

UNION CARBIDE CORPORATION

URAVAN, COLORADO

SUA - 673

SOLID WASTE DISPOSAL

REPORT

SEPTEMBER/1981

8111160110 811022
PDR WASTE
WM-34
FDR

SOLID WASTE REPORT/1981

DATA SUMMARY

1.0 MONITOR POINTS

Directional movement of the monitor points is illustrated in Plate 1.0. The request for graphical representation as presented in Mr. Jeris A. Danielson's letter to Mr. Hazle on September 10, 1981 cannot be fulfilled for this report as we are still awaiting delivery on the proper graphical format sheets. The supplier sent us a format other than that requested.

1.1 POND TWO

Movement points along Two continue to show shrinkage of the pile of a very minimal nature. The following is the quarterly history of monitor points on Pond Two in foot increments:

<u>Point</u>	<u>ΔN</u>	<u>ΔE</u>	<u>ΔElev.</u>
7	-0.019	+0.009	-0.004
8	-0.006	+0.035	-0.027
9	-0.012	+0.017	-0.011
10		Destroyed during toe berm construction	
11	-0.009	+0.012	-0.032
12		Destroyed during toe berm construction	
13	-0.016	-0.017	-0.036
14		Destroyed during toe berm construction	
15		Destroyed during toe berm construction	
16	+0.009	-0.031	-0.035
17		Destroyed during toe berm construction	
18	+0.001	-0.013	-0.025
19	-0.028	-0.010	+0.003
20		Destroyed during toe berm construction	
21	-0.042	-0.033	-0.002
22	-0.083	+0.012	+0.005

1.2 POND THREE

Monitor points along Pond Three were not surveyed. Points One, Two, Three, and Six were inadvertently destroyed during August when heavy equipment was repairing storm erosion damage to the sand portion of the berm. Points Four and Five were unharmed. The four damaged points have been replaced and will be surveyed periodically beginning November 20, 1981 as will points Four and Five.

2.0 PIEZOMETRIC MEASUREMENTS

Location of the piezometers is illustrated on Plate 2.0. Graphical representation as per the previous referenced correspondence will be given as available.

2.1 POND ONE

Tailing Pile One continues to serve as a sump for runoff and seepage from the Club Mesa Spray System Area. The spray system was active for the month of September.

Pond One has been inactive since May 30, 1980.

Piezometers 2-24 and 2-25 decreased 0.07 and 0.46 feet, respectively. Piezometer 17D remained constant. Piezometers 17S, 18S, and 18D are dry. Piezometers 2-9 and 2-10 decreased 0.16 and 0.33 feet, respectively.

2.2 POND TWO

Pond Two has been inactive since December 20, 1980. The piezometers within Pond Two varied as shown:

<u>Piezometer</u>	<u>ΔFeet</u>	<u>Piezometer</u>	<u>ΔFeet</u>
2-1	-0.15	2-16	+0.00
2-2	-0.09	2-19S	-0.08
2-3	-0.09	2-19D	+0.08
2-4	-0.09	2-20	+0.00
2-5	+0.00	2-21	Damaged
2-6	-0.17	2-23	Damaged
2-11	-0.33	2-27	Bottomed
2-12	-0.17		

Piezometers 2-20 and 2-23 were damaged during a dike lift and will be repaired soon.

2.3 POND THREE

Pond three was reactivated on September 24, 1981. The piezometer changes after reactivation, for that month, were negligible. The piezometer changes for the month were:

<u>Piezometer</u>	<u>ΔFeet</u>
3-1	+0.00
3-2	-0.25
3-3	-0.08
3-4	+0.12

3.0 OPERATIONAL SUMMARY

3.1 POND ONE

Minimum freeboard was ten feet. Beach width equaled standard at end of month due to heavy rain.

3.2 POND TWO

Minimum freeboard was eight and one-half feet. Beach width exceeded two hundred feet.

3.3 POND THREE

Minimum freeboard was ten feet. Beach width equaled one hundred and fifty feet. Spigot locations were as follows:

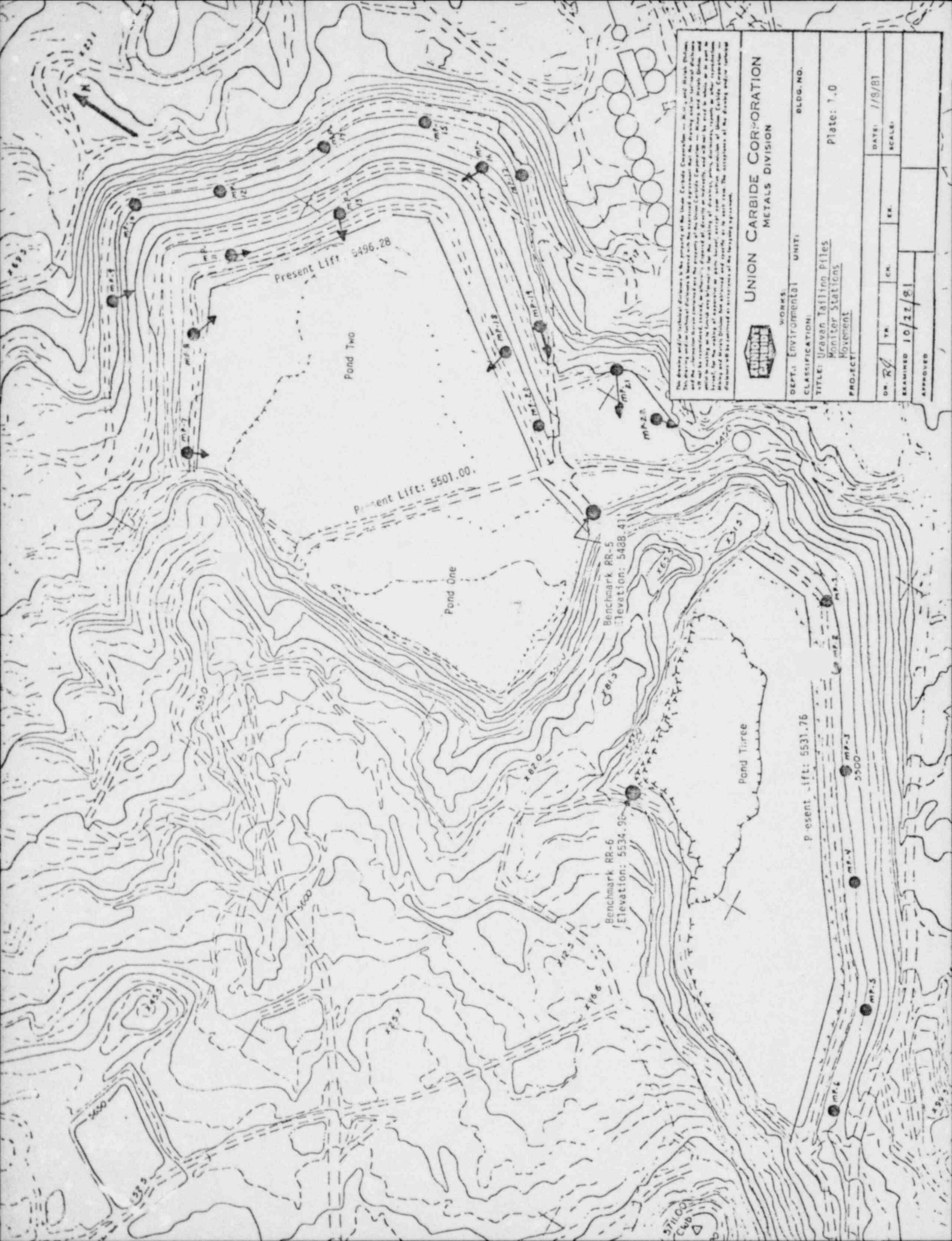
<u>Date</u>	<u>Spigot Location</u>
10/24	0'
10/25	40'
10/26	80'
10/27	120'
10/28	160'
10/29	200'
10/30	240'

