

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB AREA "J"
UNAFFECTED AREA

DATE:

N #	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	0-6" Sample	
					Total-U	Th (Nat)
1	280W-170S	7320	8	7	8.0	1.5
2	290W-90S	6798	8	7	6.4	1.0
3	300W-110S	7544	9	8	6.7	1.3
4	300W-190S	7220	7	7	7.9	1.2
5	320W-170S	8764	9	9	8.3	1.4
6	320W-180S	8006	7	7	6.8	1.3
7	340W-50N	8730	8	8	7.1	1.4
8	360W-90N	6840	9	9	8.6	1.5
9	370W-200S	7306	8	8	7.1	0.8
0	370W-30N	9826	10	10	8.4	1.4
1	380W-110N	8920	9	9	5.8	1.3
2	380W-150N	7340	8	7	8.4	1.3
	390W-140N	7910	9	8	7.1	1.4
4	400W-170N	7860	9	9	10.6	1.5
5						
6						
7						
8						

STRUMENTS:

RESULTS IN:

BACKGROUND MDA

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

μR/hr

7-10

7

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

CPM

7238

N/A

Total U

4

10

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

pCi/g

Th(Nat)

1.5

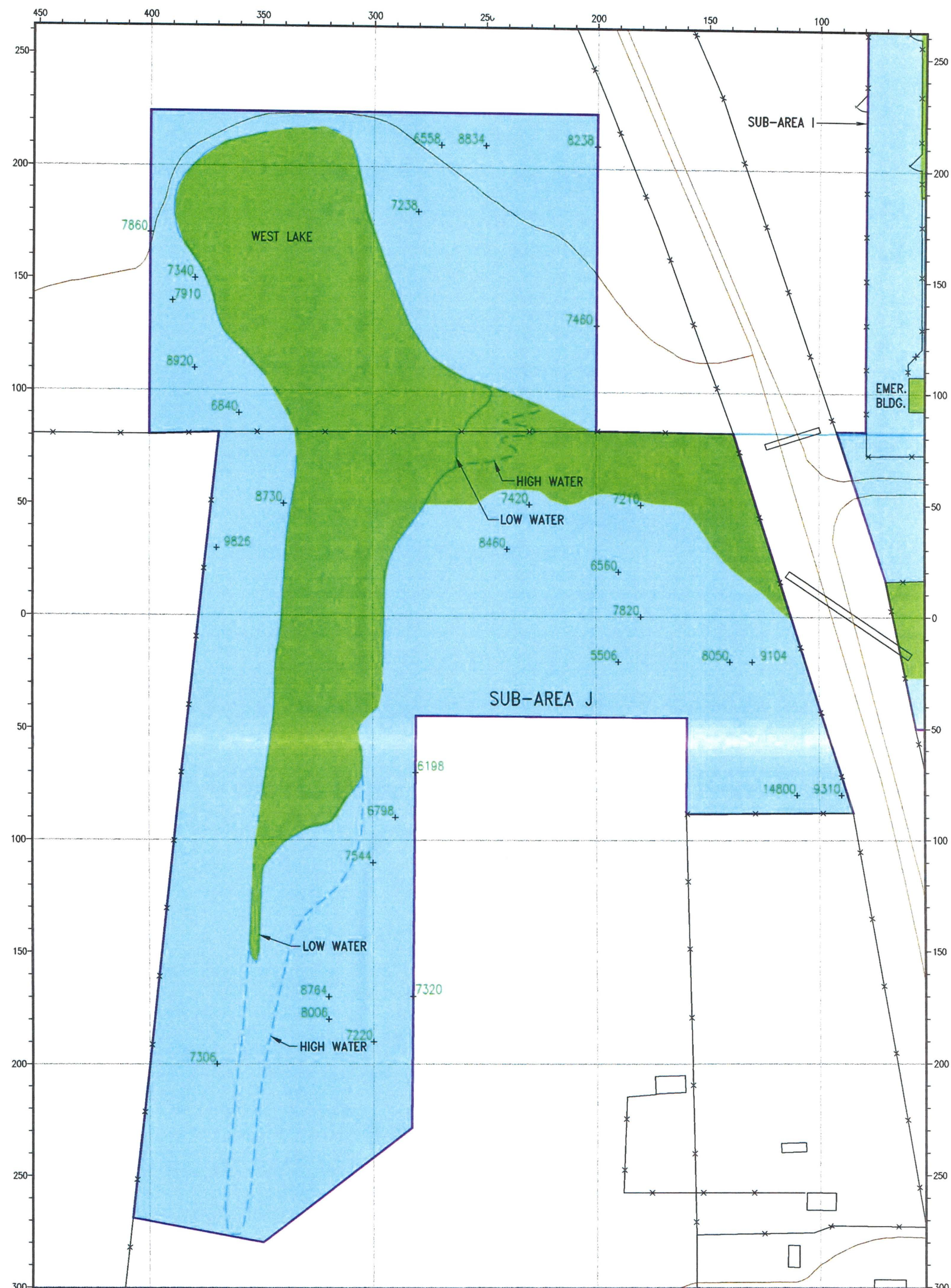
0.25

BACKGROUND NOT SUBTRACTED

DATE: AJUASURF

W.G. Rogers

DATE: 3-3-97



NOTES:

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

BACKGROUND: 7238 CPM

LEGEND

UNAFFECTED AREA (PHASE II)

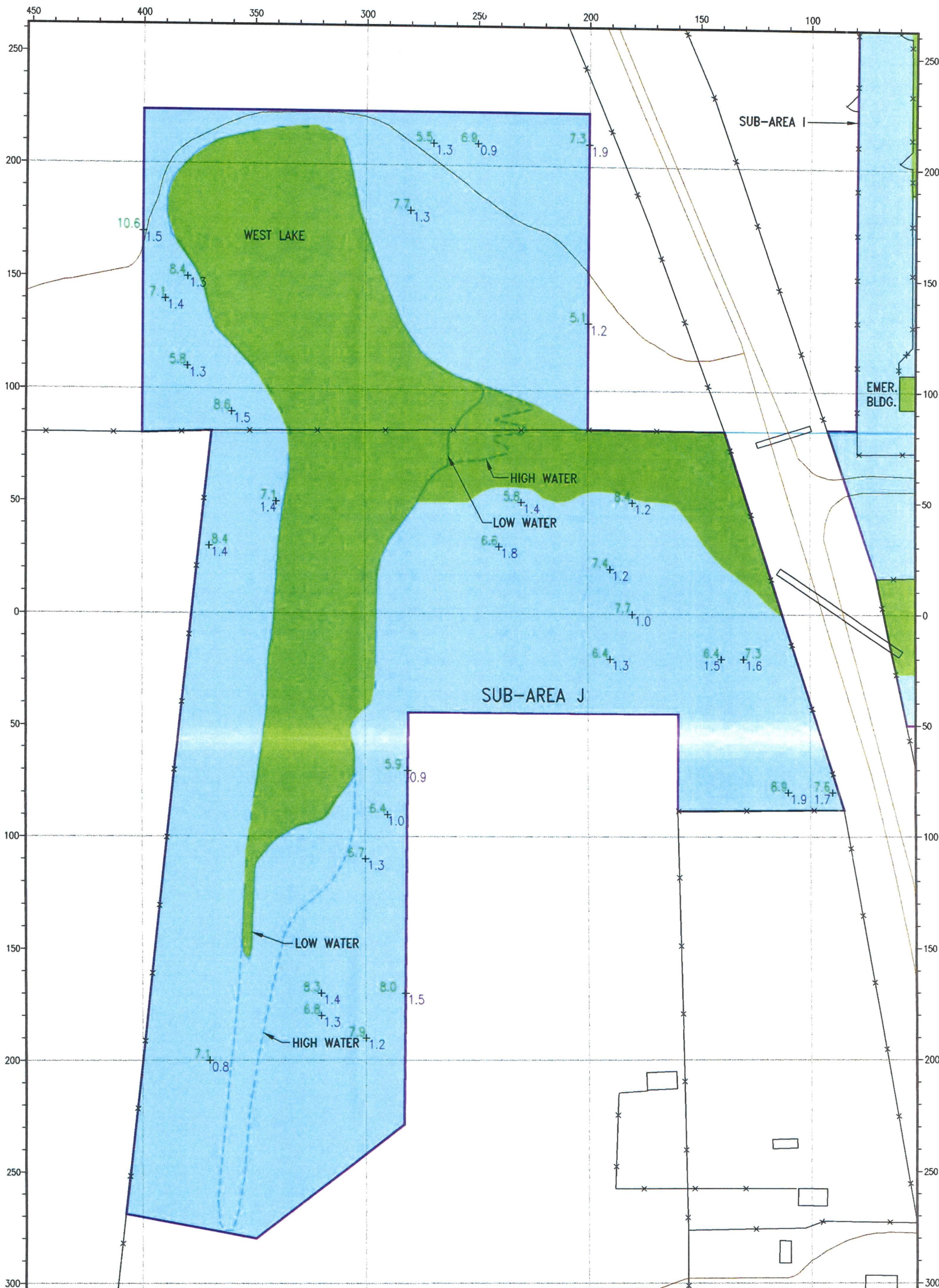
AFFECTED AREA (PHASE II)

CIMARRON CORPORATION

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

REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE	DRWN. BY	DATE	SCALE	REV.
0	DRAWING ISSUED.	JE	RS	JK	8/20/97	JE	7/9/97	AS SHOWN	0

JOB NO. DRAWING NO. 97POUJ3D-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 AND 1.5 pCi/g Th, NOT SUBTRACTED.

