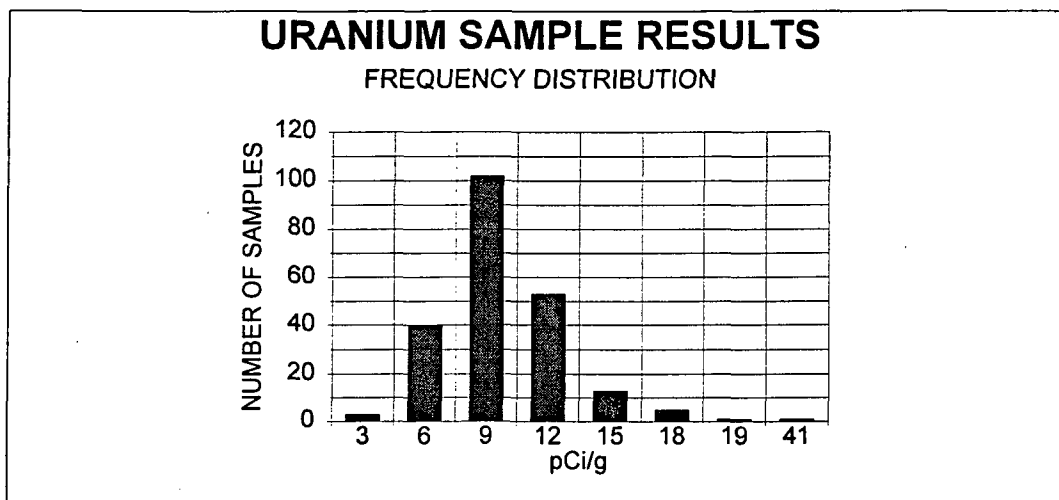
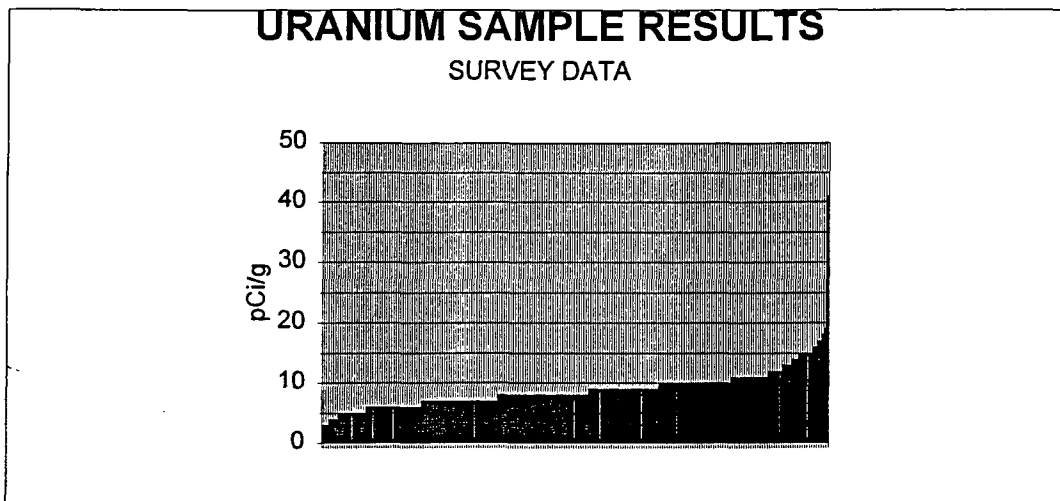
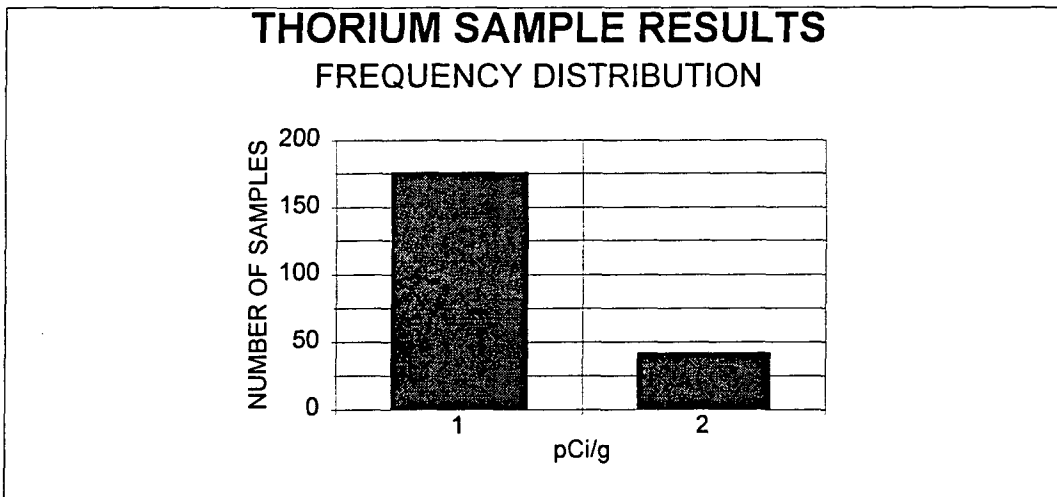
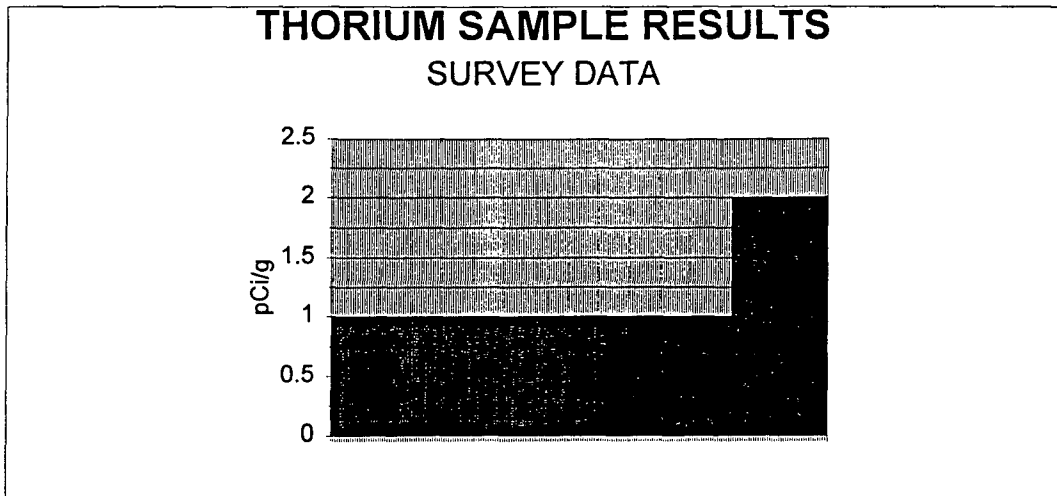


**PHASE II, SUB-AREA "J" - SURFACE
 AFFECTED AREA
 CIMARRON SOIL COUNTER
 TOTAL URANIUM SAMPLE RESULTS
 SITE BACKGROUND OF 4 pCi/g NOT SUBTRACTED
 APRIL 1997**



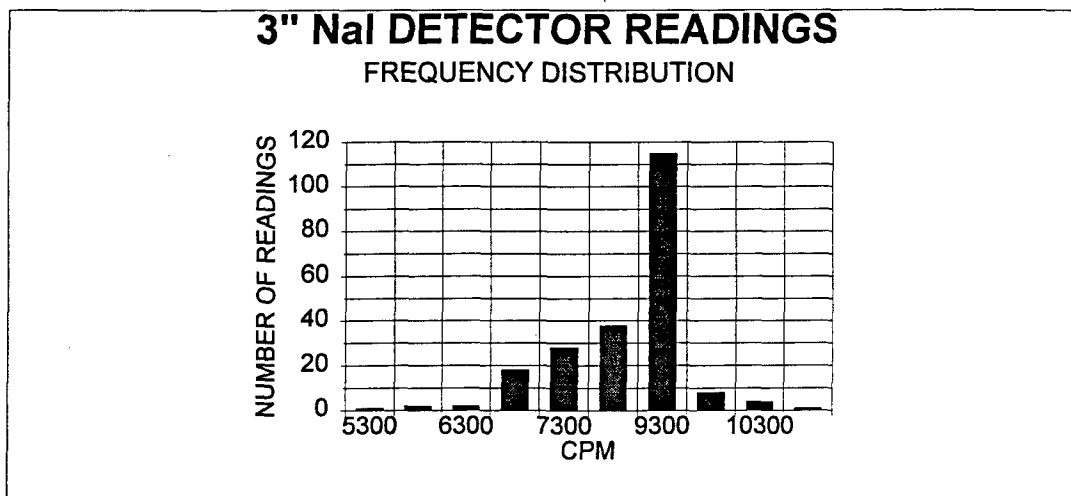
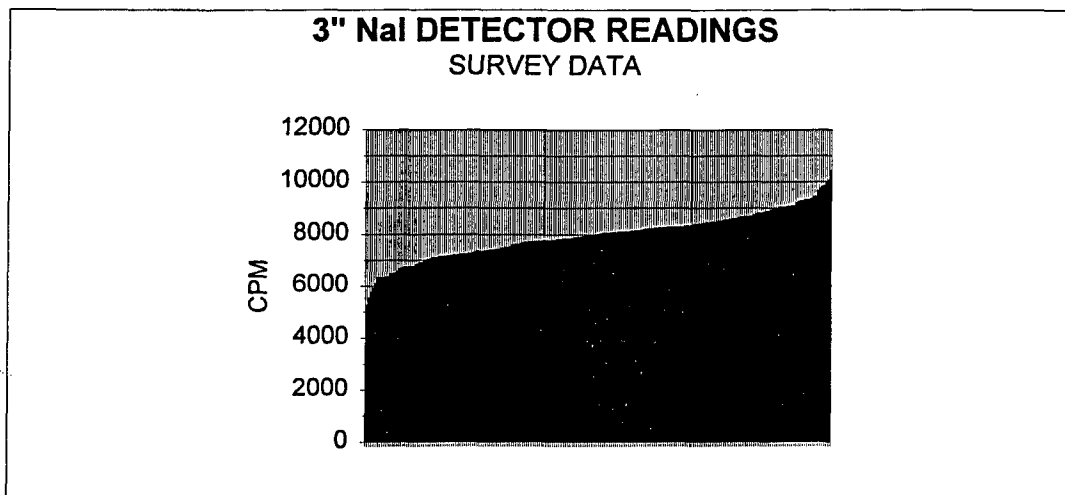
NUMBER OF SAMPLES	218
AVERAGE SAMPLE	9
MINIMUM SAMPLE	3
MAXIMUM SAMPLE	41
STANDARD DEVIATION	4