3.4 BERM AND DRAINAGE CONDITION

Average drainage for the toe drain system for Pond Three was 5.54 gpm. The drain system was flushed during the month as a preventative measure. Wet areas continue to exist along the lower face of the toe berm and will be drained in November.

Average drainage for the toe drain systems for Pond Two was 57.03 gpm. A drainage collection pond downslope of the tailing pile was inadvertently tied into the number four sump, causing high recorded volumes. This has been rectified.

One seep area exists down gradient of the traverse drain line near section 7-7 and will be rectified in November.



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UNION CARBIDE CORPORATION		METALS DIVISION	
WORKS:		BLDG. NO.	
DEPT. Environmental	UNIT:		
CLASSIFICATION:			
TITLE: Uranium Tailing Piles		Plate: 1.0	
Monitor Stations			
PROJECT:			
DATE: 10/22/81	BY: [Signature]	DATE: 1/9/81	SCALE:
APPROVED:	CH.	EA.	



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		UNION CARBIDE CORPORATION		METALS DIVISION	
DEPT.: Environmental		UNIT:		BLDG. NO.	
CLASSIFICATION:		TITLE:		plate: 2.0	
PROJECT:		DR. R. J.		DATE: 7/8/81	
EXAMINED		SCALE:		DATE: 7/8/81	
APPROVED		SCALE:		DATE: 7/8/81	

MONITOR POINTS - FIELD DATA

URAVAN, COLORADO

UNION CARBIDE CORPORATION

Metals Division
Uravan, Colorado

"W" SERIES

TAILINGS
MONITOR
STATIONSJob No. I.T.S. POINTS

Date

9-26-81

STATION	COORDINATES		ELEVATION
	North	East	
Δ Judy	176,375.950	81,986.850	5316.26
I.T.S. 1	175,336.845	81,178.352	5421.049
I.T.S. 2	175,845.934	81,415.607	5350.690
I.T.S. 3	175,289.800	82,602.192	5342.730
I.T.S. 4	174,236.313	83,550.813	5344.410
I.T.S. 5	173,559.076	83,442.942	5368.970
I.T.S. 6 was destroyed			
I.T.S. 6A	172,924.106	82,269.968	5427.310
I.T.S. 7	172,355.532	81,518.073	5445.540
I.T.S. 8	171,830.158	82,569.076	5529.970
I.T.S. 9	173,501.107	81,911.744	5553.730
I.T.S. 10	174,873.279	81,190.244	5523.060
Δ 11.9	172,635.927	80,193.121	5710.850
I.T.U. 11	172,653.704	80,410.166	5649.790
BM-1	ford 2 use as check in on upper loop disk in rock		5492.847
BM-2	start of upper loop ford 2 - cross call - check in on lower loop		5472.850

FAS

ORIGINAL DATA

N. 173, 188. 854

E 81,900.579

ELEV. 5510.900

Origins & Data

DRAVAN TAILING DAM

Done on 4-12-4-17-25

[illegible]

MOVEMENT POINT DATA SHEET

ORIGINAL DATA

MOVEMENT POINT NO. MP-2

N. 173,057.606

URAVAN TAILING DAM

E. 21,714.764

ELGY. 5511.102

[illegible]

ORIGINAL DATA

MOVEMENT POINT NO. MP-5

N. 172,557.753

£ 20,000.00

ELEV. 5511.231

URAUAN TAILING-DAM

[illegible]

MOVEMENT POINT DATA SHEET

ORIGINAL DATA

MOVEMENT POINT NO. MP-6

N 172,493.789

URAVAN TAILING DAM

E 80,738.128

ELEV. 5511.007

	TIME & DATE	NORTH COORDINATE	ΔN	EAST COORDINATE	ΔE	ELEVATION	$\Delta ELEV$
A	3/17/80 4:00 PM	172,493.782	-0.027	80,738.088	-0.040	5511.007	-0.002
B	3/18/80 3:15 PM	172,493.772	-0.016	80,738.115	-0.013	5511.007	-0.002
C	3/19/80 3:25 P.M.	172,493.801	+0.012	80,738.133	+0.005	5511.008	-0.001
D	3/21/80 7:30 A.M.	172,493.715	-0.014	80,738.103	-0.025	5511.010	+0.001
E	3/24/80 10:50 A.M.	172,493.772	-0.014	80,738.103	-0.025	5511.012	+0.003
F	3/29/80 0730	No + Visibility				5511.008	-0.001
G	4/1/80 0800	172,493.782	-0.003	80,738.121	-0.007	5511.005	-0.004
H	4/9/80 0800	172,493.790	+0.010	80,738.077	-0.051	N/A	N/A
J	4/19/80 0800	172,493.791	+0.002	80,738.107	-0.022	5511.023	+0.018
J	122/80 0800	172,493.783	+0.004	80,738.097	-0.031	5511.013	+0.004
K	5/13/80 0730	172,493.787	-0.002	80,738.123	-0.005	5511.008	-0.001
L	5/27/80 0730	172,493.788	-0.001	80,738.117	-0.011	5511.009	-0.000
M	6/9/80 0730	172,493.790	+0.001	80,738.110	-0.018	5511.001	-0.008
N	6/23/80 0730	172,493.785	-0.004	80,738.126	-0.002	5511.004	-0.005
O	7/12/80 0730	172,493.785	-0.004	80,738.150	+0.002	5510.999	-0.010
P	9-3-80 0730	172,493.782	-0.004	80,738.130	+0.002	5511.010	+0.001
Q	9-30-80 0700	172,493.791	+0.002	80,738.107	-0.021	5511.013	+0.004
R	10-23-80 0700	172,493.703	-0.086	80,738.123	-0.005	5511.002	-0.007
S	11-24-80 0800	172,493.732	-0.057	80,738.113	-0.015	5510.996	-0.013
T	12-24-80 0800	172,493.782	-0.009	80,738.132	+0.004	5510.949	-0.060
U	3-31-81 3:00 PM	172,493.786	-0.003	80,738.120	-0.008	5510.939	-0.070
V	6-30-81 3:00 PM	172,493.766	-0.023	80,738.132	+0.004	5510.934	-0.075
W	9-26-81 DESTROYED						

MOVEMENT POINT DATA SHEET

ORIGINAL DATA

MOVEMENT POINT NO. MP-7

N 174,927.603

URAUAN TAILING-DAM

$\in 21,234,152$

LEV. 5423.071

[illegible]

ORIGINAL DATA

N. 175,097.830

E 81,537.411

ELEV 5422.856.

