNAL
40 GAMMAS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MM/DIV

P 58

SCALE 1:500,000

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY	
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979	
BY CARSON HELICOPTERS, INC. 32-H BLOOMING OLEN RD. PERKASIE, PA 18944	
PREPARED FOR DEPARTMENT OF ENERGY	

MAG
40 GAMMAS/DIV

DIURNAL
40 GAMMAS/DIV

ALT
100 FT/DIV

TEMP
5.00 DEGREES/DIV

BAR ALT
10.00 MM/DIV

TL 210

SCALE 1:500,000

EXCEEDS ALTITUDE SPECIFICATIONS

NURE HERIAL GAMMA-RAY AND MAGNETIC
RECONNAISSANCE SURVEY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
MAGNETIC AND ANCILLARY STACKED PROFILE DATA
1979

BY CARSON HELICOPTERS, INC. 32-M BLOOMING GLEN RD. PERKASIE, PA 18944

PREPARED FOR
DEPARTMENT OF ENERGY

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-M BLOOMING GLEN RD. PERKASIE, PA 18944
PREPARED FOR DEPARTMENT OF ENERGY

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

⚡ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 18944 PREPARED FOR DEPARTMENT OF ENERGY

↑ EXCEEDS ALTITUDE SPECIFICATIONS

NURE AERIAL GAMMA-RAY AND MAGNETIC RECONNAISSANCE SURVEY
NEW MEXICO-CARLSBAD N13-11 QUADRANGLE MAGNETIC AND ANCILLARY STACKED PROFILE DATA 1979
BY CARSON HELICOPTERS, INC. 32-H BLOOMING GLEN RD. PERKASIE, PA 19044 PREPARED FOR DEPARTMENT OF ENERGY

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT GAL

POTASSIUM%
RECORDS 3346

677. X
644. X
610. X
576. X
542. XX
508. XX
474. XXX
440. XXXX
406. XXXXX
372. XXXXXX
339. XXXXXX
305. XXXXXX
271. XXXXXX
237. XXXXXX
203. XXXXXX
169. XXXXXXXX
135. XXXXXXXX
101. XXXXXXXX
67. XXXXXXXX
33. XXXXXXXX

0.....
C 4

MEAN 1.2 SIGMA 0.4

U/K RATIO
RECORDS 3131

882. X
838. X
794. X
750. X
706. X
662. XX
618. XX
573. XXX
529. XXX
485. XXX
441. XXX
397. XXX
353. XXXX
309. XXXX
264. XXXX
220. XXXX
176. XXXXX
132. XXXXX
88. XXXXXXXX
44. XXXXXXXX

0.....
C 9

MEAN 1.9 SIGMA 0.9

URANIUM PPM
RECORDS 3249

632. X
600. X
568. XX
537. XX
505. XX
474. XXX
442. XXX
410. XXXX
379. XXXX
347. XXXX
316. XXXXX
284. XXXXX
252. XXXXXX
221. XXXXXX
189. XXXXXXXX
158. XXXXXXXX
126. XXXXXXXX
94. XXXXXXXX
63. XXXXXXXXXX
31. XXXXXXXXXX

0.....
C 6

MEAN 2.2 SIGMA 0.6

U/T RATIO
RECORDS 3111

885. X
840. X
796. X
752. XX
708. XX
663. XX
619. XX
575. XXX
531. XXX
486. XXX
442. XXX
398. XXX
354. XXX
309. XXXX
265. XXXX
221. XXXX
177. XXXXX
132. XXXXX
88. XXXXXXXX
44. XXXXXXXX

0.....
C 2

MEAN 0.4 SIGMA 0.2

THORIUM PPM
RECORDS 3300

842. X
300. X
758. X
716. XX
674. XX
632. XXX
590. XXX
547. XXXX
505. XXXX
463. XXXX
421. XXXX
379. XXXX
337. XXXX
295. XXXX
252. XXXX
210. XXXXXX
168. XXXXXX
126. XXXXXX
84. XXXXXX
42. XXXXXX

0.....
1 27

MEAN 5.3 SIGMA 1.9

T/K RATIO
RECORDS 3230

817. X
777. XX
736. XX
695. XX
654. XX
613. XX
572. XX
531. XXX
490. XXX
449. XXXX
409. XXXX
368. XXXX
327. XXXX
286. XXXX
245. XXXX
204. XXXXX
163. XXXXXX
122. XXXXXX
81. XXXXXXXX
40. XXXXXXXX

0.....
C 11

MEAN 4.3 SIGMA 0.9

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT GLC
URANIUM PPM
RECORDS 18

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT QTP

POTASSIUM%
RECORDS 414

52. X
49. X
46. X
44. X
41. XX X
39. XX X
36. XXXX X
33. XXXX X
31. XXXX X
28. XXXXX XXX
26. XXXXX XXX
23. XXXXXX XXX
20. XXXXXX XXXX
18. XXXXXXX XXXX
15. XXXXXXX XXXX
13. XXXXXXXXXXXXXXX
10. XXXXXXXXXXXXXXX
7. XXXXXXXXXXXXXXXX
5. XXXXXXXXXXXXXXXX
2. XXXXXXXXXXXXXXXX
0.....

C 2
MEAN 1.0 SIGMA 0.4

U/K RATIO
RECORDS 368

62. X
59. X
56. X
53. XXX
50. XXX
47. XXX
44. XXXX
40. XXXX
37. XXXX
34. XXXXX
31. XXXXXX
28. XXXXXX
25. XXXXXX
22. XXXXXX
18. XXXXXX
15. XXXXXXXX
12. XXXXXXXX
9. XXXXXXXX
6. XXXXXXXX
3. XXXXXXXX
0.....