PHASE II, SUB-AREA "J" - SURFACE
AFFECTED AREA
CIMARRON SOIL COUNTER
THORIUM (NAT) SAMPLE RESULTS
SITE BACKGROUND OF 1.5 pCi/g NOT SUBTRACTED
APRIL 1997



NUMBER OF SAMPLES	218
AVERAGE SAMPLE	1
MINIMUM SAMPLE	1
MAXIMUM SAMPLE	2
STANDARD DEVIATION	0

**PHASE II, SUB-AREA "J" - SURFACE
AFFECTED AREA
GROSS GAMMA READINGS IN CPM
LUDLUM MODEL 2221, S/N 97264
BACKGROUND AVERAGE: 7916
APRIL 1997**

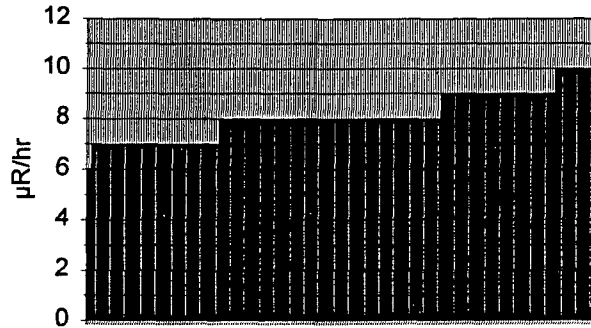


NUMBER OF READINGS	217
AVERAGE READING	7958
MINIMUM READING	5256
MAXIMUM READING	10418
STANDARD DEVIATION	876

PHASE II, SUB-AREA "J" - SURFACE
AFFECTED AREA
MICRO 'R' READINGS AT SURFACE
LUDLUM MODEL 19, S/N 111299
RESULTS IN $\mu\text{R/hr}$
APRIL 1997

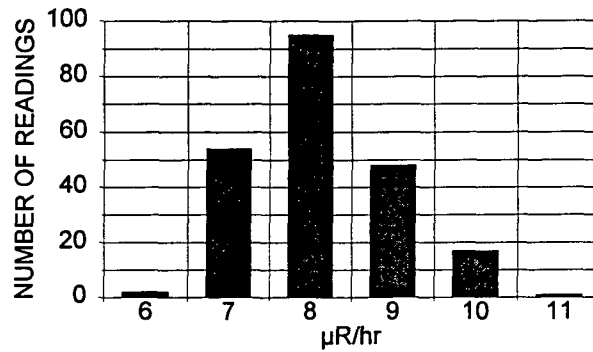
MICRO 'R' READINGS

SURVEY DATA



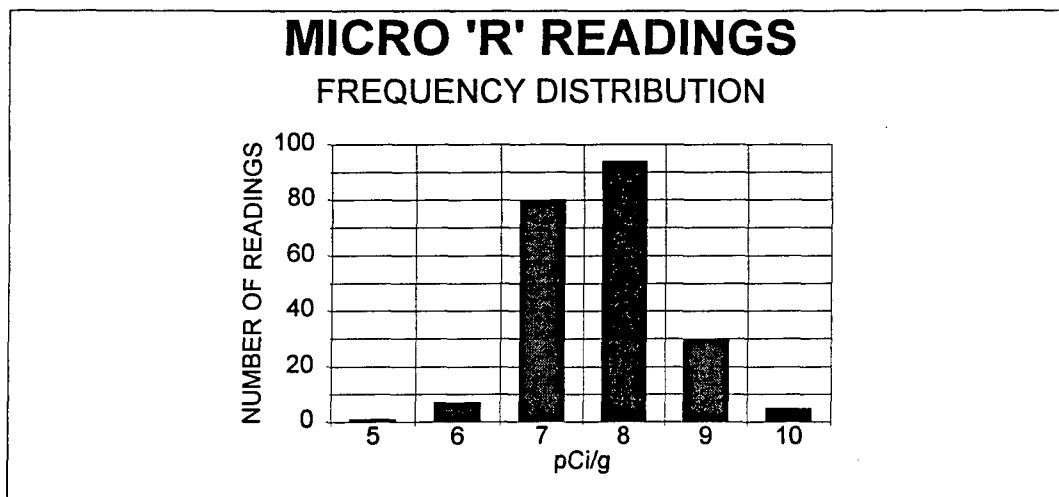
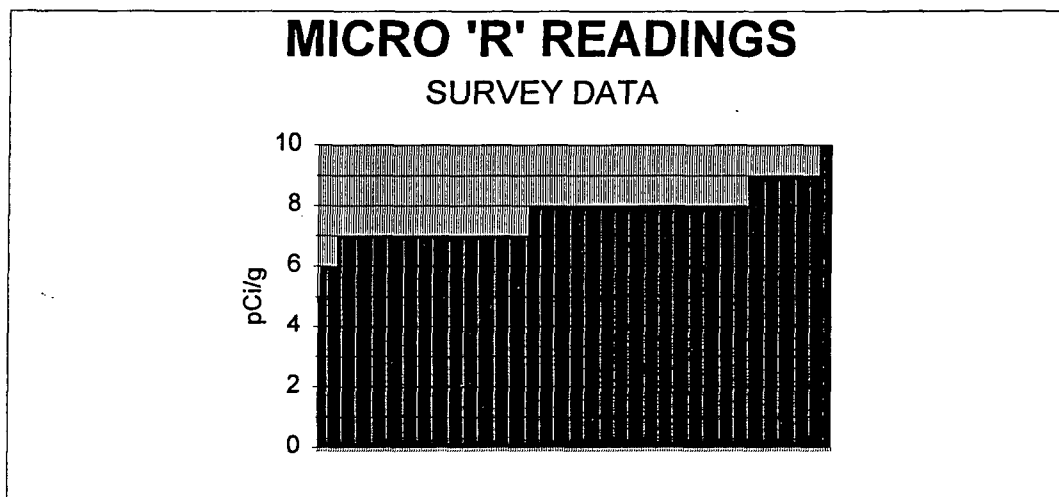
MICRO 'R' READINGS

FREQUENCY DISTRIBUTION



NUMBER OF READINGS	217
AVERAGE READING	8
MINIMUM READING	6
MAXIMUM READING	11
STANDARD DEVIATION	1

PHASE II, SUB-AREA "J" - SURFACE
AFFECTED AREA
MICRO 'R' READINGS AT 1 METER ABOVE SURFACE
LUDLUM MODEL 19, S/N 111299
RESULTS IN $\mu\text{R/hr}$
APRIL 1997



NUMBER OF READINGS	217
AVERAGE READING	8
MINIMUM READING	5
MAXIMUM READING	10
STANDARD DEVIATION	1

TRUE MEAN ACTIVITY VS. GUIDELINE VALUE AT 95% CONFIDENCE (SUB - AREA "J") AFFECTED AREA

n = pCl/g TOTAL U

[illegible][illegible]

TRUE MEAN ACTIVITY VS. GUIDELINE VALUE AT 95% CONFIDENCE (SUB - AREA "J") AFFECTED AREA

[illegible]