[illegible]

MOVEMENT POINT DATA SHEET

ORIGINAL DATA

MOVEMENT POINT NO. MP-13

N 174,827.826

E 82,020.227

URAUAN TAILING DAM

ELEV 5486.608

	TIME & DATE	NORTH COORDINATE	ΔN	EAST COORDINATE	ΔE	ELEVATION	$\Delta ELEV$
A	3/17/80 4:00 PM	174,827.843	-0.013	82,020.346	+0.009	5486.608	0.000
B	3/18/80 3:15 P.M.	174,837.876	-0.010	82,020.294	-0.043	5486.609	+0.001
C	3/19/80 3:25 P.M.	174,837.910	+0.024	82,020.322	-0.015	5486.601	-0.001
D	3/11/80 7:30 A.M.	174,837.839	-0.047	82,020.290	-0.047	N/A	N/A
E	3/24/80 10:00 A.M.	174,837.890	-0.016	82,020.305	-0.032	5486.594	0.014
F	3/25/80 0735	174,837.875	-0.011	82,020.332	-0.005	5486.608	0.000
G	4/1/80 0800	174,837.916	+0.030	82,020.354	+0.017	5486.590	-0.018
H	4/9/80 0800	174,837.845	-0.041	82,020.339	+0.002	N/A	N/A
I	4/12/80 0800	174,837.857	-0.024	82,020.292	-0.045	5486.595	+0.007
J	4/27/80 0800	174,837.898	+0.012	82,020.347	+0.010	5486.596	+0.012
K	5/13/80 0730	174,837.881	-0.005	82,020.344	+0.007	5486.563	-0.045
L	5/27/80 0730	174,837.883	-0.002	82,020.341	+0.040	5486.554	-0.054
M	6/9/80 0730	174,837.876	-0.010	82,020.318	-0.019	5486.548	-0.016
N	6/24/80 0730	174,837.849	-0.037	82,020.292	-0.045	5486.534	-0.024
O	7/27/80 0700	174,837.851	-0.035	82,020.306	-0.031	5486.478	-0.130
P	9-3-80	174,837.847	-0.044	82,020.315	-0.022	5486.496	-0.112
Q	9-30-80 0700	174,837.834	-0.052	82,020.245	-0.092	5486.499	-0.109
R	10-23-80 0700	174,837.848	-0.038	82,020.309	-0.028	5486.456	-0.152
S	11-29-80 0800	174,837.848	-0.038	82,020.321	-0.016	5486.434	-0.174
T	12-24-80 0830	174,837.857	-0.029	82,020.303	-0.034	5486.405	-0.203
U	3-30-81 0800	174,837.896	+0.010	82,020.341	+0.004	5486.334	-0.274
V	5-20-81 0800	174,837.819	-0.067	82,020.291	-0.046	5486.303	-0.305
W	9-26-81 10:00	174,837.803	-0.083	82,020.274	-0.063	5486.267	-0.341

ELEV. 5414.265

MOVEMENT POINT DATA SHEET

ORIGINAL DATA

N 175,078.002

MOVEMENT POINT NO. MP-11

E 81,791.937

URAUAN TAILING DAM

ELEV 5484.997

	TIME & DATE	NORTH COORDINATE	ΔN	EAST COORDINATE	ΔE	ELEVATION	ΔE
A	3/17/80 4:00 PM	175,077.947	-0.055	81,791.892	-0.045	5484.989	-0.008
B	3/18/80 3:45 PM	175,077.952	+0.050	81,791.867	-0.130	5484.998	+0.001
C	3/19/80 3:25 PM	175,078.003	+0.001	81,791.911	-0.086	5484.981	-0.008
D	3/21/80 7:35 AM	175,077.961	-0.041	81,791.914	-0.023	NA	N/A
E	3/21/80 10:00 AM	175,077.965	-0.037	81,791.912	-0.025	5484.954	-0.044
F	3/22/80 6:12 PM	175,077.937	-0.065	81,791.906	-0.031	5484.993	-0.004
G	4/1/80 8:00 PM	175,077.993	-0.009	81,791.919	-0.018	5484.986	-0.011
H	4/1/80 8:00 PM	175,077.893	-0.109	81,791.889	-0.048	N/A	N/A
I	4/14/80 8:00 PM	175,077.935	-0.066	81,791.845	-0.042	5484.975	+0.019
J	4/22/80 8:00 PM	175,077.912	-0.090	81,791.900	-0.037	5484.978	-0.019
K	5/13/80 0730	175,077.931	-0.011	81,791.917	-0.020	5484.962	-0.015
L	5/27/80 0730	175,077.949	+0.027	81,791.921	-0.076	5484.955	-0.009
M	6/9/80 0730	175,077.951	-0.045	81,791.913	-0.024	5484.947	-0.050
N	6/19/80 0730	175,077.952	-0.070	81,791.901	-0.036	5484.996	-0.001
O	7/27/80 0700	175,077.910	-0.084	81,791.906	-0.031	5484.995	-0.102
P	9-3-80 0700	175,077.942	-0.060	81,791.911	-0.016	5484.920	-0.077
Q	9-30-80 0700	175,077.984	-0.018	81,791.903	-0.054	5484.907	-0.090
R	9-23-80 0700	175,077.947	-0.055	81,791.903	-0.034	5484.904	-0.093
S	11-29-80 0800	175,077.945	-0.054	81,791.923	-0.014	5484.882	-0.115
T	12-24-80 0800	175,077.936	-0.066	81,791.895	-0.042	5484.863	-0.129
U	5-31-81 0800	175,077.963	-0.037	81,791.964	+0.027	5484.814	-0.183
V	6-30-81 0900	175,077.922	-0.080	81,791.874	-0.063	5484.804	-0.193
W	9-26-81 10:00	175,077.913	-0.087	81,791.886	-0.051	5484.772	-0.225