C 5
MEAN 1.9 SIGMA 0.6

URANIUM PPM
RECORDS 400

52. X
50. X
47. X
45. X
42. X X
39. X X X
37. X X X X
34. XX X X X
31. XXXX XXX
29. XXXXXXXX
26. XXXXXXXX
23. XXXXXXXX
21. XXXXXXXX
18. XXXXXXXXXXXX
15. XXXXXXXXXXXX
13. XXXXXXXXXXXX
10. XXXXXXXXXXXX
7. XXXXXXXXXXXX
5. XXXXXXXXXXXX
2. XXXXXXXXXXXX
0.....

C 4
MEAN 1.9 SIGMA 0.6

U/T RATIO
RECORDS 368

63. X X
60. X X
57. X X
54. XX X
51. XX X
48. XXXX
44. XXXX
41. XXXX
38. XXXX
35. XXXXX
32. XXXXX
28. XXXXX
25. XXXXX
22. XXXXX
19. XXXXX
15. XXXXXXXX
12. XXXXXXXX
9. XXXXXXXX
6. XXXXXXXX X
3. XXXXXXXX X
0.....

C 1
MEAN 0.4 SIGMA 0.1

THORIUM PPM
RECORDS 410

85. X
80. X
76. X
72. X
68. X
63. XX
59. XX
55. XX
51. XX
46. XX XX
42. XXXX XX
38. XXXX XX
34. XXXXXXX
29. XXXXXXX
25. XXXXXXX
21. XXXXXXX
17. XXXXXXX
12. XXXXXXX
8. XXXXXXX
4. XXXXXXX
0.....

C 15
MEAN 4.7 SIGMA 1.7

T/K RATIO
RECORDS 387

126. X
119. X
113. X
107. XX
100. XX
94. XX
88. XX
81. XX
75. XX
69. XXX
63. XXX
56. XXX
50. XXX
44. XXX
37. XXXX
31. XXXX
25. XXXX
18. XXXXX
12. XXXXX
6. XXXXX
0.....

C 12
MEAN 4.5 SIGMA 0.9

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT TI
URANIUM PPM
RECORDS 26

NEW MEXICO-CARLSBAD N1 13-11 QUADRANGLE
GEOLOGIC UNIT KW
URANIUM PPM
RECORDS 14

NEW MEXICO-CARLSEAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT PR

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE

GEOLOGIC UNIT PCS

POTASSIUM%
RECORDS 408

37. X
36. X
34. XX
32. X XXX
30. X X XXX
28. X X X XXX
26. XX X X XXX
24. XX X XXXXXX
22. XXXXXXXXXXXXX
20. XXXXXXXXXXXXX
19. XXXXXXXXXXXXX
17. XXXXXXXXXXXXX
15. XXXXXXXXXXXXX
13. XXXXXXXXXXXXX
11. XXXXXXXXXXXXX
9. XXXXXXXXXXXXX
7. XXXXXXXXXXXXX
5. XXXXXXXXXXXXX X
3. XXXXXXXXXXXXX
1. XXXXXXXXXXXXX
0.....

0 2
MEAN 0.8 SIGMA 0.4

U/K RATIO
RECORDS 288

73.
70.
66.
62. X
59. X
55. X
51. XX
48. XX
44. XX
40. XXX
37. XXXX
33. XXXX
29. XXXXX
25. XXXXXX
22. XXXXXX
18. XXXXXX
14. XXXXXX
11. XXXXXX
7. XXXXXXXXX
3. XXXXXXXXX X
0.....

0 6
MEAN 2.2 SIGMA 0.7

URANIUM PPM
RECORDS 371

42. X
39. X X
37. XX XX
35. XXX XXX
33. XXXXXXX
31. XXXXXXXX
29. XXXXXXXX
27. XXXXXXXX
25. XXXXXXXX
23. XXXXXXXX
21. XXXXXXXX
18. XXXXXXXX
16. XXXXXXXX
14. XXXXXXXX
12. XXXXXXXX
10. XXXXXXXX
8. XXXXXXXX
6. XXXXXXXXXX
4. XXXXXXXXXX
2. XXXXXXXXXX X
0.....

0 4
MEAN 1.9 SIGMA 0.7

U/T RATIO
RECORDS 287

61. X
57. X
54. X
51. X
48. X
45. XX
42. XX
39. XXX
36. XXX
33. XXXX
30. XXXXX
27. XXXXX
24. XXXXX
21. XXXXX
18. XXXXXX
15. XXXXXX
12. XXXXXX
9. XXXXXXXX
6. XXXXXXXX
3. XXXXXXXXX X
0.....

0 2
MEAN 0.6 SIGMA 0.2

THORIUM PPM
RECORDS 358

37. X
36. X
34. X X
32. XXX X X
30. XXXX X XX
28. XXXXXX XX
26. XXXXXX XX
24. XXXXXX XXX
22. XXXXXXXXXXX
20. XXXXXXXXXXX
19. XXXXXXXXXXX
17. XXXXXXXXXXX
15. XXXXXXXXXXX
13. XXXXXXXXXXX X
11. XXXXXXXXXXX
9. XXXXXXXXXXX
7. XXXXXXXXXXX
5. XXXXXXXXXXX
3. XXXXXXXXXXX
1. XXXXXXXXXXX
0.....

0 8
MEAN 3.7 SIGMA 1.4

T/K RATIO
RECORDS 299

58.
56.
53.
50.
47. XX
44. XX
41. XXX
38. XXX
35. XXXX
32. XXXX
29. XXXXX
26. XXXXX
23. XXXXX
20. XXXXX
17. XXXXXX
14. XXXXXXXX
11. XXXXXXXX
8. XXXXXXXX
5. XXXXXXXXXXX
2. XXXXXXXXXXX
0.....