40 0 40
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

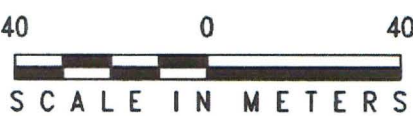
CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION UNAFFECTED AREA
SOIL SAMPLE RESULTS (1997)
SOIL SAMPLE ALIQUOT: 0-6"

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

...\\CIMARRON\\SUBAREA\\97POUJSS



NOTES:
READINGS ARE IN MICRO-R/Hr. ($\mu\text{R}/\text{Hr.}$)
INSTRUMENT: LUDLUM MICRO-R METER
MODEL NO.: 19
BACKGROUND: 7 $\mu\text{R}/\text{Hr.}$



LEGEND

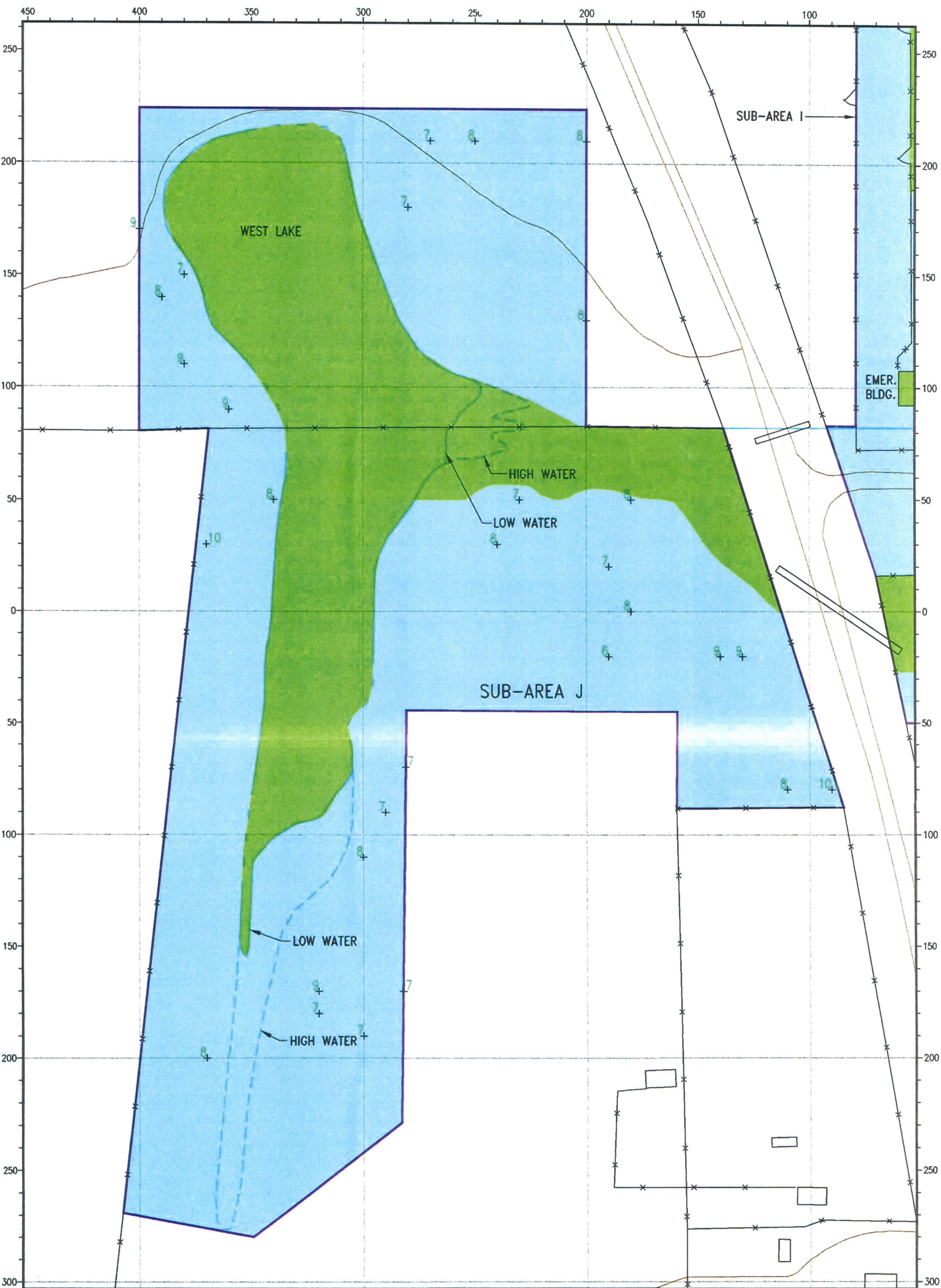
- UNAFECTED AREA (PHASE II)
- AFFECTED AREA (PHASE II)

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 UNAFECTED AREA
MICRO-R SURVEY (1997)
AT LAND SURFACE**

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



NOTES:

READINGS ARE IN MICRO-R/Hr. ($\mu R/Hr.$)
INSTRUMENT: LUDLUM MICRO-R METER
MODEL NO.: 19
BACKGROUND: 7 $\mu R/Hr.$

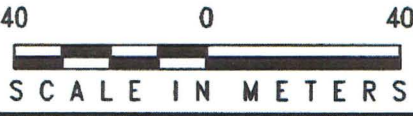
LEGEND

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



CIMARRON CORPORATION

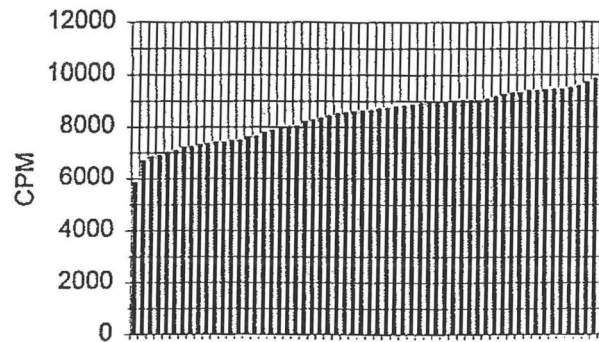
**CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION UNAFFECTED AREA
MICRO-R SURVEY (1997)
AT ONE METER ABOVE SURFACE**



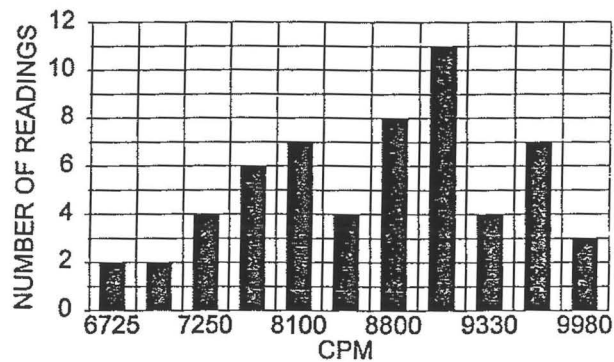
REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE	DRWN BY:	DATE	SCALE
0	DRAWING ISSUED.	JE	RS	JK	8/20/97	JE	7/9/97	AS SHOWN

PHASE II, SUB-AREA "J", WITH DATA FROM SUB-AREA "E"
 BOUNDARY
 GROSS GAMMA READINGS IN CPM
 LUDLUM MODEL 2221, S/N 97264
 BACKGROUND AVERAGE : 8572
 MARCH 1997

3" NaI DETECTOR READINGS
 SURVEY DATA



3" NaI DETECTOR READINGS
 FREQUENCY DISTRIBUTION

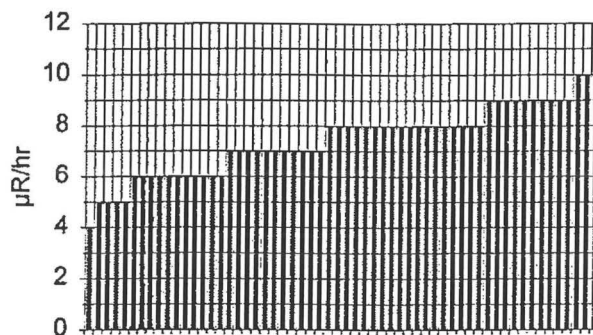


NUMBER OF READINGS	58
AVERAGE READING	8431
MINIMUM READING	5872
MAXIMUM READING	9974
STANDARD DEVIATION	927

PHASE II, SUB-AREA "J", WITH DATA FROM SUB-AREA "E"
 BOUNDARY
 MICRO 'R' READINGS AT SURFACE
 LUDLUM MODEL 19, S/N 111299
 RESULTS IN $\mu\text{R/hr}$
 MARCH 1997

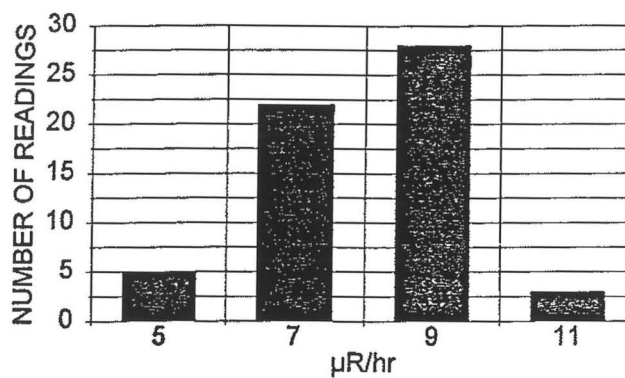
MICRO 'R' READINGS

SURVEY DATA



MICRO 'R' READINGS

FREQUENCY DISTRIBUTION

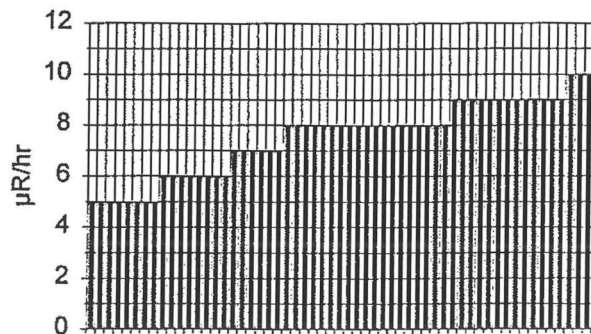


NUMBER OF READINGS	58
AVERAGE READING	7
MINIMUM READING	4
MAXIMUM READING	10
STANDARD DEVIATION	1

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

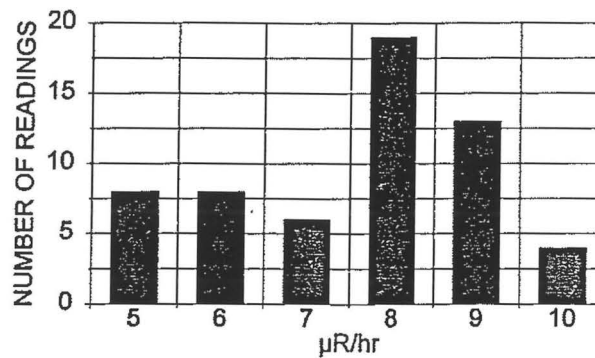
MICRO 'R' READINGS

SURVEY DATA



MICRO 'R' READINGS

FREQUENCY DISTRIBUTION



NUMBER OF READINGS	58
AVERAGE READING	8
MINIMUM READING	5
MAXIMUM READING	10
STANDARD DEVIATION	1

CIMARRON CORPORATION
 CIMARRON FACILITY
 PHASE II, SUB-AREA "J", WITH SUB-AREA "E" DATA
 BOUNDARY

DATE: 2/28/97

GRID NUMBER	3" NaI DETECTOR C.P.M.	MICRO 'R' 1 METER	MICRO 'R' SURFACE
138W-82N	8522	8	9
148W-82N	9454	10	9
158W-82N	8744	9	9
168W-83N	8572	8	8
178W-83N	8622	8	8
188W-83N	7810	7	9
198W-83N	8352	8	8