MOVEMENT POINT DATA SHEET

MOVEMENT POINT NO. MP-12

URAUAN TAILING DAM

ORIGINAL DATA

N 175,210.651

E 81,946.077

ELEV. 5414.232

	TIME & DATE	NORTH COORDINATE	ΔN	EAST COORDINATE	ΔE	ELEVATION	ΔELEV.
A	3/7/80 4:00 PM	175,210.625	-0.025	81,946.041	-0.036	5414.246	+0.013
B	3/13/80 3:15 PM	175,210.584	-0.067	81,946.007	-0.070	5414.245	+0.012
C	3/17/80 3:25 P.M.	175,210.614	-0.037	81,946.043	-0.029	5414.244	+0.011
D	3/21/80 7:20 A.M.	175,210.518	-0.072	81,946.049	-0.028	N/A	N/A
E	3/24/80 10:00 AM	175,210.565	-0.066	81,946.043	-0.034	5414.238	+0.005
F	3/24/80 0730	175,210.562	-0.089	81,946.034	-0.043	5414.227	-0.005
G	4/1/80 0800	175,210.603	-0.048	81,946.072	-0.005	5414.228	-0.005
H	4/9/80 0900	175,210.558	-0.093	81,946.052	-0.035	N/A	N/A
I	4/14/80 0800	175,210.558	-0.093	81,946.040	-0.037	5414.226	-0.007
J	4/22/80 0800	175,210.574	-0.077	81,946.026	-0.051	5414.223	-0.010
K	5/13/80 0730	175,210.56	-0.045	81,946.061	-0.016	5414.227	-0.006
L	5/27/80 0720	175,210.595	-0.056	81,946.049	-0.028	5414.229	-0.004
M	6/9/80 0730	175,210.583	-0.068	81,946.032	-0.045	5414.230	-0.003
N	6/24/80 0730	175,210.575	-0.076	81,946.018	-0.059	5414.216	-0.017
O	7/29/80 0700	175,210.568	-0.093	81,946.041	-0.036	5414.196	-0.037
P	9-3-80	UN A.P. L.C.	+0	USE	+15	DOWN TO CENTER	
Q	9-30-80 0700	UN A.P. L.C.	+0	USE	+15	DOWN TO CENTER	
R	10-23-80 0700	UN A.P. L.C.	+0	USE	+15	DOWN TO CENTER	
S	11-29-80 0800	UN A.P. L.C.	+0	USE	+15	DOWN TO CENTER	
T	12-28-80 0800	UN A.P. L.C.	+0	USE	+15	DOWN TO CENTER	
U	3-30-81 0800	UN A.P. L.C.	+0	USE	+15	DOWN TO CENTER	
V	3-30-81 11:00	UN A.P. L.C.	+0	USE	+15	DOWN TO CENTER	
W	9-25-81 1:00 PM	UN A.P. L.C.	+0	USE	+15	DOWN TO CENTER	

URAUAN TAILING DAM

ELEV 474.246

[illegible]

ORIGINAL DATA

$N = 17\frac{1}{2} 815.454$

E 22,388.408

ELEV. 541.276

GRAVAN TAILING DAM

[illegible]

ORIGINAL DATA

N. 174516.9.5

E 22, 32, 37.

ELEV. 5411.252

URAUAN TAILING DAM

[illegible]

MOVEMENT POINT DATA SHEET

ORIGINAL DATA

MOVEMENT POINT NO. MP-18

N 174,367.739

E 81,984.221

ELEV. 5485.609

URAUAN TAILING DAM

83

	TIME & DATE	NORTH COORDINATE	ΔN	EAST COORDINATE	ΔE	ELEVATION	$\Delta ELEV$
A	3/7/80 4:00 PM	174,367.763	+0.024	81,984.180	-0.051	5485.607	-0.002
B	3/18/80 3:15 PM	174,367.779	+0.040	81,984.145	-0.036	5485.608	-0.001
C	3/19/80 3:25 PM	174,367.763	+0.024	81,984.150	-0.081	5485.610	+0.001
D	3/21/80 7:30 AM	N/A		N/A		S N/A	N/A
E	3/25/80 10:00 AM	174,367.755	+0.046	81,984.146	-0.085	5485.606	-0.003
F	3/27/80 7:30	174,367.831	+0.092	81,984.159	-0.072	5485.607	+0.000
G	4/1/80 0800	174,367.792	+0.053	81,984.139	-0.097	5483.607	-0.002
H	4/9/80 0800	174,367.783	+0.044	81,984.157	-0.074	N/A	N/A
I	4/14/80 0800	174,367.789	+0.030	81,984.110	-0.121	5483.603	-0.003
J	4/22/80 0500	174,367.832	+0.083	81,984.147	-0.084	5483.608	-0.001
K	5/13/80 0730	174,367.792	+0.053	81,984.172	-0.057	5483.592	-0.027
L	5/28/80 0730	174,367.822	+0.033	81,984.132	-0.099	5483.579	-0.030
M	6/7/80 0730	174,367.798	+0.059	81,984.152	-0.079	5483.567	-0.042
N	6/24/80 0730	174,367.786	+0.047	81,984.167	-0.064	5483.593	-0.016
O	7/12/80 0700	174,367.785	+0.046	81,984.160	-0.071	5483.574	-0.025
P	7-3-80	174,367.784	+0.045	81,984.179	-0.052	5483.565	-0.044
Q	9-30-80 0700	174,367.754	+0.015	81,984.133	-0.048	5483.555	-0.050
R	10-23-80 0700	174,367.808	+0.069	81,984.070	-0.161	5483.558	-0.051
S	11-29-80 0800	174,367.810	+0.071	81,984.052	-0.179	5483.535	-0.074
T	12-24-80 0300	174,367.812	+0.073	81,984.080	-0.151	5483.520	-0.089
U	3-30-81 0800	174,367.799	+0.060	81,984.195	-0.036	5483.515	-0.094
V	4-30-81 0800	174,367.864	+0.125	81,984.088	-0.143	5483.490	-0.119
W	9-28-81 10:00	174,367.8	+0.126	81,984.075	-0.156	5483.465	-0.144