0 6
MEAN 4.1 SIGMA 0.8

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT PT

POTASSIUM%
RECORDS 361

46. X
43. X
41. X
39. X
36. X XX
34. X XX
32. X XX
29. XX XXXXX
27. XX XXXXX
25. XX XXXXX
23. XX XXXXX
20. XXXXXXXXX
18. XXXXXXXXXX
16. XXXXXXXXXX
13. XXXXXXXXXX
11. XXXXXXXXXX
9. XXXXXXXXXX
6. XXXXXXXXXX
4. XXXXXXXXXX
2. XXXXXXXXXX X
0.....2
C
MEAN 0.8 SIGMA 0.3

U/K RATIO
RECORDS 275

57.
64.
61.
57.
54. X
51. X
47. X
44. X
40. XX
37. XX
34. XXX
30. XXX
27. XXXX
23. XXXXX
20. XXXXXX
17. XXXXXXX
13. XXXXXXX
10. XXXXXXX
6. XXXXXXX
3. XXXXXXX X
0.....6
C
MEAN 2.2 SIGMA 1.0

URANIUM PPM
RECORDS 345

73. X
70. X
66. X
62. XX
59. XX
55. XX
51. XX
48. XXX
44. XXXX
40. XXXX
37. XXXX
33. XXXXXX
29. XXXXXX
25. XXXXXX
22. XXXXXX
18. XXXXXX
14. XXXXXX
11. XXXXXX
7. XXXXXXX
3. XXXXXXX
0.....5
C
MEAN 1.9 SIGMA 0.6

U/T RATIO
RECORDS 275

58.
56.
53.
50. X
47. XX
44. XX
41. XX
38. XXX
35. XXXX
32. XXXX
29. XXXX
26. XXXX X
23. XXXX X
20. XXXXXX
17. XXXXXX
14. XXXXXX
11. XXXXXX
8. XXXXXXX
5. XXXXXXX X
2. XXXXXXX XXXX
0.....1
C
MEAN 0.5 SIGMA 0.2

THORIUM PPM
RECORDS 352

46. X
43. X XX
41. X XX
39. X XXX
36. X XXX
34. XX XXX
32. XX XXXX
29. XX XXXX
27. XX XXXX
25. XXXXXXX
23. XXXXXXX
20. XXXXXXX
18. XXXXXXX
16. XXXXXXX
13. XXXXXXX
11. XXXXXXX
9. XXXXXXX
6. XXXXXXX
4. XXXXXXX
2. XXXXXXX
0.....8
C
MEAN 3.8 SIGMA 1.2

T/K RATIO
RECORDS 300

52.
49. X
46. XX
44. XX
41. XX
39. XXX X
36. XXX X
33. XXX X
31. XXXXX
28. XXXXX
26. XXXXX
23. XXXXX
20. XXXXX
18. XXXXX
15. XXXXXXX
13. XXXXXXX
10. XXXXXXX
7. XXXXXXX
5. XXXXXXX
2. XXXXXXX
0.....7
C
MEAN 4.4 SIGMA 0.8

NEW MEXICO-CARLSEAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT PYA

MEAN 0.7 SIGMA 0.3
U/K RATIO
RECORDS 218

MEAN 2.4 SIGMA 0.9

MEAN 1.9 SIGMA 0.5
U/T RATIO
RECORDS 218

MEAN 0.5 SIGMA 0.2

MEAN 3.6 SIGMA 1.3
T/K RATIO
RECORDS 226

MEAN 4.7 SIGMA 0.9

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT PB

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT PCM
URANIUM PPM
RECORDS 27

NEW MEXICO-CARLSEAD N1 13-11 QUADRANGLE
GEOLOGIC UNIT PCB
URANIUM PPM
RECORDS 17

NEW MEXICO-CARLSBAD NI. 13-11 QUADRANGLE
GEOLOGIC UNIT PSR

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT PQ

NEW MEXICO-CARLSBAD N13-11 QUADRANGLE
GEOLOGIC UNIT PGR

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT PSA

NEW MEXICO-CARLSEAD N1 13-11 QUADRANGLE
GEOLOGIC UNIT PCC
URANIUM PPM
RECORDS 11

NEW MEXICO-CARLSEAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT PY
URANIUM PPM
RECORDS 1182

POTASSIUM%
RECORDS 1190

225. X
213. X
202. X
191. X
180. X
168. XX XX
157. XX XX
146. XX XX
135. XX XXX
123. XX XXX
112. XXX XXX
101. XXXXXXX
90. XXXXXXX
78. XXXXXXX
67. XXXXXXX
56. XXXXXXX
45. XXXXXXX
33. XXXXXXX
22. XXXXXXX
11. XXXXXXX
0.....

C 4
MEAN 1.1 SIGMA C.5
U/K RATIO
RECORDS 1078

213. X
203. X
192. X
181. X
171. XX
160. XX
149. XX
139. XXX
128. XXX
117. XXX
107. XXX
96. XXXX
85. XXXX
74. XXXXX
64. XXXXX X
53. XXXXXXX
42. XXXXXXX X
32. XXXXXXXXX
21. XXXXXXXXXX
10. XXXXXXXXXX X
0.....

C 5
MEAN 1.9 SIGMA 0.9

366. X
347. X
329. XX
311. XX
292. XX
274. XX
256. XX
237. XX
219. XX
201. XX
183. XX
164. XXX
146. XXXX
128. XXXX
109. XXXX
91. XXXX
73. XXXX
54. XXXXX
36. XXXXX
18. XXXXXXX
0.....

C 8
MEAN 2.0 SIGMA C.6
U/T RATIO
RECORDS 1074

248. X
236. X
224. X
211. X
199. XX
186. XX
174. XX
161. XXX
149. XXX
136. XXX
124. XXX
112. XXX
99. XXX
87. XXX X
74. XXXXXX
62. XXXXXXX
49. XXXXXXX
37. XXXXXXX
24. XXXXXXX
12. XXXXXXX
0.....