TRUE MEAN ACTIVITY VS. GUIDELINE VALUE AT 95% CONFIDENCE (SUB - AREA "J") AFFECTED AREA
n = pCi/g Th (NAT) (SURFACE)

$$n = pCi/g \text{ Th (NAT)}$$

Number	n	(n-N)	(n-N) ²
1	1	-0.19	0.04
2	1	-0.19	0.04
3	1	-0.19	0.04
4	1	-0.19	0.04
5	1	-0.19	0.04
6	1	-0.19	0.04
7	1	-0.19	0.04
8	1	-0.19	0.04
9	1	-0.19	0.04
10	1	-0.19	0.04
11	1	-0.19	0.04
12	1	-0.19	0.04
13	1	-0.19	0.04
14	1	-0.19	0.04
15	1	-0.19	0.04
16	1	-0.19	0.04
17	1	-0.19	0.04
18	1	-0.19	0.04
19	1	-0.19	0.04
20	1	-0.19	0.04
21	1	-0.19	0.04
22	1	-0.19	0.04
23	1	-0.19	0.04
24	1	-0.19	0.04
25	1	-0.19	0.04
26	1	-0.19	0.04
27	1	-0.19	0.04
28	1	-0.19	0.04
29	1	-0.19	0.04
30	1	-0.19	0.04
31	1	-0.19	0.04
32	1	-0.19	0.04
33	1	-0.19	0.04
34	1	-0.19	0.04
35	1	-0.19	0.04
36	1	-0.19	0.04
37	1	-0.19	0.04
38	1	-0.19	0.04
39	1	-0.19	0.04
40	1	-0.19	0.04
41	1	-0.19	0.04
42	1	-0.19	0.04
43	1	-0.19	0.04
44	1	-0.19	0.04
45	1	-0.19	0.04
46	1	-0.19	0.04
47	1	-0.19	0.04
48	1	-0.19	0.04
49	1	-0.19	0.04
50	1	-0.19	0.04
	50		1.856
	50		1.856
	74		16.608
	36		11.732
	260		33.908
	Sum(n)		Sum(n-N) ²

No. of Samples (x) : 218

COUNT TIME: 5 MINUTES

Sample Mean (N) = Sum(n) ÷ (x)

Sample Mean (N) : 1.19

Standard Deviation (Sd) = SQRT [(n-N)² + (x - 1)]

Standard Deviation: **0.40**

2 Std Deviations:	0.79
-------------------	------

Degree of Freedom(df).= (x) - 1 Data listed on Table B-1

 $(df) = 1.655$

Area's Average Level ($A\mu$) = $(N) + (df) \times [(Sd)/(x)]$

(A_μ) = 1.24 pCi/gTh (NAT)

GUIDELINE VALUE: **10** pCi/gTh (NAT)

Acceptable Level: **4.0** pCi/gTh (NAT)

(25% OF GUIDELINE PLUS BACKGROUND)

TABLE B - 1

(df)	95%	97.5%	(df)	95%	97.5%
1	6.314	12.706	19	1.729	2.093
2	2.92	4.303	20	1.725	2.086
3	2.353	3.182	21	1.721	2.08
4	2.132	2.776	22	1.717	2.074
5	2.015	2.571	23	1.714	2.069
6	1.943	2.447	24	1.711	2.064
7	1.895	2.365	25	1.708	2.06
8	1.86	2.306	26	1.706	2.056
9	1.833	2.262	27	1.703	2.052
10	1.812	2.228	28	1.701	2.048
11	1.796	2.201	29	1.699	2.045
12	1.782	2.179	30	1.697	2.042
13	1.771	2.16	40	1.684	2.021
14	1.761	2.145	60	1.671	2
15	1.753	2.131	120	1.658	1.98
16	1.746	2.12	400	1.649	1.966
17	1.74	2.11	Infinite	1.645	1.96
18	1.734	2.101			

For values of Degrees of Freedom not listed:

Interpolate between the listed values.

(df) high value(Z)	400	is (B)	1.649	95%
(df) low value(Y)	120	is (A)	1.658	95%

Desired value(df) (X)	217	is calculated as follow:
-----------------------	------------	--------------------------

$$\text{EXP}[(\text{Ln}(\text{B}) - \text{Ln}(\text{A})) + (\text{Z} - \text{Y}) (\text{X} - \text{Y}) + \text{Ln}(\text{A})]$$

The (df) value for (X	217	1.655	95%
-----------------------	-----	-------	-----

PERFORMED BY: Erving Powell DATE: 4-16-97

REVIEWED BY: W.A. Rogers DATE: 4-16-97

CIMARRON CORPORATION - CIMARRON FACILITY

**TRUE MEAN ACTIVITY VS. GUIDELINE VALUE AT 95% CONFIDENCE (SUB - AREA "J") AFFECTED AREA
(SURFACE)**

n = pCi/g Th (NAT)			
Number	n	(n-N)	(n-N) ²
51	1	-0.19	0.04
52	1	-0.19	0.04
53	1	-0.19	0.04
54	1	-0.19	0.04
55	1	-0.19	0.04
56	1	-0.19	0.04
57	1	-0.19	0.04
58	1	-0.19	0.04
59	1	-0.19	0.04
60	1	-0.19	0.04
61	1	-0.19	0.04
62	1	-0.19	0.04
63	1	-0.19	0.04
64	1	-0.19	0.04
65	1	-0.19	0.04
66	1	-0.19	0.04
67	1	-0.19	0.04
68	1	-0.19	0.04
69	1	-0.19	0.04
70	1	-0.19	0.04
71	1	-0.19	0.04
72	1	-0.19	0.04
73	1	-0.19	0.04
74	1	-0.19	0.04
75	1	-0.19	0.04
76	1	-0.19	0.04
77	1	-0.19	0.04
78	1	-0.19	0.04
79	1	-0.19	0.04
80	1	-0.19	0.04
81	1	-0.19	0.04
82	1	-0.19	0.04
83	1	-0.19	0.04
84	1	-0.19	0.04
85	1	-0.19	0.04
86	1	-0.19	0.04
87	1	-0.19	0.04
88	1	-0.19	0.04
89	1	-0.19	0.04
90	1	-0.19	0.04
91	1	-0.19	0.04
92	1	-0.19	0.04
93	1	-0.19	0.04
94	1	-0.19	0.04
95	1	-0.19	0.04
96	1	-0.19	0.04
97	1	-0.19	0.04
98	1	-0.19	0.04
99	1	-0.19	0.04
100	1	-0.19	0.04
	50		1.856
	Sum(n)		Sum(n-N) ²

n = pCi/g Th (NAT)			
Number	n	(n-N)	(n-N) ²
101	1	-0.19	0.04
102	1	-0.19	0.04
103	1	-0.19	0.04
104	1	-0.19	0.04
105	1	-0.19	0.04
106	1	-0.19	0.04
107	1	-0.19	0.04
108	1	-0.19	0.04
109	1	-0.19	0.04
110	1	-0.19	0.04
111	1	-0.19	0.04
112	1	-0.19	0.04
113	1	-0.19	0.04
114	1	-0.19	0.04
115	1	-0.19	0.04
116	1	-0.19	0.04
117	1	-0.19	0.04
118	1	-0.19	0.04
119	1	-0.19	0.04
120	1	-0.19	0.04
121	1	-0.19	0.04
122	1	-0.19	0.04
123	1	-0.19	0.04
124	1	-0.19	0.04
125	1	-0.19	0.04
126	1	-0.19	0.04
127	1	-0.19	0.04
128	1	-0.19	0.04
129	1	-0.19	0.04
130	1	-0.19	0.04
131	1	-0.19	0.04
132	1	-0.19	0.04
133	1	-0.19	0.04
134	1	-0.19	0.04
135	1	-0.19	0.04
136	1	-0.19	0.04
137	1	-0.19	0.04
138	1	-0.19	0.04
139	1	-0.19	0.04
140	1	-0.19	0.04
141	1	-0.19	0.04
142	1	-0.19	0.04
143	1	-0.19	0.04
144	1	-0.19	0.04
145	1	-0.19	0.04
146	1	-0.19	0.04
147	1	-0.19	0.04
148	1	-0.19	0.04
149	1	-0.19	0.04
150	1	-0.19	0.04
	50		1.856
	Sum(n)		Sum(n-N) ²

CIMARRON CORPORATION - CIMARRON FACILITY

TRUE MEAN ACTIVITY VS. GUIDELINE VALUE AT 95% CONFIDENCE (SUB - AREA "J") AFFECTED AREA

(SURFACE)

n = pCi/g Th (NAT)			
Number	n	(n-N)	(n-N) ²
151	1	-0.19	0.04
152	1	-0.19	0.04
153	1	-0.19	0.04
154	1	-0.19	0.04
155	1	-0.19	0.04
156	1	-0.19	0.04
157	1	-0.19	0.04
158	1	-0.19	0.04
159	1	-0.19	0.04
160	1	-0.19	0.04
161	1	-0.19	0.04
162	1	-0.19	0.04
163	1	-0.19	0.04
164	1	-0.19	0.04
165	1	-0.19	0.04
166	1	-0.19	0.04
167	1	-0.19	0.04
168	1	-0.19	0.04
169	1	-0.19	0.04
170	1	-0.19	0.04
171	1	-0.19	0.04
172	1	-0.19	0.04
173	1	-0.19	0.04
174	1	-0.19	0.04
175	1	-0.19	0.04
176	1	-0.19	0.04
177	2	0.81	0.65
178	2	0.81	0.65
179	2	0.81	0.65
180	2	0.81	0.65
181	2	0.81	0.65
182	2	0.81	0.65
183	2	0.81	0.65
184	2	0.81	0.65
185	2	0.81	0.65
186	2	0.81	0.65
187	2	0.81	0.65
188	2	0.81	0.65
189	2	0.81	0.65
190	2	0.81	0.65
191	2	0.81	0.65
192	2	0.81	0.65
193	2	0.81	0.65
194	2	0.81	0.65
195	2	0.81	0.65
196	2	0.81	0.65
197	2	0.81	0.65
198	2	0.81	0.65
199	2	0.81	0.65
200	2	0.81	0.65
	74		16.608
	Sum(n)		Sum(n-N) ²

n = pCi/g Th (NAT)			
Number	n	(n-N)	(n-N) ²
201	2	0.81	0.65
202	2	0.81	0.65
203	2	0.81	0.65
204	2	0.81	0.65
205	2	0.81	0.65
206	2	0.81	0.65
207	2	0.81	0.65
208	2	0.81	0.65
209	2	0.81	0.65
210	2	0.81	0.65
211	2	0.81	0.65
212	2	0.81	0.65
213	2	0.81	0.65
214	2	0.81	0.65
215	2	0.81	0.65
216	2	0.81	0.65
217	2	0.81	0.65
218	2	0.81	0.65
219			
220			
221			
222			
223			
224			
225			
226			
227			
228			
229			
230			
231			
232			
233			
234			
235			
236			
237			
238			
239			
240			
241			
242			
243			
244			
245			
246			
247			
248			
249			
250			
	36		11.732
	Sum(n)		Sum(n-N) ²

**CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA**

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	115W-0N	10418	10	10	13	2
2	115W-5N	9756	10	9	7	2
3	120W-5N	9360	9	9	9	2
4	120W-10N	8684	10	8	14	1
5	120W-15N	8954	9	9	9	1
6	120W-20N	8596	8	8	6	1
7	125W-15N	6590	7	7	10	1
8	125W-20N	9450	10	8	5	2
9	125W-25N	8324	9	8	7	1
10	125W-30N	7764	9	8	9	2
11	130W-15N	9070	10	9	7	2
12	130W-20N	6380	7	8	8	1
13	130W-25N	8050	8	8	11	1
14	130W-30N	7960	8	8	8	1
15	130W-35N	8126	8	8	8	1
16	130W-40N	8156	9	8	8	1
17	130W-45N	8420	9	8	12	1
18	130W-50N	8256	8	9	9	1

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William J. Rhodes

DATE: 4-11-97

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	135W-20N	8126	8	8	10	1
2	135W-25N	8680	9	9	11	2
3	135W-30N	7798	8	8	6	1
4	135W-35N	7916	8	8	9	1
5	135W-40N	8056	7	8	9	1
6	135W-45N	8160	8	7	9	2
7	135W-50N	8832	9	8	8	1
8	135W-55N	8612	9	9	7	1
9	135W-60N	8062	9	8	15	1
10	135W-65N	8314	9	8	9	1
11	140W-25N	8334	8	8	7	1
12	140W-30N	8468	10	8	8	1
13	140W-35N	8812	9	7	6	1
14	140W-40N	8294	9	8	5	1
15	140W-45N	8234	8	8	15	1
16	140W-50N	8170	8	8	6	1
17	140W-55N	8084	7	7	10	1
18	140W-60N	8706	10	8	10	1

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

Sublett J. Rhodes

DATE: 4-11-97

**CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA**

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	140W-65N	8482	9	8	11	1
2	140W-70N	8432	8	8	4	1
3	140W-75N	9214	9	8	7	1
4	140W-80N	10064	10	10	14	2
5	145W-30N	9048	8	8	7	1
6	145W-35N	8368	9	9	6	1
7	145W-40N	8880	8	7	7	1
8	145W-45N	7748	7	7	8	1
9	145W-50N	7118	7	7	9	1
10	145W-55N	7928	8	8	8	2
11	145W-60N	8350	9	9	6	2
12	145W-65N	8082	8	7	6	1
13	145W-70N	8154	8	8	9	1
14	145W-75N	8476	9	9	7	1
15	145W-80N	9944	10	10	7	2
16						
17						
18						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMARRON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William J. Rhodes

DATE: 4-11-97

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	150W-40N	8862	9	8	8	1
2	150W-45N	7348	8	7	6	1
3	150W-50N	8410	10	9	7	1
4	150W-55N	8798	8	8	7	1
5	150W-60N	8108	8	8	5	1
6	150W-65N	6326	7	7	10	1
7	150W-70N	7120	8	7	7	1
8	150W-75N	5540	6	6	5	1
9	150W-80N	9052	9	9	8	2
10	155W-45N	9018	8	8	9	1
11	155W-50N	7948	9	8	8	1
12	155W-55N	8074	8	7	12	1
13	155W-60N	8272	8	8	8	1
14	155W-65N	8290	8	7	12	1
15	155W-70N	8018	8	8	9	1
16	155W-75N	7320	8	7	6	1
17	155W-80N	8008	8	8	10	2
18						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William J. Rhodes

DATE: 4-11-97

**CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA**

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	160W-50N	9336	10	10	7	2
2	160W-55N	7028	8	8	11	2
3	160W-60N	8312	8	8	11	1
4	160W-65N	8928	8	7	9	1
5	160W-70N	8570	9	8	10	1
6	160W-75N	8750	8	8	8	2
7	160W-80N	6094	7	7	6	1
8	165W-50N	9852	9	9	6	2
9	165W-55N	8078	7	8	10	1
10	165W-60N	7056	8	7	8	1
11	165W-65N	8256	8	8	11	1
12	165W-70N	9100	9	9	11	2
13	165W-75N	9300	9	9	9	1
14	165W-80N	8406	9	8	10	2
15						
16						
17						
18						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

µR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U 4 10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat) 1.5 0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William T. Rhodes

DATE: 4-11-97

**CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA**

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	170W-50N	8232	8	9	13	1
2	170W-55N	8530	9	9	11	1
3	170W-60N	7738	8	7	5	1
4	170W-65N	6962	8	7	9	1
5	170W-70N	8206	7	7	10	1
6	170W-75N	9096	8	8	8	1
7	170W-80N	8890	10	9	7	2
8	175W-55N	8270	8	8	7	2
9	175W-60N	7244	8	8	6	1
10	175W-65N	5786	7	6	10	1
11	175W-70N	7698	9	9	11	1
12	175W-75N	8690	8	8	8	1
13	175W-80N	9300	10	9	10	1
14						
15						
16						
17						
18						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William J. Rhodes DATE: 4-11-97

**CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA**

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	180W-55N	7274	7	9	8	1
2	180W-60N	7508	8	7	7	1
3	180W-65N	7450	7	7	10	2
4	180W-70N	7628	7	7	11	1
5	180W-75N	8308	8	9	8	1
6	180W-80N	9246	9	8	9	2
7	185W-55N	9672	11	9	8	2
8	185W-60N	7708	7	7	9	1
9	185W-65N	7254	7	8	7	1
10	185W-70N	8620	8	7	16	2
11	185W-75N	8504	8	7	9	1
12	185W-80N	8228	7	7	11	1
13	190W-55N	8956	9	8	4	2
14	190W-60N	8108	9	8	7	1
15	190W-65N	7624	7	7	3	1
16	190W-70N	7220	8	8	6	1
17	190W-75N	7820	8	8	15	1
18	190W-80N	9808	10	9	11	1

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LU DLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LU DLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William J. Rhodes

DATE: 4-11-97

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	195W-55N	8630	9	8	7	2
2	195W-60N	5256	7	6	7	1
3	195W-65N	7616	8	7	9	1
4	195W-70N	8002	7	8	8	1
5	195W-75N	8154	8	8	18	1
6	195W-80N	8442	9	8	10	1
7	200W-55N	9342	9	8	10	2
8	200W-60N	9330	9	9	10	2
9	200W-65N	7852	8	8	12	1
10	200W-70N	7190	8	7	8	2
11	200W-75N	8468	9	8	9	1
12	200W-80N	8468	9	9	8	1
13	205W-55N	9034	10	8	8	2
14	205W-60N	8682	8	8	8	1
15	205W-65N	8302	9	8	17	1
16	205W-70N	7870	8	8	8	1
17	205W-75N	7662	8	7	6	1
18	205W-80N	8272	8	8	9	2

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

µR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMARRON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William T. Rhodes

DATE: 4-11-97

**CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA**

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	210W-50N	9068	10	10	4	2
2	210W-55N	7736	8	8	7	1
3	210W-60N	7784	7	8	11	1
4	210W-65N	8308	8	8	11	1
5	210W-70N	8390	7	8	19	2
6	210W-75N	7296	8	7	7	1
7	210W-80N	7226	7	7	5	1
8	210W-85N	8560	8	7	10	1
9	215W-50N	9048	9	8	5	1
10	215W-55N	7072	7	7	6	1
11	215W-60N	8104	8	8	10	1
12	215W-65N	8656	8	7	16	1
13	215W-70N	8602	9	8	17	1
14	215W-75N	8234	8	7	10	1
15	215W-80N	6768	7	7	7	1
16	215W-85N	8014	8	7	14	1
17						
18						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

µR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMARRON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William J. Kleider

DATE: 4-11-97

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	220W-55N	7824	8	8	7	1
2	220W-60N	7994	8	9	7	1
3	220W-65N	8692	10	9	15	1
4	220W-70N	9464	9	9	41	1
5	220W-75N	7352	7	7	12	2
7	220W-80N	7256	8	7	10	1
8	220W-85N	8106	7	7	9	1
9	220W-90N	7246	7	7	6	1
10	225W-60N	7352	8	7	11	1
11	225W-65N	8518	9	8	7	1
12	225W-70N	8814	8	8	10	1
13	225W-75N	7750	8	7	8	1
14	225W-80N	6342	7	7	12	2
15	225W-85N	7902	8	8	9	1
16	225W-90N	7716	9	8	10	1
17						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