INSTRUMENTS:	BACKGROUND	MDA
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LUDLUM MICRO 'R' METER - MODEL	μr/hr	7-10	7
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LUDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR	CPM	8572	N/A
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REVIEWED BY: <i>W.A. Rogers</i>	DATE: 3-3-97
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FILE: AJBOUND

CIMARRON CORPORATION
 CIMARRON FACILITY
 PHASE II, SUB-AREA "J", WITH SUB-AREA "E" DATA
 BOUNDARY

DATE: 2/28/97

GRID NUMBER	3" NaI DETECTOR C.P.M.	MICRO 'R' 1 METER	MICRO 'R' SURFACE
200W - 80N	8924	10	9
200W - 90N	9734	9	9
200W - 100N	9004	8	8
200W - 110N	8618	8	8
200W - 120N	8224	9	8
200W - 130N	7504	8	8
200W - 140N	7978	8	7
200W - 150N	7420	8	7
200W - 160N	7250	8	7
200W - 170N	7232	8	7
200W - 180N	8050	9	8
200W - 190N	8722	8	8
200W - 200N	8798	7	8
200W - 210N	7890	8	8
200W - 220N	8018	8	7
200W - 225N	7340	7	7

INSTRUMENTS:

BACKGROUND

MDA

UDLUM MICRO 'R' METER - MODEL

μr/hr

7-10

7

UDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR -

CPM

8572

N/A

REVIEWED BY: *W.A. Rogers*

DATE: 3-3-97

FILE: AJBOUND

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", WITH SUB-AREA "E" DATA
BOUNDARY

DATE: 2/28/97

GRID NUMBER	3" NaI DETECTOR C.P.M.	MICRO 'R' 1 METER	MICRO 'R' SURFACE
225N - 210W	7378	7	7
225N - 220W	7422	8	7
225N - 230W	7630	8	7
225N - 240W	7040	7	7
225N - 250W	5872	7	6
225N - 260W	6858	8	8
225N - 270W	8276	9	8
225N - 280W	8876	9	8
225N - 290W	8442	8	8
225N - 300W	7104	8	8
225N - 310W	7508	9	8
225N - 320W	9588	9	9
225N - 330W	9044	10	9
225N - 340W	9328	10	9
225N - 350W	9026	9	10
225N - 360W	9042	9	10
225N - 370W	8652	9	9
225N - 380W	7652	9	8
225N - 390W	8828	9	10

INSTRUMENTS:

BACKGROUND

MDA

LUDLUM MICRO 'R' METER - MODEL

µr/hr

7-10

7

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

CPM

8572

N/A

REVIEWED BY: *W.A. Rozen*

DATE: 3-3-97

FILE: AJBOUND

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J", WITH SUB-AREA "E" DATA
BOUNDARY

DATE: 2/28/97

GRID NUMBER	3" NaI DETECTOR C.P.M.	MICRO 'R' 1 METER	MICRO 'R' SURFACE
400W - 80N	9004	5	5
400W - 90N	9510	6	6
400W - 100N	9414	5	5
400W - 110N	9408	6	6
400W - 120N	9180	6	6
400W - 130N	9092	6	5
400W - 140N	9316	6	6
400W - 150N	9974	5	6
400W - 160N	9458	6	7
400W - 170N	9446	5	6
400W - 180N	6724	5	4
400W - 190N	9046	5	6
400W - 200N	9270	6	6
400W - 210N	9874	5	6
400W - 220N	9000	6	6
400W - 225N	6918	5	5

INSTRUMENTS:

BACKGROUND

MDA

UDLUM MICRO 'R' METER - MODEL

μr/hr

7-10

7

UDLUM 2221, UNSHIELDED 3" X 1/2" NaI DETECTOR

CPM

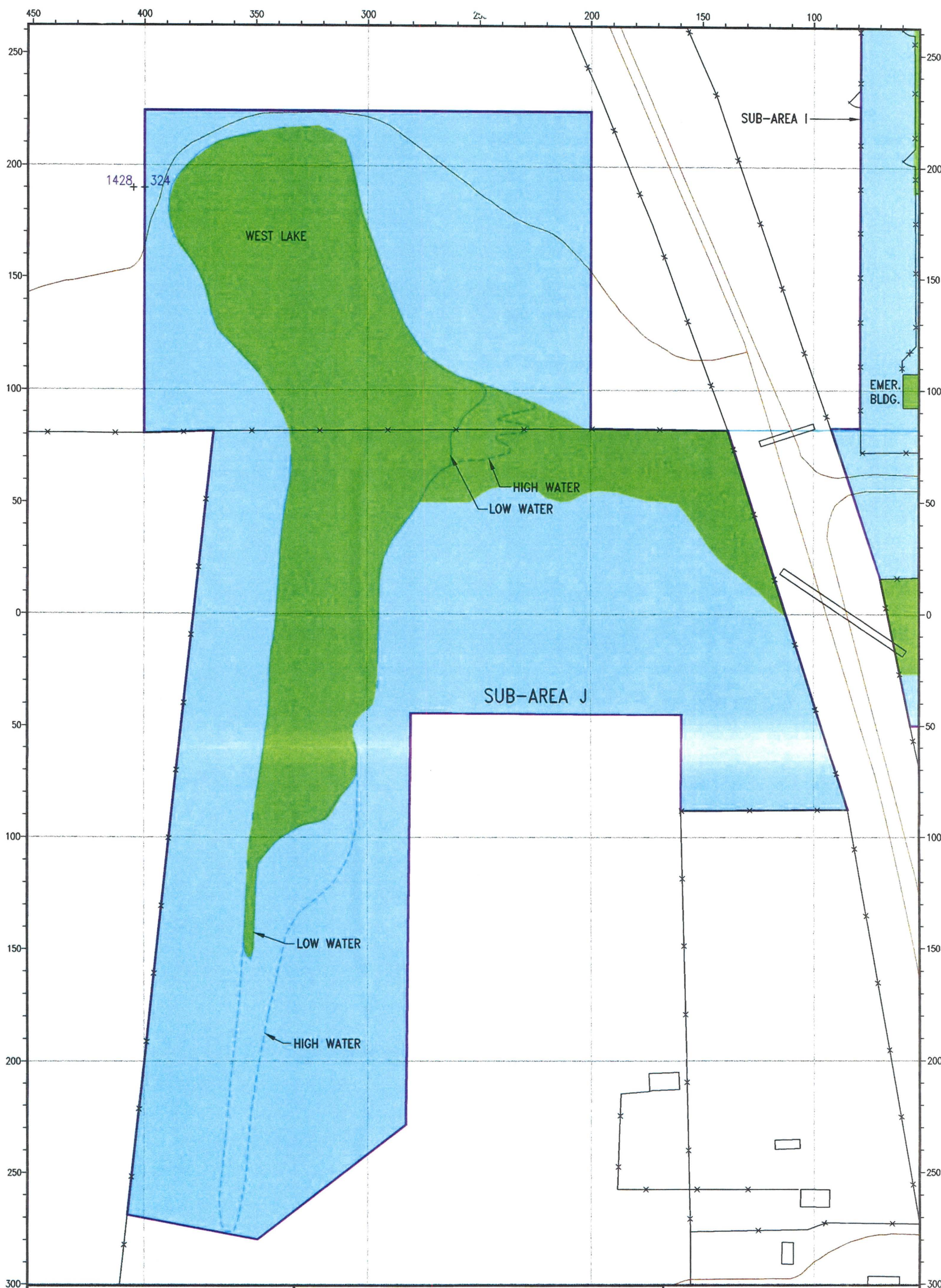
8572

N/A

REVIEWED BY: *W.A. Rogers*

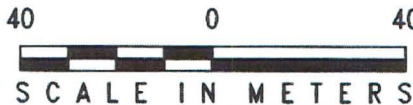
DATE: 3-3-97

FILE: AJBOUND



NOTES:

READINGS ARE IN DPM
INSTRUMENT: LUDLUM 2224, S/N 114606
BACKGROUND: 734, NOT SUBTRACTED



LEGEND

- UNAFECTED AREA (PHASE II)
- AFFECTED AREA (PHASE II)