C 2
MEAN 0.4 SIGMA C.2

THORIUM PPM
RECORDS 1169

361. X
342. X
324. X
306. X
288. XX
270. XXX
252. XXX
234. XXX
216. XXX
198. XXX
180. XXX
162. XXX
144. XXX
126. XXXX
108. XXXX
90. XXXXX
72. XXXXX
54. XXXXX
36. XXXXX
18. XXXXX
0.....

1 28
MEAN 4.9 SIGMA 2.0
T/K RATIO
RECORDS 1086

267. X
253. X
240. X
226. XX
213. XX
200. XX
186. XX
173. XXX
160. XXX
146. XXX
133. XXX
120. XXX
106. XXXX
93. XXXXX
80. XXXXX
66. XXXXX
53. XXXXXX
40. XXXXXX
26. XXXXXXXXX
13. XXXXXXXXX
0.....

C 9
MEAN 4.3 SIGMA C.9

NEW MEXICO-CARLSBAD NI 13-11 SQUADRANGLE
GEOLOGIC UNIT PH

POTASSIUM%
RECORDS 139

U/K RATIO
RECORDS 138

URANIUM PPM
RECORDS 139

U/T RATIO
RECORDS 138

THORIUM PPM
RECORDS 138

T/K RATIO
RECORDS 138

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT F

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT MD
URANIUM PPM
RECORDS 25

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
GEOLOGIC UNIT SCC
URANIUM PPM
RECORDS 19

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
STATISTICAL SUMMARY

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	3249.0	1.2 0.4	2.2 0.6	5.3 1.9	1.9 0.9	0.4 0.2	4.3 0.9
102.	GLC	18.0	1.2 0.2	2.0 0.4	5.4 1.4	1.8 0.6	0.4 0.2	4.6 0.7
103.	GTP	400.0	1.0 0.4	1.9 0.6	4.7 1.7	1.9 0.6	0.4 0.1	4.5 0.9
104.	TI	26.0	2.6 1.1	4.8 1.6	17.7 9.3	1.9 0.7	0.3 0.1	6.5 1.4
201.	KW	14.0	2.9 1.0	4.8 2.4	20.4 10.4	1.6 0.4	0.2 0.1	6.6 2.0
301.	PR	490.0	0.9 0.3	2.1 0.6	3.9 1.2	2.2 0.6	0.6 0.2	4.1 0.7
302.	PCS	371.0	0.8 0.4	1.9 0.7	3.7 1.4	2.2 0.7	0.6 0.2	4.1 0.8
303.	PT	345.0	0.8 0.3	1.9 0.6	3.8 1.2	2.2 1.0	0.5 0.2	4.4 0.8
304.	FYA	286.0	0.7 0.3	1.9 0.5	3.6 1.3	2.4 0.9	0.5 0.2	4.7 0.9
305.	PE	127.0	1.3 0.3	1.9 0.4	5.3 1.1	1.5 0.5	0.4 0.1	4.1 0.7
306.	FCM	27.0	0.4 0.2	1.6 0.5	2.6 0.8	2.7 0.7	0.5 0.1	5.6 0.9
307.	FCB	17.0	0.2 0.0	1.5 0.4	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
309.	PSR	202.0	0.6 0.3	1.8 0.5	3.1 1.1	2.6 0.9	0.6 0.2	4.4 1.0
310.	PQ	414.0	1.0 0.2	1.9 0.4	4.1 1.1	1.9 0.6	0.5 0.2	4.1 0.9
311.	PGR	557.0	0.8 0.3	1.8 0.5	3.6 1.4	2.1 0.6	0.5 0.2	4.3 0.9
313.	FSA	4677.0	0.8 0.4	2.1 0.5	4.1 1.6	2.7 1.0	0.5 0.2	5.1 1.1
314.	FCC	11.0	0.5 0.2	3.5 0.9	2.4 0.3	6.7 1.9	1.6 0.1	3.4 0.9
315.	FY	1132.0	1.1 0.5	2.0 0.6	4.9 2.0	1.9 0.9	0.4 0.2	4.3 0.9
316.	PA	204.0	0.8 0.3	1.7 0.4	4.3 1.9	2.3 0.6	0.4 0.1	5.5 1.7
317.	PH	139.0	1.2 0.4	2.4 0.6	4.8 1.5	2.3 1.0	0.6 0.2	4.1 0.7
318.	P	229.0	0.7 0.3	2.0 0.4	4.5 2.5	2.7 0.9	0.5 0.3	5.9 2.2
319.	MD	25.0	0.5 0.2	1.8 0.6	2.5 0.7	3.2 1.0	0.7 0.3	4.5 0.7
320.	SOC	19.0	0.5 0.2	1.8 0.7	2.3 0.6	2.3 0.6	0.7 0.1	3.8 1.0

NEW MEXICO-CARLSBAD N1 13-11 QUADRANGLE
STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 36

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	219.0	1.2 0.4	2.0 0.5	5.2 1.4	1.7 0.6	0.4 0.1	4.5 1.0
103.	GTP	19.0	1.0 0.4	1.7 0.5	4.6 1.5	1.8 0.7	0.4 0.1	4.6 0.7
303.	PT	46.0	1.0 0.2	1.5 0.4	4.0 0.8	1.5 0.4	0.4 0.1	3.9 0.7
304.	FYA	25.0	1.1 0.2	1.5 0.3	4.6 0.7	1.4 0.3	0.3 0.1	4.2 0.6
305.	PB	66.0	1.3 0.3	1.8 0.3	5.2 1.3	1.4 0.4	0.4 0.1	3.9 0.7
313.	PSA	432.0	0.6 0.2	2.0 0.4	3.5 1.2	3.1 0.8	0.6 0.2	5.5 1.0
315.	PY	50.0	0.6 0.2	1.8 0.4	3.7 0.9	2.9 0.9	0.5 0.2	5.8 1.1
316.	PA	41.0	0.7 0.2	1.7 0.5	4.5 2.5	2.5 0.6	0.4 0.2	6.4 1.3