µR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William J. Rhodes

DATE: 4-11-97

**CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA**

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	230W-60N	7412	9	7	8	1
2	230W-65N	8076	7	8	10	1
3	230W-70N	8176	8	8	10	1
4	230W-75N	7388	8	7	3	1
5	230W-80N	6760	6	5	8	1
6	230W-85N	7520	8	7	8	2
7	230W-90N	7686	7	6	8	1
8	230W-95N	7542	8	8	10	1
9	235W-60N	8290	9	8	8	1
10	235W-65N	7822	8	8	8	2
11	235W-70N	7732	8	7	7	1
12	235W-75N	7910	7	8	4	1
13	235W-80N	6840	7	7	9	1
14	235W-85N	7854	8	8	13	1
15	235W-90N	LAKE WATER	LAKE WATER	LAKE WATER	8	1
16	235W-95N	7616	7	8	8	1
17						
18						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William T. Rhodes DATE: 4-11-97

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	240W-60N	7946	7	8	11	1
2	240W-65N	6748	7	6	8	1
3	240W-70N	7210	7	7	15	1
4	240W-75N	6694	7	7	6	1
5	240W-80N	6732	7	7	9	1
6	240W-85N	7474	9	7	7	1
7	240W-90N	6940	8	7	5	1
8	240W-95N	6934	8	7	9	1
9	245W-60N	7852	9	7	6	1
10	245W-65N	7442	8	7	10	1
11	245W-70N	7170	7	7	10	1
12	245W-75N	6748	7	7	8	1
13	245W-80N	6880	7	7	5	1
14	245W-85N	7378	7	7	9	1
15	245W-90N	7152	7	7	6	1
16	245W-95N	6780	8	7	7	1
17	245W-100N	7414	8	8	8	2
18						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

µR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMARRON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

William T. Rhodes

DATE: 4-11-97

**CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA**

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	250W-55N	8268	8	8	10	2
2	250W-60N	7756	8	8	9	2
3	250W-65N	7426	8	7	7	1
4	250W-70N	6518	7	7	5	1
5	250W-75N	7194	8	7	15	1
6	250W-80N	6330	7	7	9	1
7	250W-85N	7110	8	7	10	1
8	250W-90N	7144	8	7	7	1
9	255W-50N	7782	9	9	6	1
10	255W-55N	7494	7	8	10	1
11	255W-60N	7770	8	8	5	1
12	255W-65N	7362	8	6	8	1
13	255W-70N	7160	8	7	6	1
14	255W-75N	6338	8	7	5	1
15	255W-80N	6356	7	7	10	1
16	255W-85N	6498	7	7	13	1

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMMARON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

FILE: AJAASURF

Richard J. Rhodes

DATE: 4-11-97

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", SURFACE
AFFECTED AREA

DATE: 03/20/97

LN #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	260W-50N	7276	7	7	9	1
2	260W-55N	7794	8	8	8	1
3	260W-60N	7846	8	7	6	1
4	260W-65N	7148	7	6	6	1
5	260W-70N	6470	7	7	7	1
6	260W-75N	6676	7	7	6	1
7	260W-80N	5934	7	7	3	1
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

INSTRUMENTS:

RESULTS IN:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL 19 S/N 111299

μR/hr

7-10

7

LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR S/N 97264

CPM

7916

N/A

Total U

4

10

CIMARRON SOIL COUNTER 4" X 4" X 16" NaI DETECTOR

pCi/g

Th(Nat)

1.5

0.25

BACKGROUND NOT SUBTRACTED

William T. Rhodes DATE: 4-11-97

FILE: AJAASURF

9709160130-06



NOTES:

INSTRUMENT: LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR

BACKGROUND: 7920 CPM

20 0 20
SCALE IN METERS

NORTH

LEGEND

- UNAFFECTED AREA (PHASE II)
- AFFECTED AREA (PHASE II)

REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE
0	DRAWING ISSUED.	JE	RS	JK	8/20/97

CIMARRON CORPORATION

CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION AFFECTED AREA
CONFIRMATORY GAMMA SURVEY (1997)

DRWN. BY	DATE	SCALE
JE	7/9/97	AS SHOWN

JOB NO.	DRAWING NO.	REV.
	97POAJ3D-CONF-0	0

9709160130-07



NOTES:

READINGS ARE IN MICRO-R/Hr. ($\mu\text{R}/\text{Hr.}$)

INSTRUMENT: LUDLUM MICRO-R METER
MODEL NO.: 19
BACKGROUND: $7 \mu\text{R}/\text{Hr.}$

20 0 20
SCALE IN METERS



LEGEND



UNAFFECTED AREA (PHASE II)



AFFECTED AREA (PHASE II)

REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE
0	DRAWING ISSUED.	JE	RS	JK	8/20/97

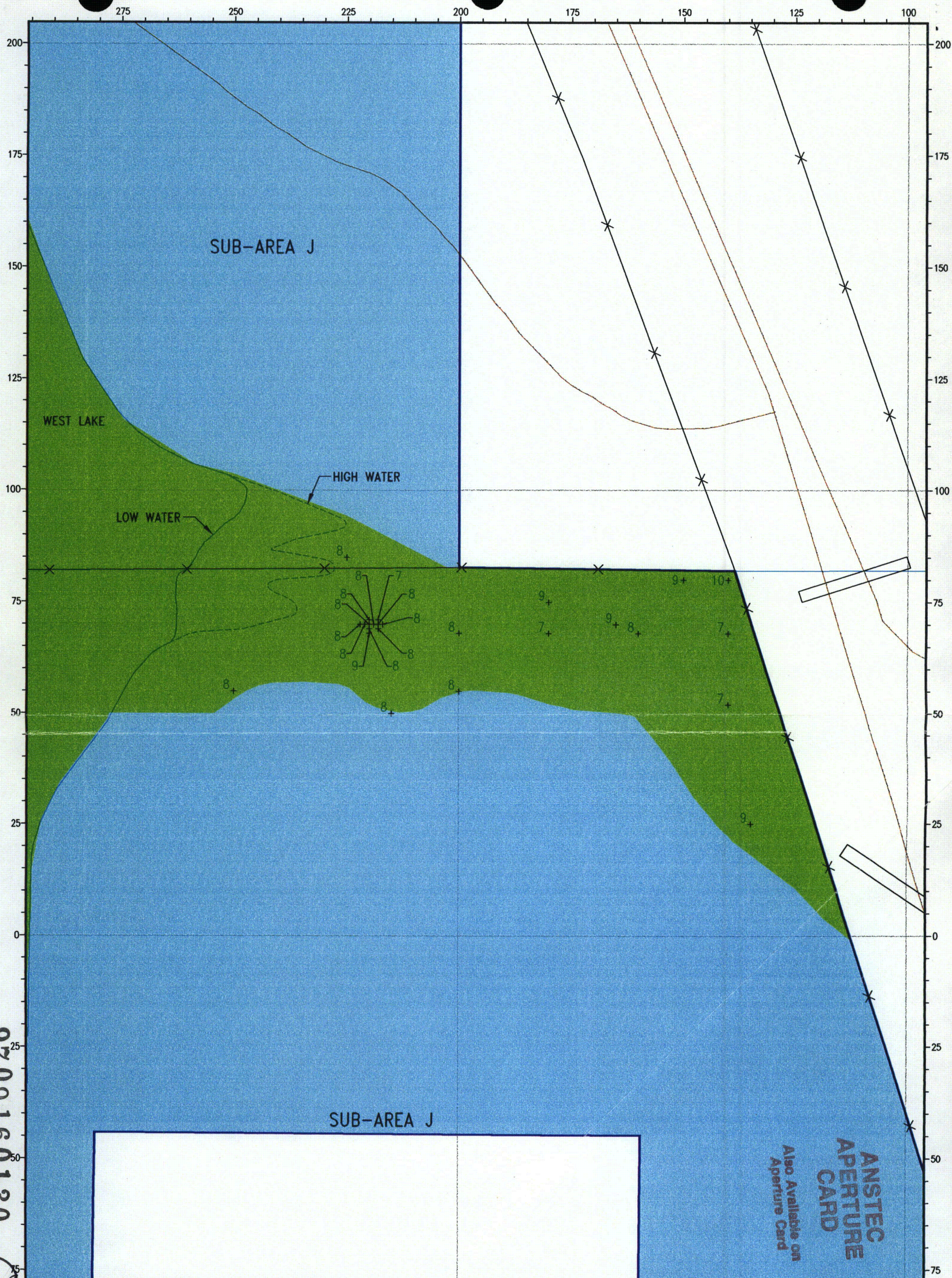


CIMARRON CORPORATION

CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION AFFECTED AREA
CONFIRMATORY MICRO-R SURVEY (1997)
AT LAND SURFACE

DRWN. BY: JE	DATE: 7/9/97	SCALE: AS SHOWN
JOB NO.	DRAWING NO. 97POAJUR-CONF-0	REV. 0

...\\CIMARRON\\SUBAREA\\97POAJUC



NOTES:

READINGS ARE IN MICRO-R/Hr. (μ R/Hr.)

INSTRUMENT: LUDLUM MICRO-R METER

MODEL NO.: 19

BACKGROUND: 7 μ R/Hr.