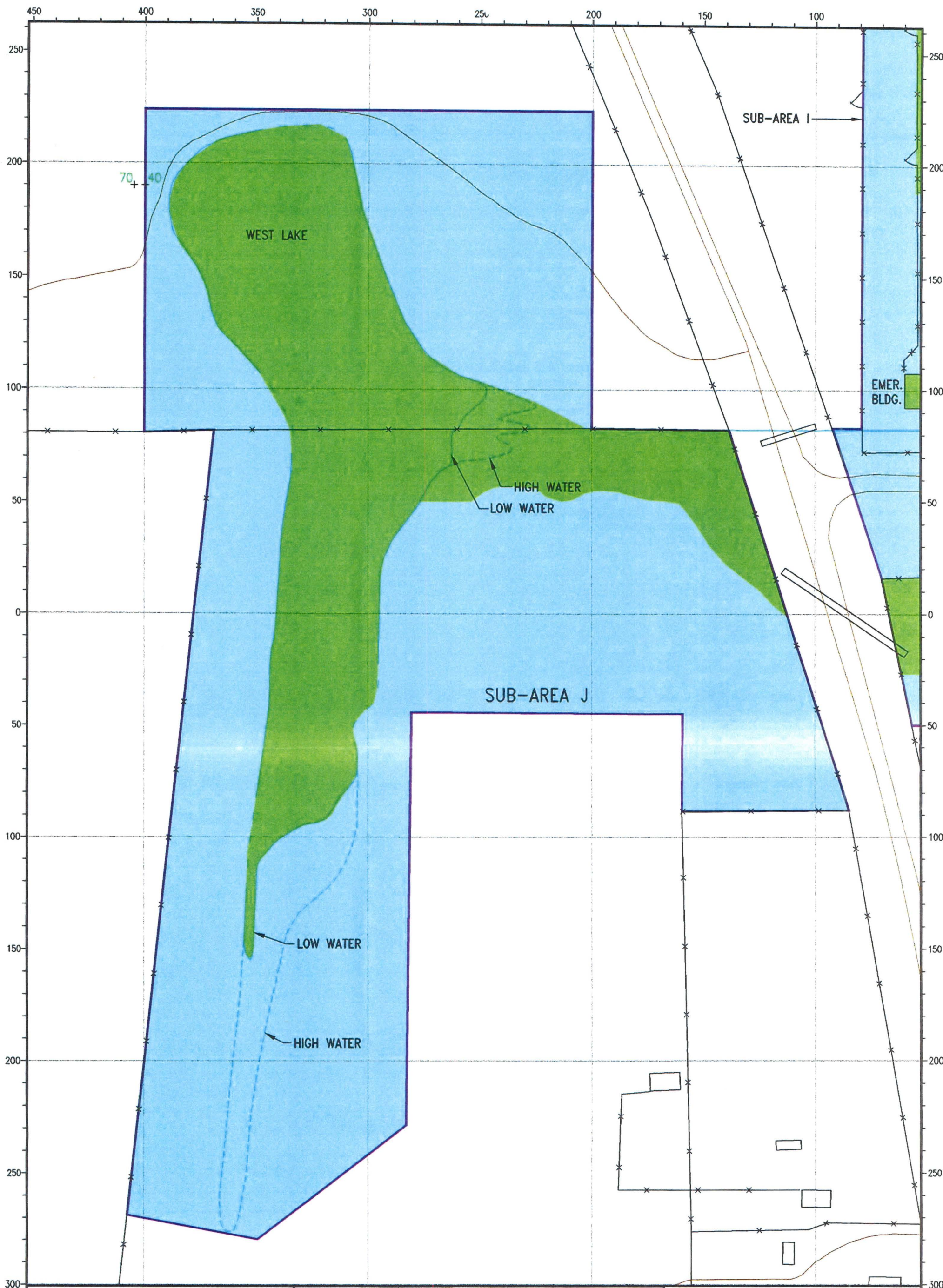


CIMARRON CORPORATION

**CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION CONCRETE AREA
BETA/GAMMA SURVEY (1997)**

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

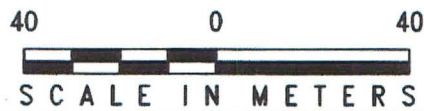
DRWN. BY: JE	DATE: 7/9/97	SCALE: AS SHOWN
JOB NO.	DRAWING NO. 97POCJBT-0	REV. 0



NOTES:

READINGS ARE IN DPM

INSTRUMENT: LUDLUM 2224, S/N 114606
BACKGROUND: 109, NOT SUBTRACTED



LEGEND

- UNAFECTED 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

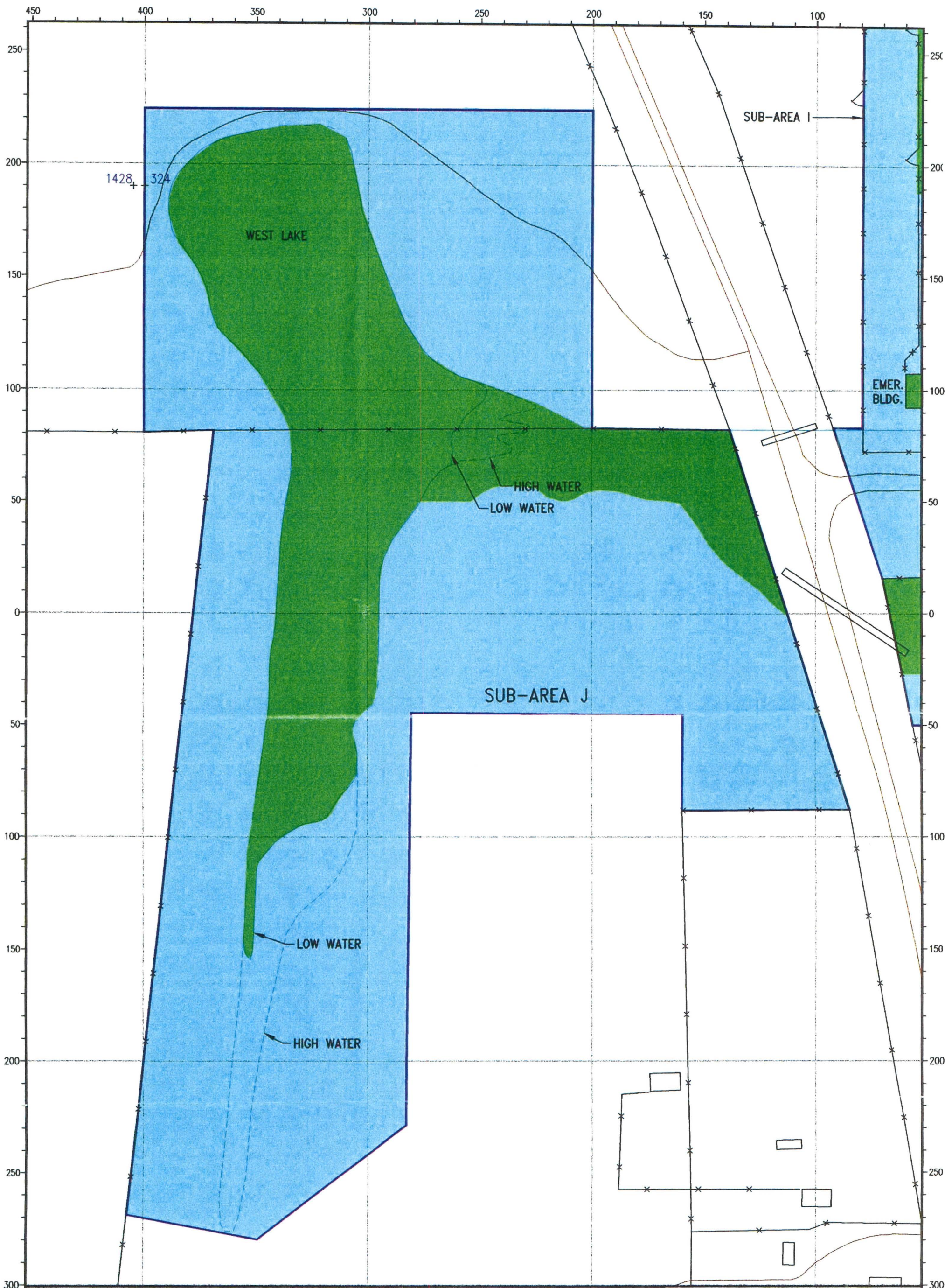


CIMARRON CORPORATION

**CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION CONCRETE AREA
ALPHA SURVEY (1997)**

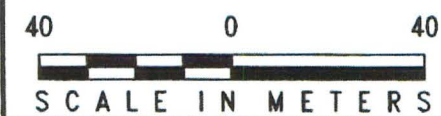
DRWN. BY: JE	DATE: 7/9/97	SCALE: AS SHOWN
JOB NO.	DRAWING NO. 97POCJAL-0	REV. 0

...\\CIMARRON\\SUBAREA\\97POCJAB



NOTES:

READINGS ARE IN DPM
INSTRUMENT: LUDLUM 2224, S/N 114606
BACKGROUND: 734, NOT SUBTRACTED



LEGEND

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

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

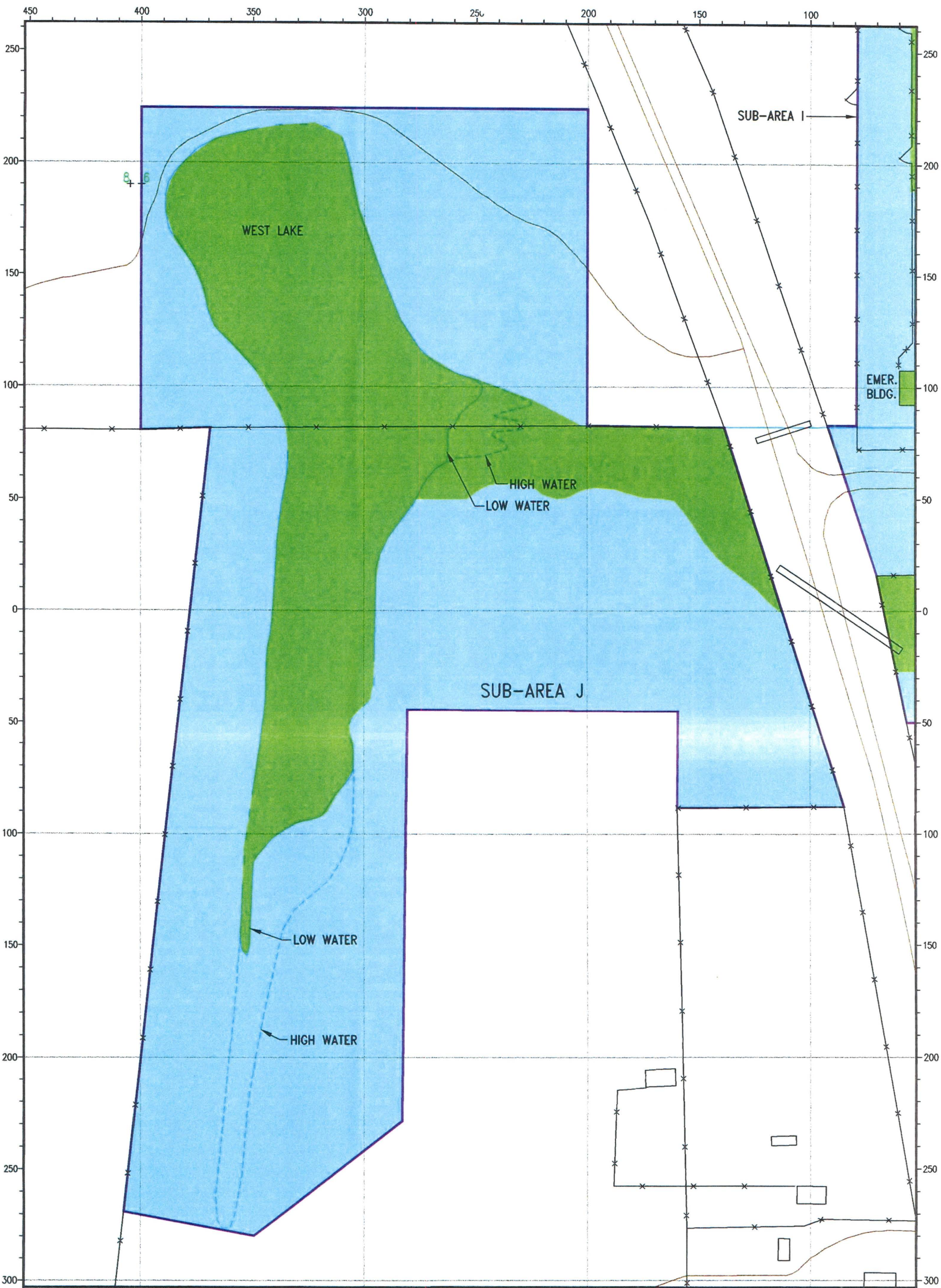


CIMARRON CORPORATION

**CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION CONCRETE AREA
BETA/GAMMA SURVEY (1997)**

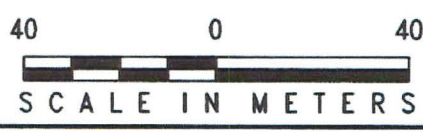
DRWN. BY: JE	DATE: 7/9/97	SCALE: AS SHOWN
JOB NO.	DRAWING NO. 97POCJBT-0	REV. 0

...\\CIMARRON\\SUBAREA\\97POCJAB



NOTES:

READINGS ARE IN MICRO-R/Hr. (μ R/Hr.)
INSTRUMENT: LUDLUM MICRO-R METER
MODEL NO.: 19
BACKGROUND: 7 μ R/Hr.



LEGEND

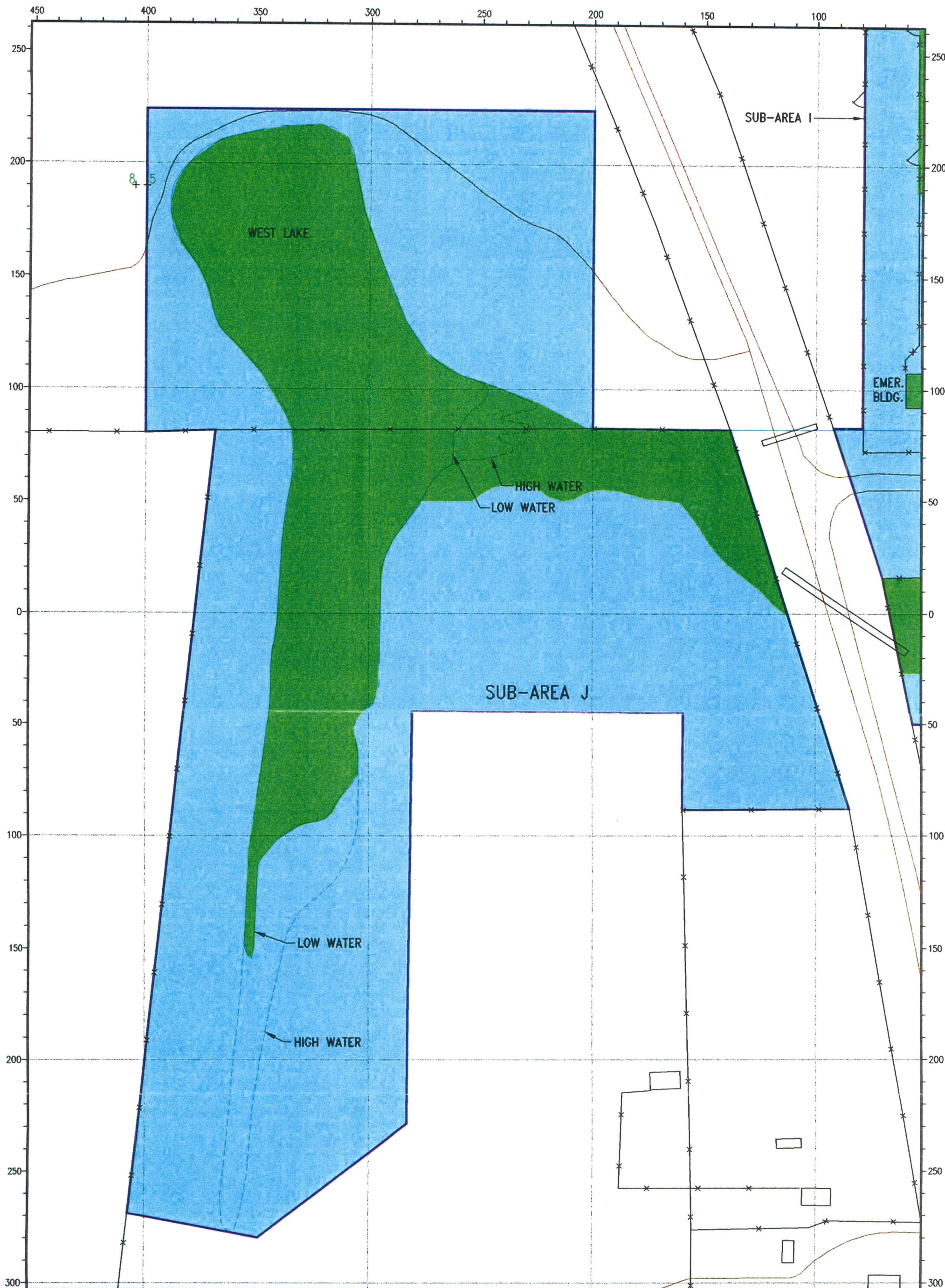
- UNAFECTED AREA (PHASE II)
- AFFECTED AREA (PHASE II)

CIMARRON CORPORATION

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

REV.	DESCRIPTION	DRWN BY:	CK'D BY:	APP'D BY:	DATE	DRWN BY:	DATE	SCALE
0	DRAWING ISSUED.	JE	RS	JK	8/20/97	JE	7/7/97	AS SHOWN

JOB NO.	DRAWING NO.	REV.
	97POCJUR-0	0



NOTES:

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

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

40 0 40
SCALE IN METERS



LEGEND

- UNAFECTED AREA (PHASE II)
- AFFECTED AREA (PHASE II)

REV.	DESCRIPTION	DRWN BY:	CHK'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 CONCRETE AREA
MICRO-R SURVEY (1997)
AT ONE METER ABOVE SURFACE

DRWN. BY: JE	DATE: 7/7/97	SCALE: AS SHOWN
JOB NO.	DRAWING NO. 97POCJUR-1	REV. 0

...\\CIMARRON\\SUBAREA\\97POCJUR

CIMARRON CORPORATION
CIMARRON FACILITY
PHASE II, SUB-AREA "J"
CONCRETE SURVEY

DATE: 03/03/97

N E	GRID NUMBER	3" DETECT C.P.M.	MICRO R' SURF	MICRO R' 1 METER	DPM/100cm ²	
					ALPHA	BETA
1	400W-190N	5204	6	5	40	324
2	405W-190N	8728	8	8	70	1428
3						
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7						
8						
9						
0						
1						
2						

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

$$n = \text{DPM}/100\text{cm}^2 \quad (\text{ALPHA})$$

CONCRETE SURVEY

[illegible]

No. of Samples (x) :	66
----------------------	----

COUNT TIME: 0.5 MINUTES

Sample Mean (N) = Sum(n) ÷ (x)

Sample Mean (N) : 54.24

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

Standard Deviation: 125.08

2 Std Deviations:	250.16
-------------------	--------

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

 $(df) = 1.670$

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

(A _μ) =	79.95	dpm/100cm ²
GUIDELINE VALUE:	5000	dpm/100cm ²
Acceptable Level:	5000	dpm/100cm ²

(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)	120	is (B)	1.658	95%
(df) low value(Y)	60	is (A)	1.671	95%
Desired value(df) (X)	65	is calculated as follow:		
$\text{EXP}[(\text{Ln}(\text{B}) - \text{Ln}(\text{A})) + (\text{Z-Y})] \times (\text{X-Y}) + \text{Ln}(\text{A})$				
The (df) value for (X)	65	1.670	95%	

PERFORMED BY: C. Fowell

DATE: 9-8-97

REVIEWED BY: W. A. Rogers

DATE: 9-8-9

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

CONCRETE SURVEY

[illegible]

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

$$n = \text{DPM}/100\text{cm}^2 \quad (\text{BETA})$$

CONCRETE SURVEY

[illegible]

No. of Samples (x) : 66

COUNT TIME: 0.5 MINUTES

Sample Mean (N) = $\text{Sum}(n) \div (x)$

Sample Mean (N): 1351.61

Standard Deviation (Sd) = $\text{SQRT} [(n \cdot N)^2 \div (x - 1)]$

Standard Deviation: 710.13

2 Std Deviations:	1420.26
-------------------	---------

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

$$(df) = 1.670$$

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

(Au) = 1497.6 dpm/100cm²

GUIDELINE VALUE: **5000** dpm/100cm²

Acceptable Level:	5000	dpm/100cm ²
-------------------	------	------------------------

(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)	120	is (B)	1.658	95%
(df) low value(Y)	60	is (A)	1.671	95%

Desired value(df) (X)	65	is calculated as follow:
-----------------------	----	--------------------------

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

The (df) value for (X)	65	1.670	95%
------------------------	----	-------	-----

PERFORMED BY: C. Powell

DATE: 9-8-97

REVIEWED BY: W-a. Byers

DATE: 9-8-97

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

CONCRETE SURVEY

[illegible]

CIMARRON CORPORATION - CIMARRON FACILITY

CONCRETE SURVEY - SUB AREA "J"

SYSTEMATIC GRID SURVEY

(ALPHA, BETA, AND GAMMA)

ALPHA AND BETA READINGS ARE RECORDED IN (DPM/100CM²)

DATE: 7/25/97

3" DETECTOR READINGS ARE RECORDED IN COUNTS PER MINUTE (CPM)

(1 METER X 1 METER GRIDS)