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 38

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** L/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	231.0	1.2 0.3	1.9 0.5	5.5 1.6	1.7 0.4	0.4 0.1	4.7 0.7
102.	GLC	18.0	1.2 0.2	2.0 0.4	5.4 1.4	1.8 0.6	0.4 0.2	4.6 0.7
103.	GTP	20.0	1.0 0.2	1.7 0.4	4.4 0.7	1.8 0.6	0.4 0.1	4.4 0.8
303.	PT	39.0	0.9 0.3	1.5 0.3	3.9 1.2	1.6 0.4	0.4 0.1	4.3 0.8
304.	FYA	26.0	1.0 0.3	1.8 0.7	4.7 1.7	1.8 0.6	0.4 0.1	4.7 0.8
305.	PB	29.0	1.2 0.2	1.9 0.5	5.4 0.8	1.6 0.6	0.4 0.1	4.5 0.7
313.	PSA	413.0	0.7 0.3	2.1 0.5	4.0 1.6	2.8 0.9	0.5 0.2	5.6 1.1
315.	PY	51.0	0.9 0.3	1.7 0.4	4.1 1.0	2.0 0.8	0.4 0.1	4.7 0.9
316.	PA	7.0	0.5 0.1	1.5 0.2	2.8 0.4	2.6 0.5	0.5 0.1	5.5 0.7
318.	P	25.0	0.6 0.2	1.7 0.4	4.9 2.6	2.5 0.6	0.3 0.1	8.1 2.3
319.	MD	11.0	0.5 0.1	1.3 0.4	2.2 0.6	3.0 0.5	0.7 0.1	4.4 0.4

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 40

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	267.0	1.1 0.4	1.9 0.5	5.5 1.9	1.7 0.6	0.4 0.2	4.8 0.8
103.	GTP	4.0	0.9 0.2	1.9 0.4	3.7 0.7	2.2 0.3	0.5 0.0	4.3 0.6
301.	PR	16.0	0.8 0.2	2.1 0.4	3.8 0.5	2.6 0.6	0.6 0.2	4.7 1.1
302.	PCS	8.0	0.9 0.2	2.1 0.3	4.7 0.9	2.5 0.6	0.5 0.1	5.3 0.4
303.	PT	12.0	0.6 0.2	1.7 0.4	3.1 1.0	2.5 0.5	0.5 0.2	4.9 1.3
304.	FYA	17.0	0.9 0.3	1.7 0.4	4.6 1.3	1.9 0.5	0.4 0.1	4.9 0.6
313.	PSA	402.0	0.8 0.3	2.0 0.5	4.4 1.6	2.6 0.8	0.5 0.2	5.6 0.9
315.	PY	36.0	0.7 0.4	1.7 0.5	4.1 1.6	2.2 0.7	0.4 0.1	5.3 0.9
316.	PA	4.0	0.9 0.2	2.2 0.2	9.4 1.2	2.7 0.8	0.2 0.0	11.2 3.0
318.	P	38.0	0.8 0.2	1.9 0.4	4.5 1.2	2.5 0.8	0.4 0.2	5.9 1.2
319.	MD	5.0	0.5 0.1	2.1 0.3	3.0 0.5	3.6 0.5	0.7 0.2	5.3 0.6
320.	SOC	7.0	0.5 0.1	1.5 0.6	2.4 0.6	2.7 1.0	0.7 0.0	4.7 0.6

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 42

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	365.0	1.2 0.4	2.2 0.6	5.4 2.0	1.9 0.5	0.4 0.2	4.4 0.9
303.	PT	11.0	0.8 0.1	1.7 0.2	3.8 0.8	2.1 0.5	0.5 0.1	4.6 0.9
304.	FYA	14.0	0.8 0.1	1.6 0.3	3.8 0.9	2.0 0.5	0.4 0.1	4.6 0.8
313.	PSA	442.0	0.8 0.3	2.2 0.5	4.4 1.6	2.8 0.8	0.5 0.2	5.6 1.0
315.	PY	36.0	0.6 0.2	1.8 0.3	3.2 1.1	2.6 0.7	0.5 0.2	5.1 1.0
316.	PA	11.0	0.9 0.3	1.3 0.3	4.6 1.6	2.0 0.4	0.4 0.1	4.8 0.7
318.	P	35.0	0.8 0.3	2.0 0.4	4.6 2.1	2.6 1.0	0.5 0.2	5.6 1.0
319.	MD	7.0	0.4 0.1	2.4 0.2	1.9 0.3	4.5 0.4	1.1 0.2	4.0 0.3
320.	SCC	5.0	0.3 0.0	2.5 0.3	1.9 0.2	0.0 0.0	0.0 0.0	0.0 0.0

NEW MEXICO-CARLSBAD N1 13-11 QUADRANGLE
STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 44

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	219.0	1.3 0.3	2.1 0.6	5.1 1.5	1.8 0.7	0.4 0.1	4.2 1.3
301.	PR	53.0	0.8 0.2	1.9 0.5	3.2 0.9	2.4 0.6	0.6 0.2	4.0 0.7
303.	PT	23.0	0.8 0.2	2.2 0.4	4.1 0.7	2.7 0.7	0.5 0.1	4.9 0.8
304.	PYA	10.0	0.6 0.4	1.8 0.6	3.6 2.5	2.5 0.7	0.6 0.2	4.7 0.7
309.	PSR	13.0	1.3 0.1	2.4 0.5	5.1 0.8	1.8 0.5	0.5 0.1	3.9 0.5
310.	PQ	6.0	1.4 0.2	2.8 0.3	6.2 0.7	2.1 0.4	0.5 0.1	4.6 0.6
311.	PGR	53.0	1.1 0.3	2.4 0.5	5.3 1.5	2.2 0.6	0.5 0.1	4.8 0.7
313.	PSA	343.0	0.8 0.3	2.1 0.5	4.3 1.4	2.6 0.8	0.5 0.2	5.3 1.0
315.	PY	53.0	0.9 0.3	2.0 0.4	4.6 1.4	2.5 0.9	0.5 0.2	5.3 1.0
316.	PA	4.0	0.6 0.1	1.9 0.2	3.4 0.2	3.0 0.2	0.5 0.0	5.5 0.4
318.	P	37.0	0.5 0.2	2.0 0.4	2.6 0.7	3.2 0.7	0.8 0.2	4.3 0.8
320.	SOC	4.0	0.9 0.1	2.0 0.3	3.0 0.3	2.1 0.3	0.7 0.2	3.3 0.7