20 0 20

SCALE IN METERS



LEGEND



UNAFECTED AREA (PHASE II)



AFFECTED AREA (PHASE II)



CIMARRON CORPORATION

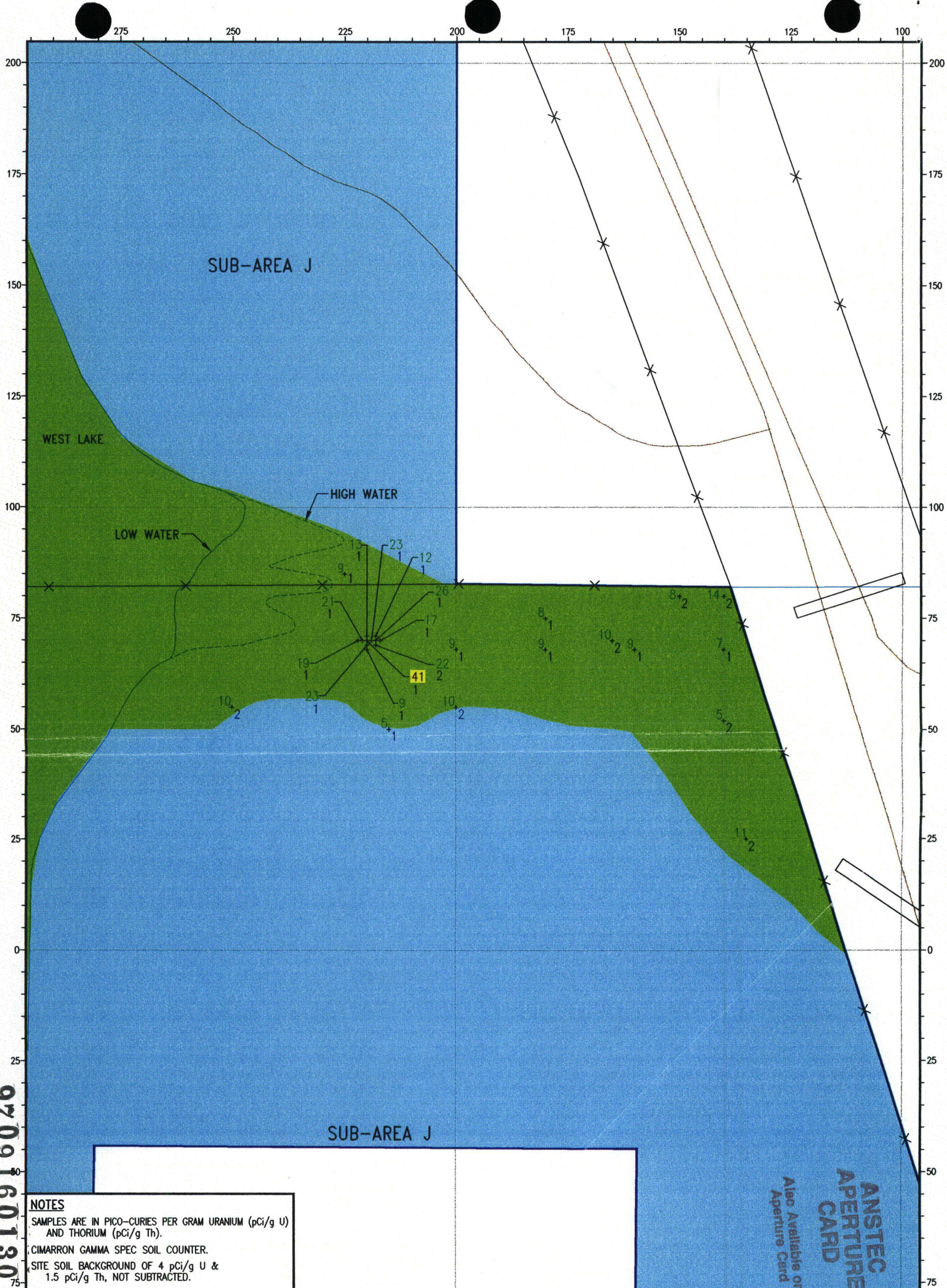
CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION AFFECTED AREA
CONFIRMATORY MICRO-R SURVEY (1997)
AT ONE METER ABOVE SURFACE

REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE	DRWN. BY	DATE	SCALE
						JE	7/9/97	AS SHOWN
0	DRAWING ISSUED.	JE	RS	JK	8/20/97	JOB NO.	DRAWING NO. 97POAJUR-CONF-1	REV. 0

DRWN. BY JE	DATE 7/9/97	SCALE AS SHOWN
JOB NO.	DRAWING NO. 97POAJUR-CONF-1	REV. 0

... \CIMARRON \SUBAREA \ 97POAJUC

9709160130



NOTES
SAMPLES ARE IN PICO-CURIES PER GRAM URANIUM (pCi/g U) AND THORIUM (pCi/g Th).
CIMARRON GAMMA SPEC SOIL COUNTER.
SITE SOIL BACKGROUND OF 4 pCi/g U & 1.5 pCi/g Th, NOT SUBTRACTED.

LEGEND
12+ URANIUM 1 - 30 pCi/g U
31+ URANIUM > 30 pCi/g U
+1 THORIUM < 10 pCi/g Th
+ URANIUM HIT ROCK, NO SAMPLE
+ THORIUM HIT ROCK, NO SAMPLE

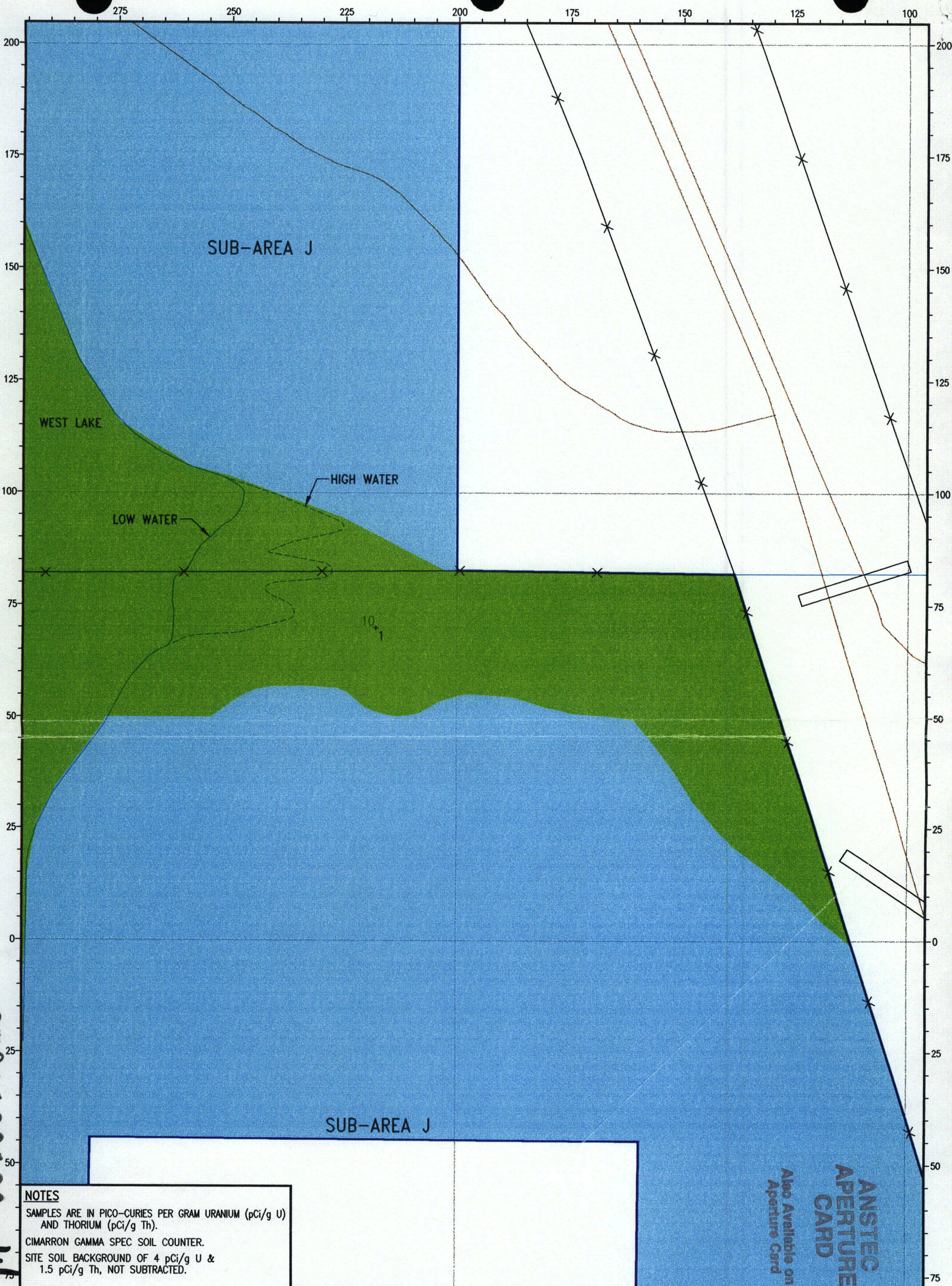
20 0 20
SCALE IN METERS

NORTH

LEGEND				
UNAFECTED AREA (PHASE II)				
AFFECTED AREA (PHASE II)				
REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:
0	DRAWING ISSUED.	JE	RS	JK

CIMARRON FACILITY PHASE II - SUB-AREA J POST REMEDIATION AFFECTED AREA CONFIRMATORY SOIL SAMPLE RESULTS (1997) SOIL SAMPLE ALIQUOT: 0-6"			
DRWN. BY: JE	DATE: 7/9/97	SCALE: AS SHOWN	
JOB NO.	DRAWING NO. 97POAJSS-CONF-0	REV. 0	

9709160130-14



NOTES
SAMPLES ARE IN PICO-CURIES PER GRAM URANIUM (pCi/g U) AND THORIUM (pCi/g Th).
CIMARRON GAMMA SPEC SOIL COUNTER.
SITE SOIL BACKGROUND OF 4 pCi/g U & 1.5 pCi/g Th, NOT SUBTRACTED.