GRID LOCATION	ALPHA	BETA	3" DETECTOR
193N - 404W	10	1001	1818
192N - 404W	60	858	1610
192N - 403W	20	286	1482
192N - 402W	70	728	1700
192N - 401W	50	806	1790
192N - 400W	70	767	1898
192N - 399W	0	715	1656
191N - 409W	30	1391	1646
191N - 408W	50	1716	1566
191N - 407W	30	1209	1704
191N - 406W	40	897	2066
191N - 405W	60	780	1904
191N - 404W	30	1391	1486
191N - 403W	40	975	1890
191N - 402W	10	1599	1914
191N - 401W	20	1352	1758
191N - 400W	40	1703	1844

ALPHA INSTRUMENT

LUDLUM MODEL: 2224

S/N 114616 CI NO. 51

PROBE: 43 - 89

MDA: 75 dpm

BKG: 3

CAL. DATE: 6-26-97

AL. DUE DATE: 9-97

BETA INSTRUMENT

LUDLUM MODEL: 2224

S/N 114616 CI NO. 51

PROBE: 43-89

MDA: 815 dpm

BKG: 165

CAL. DATE: 6-26-97

CAL. DUE DATE: 9-97

1 MIN. COUNTS

3" SHIELDED DETECTOR

LUDLUM MODEL: 2220

S/N 50057 CI NO. 49

CAL. DATE: 6-4-97

CAL. DUE DATE: 9-97

BKG: 1436

REVIEWED BY: W. A. Rogers

DATE: 8-15-97

** NO CONCRETE

CIMARRON CORPORATION - CIMARRON FACILITY
CONCRETE SURVEY - SUB AREA "J"
SYSTEMATIC GRID SURVEY
(ALPHA, BETA, AND GAMMA)

ALPHA AND BETA READINGS ARE RECORDED IN (DPM/100CM²)
 3" DETECTOR READINGS ARE RECORDED IN COUNTS PER MINUTE (CPM)

DATE: 7/25/97

(1 METER X 1 METER GRIDS)

GRID LOCATION	ALPHA	BETA	3" DETECTOR
190N - 410W	20	1586	1932
190N - 409W	10	741	1766
190N - 408W	40	1183	2014
190N - 407W	0	1378	2082
190N - 406W	**	**	**
190N - 405W	50	1144	1864
190N - 404W	40	1001	1604
190N - 403W	40	1313	1604
190N - 402W	40	1573	1622
190N - 401W	30	1183	1874
190N - 400W	20	1885	1828
190N - 399W	50	1235	2210

ALPHA INSTRUMENT
 LUDLUM MODEL: 2224
 S/N 114616 CI NO. 51
 PROBE: 43 - 89
 MDA: 75 dpm
 BKG: 3
 CAL. DATE: 6-26-97
 CAL. DUE DATE: 9-97

BETA INSTRUMENT
 LUDLUM MODEL: 2224
 S/N 114616 CI NO. 51
 PROBE: 43-89
 MDA: 815 dpm
 BKG: 165
 CAL. DATE: 6-26-97
 CAL. DUE DATE: 9-97

1 MIN. COUNTS
 3" SHIELDED DETECTOR
 LUDLUM MODEL: 2220
 S/N 50057 CI NO. 49
 CAL. DATE: 6-4-97
 CAL. DUE DATE: 9-97
 BKG: 1436

VIEWED BY: W. G. Rogers

DATE: 8-15-97

** NO CONCRETE

CIMARRON CORPORATION - CIMARRON FACILITY
CONCRETE SURVEY - SUB AREA "J"
SYSTEMATIC GRID SURVEY
(ALPHA, BETA, AND GAMMA)

ALPHA AND BETA READINGS ARE RECORDED IN (DPM/100CM²)
 3" DETECTOR READINGS ARE RECORDED IN COUNTS PER MINUTE (CPM)

DATE: 7/25/97

(1 METER X 1 METER GRIDS)

GRID LOCATION	ALPHA	BETA	3" DETECTOR
189N - 410W	10	1144	1980
189N - 409W	30	1950	1980
CLAY TILE 189N - 408W	90	2613	3944
189N - 407W	**	**	**
189N - 406W	120	1339	1514
189N - 405W	0	1586	1498
189N - 404W	30	1352	1806
189N - 403W	10	1092	1774
189N - 402W	50	1092	1566
189N - 401W	50	1105	1922

ALPHA INSTRUMENT
 LUDLUM MODEL: 2224
 S/N 114616 CI NO. 51
 PROBE: 43 - 89
 MDA: 75 dpm
 BKG: 3
 CAL. DATE: 6-26-97
 CAL. DUE DATE: 9-97

BETA INSTRUMENT
 LUDLUM MODEL: 2224
 S/N 114616 CI NO. 51
 PROBE: 43-89
 MDA: 815 dpm
 BKG: 165
 CAL. DATE: 6-26-97
 CAL. DUE DATE: 9-97

1 MIN. COUNTS
 3" SHIELDED DETECTOR
 LUDLUM MODEL: 2220
 S/N 50057 CI NO. 49
 CAL. DATE: 6-4-97
 CAL. DUE DATE: 9-97
 BKG: 1436

REVIEWED BY: W. C. Rogers

DATE: 8-15-97

** NO CONCRETE

CIMARRON CORPORATION - CIMARRON FACILITY
CONCRETE SURVEY - SUB AREA "J"
SYSTEMATIC GRID SURVEY
(ALPHA, BETA, AND GAMMA)

ALPHA AND BETA READINGS ARE RECORDED IN (DPM/100CM²)
 3" DETECTOR READINGS ARE RECORDED IN COUNTS PER MINUTE (CPM)

DATE: 7/25/97

(1 METER X 1 METER GRIDS)

GRID LOCATION	ALPHA	BETA	3" DETECTOR
188N - 410W	**	**	**
188N - 409W	**	**	**
188N - 408W	30	1495	1804
CLAY TILE 188N - 407W	70	2288	3800
CLAY TILE 188N - 406W	30	1911	2406
188N - 405W	50	1170	1798
188N - 404W	30	364	1930
188N - 403W	0	936	1642
188N - 402W	30	208	1646
188N - 401W	100	1079	1766
188N - 400W	10	858	1870
188N - 399W	10	1378	2162

ALPHA INSTRUMENT
 LUDLUM MODEL: 2224
 S/N 114616 CI NO. 51
 PROBE: 43 - 89
 MDA: 75 dpm
 BKG: 3
 CAL. DATE: 6-26-97
 CAL. DUE DATE: 9-97

BETA INSTRUMENT
 LUDLUM MODEL: 2224
 S/N 114616 CI NO. 51
 PROBE: 43-89
 MDA: 815 dpm
 BKG: 165
 CAL. DATE: 6-26-97
 CAL. DUE DATE: 9-97

1 MIN. COUNTS
 3" SHIELDED DETECTOR
 LUDLUM MODEL: 2220
 S/N 50057 CI NO. 49
 CAL. DATE: 6-4-97
 CAL. DUE DATE: 9-97
 BKG: 1436

REVIEWED BY: W.A. Rogers

DATE: 8-15-97

** NO CONCRETE

CIMARRON CORPORATION - CIMARRON FACILITY
CONCRETE SURVEY - SUB AREA "J"
SYSTEMATIC GRID SURVEY
(ALPHA, BETA, AND GAMMA)

ALPHA AND BETA READINGS ARE RECORDED IN (DPM/100CM²)
 3" DETECTOR READINGS ARE RECORDED IN COUNTS PER MINUTE (CPM)

DATE: 7/25/97

(1 METER X 1 METER GRIDS)

GRID LOCATION	ALPHA	BETA	3" DETECTOR
187N - 409W	10	923	1808
187N - 408W	20	1079	1918
187N - 407W	0	1274	2044
187N - 406W	10	1196	1846
187N - 405W	150	1781	1882
187N - 404W	50	1365	1640
187N - 403W	40	1352	1682
187N - 402W	20	1430	1838
187N - 401W	90	1495	1800
187N - 400W	0	1638	1814
187N - 399W	280	1872	2328
186N - 408W	20	1443	3196
186N - 407W	60	1157	1738
CLAY TILE 186N - 406W	50	3120	3244
186N - 405W	**	**	**
186N - 404W	0	1118	2328
186N - 403W	50	1196	1772
186N - 402W	0	1326	1778
186N - 401W	0	1560	1846
186N - 400W	1010	5525	2130