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 46

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	128.0	1.1 0.5	1.6 0.4	3.9 1.2	1.7 0.7	0.4 0.2	3.7 0.9
301.	PR	37.0	0.8 0.1	1.7 0.4	3.5 0.7	2.1 0.6	0.5 0.2	4.3 0.7
302.	PCS	9.0	0.8 0.1	1.7 0.4	2.8 0.6	2.2 0.7	0.6 0.2	3.6 0.9
303.	PT	24.0	0.9 0.2	2.0 0.4	4.0 0.9	2.5 0.8	0.5 0.2	4.7 0.8
304.	PYA	30.0	0.9 0.2	2.1 0.5	4.4 0.7	2.4 0.8	0.5 0.2	4.9 0.7
309.	PSR	36.0	0.7 0.3	1.9 0.3	3.1 1.0	2.4 0.6	0.6 0.2	4.2 0.7
310.	PQ	28.0	1.2 0.3	1.8 0.6	4.2 1.4	1.6 0.5	0.4 0.1	4.0 0.6
311.	PGR	66.0	0.8 0.3	1.8 0.4	3.7 1.4	2.3 0.7	0.5 0.2	4.6 0.8
313.	PSA	378.0	0.7 0.2	2.1 0.4	3.7 1.3	2.9 0.8	0.5 0.2	5.3 0.9
315.	PY	113.0	0.6 0.2	1.9 0.4	2.8 0.8	2.8 0.8	0.6 0.2	4.6 1.0
316.	PA	29.0	0.9 0.2	1.5 0.3	3.9 0.5	2.2 0.8	0.5 0.1	4.6 1.1
317.	PH	12.0	0.7 0.2	2.0 0.4	3.0 0.6	3.3 1.0	0.7 0.2	4.6 1.3

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 42

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	258.0	1.3 0.4	1.9 0.5	5.1 1.7	1.6 0.8	0.4 0.2	3.9 0.8
301.	PR	55.0	0.9 0.2	1.7 0.3	3.2 0.8	2.1 0.4	0.6 0.2	3.7 0.6
303.	PT	50.0	0.8 0.3	2.4 0.6	3.8 1.3	3.1 1.2	0.7 0.3	4.6 0.8
304.	PYA	33.0	0.8 0.4	2.5 0.4	3.7 1.5	3.0 0.9	0.7 0.2	4.4 0.8
309.	PSR	10.0	0.6 0.1	2.0 0.4	2.6 0.4	3.5 0.7	0.8 0.1	4.5 0.9
310.	PQ	64.0	1.0 0.3	2.1 0.5	3.8 1.1	2.2 0.8	0.6 0.2	3.8 0.6
311.	PGR	50.0	0.8 0.2	1.6 0.3	3.0 0.7	2.1 0.5	0.5 0.1	4.1 0.9
313.	PSA	331.0	0.7 0.3	1.9 0.4	3.7 1.4	2.6 0.9	0.5 0.2	5.1 0.9
315.	PY	24.0	0.6 0.2	2.2 0.5	2.7 0.6	3.4 0.9	0.8 0.2	4.2 0.5
316.	PA	8.0	0.8 0.1	1.8 0.2	4.4 1.0	2.3 0.3	0.4 0.1	5.9 1.6
317.	PH	11.0	0.9 0.1	1.7 0.3	4.0 0.5	1.8 0.4	0.4 0.1	4.2 0.6

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 50

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	317.0	1.2 0.4	2.1 0.5	5.2 1.6	1.8 0.7	0.4 0.2	4.2 0.8
103.	GTP	16.0	1.4 0.1	3.0 0.3	5.8 0.7	2.1 0.3	0.5 0.1	4.2 0.6
301.	PR	12.0	1.0 0.1	1.7 0.4	3.8 0.6	1.8 0.4	0.5 0.1	3.9 0.4
303.	PT	21.0	0.7 0.2	2.4 0.9	3.6 1.1	2.8 1.0	0.6 0.3	4.9 0.5
304.	PYA	52.0	0.6 0.1	1.9 0.5	2.7 0.6	3.1 0.9	0.7 0.2	4.6 0.8
309.	PSR	18.0	0.6 0.1	1.7 0.4	2.5 0.4	2.8 0.7	0.7 0.2	4.2 0.8
310.	PQ	34.0	1.1 0.2	1.9 0.4	4.0 0.8	1.8 0.4	0.5 0.1	3.7 0.6
311.	PGR	39.0	0.9 0.2	1.8 0.4	3.8 0.8	2.0 0.6	0.5 0.2	4.1 0.7
313.	PSA	224.0	0.7 0.3	2.0 0.5	3.4 1.5	2.6 0.9	0.6 0.2	4.7 0.8
315.	PY	130.0	1.1 0.5	2.1 0.4	4.8 1.8	2.0 1.1	0.5 0.3	4.0 0.6
317.	PH	15.0	1.1 0.2	2.1 0.2	4.7 1.1	2.0 0.4	0.5 0.1	4.2 0.5

NEW MEXICO-CARLSBAD N1 13-11 QUADRANGLE
STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 52