MOVEMENT POINT DATA SHEET

MOVEMENT POINT NO. MP-19

URAUAN TAILING DAM

ORIGINAL DATA

N 174,282.283

E 82,101.371

ELEV 5444.230

	TIME & DATE	NORTH COORDINATE	ΔN	EAST COORDINATE	ΔE	ELEVATION	$\Delta ELEV$
A	3/17/80 4:30 PM	174,282.291	+0.008	82,101.472	+0.067	5444.232	+0.002
B	3/18/80 3:15 P.M.	174,282.292	+0.009	82,101.415	+0.024	5444.233	+0.008
C	3/19/80 5:25 P.M.	174,282.292	+0.010	82,101.401	+0.010	5444.232	+0.002
D	3/21/80 7:30 A.M.	N/A		N/A		N/A	N/A
E	3/24/80 10:00 A.M.	174,282.299	+0.016	82,101.474	+0.033	5444.235	+0.005
F	3/27/80 0730	174,282.351	+0.068	82,101.416	+0.025	5444.232	+0.006
G	4/1/80 0800	174,282.345	+0.062	82,101.380	-0.011	5444.226	-0.004
H	4/9/80 0800	174,282.320	+0.037	82,101.447	+0.056	N/A	N/A
I	4/16/80 0800	174,282.312	+0.029	82,101.405	+0.014	5444.232	+0.002
J	4/22/80 0800	174,282.372	+0.091	82,101.474	+0.083	5444.234	+0.004
K	5/13/80 0730	174,282.338	+0.045	82,101.454	+0.053	5444.239	+0.009
L	5/128/80 0730	174,282.366	+0.085	82,101.452	+0.061	5444.232	-0.002
M	6/9/80 0730	174,282.354	+0.071	82,101.479	+0.088	5444.225	-0.005
N	6/24/80 0730	174,282.329	+0.046	82,101.470	+0.079	5444.217	-0.013
O	7/2/80 0700	174,282.332	+0.049	82,101.476	+0.055	5444.229	-0.022
P	9-3-80	174,282.306	+0.023	82,101.547	+0.156	5444.235	+0.008
Q	9-30-80 0700	174,282.306	+0.023	82,101.471	+0.080	5444.184	-0.046
R	10-23-80 0700	174,282.335	+0.052	82,101.362	-0.029	5444.223	-0.007
S	11-24-80 0700	174,282.323	+0.040	82,101.371	-0.020	5444.247	+0.017
T	12-24-80 0800	174,282.345	+0.062	82,101.375	-0.016	5444.230	0.000
U	3-30-81 11:00 AM	174,282.315	+0.032	82,101.458	+0.067	5444.204	-0.026
V	6-30-81 11:00 PM	174,282.367	+0.084	82,101.416	+0.025	5444.201	-0.029
W	9-26-81 2:00 PM	174,282.339	+0.056	82,101.406	+0.015	5444.204	-0.026

MOVEMENT POINT DATA SHEET

ORIGINAL DATA

MOVEMENT POINT NO. MP-21

N 174,002.625

E 82,082.731

ELEV. 5453.391

URAUAN TAILING DAM

	TIME & DATE	NORTH COORDINATE	ΔN	EAST COORDINATE	ΔE	ELEVATION	$\Delta ELEV$
A	3/7/70 4:30 PM	174,002.157	-0.007	82,082.712	+0.021	5453.394	+0.003
B	3/13/80 3:15 PM	174,002.597	-0.033	82,082.679	-0.052	5453.384	+0.002
C	3/19/80 2:25 PM	174,002.583	-0.047	82,082.681	-0.050	5453.368	-0.003
D	3/21/80 7:30 AM	N/A		N/A		N/A	N/A
E	3/24/80 10:00 AM	174,002.661	+0.026	82,082.713	-0.018	5453.385	-0.006
F	3/27/80 0730	174,002.695	+0.060	82,082.798	+0.067	5453.393	+0.002
G	4/1/80 0800	174,002.746	+0.111	82,082.784	+0.053	5453.371	-0.020
H	4/13/80 0800	174,002.677	+0.042	82,082.713	-0.018	N/A	N/A
I	4/14/80 0800	174,002.641	+0.006	82,082.643	-0.038	5453.411	+0.020
J	4/22/80 0800	174,002.710	+0.075	82,082.723	-0.008	5453.410	+0.019
K	5/13/80 0730	174,002.605	-0.030	82,082.689	-0.032	5453.409	+0.018
L	5/25/80 0730	174,002.675	+0.043	82,082.710	-0.021	5453.401	+0.010
M	6/9/80 0730	174,002.574	-0.061	82,082.705	-0.026	5453.408	+0.017
N	6/24/80 0730	174,002.584	-0.091	82,082.691	-0.040	5453.410	+0.019
O	7/27/80 0700	174,002.626	-0.009	82,082.758	+0.027	5453.414	+0.023
P	9-3-80 0700	174,002.619	-0.016	82,082.721	-0.010	5453.406	+0.015
Q	9-30-80 0700	174,002.552	-0.083	82,082.718	-0.013	5453.353	-0.038
R	10-23-80 0700	174,002.609	-0.026	82,082.678	-0.113	5453.398	+0.007
S	11-24-80 0800	174,002.592	-0.043	82,082.603	-0.128	5453.434	+0.043
T	12-24-80 0800	174,002.601	-0.034	82,082.643	-0.083	5453.422	+0.031
U	3-30-81 11:00 AM	174,002.567	-0.068	82,082.699	-0.032	5453.391	+0.000
V	6-30-81 1:00 PM	174,002.654	+0.019	82,082.658	-0.073	5453.391	+0.000
W	9-25-81 2:00 PM	174,002.612	-0.023	82,082.625	-0.106	5453.389	-0.002

120" SERIES

UNION CARBIDE CORPORATION
Metals Division Uravan, Colorado

Date

9-30-71

HORIZONTAL CONTROL

State

Area

Sheet

1 of 3

From	STATION TO	AZIMUTH BEARING	DISTANCE	LATITUDE		DEPARTURE		North	Eas
				N+	S-	E+	W-		
ITS-6A	MP-1								
ITS-8	MP-1								
ITU-11	MP-1								
ITS-6A	MP-2								
ITS-8	MP-2								
ITU-11	MP-2								
ITS-6A	MP-3								
ITS-8	MP-3								
ITU-11	MP-3								
ITS-6A	MP-4								
ITS-8	MP-4								
ITU-11	MP-4								
ITS-6A	MP-5								
ITS-8	MP-5								
ITU-11	MP-5								
ITS-8	MP-6	DESTROYED							
ITU-11	MP-6								
ITS-1	MP-7	509-04-42 E						174,987.713	81,234.139
ITS-2	MP-7	511-56-21 42						174,987.692	81,234.135
ITS-3	MP-7	528-28-00 42						174,987.195	81,234.137