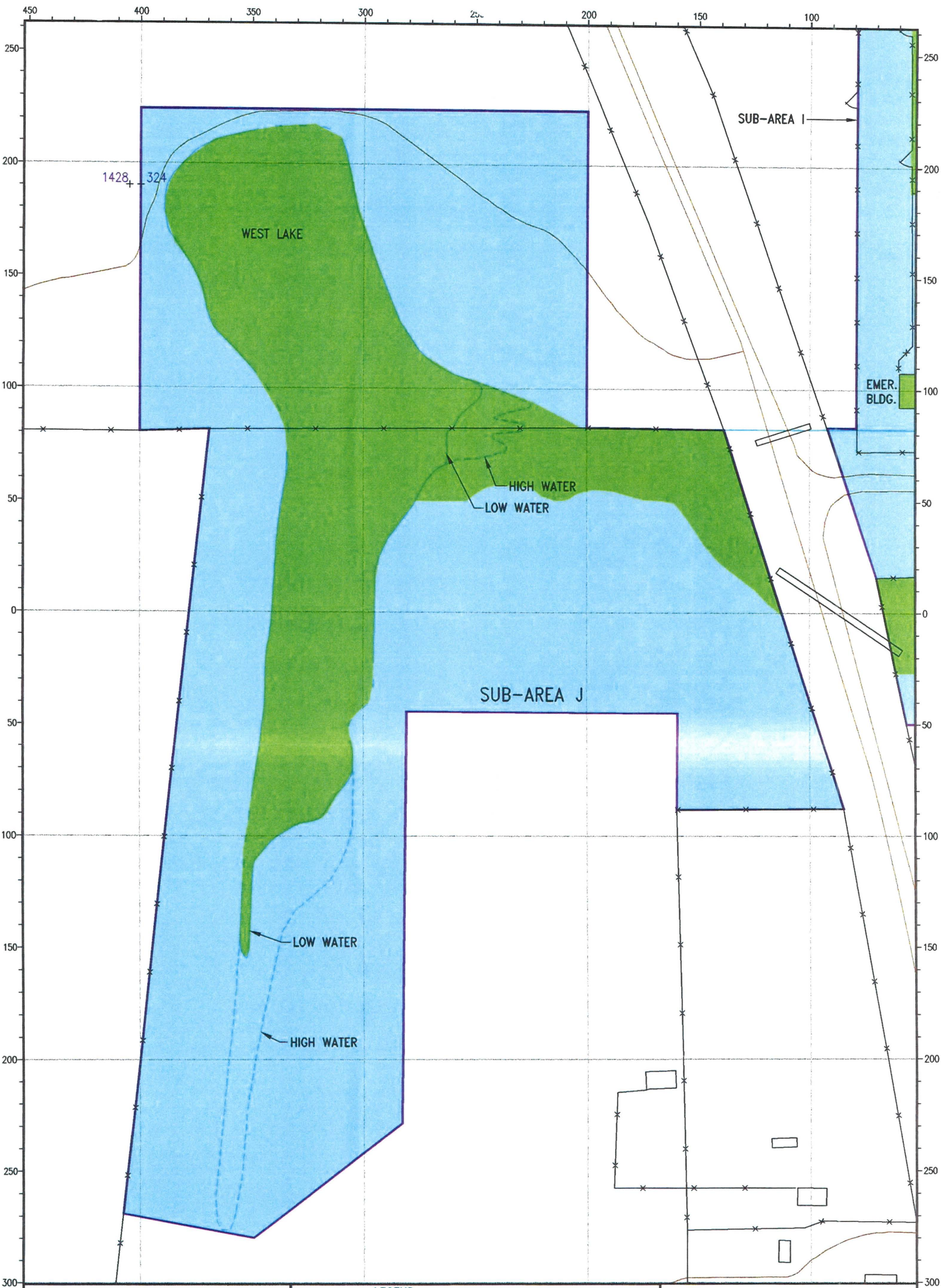
ALPHA INSTRUMENT
 LUDLUM MODEL: 2224
 S/N 114616 CI NO. 51
 PROBE: 43 - 89
 MDA: 75 dpm
 BKG: 3
 CAL. DATE: 6-26-97
 CAL. DUE DATE: 9-97

BETA INSTRUMENT
 LUDLUM MODEL: 2224
 S/N 114616 CI NO. 51
 PROBE: 43-89
 MDA: 815 dpm
 BKG: 165
 CAL. DATE: 6-26-97
 CAL. DUE DATE: 9-97

1 MIN. COUNTS
 3" SHIELDED DETECTOR
 LUDLUM MODEL: 2220
 S/N 50057 CI NO. 49
 CAL. DATE: 6-4-97
 CAL. DUE DATE: 9-97
 BKG: 1436

REVIEWED BY: W. A. Boyer

DATE: 8-15-97



NOTES:
READINGS ARE IN DPM
INSTRUMENT: LUDLUM 2224, S/N 114606
BACKGROUND: 734, NOT SUBTRACTED

40 0 40
SCALE IN METERS

NORTH

LEGEND

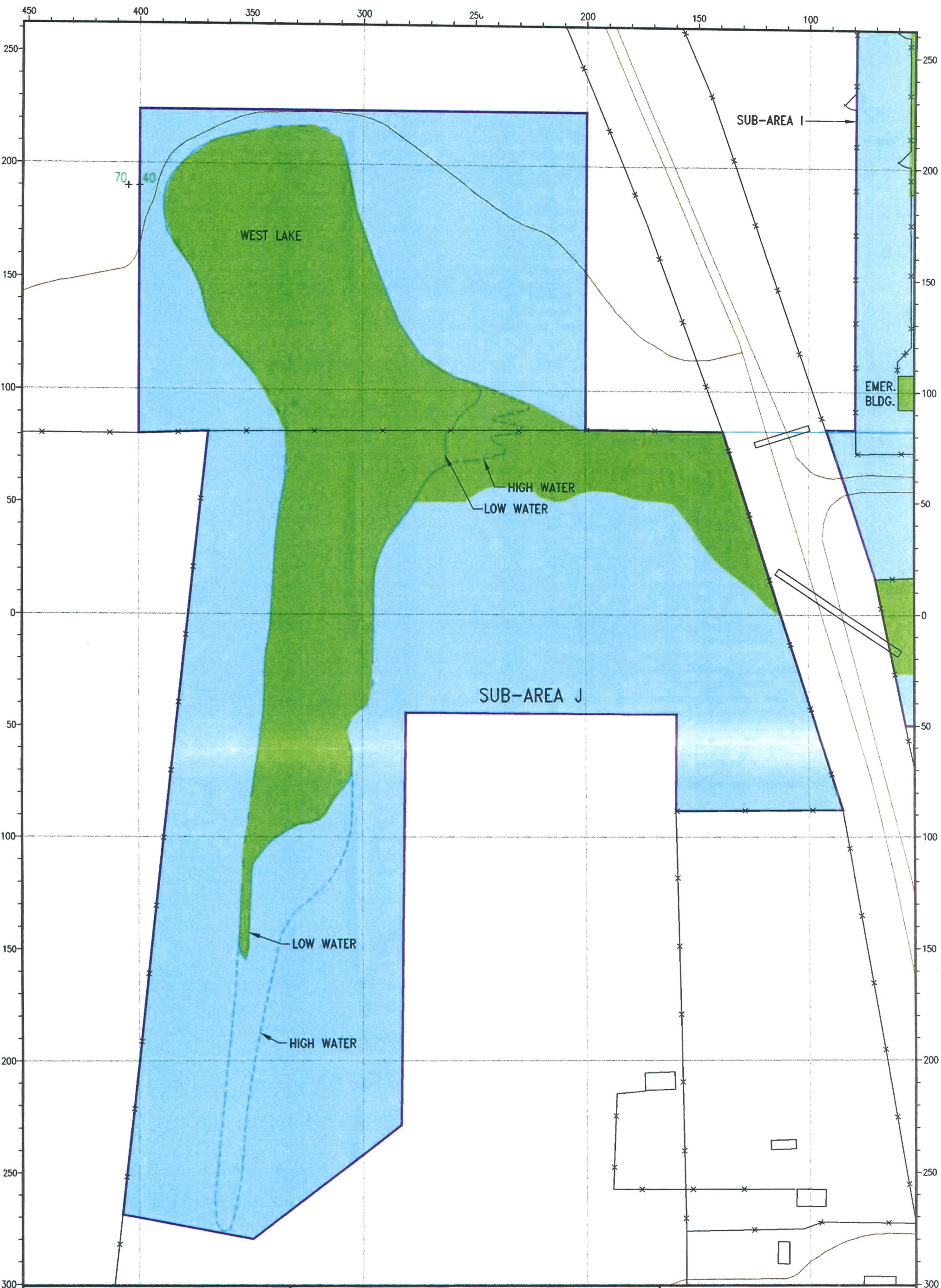
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- AFFECTED AREA (PHASE II)

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

CIMARRON CORPORATION

**CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION CONCRETE AREA
BETA/GAMMA SURVEY (1997)**



NOTES:
READINGS ARE IN DPM
INSTRUMENT: LUDLUM 2224, S/N 114606
BACKGROUND: 109, NOT SUBTRACTED

400040

SCALE IN METERS

NORTH

LEGEND

UNAFECTED AREA (PHASE II)

AFFECTED AREA (PHASE II)

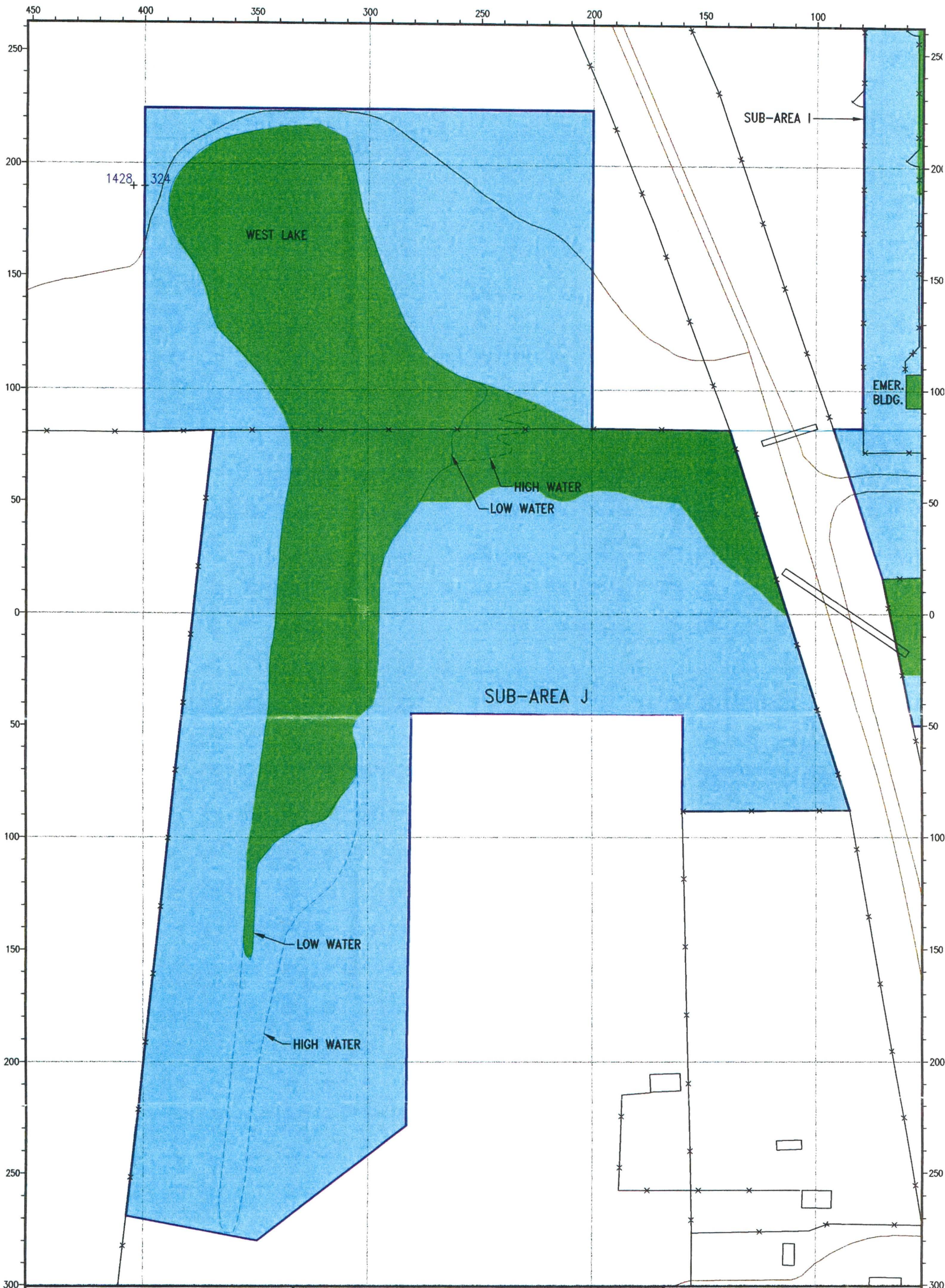
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CIMARRON CORPORATION

CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION CONCRETE AREA
ALPHA SURVEY (1997)

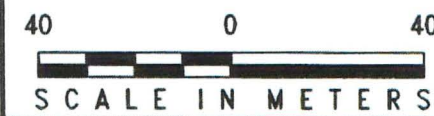
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JOB NO.	DRAWING NO. 97POCJAL-0	REV. 0

...\\CIMARRON\\SUBAREA\\97POCJAL



NOTES:

READINGS ARE IN DPM
INSTRUMENT: LUDLUM 2224, S/N 114606
BACKGROUND: 734, NOT SUBTRACTED



LEGEND

- UNAFECTED 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

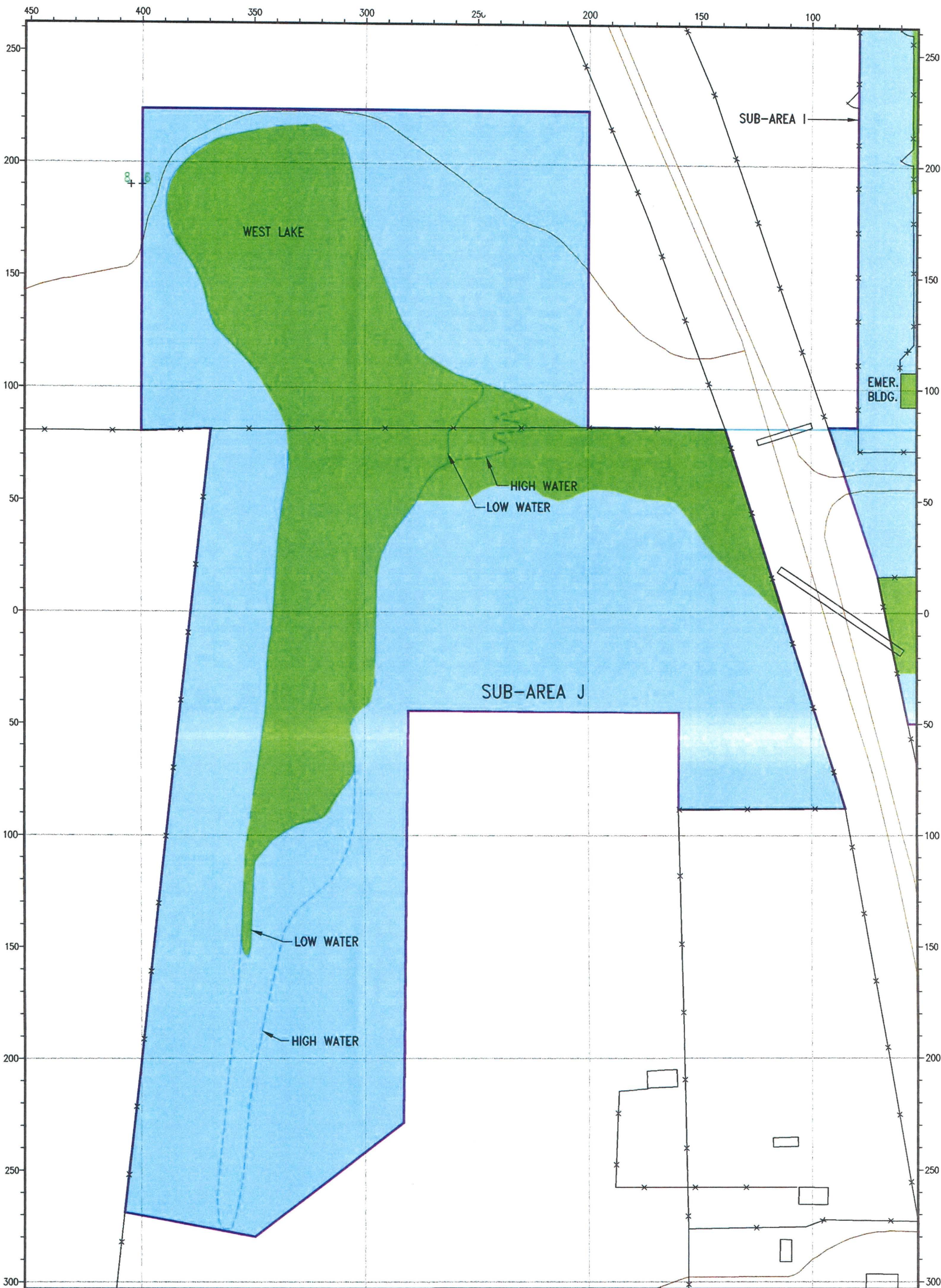


CIMARRON CORPORATION

**CIMARRON FACILITY
PHASE II - SUB-AREA J
POST REMEDIATION CONCRETE AREA
BETA/GAMMA SURVEY (1997)**

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

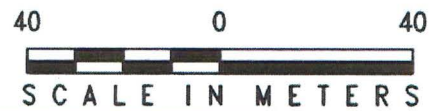
...\\CIMARRON\\SUBAREA\\97POCJAB



NOTES:

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

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



LEGEND

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



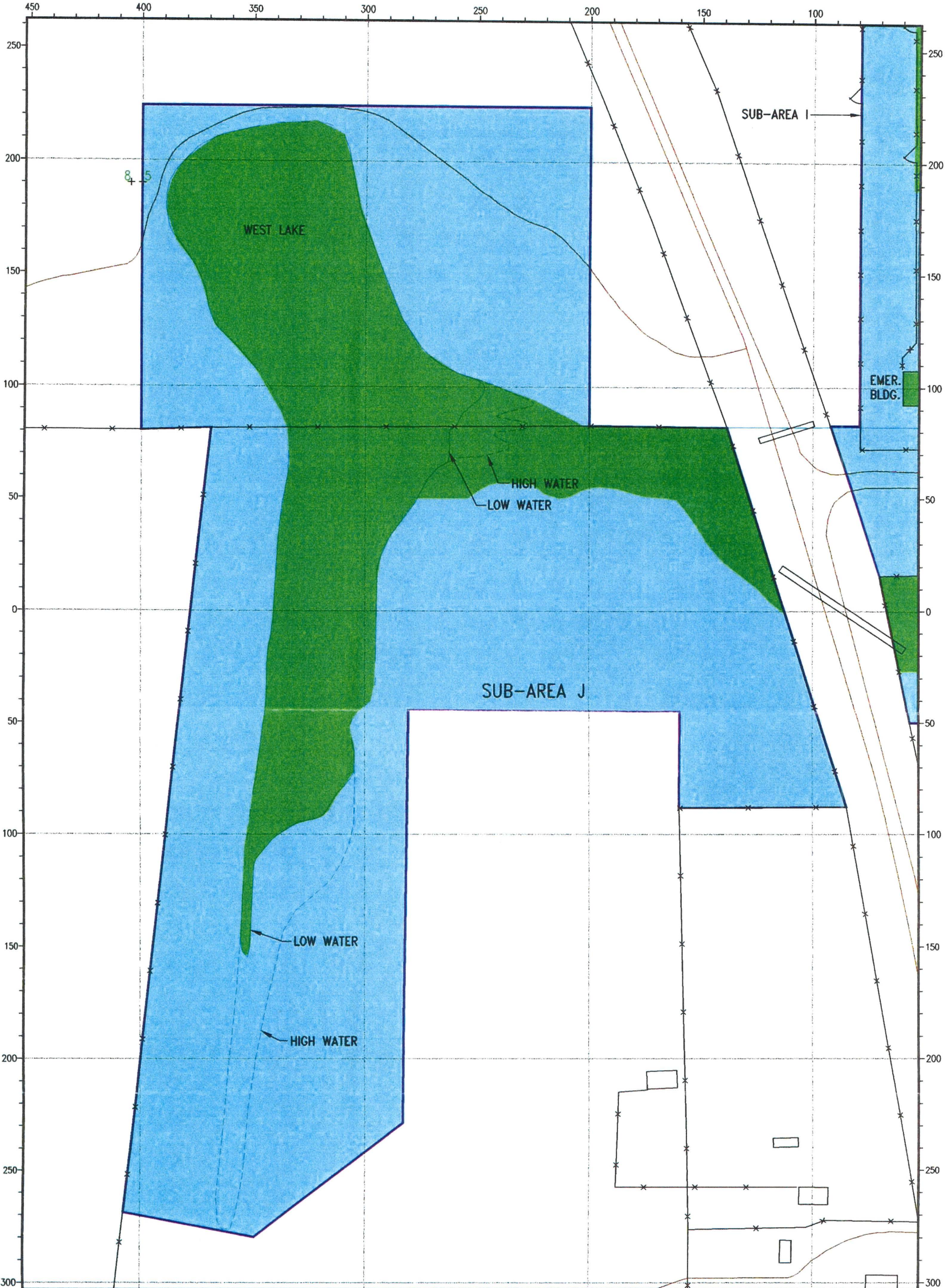
CIMARRON CORPORATION

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

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

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

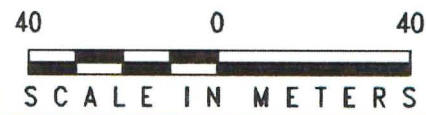
... \CIMARRON \SUBAREA \ 97POCJUR



NOTES:

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

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



LEGEND

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



CIMARRON CORPORATION

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

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

DRWN. BY: JE	DATE: 7/7/97	SCALE: AS SHOWN
JOB NO.	DRAWING NO. 97POCJUR-1	REV. 0