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	254.0	1.2 0.4	2.4 0.6	4.9 1.6	2.2 0.9	0.5 0.2	4.1 0.6
103.	GTP	75.0	1.4 0.2	2.4 0.4	6.4 1.0	1.7 0.3	0.4 0.1	4.5 0.5
301.	PR	4.0	0.7 0.2	1.4 0.2	3.0 1.0	1.9 0.1	0.4 0.1	4.7 0.9
303.	PT	11.0	0.5 0.1	2.3 0.3	2.3 0.5	3.6 0.7	0.9 0.2	4.0 0.3
304.	PYA	21.0	0.7 0.1	2.0 0.5	2.9 0.6	2.7 0.6	0.6 0.2	4.3 0.9
309.	PSR	15.0	0.7 0.1	1.9 0.5	2.9 0.5	2.8 1.0	0.6 0.3	4.5 0.9
310.	PQ	62.0	1.0 0.2	2.1 0.3	4.0 0.8	2.2 0.6	0.5 0.2	4.0 0.6
311.	PGR	46.0	0.9 0.2	1.6 0.4	3.4 1.0	1.8 0.6	0.5 0.2	3.6 0.7
313.	PSA	209.0	0.9 0.4	2.1 0.5	4.0 1.5	2.1 1.1	0.5 0.2	4.1 0.7
315.	PY	116.0	1.5 0.3	1.9 0.3	6.1 1.4	1.3 0.5	0.3 0.1	4.1 0.6
316.	PA	9.0	1.2 0.1	2.0 0.4	5.5 0.8	1.7 0.4	0.4 0.1	4.6 0.6
317.	PH	9.0	1.3 0.3	2.2 0.4	5.1 1.2	1.9 0.8	0.5 0.2	4.1 0.7

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 54

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	164.0	1.4 0.4	2.9 0.7	6.0 1.5	2.1 0.7	0.5 0.2	4.2 0.5
103.	GTP	22.0	1.0 0.2	2.4 0.3	4.3 0.9	2.6 0.8	0.6 0.1	4.5 0.7
301.	PR	73.0	1.1 0.3	2.3 0.6	4.2 1.2	2.2 0.7	0.5 0.2	4.4 0.7
302.	FCS	38.0	1.0 0.2	1.9 0.4	4.3 1.0	2.0 0.6	0.5 0.2	4.3 0.7
303.	PT	37.0	0.4 0.1	1.9 0.3	2.4 0.5	3.6 0.6	0.8 0.2	4.7 0.7
304.	PYA	35.0	0.5 0.1	1.9 0.4	2.8 0.7	3.0 0.6	0.6 0.2	5.0 1.3
306.	PCM	6.0	0.4 0.1	2.1 0.5	2.3 0.6	4.2 0.0	0.7 0.0	6.0 0.0
309.	PSR	45.0	0.5 0.2	1.8 0.6	2.8 0.9	2.9 1.1	0.6 0.2	4.7 0.8
310.	PQ	63.0	1.0 0.3	1.9 0.3	4.5 1.1	2.1 0.7	0.4 0.2	4.8 1.2
311.	PGR	94.0	0.8 0.3	1.7 0.4	3.4 1.3	2.0 0.7	0.5 0.2	4.4 0.9
313.	PSA	162.0	1.0 0.5	2.6 0.5	4.6 1.6	2.5 1.1	0.6 0.2	4.2 0.6
315.	PY	135.0	1.2 0.3	2.7 0.5	5.1 1.4	2.4 0.9	0.6 0.2	4.2 0.5
317.	PH	61.0	1.3 0.3	2.9 0.5	5.3 1.4	2.4 1.1	0.6 0.3	4.1 0.6

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 56

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	121.0	1.3 0.4	2.4 0.6	5.4 1.5	2.0 1.2	0.5 0.3	4.1 0.7
103.	GTP	44.0	0.7 0.2	2.1 0.5	4.0 1.1	2.7 0.4	0.5 0.1	5.2 0.8
301.	PR	55.0	1.0 0.2	2.3 0.5	4.3 1.2	2.4 0.6	0.6 0.2	4.3 0.7
302.	PCS	119.0	0.9 0.4	1.9 0.6	4.0 1.7	2.1 0.6	0.5 0.2	4.3 0.6
304.	PYA	21.0	0.5 0.2	1.6 0.4	3.3 1.1	2.7 0.4	0.4 0.1	6.4 1.4
307.	PCB	4.0	0.0 0.0	1.6 0.4	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
309.	PSR	14.0	0.8 0.2	1.5 0.3	4.1 1.1	2.0 0.7	0.4 0.1	5.4 1.4
310.	PQ	32.0	1.0 0.3	1.8 0.4	4.3 1.4	1.8 0.5	0.4 0.1	4.4 1.3
311.	PGR	75.0	0.6 0.3	1.7 0.5	3.0 1.1	2.3 0.6	0.6 0.2	4.4 1.3
313.	PSA	285.0	1.1 0.4	2.4 0.7	4.6 1.7	2.3 1.1	0.5 0.3	4.3 0.7
315.	PY	89.0	1.5 0.2	1.8 0.3	5.8 0.9	1.2 0.3	0.3 0.1	3.9 0.5
317.	PH	27.0	1.3 0.4	2.1 0.3	4.8 1.5	2.0 1.0	0.5 0.3	3.9 0.8