Date 9-30-81

UNION CARBIDE CORPORATION
Metals Division Ureavan, Colorado

HORIZONTAL CONTROL

Area TAILINGSSheet 2 of 3

STATION	To	AZIMUTH BEARING	DISTANCE	LATITUDE		DEPARTURE		COORDINATES	
				N+	S-	E+	W-	North	East
MP-8		S 56-29-45 E						175,097.789	81,539.469
MP-8		S 09-24-02 E						175,097.807	81,539.466
MP-8		S 19-17-29 W						175,097.798	81,539.468
MP-9		S 86-39-39 E						175,319.319	81,478.731
MP-9		S 06-50-07 E						175,319.349	81,478.727
MP-9		S 25-40-59 W						175,319.334	81,478.729
MP-11		S 08-32-31 W						175,077.913	81,791.886
MP-11		S 75-20-45 W							
13		S 01-17-07 E						174,887.779	82,020.239
13		S 55-21-46 W						174,887.827	82,020.308
13		N 66-50-29 W						174,887.803	82,020.274
14		S 02-56-03 E						175,033.359	82,197.915
14		S 57-21-44 W							
16		N 75-05-20 W						175,607.322	82,157.566
16		N 12-31-43 E							
18		N 25-17-02 W						174,367.865	81,984.075
18		N 04-46-13 E							
19		N 28-10-53 W						174,282.339	82,101.406
19		N 12-34-45 E							

(10' Range pole)

18-08-6

Area Table sheet 3 of 3

Sheet 2 of 3[illegible]

PIEZOMETRIC MEASUREMENTS

URAVAN, COLORADO

NO. 10111-10

6C

6



C

6



2

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT
MONITOR WELL PHREATIC MEASUREMENTS

[illegible]

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT
MONITOR WELL PHREATIC MEASUREMENTS

Monitor Well	2-195	2-191D	2-20	2-21	2-22
Casing Elevation	5491.90	5491.90	5489.44	5496.28	5492.90
Surface Elevation					
Date					
8/8/81	5444.98	5417.99	5420.36	5424.45	DAMAGED
8/12/81	5444.65	5417.96	5420.44	5425.53	-
8/18/81	5444.57	5417.90	5420.44	5424.45	-
8/27/81	5444.48	5417.82	5419.94	5424.28	-
9/4/81	5444.40	5417.78	5419.94	PLUGGED	-
9/12/81	5444.40	5417.82	5419.94	To be repaired when	-
9/16/81	5444.40	5417.90	5420.11	lift is completed	-
9/26/81	5444.40	5417.90	5419.94	-	-
10/3/81	5				-

C

1

1981 1982

ACTION LEVEL

5405

HIGH

LOW

ACTION LEVEL

5410

5400

5390

5380

5370

5360

5350

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

1981

46 3013

K&E 1 YEAR BY WEEKS X 100 DIVISIONS
KUFFEL & ESSER CO. NEW YORK, N.Y.

1981 1982

ACTION LEVEL 5410
HIGH
LOW

ACTION LEVEL

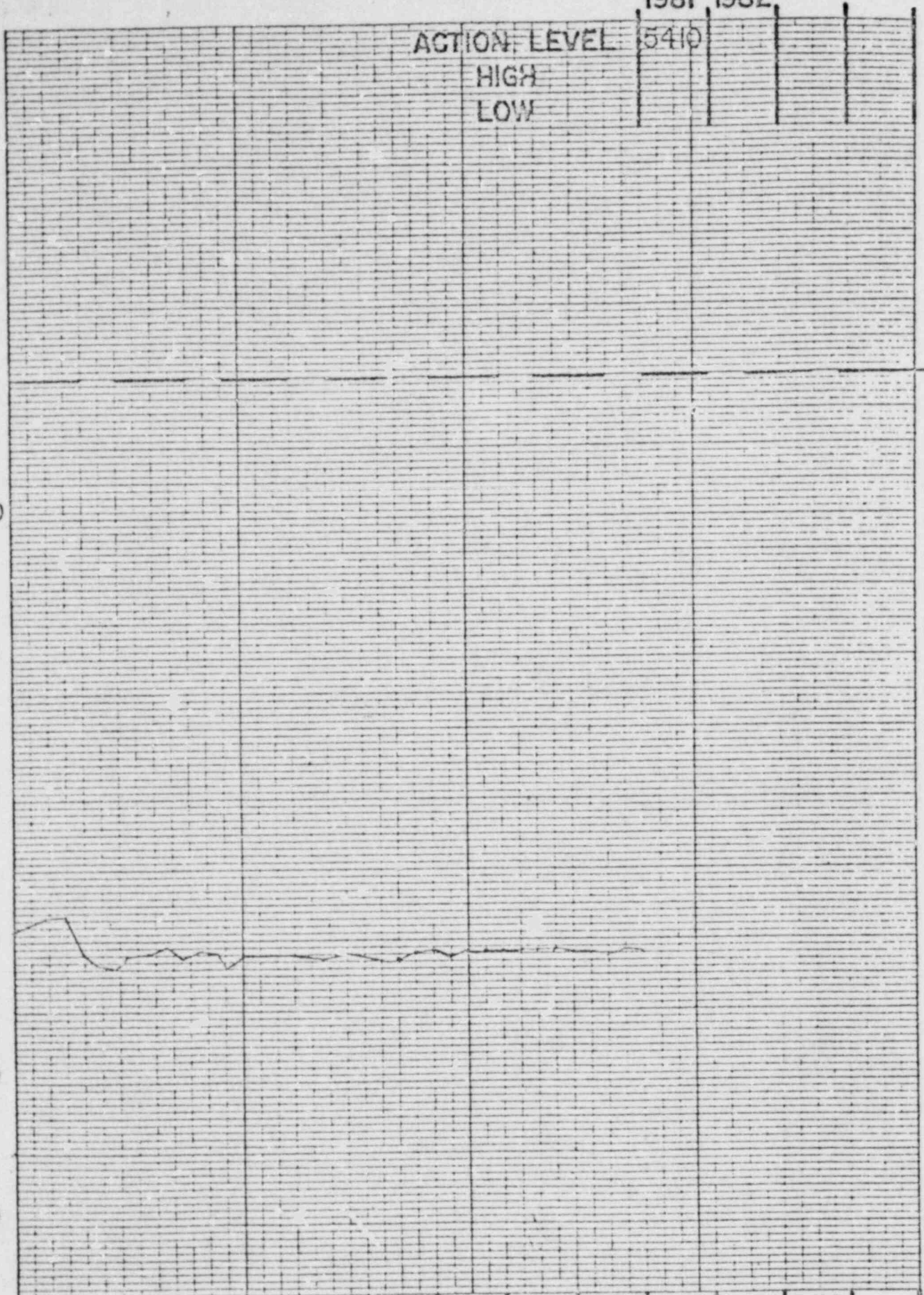
46 3013

1 YEAR BY WEEKS X 180 DIVISIONS
KLEIFFEL & ESSER CO. MADE IN U.S.A.
K-2

5410
5400
5390
5380
5370
5360
5350

JAN ' FEB ' MAR ' APR ' MAY ' JUN ' JUL ' AUG ' SEP ' OCT ' NOV ' DEC '