LEGEND

12+ URANIUM 1 - 30 pCi/g U	-+ URANIUM HIT ROCK, NO SAMPLE
31+ URANIUM > 30 pCi/g U	
+1 THORIUM < 10 pCi/g Th	+ THORIUM HIT ROCK, NO SAMPLE

20 0 20
SCALE IN METERS

NORTH

LEGEND

UNAFFECTED AREA (PHASE II)
AFFECTED AREA (PHASE II)

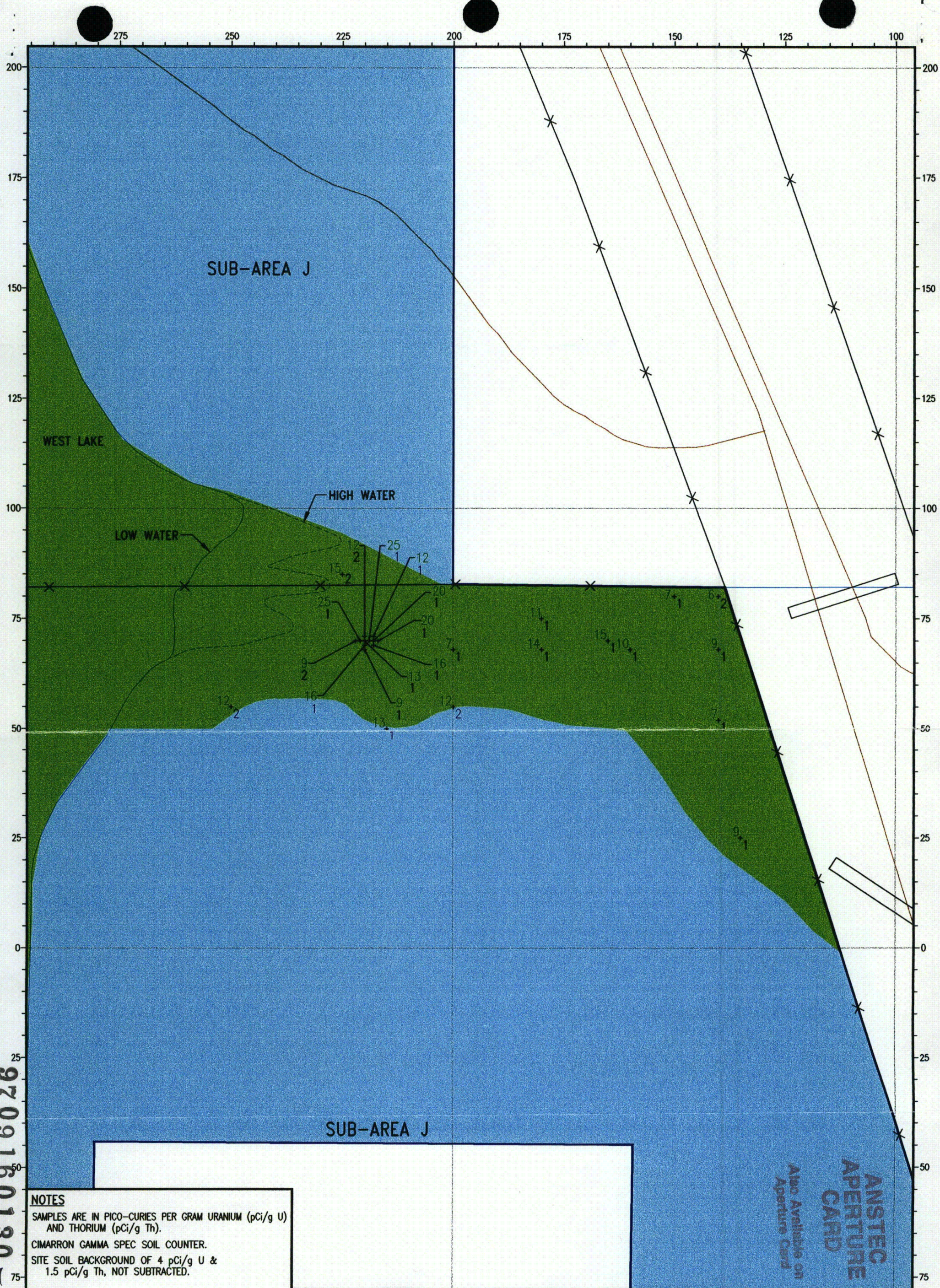
REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE
0	DRAWING ISSUED.	JE	RS	JK	8/20/97

CIMARRON CORPORATION

CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION AFFECTED AREA
CONFIRMATORY SOIL SAMPLE RESULTS (1997)
SOIL SAMPLE ALIQUOT: 4'-5'

DRWN. BY	DATE	SCALE
JE	7/9/97	AS SHOWN

JOB NO.	DRAWING NO.	REV.
	97POAJSS-CONF-5	0



NOTES

SAMPLES ARE IN PICO-CURIES PER GRAM URANIUM (pCi/g U)
AND THORIUM (pCi/g Th).
CIMARRON GAMMA SPEC SOIL COUNTER.
SITE SOIL BACKGROUND OF 4 pCi/g U &
1.5 pCi/g Th, NOT SUBTRACTED.

LEGEND

12	+	URANIUM	-	URANIUM
		1 - 30 pCi/g U	+	HIT ROCK, NO SAMPLE
31	+	URANIUM		
		> 30 pCi/g U		
		THORIUM		THORIUM
	+	< 10 pCi/g Th	+	HIT ROCK, NO SAMPLE

20 0 20

SCALE IN METERS



LEGEND

 UNAFFECTED AREA (PHASE II)
 AFFECTED AREA (PHASE II)



CIMARRON CORPORATION

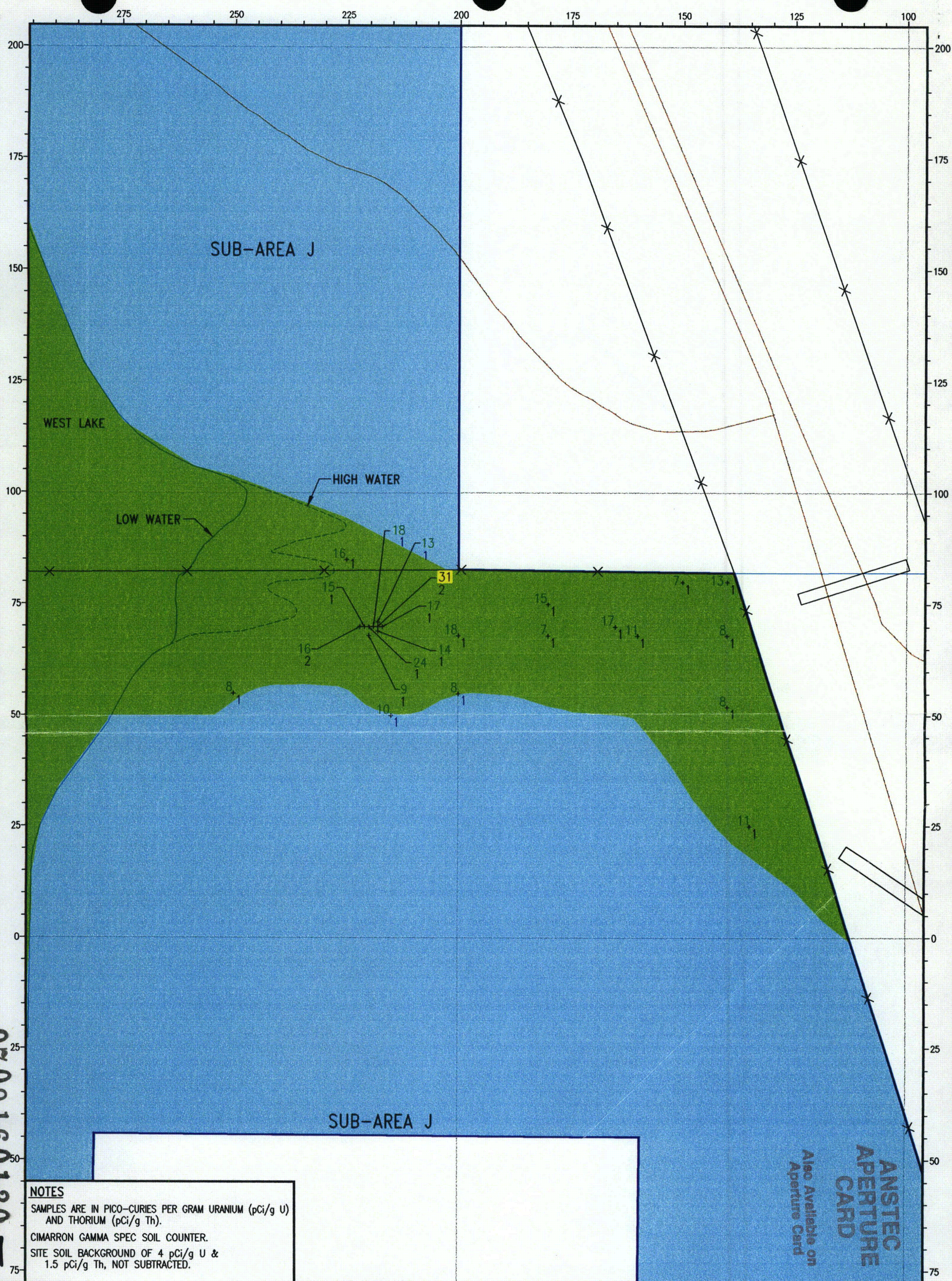
CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION AFFECTED AREA
CONFIRMATORY SOIL SAMPLE RESULTS (1997)
SOIL SAMPLE ALIQUOT: 6"-1'

REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE
0	DRAWING ISSUED.	JE	RS	JK	8/20/97

DRWN. BY JE	DATE 7/9/97	SCALE AS SHOWN
JOB NO.	DRAWING NO. 97POAJSS-CONF-1	REV. 0

... \CIMARRON \SUBAREAJ \97POAJSC

9709160130-11



NOTES
SAMPLES ARE IN PICO-CURIES PER GRAM URANIUM (pCi/g U) AND THORIUM (pCi/g Th).
CIMARRON GAMMA SPEC SOIL COUNTER.
SITE SOIL BACKGROUND OF 4 pCi/g U & 1.5 pCi/g Th, NOT SUBTRACTED.

LEGEND

12+ URANIUM 1 - 30 pCi/g U	-+ URANIUM HIT ROCK, NO SAMPLE
31+ URANIUM > 30 pCi/g U	
+ THORIUM < 10 pCi/g Th	+ THORIUM HIT ROCK, NO SAMPLE

20 0 20
SCALE IN METERS

NORTH

LEGEND

UNAFFECTED AREA (PHASE II)
AFFECTED AREA (PHASE II)

REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE
0	DRAWING ISSUED.	JE	RS	JK	8/20/97

CIMARRON CORPORATION

CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION AFFECTED AREA
CONFIRMATORY SOIL SAMPLE RESULTS (1997)
SOIL SAMPLE ALIQUOT: 1'-2'

DRWN. BY: JE	DATE: 7/9/97	SCALE: AS SHOWN
JOB NO.	DRAWING NO. 97POAJSS-CONF-2	REV. 0

9709160130-12



NOTES
SAMPLES ARE IN PICO-CURIES PER GRAM URANIUM (pCi/g U) AND THORIUM (pCi/g Th).
CIMARRON GAMMA SPEC SOIL COUNTER.
SITE SOIL BACKGROUND OF 4 pCi/g U & 1.5 pCi/g Th, NOT SUBTRACTED.

LEGEND

12+ URANIUM 1 - 30 pCi/g U	-+ URANIUM HIT ROCK, NO SAMPLE
31+ URANIUM > 30 pCi/g U	
+1 THORIUM < 10 pCi/g Th	+ THORIUM HIT ROCK, NO SAMPLE

20 0 20
SCALE IN METERS

NORTH

LEGEND

UNAFFECTED AREA (PHASE II)
AFFECTED AREA (PHASE II)

REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE
0	DRAWING ISSUED.	JE	RS	JK	8/20/97

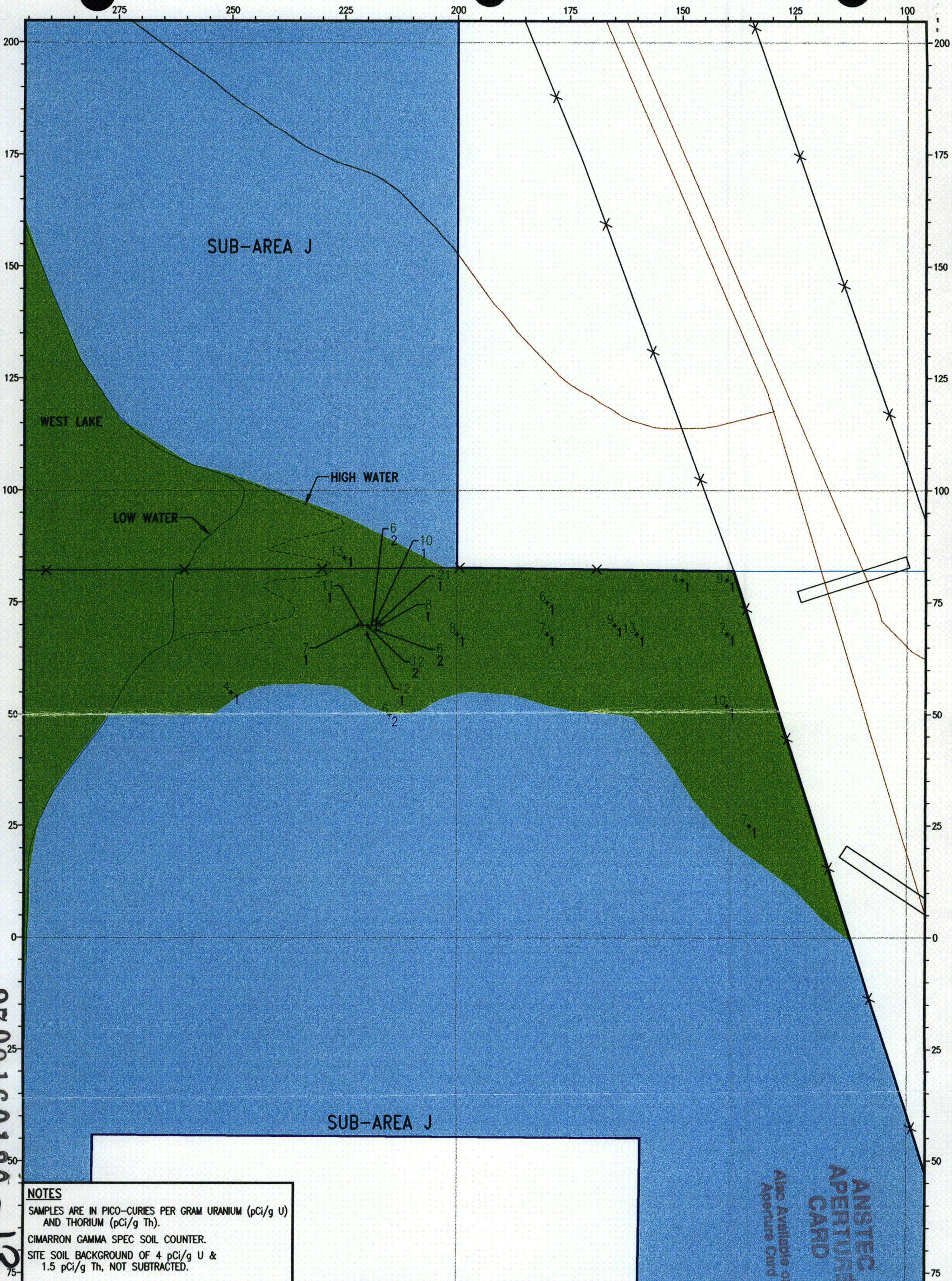
CIMARRON CORPORATION

CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION AFFECTED AREA
CONFIRMATORY SOIL SAMPLE RESULTS (1997)
SOIL SAMPLE ALIQUOT: 2'-3'

DRWN. BY	DATE	SCALE
JE	7/9/97	AS SHOWN

JOB NO.	DRAWING NO.	REV.
	97POAJSS-CONF-3	0

9709160130-13



NOTES
SAMPLES ARE IN PICO-CURIES PER GRAM URANIUM (pCi/g U) AND THORIUM (pCi/g Th).
CIMARRON GAMMA SPEC SOIL COUNTER.
SITE SOIL BACKGROUND OF 4 pCi/g U & 1.5 pCi/g Th, NOT SUBTRACTED.

LEGEND
12+ URANIUM 1 - 30 pCi/g U
31+ URANIUM > 30 pCi/g U
+ THORIUM < 10 pCi/g Th
-+ URANIUM HIT ROCK, NO SAMPLE
+ THORIUM HIT ROCK, NO SAMPLE
20 0 20
SCALE IN METERS
NORTH

LEGEND				
UNAFECTED AREA (PHASE II)				
AFFECTED AREA (PHASE II)				
REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:
0	DRAWING ISSUED.	JE	RS	JK

CIMARRON CORPORATION			
CIMARRON FACILITY PHASE II - SUB-AREA J POST REMEDIATION AFFECTED AREA CONFIRMATORY SOIL SAMPLE RESULTS (1997) SOIL SAMPLE ALIQUOT: 3'-4'			
DRWN BY: JE	DATE: 7/9/97	SCALE: AS SHOWN	REV. 0
JOB NO.	DRAWING NO. 97POAJSS-CONF-4		