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 58

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	195.0	1.4 0.8	2.8 0.8	6.1 3.7	2.5 1.8	0.6 0.4	4.2 0.8
103.	GTP	76.0	0.7 0.2	1.5 0.4	3.3 0.8	2.0 0.6	0.5 0.2	4.4 0.8
104.	TI	25.0	2.8 0.9	4.9 1.5	18.8 8.8	1.9 0.6	0.3 0.1	6.5 1.4
201.	KW	14.0	2.9 1.0	4.8 2.4	20.4 10.4	1.6 0.4	0.2 0.1	6.6 2.0
301.	PR	36.0	1.0 0.3	2.7 0.9	3.4 1.0	2.8 0.6	0.8 0.3	3.6 0.7
302.	PCS	133.0	0.6 0.4	1.8 0.8	3.0 1.2	2.6 0.8	0.7 0.2	3.9 0.8
303.	PT	11.0	0.3 0.1	1.4 0.4	2.7 0.8	0.0 0.0	0.0 0.0	0.0 0.0
306.	PCM	13.0	0.5 0.2	1.4 0.3	3.0 0.9	2.6 0.6	0.5 0.1	5.7 0.8
307.	PCB	10.0	0.2 0.0	1.5 0.4	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
309.	PSR	14.0	0.7 0.4	1.5 0.4	3.5 1.3	1.7 0.3	0.4 0.1	4.2 0.7
311.	PGR	36.0	0.6 0.2	1.5 0.3	2.4 0.5	2.3 0.5	0.6 0.1	3.6 0.6
313.	PSA	167.0	1.3 0.5	2.5 0.7	5.7 2.9	2.2 1.2	0.5 0.3	4.3 0.9
314.	PCC	9.0	0.5 0.2	3.7 1.0	2.4 0.3	6.7 1.9	1.6 0.1	3.4 0.9
315.	PY	52.0	1.8 0.7	2.2 1.3	7.5 3.5	1.2 0.3	0.3 0.1	3.9 0.9
317.	PH	4.0	1.3 0.4	2.1 0.4	5.6 2.2	1.7 0.4	0.4 0.1	4.2 0.7
318.	P	6.0	1.2 0.2	2.4 0.4	5.8 1.4	2.1 0.3	0.4 0.1	4.8 0.7

NEW MEXICO-CARLSBAD NI 13-11 QUADRANGLE
STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 210

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	62.0	1.5 0.4	1.8 0.3	5.7 1.3	1.3 0.5	0.3 0.1	3.9 0.5
103.	GTP	5.0	1.1 0.1	2.2 0.2	9.7 3.3	2.1 0.3	0.2 0.1	8.8 2.1
313.	FSA	8.0	0.8 0.1	1.4 0.3	3.8 1.0	1.8 0.7	0.4 0.2	4.7 0.9
315.	PY	231.0	1.3 0.3	1.8 0.4	5.3 1.2	1.5 0.5	0.4 0.1	4.2 0.9
316.	PA	89.0	0.8 0.2	1.7 0.3	4.1 1.7	2.3 0.6	0.4 0.1	5.2 1.2
318.	P	83.0	0.8 0.2	2.1 0.5	5.0 3.2	2.8 1.0	0.5 0.3	6.1 2.8

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 212

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** L/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	69.0	1.2 0.4	2.0 0.4	6.1 1.9	1.7 0.6	0.3 0.1	5.1 1.0
313.	FSA	412.0	0.9 0.4	2.1 0.5	4.4 1.5	2.6 1.0	0.5 0.2	5.2 1.1
315.	PY	16.0	1.2 0.4	1.8 0.3	4.9 1.4	1.6 0.6	0.4 0.1	4.3 0.7

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 214

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	67.0	0.9 0.4	2.6 0.4	3.3 1.2	2.9 0.9	0.8 0.3	3.5 0.6
311.	PGR	21.0	0.3 0.1	2.0 0.5	1.7 0.4	0.0 0.0	0.0 0.0	0.0 0.0
313.	FSA	469.0	0.6 0.2	1.9 0.5	3.1 0.9	2.7 0.8	0.6 0.2	5.0 0.9

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 216

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** U/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	152.0	1.4 0.2	2.1 0.4	6.2 1.1	1.6 0.4	0.4 0.1	4.6 0.6
103.	GTP	48.0	0.7 0.2	1.5 0.3	3.2 0.8	2.2 0.6	0.5 0.2	4.6 0.6
303.	PT	4.0	0.6 0.2	1.2 0.2	2.9 0.9	2.0 0.5	0.4 0.1	5.1 0.4
305.	PB	32.0	1.3 0.1	2.1 0.4	5.5 0.8	1.6 0.4	0.4 0.1	4.3 0.6
306.	PCM	4.0	0.3 0.1	1.2 0.2	2.0 0.4	0.0 0.0	0.0 0.0	0.0 0.0
309.	FSR	37.0	0.5 0.1	1.8 0.6	2.7 0.6	3.0 1.1	0.7 0.3	4.5 1.0
310.	PQ	125.0	1.0 0.2	1.6 0.4	3.8 0.8	1.6 0.5	0.4 0.1	3.8 0.7
311.	PGR	77.0	0.9 0.3	1.8 0.4	4.2 1.1	2.0 0.5	0.4 0.1	4.5 0.8

STATISTICAL SUMMARY OF GEOLOGIC UNITS BY LINE 218

CODE	UNIT	RECS	*** K ***	*** U ***	*** T ***	*** L/K ***	*** U/T ***	*** T/K ***
			MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.	MEAN ST.DEV.
101.	GAL	161.0	1.0 0.2	2.2 0.9	4.2 1.2	2.3 0.7	0.5 0.2	4.4 0.7
103.	GTP	71.0	1.3 0.3	1.9 0.6	5.7 1.5	1.5 0.5	0.3 0.1	4.3 0.5
301.	PR	149.0	1.0 0.3	2.1 0.6	4.0 1.2	2.1 0.6	0.5 0.2	4.0 0.7
302.	FCS	62.0	1.1 0.3	2.1 0.5	4.2 1.2	2.0 0.6	0.5 0.2	4.0 0.7
303.	PT	54.0	1.1 0.2	1.7 0.3	4.7 0.8	1.5 0.3	0.4 0.1	4.3 0.7