1981



URAVAN POND 2 PIEZOMETER 2-6

1981 1982

ACTION LEVEL
HIGH
LOW

ACTION LEVEL

46 3013

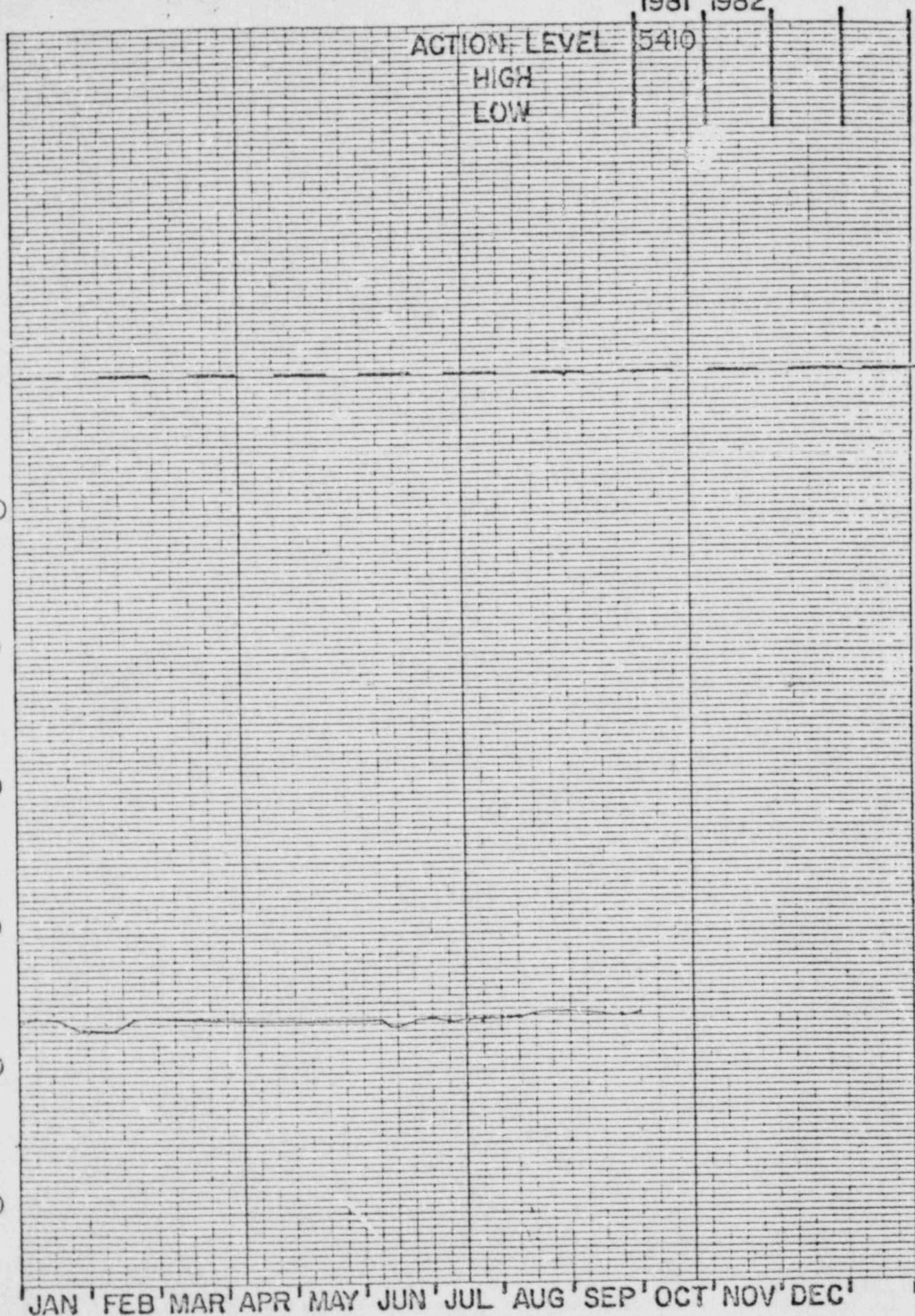
1 YEAR BY WEEKS X 160 DIVISIONS
KLUFFEL & EISEN CO. WICHITA, KAN.

K-E

5410
5400
5390
5380
5370
5360
5350

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

1981



URAVAN POND 2 PIEZOMETER 2-12

1981 1982

ACTION LEVEL

5445

HIGH

LOW

ACTION LEVEL

5450

5440

5430

5420

5410

5400

'JAN' 'FEB' 'MAR' 'APR' 'MAY' 'JUN' 'JUL' 'AUG' 'SEP' 'OCT' 'NOV' 'DEC'

1981

2-20

1982

5432

LOW

ACTION LEVEL

5440

5430

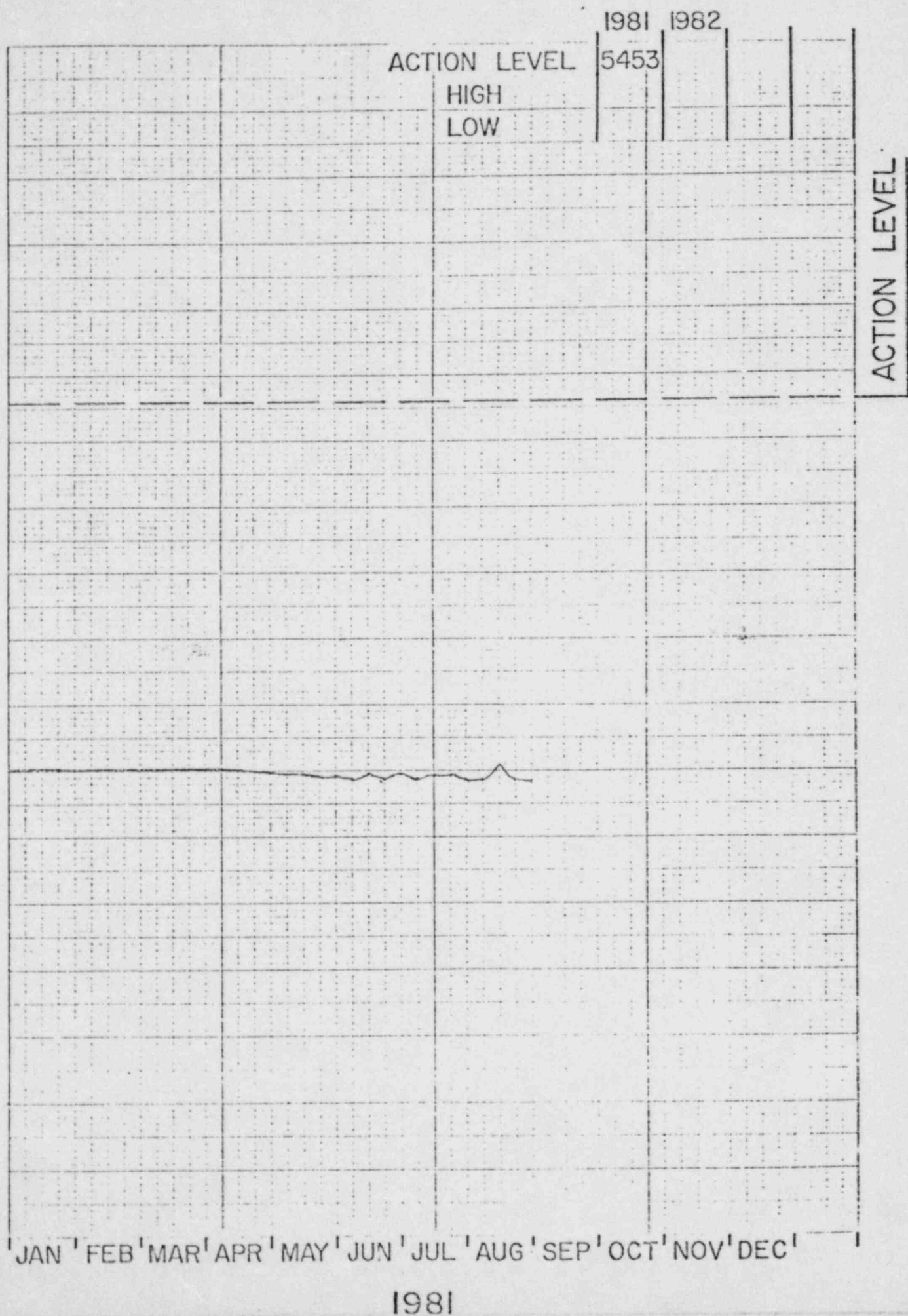
5420

5410

'JAN' 'FEB' 'MAR' 'APR' 'MAY' 'JUN' 'JUL' 'AUG' 'SEP' 'OCT' 'NOV' 'DEC'

198!

URAVAN POND 2 PIEZOMETER 2-21



URAVAN POND 3 PIEZOMETER 3-1

1981 1982
5489 5489

ACTION LEVEL
HIGH
LOW

ACTION LEVEL

5500

5490

5480

5470

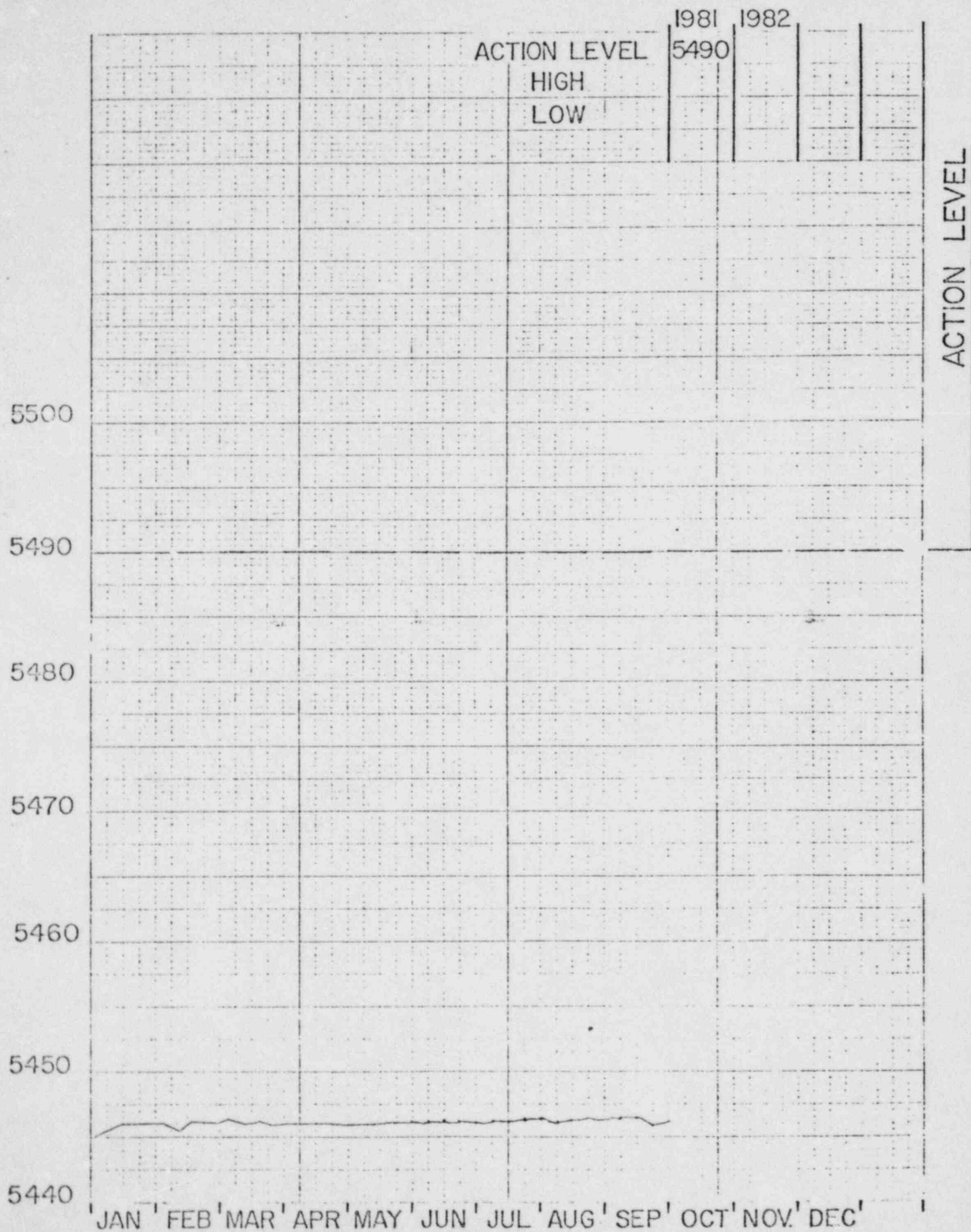
5460

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

40 3013

100% RELATIVE & BUREAU CO. MADE IN U.S.A.

URAVAN POND 3 PIEZOMETER 3-2



URAVAN

POND 3

PIEZOMETER 3-3

1981 1982

5495

ACTION LEVEL

HIGH

LOW

ACTION LEVEL

5500

5490

5480

5470

5460

JAN' FEB' MAR' APR' MAY' JUN' JUL' AUG' SEP' OCT' NOV' DEC'

URAVAN POND 3 PIEZOMETER 3-4



1981

OPERATION SUMMARY

DATA

URAVAN, COLORADO

ENVIRONMENTAL DEPARTMENT

TAILING PILE TOE DRAINAGE

FLOW
GPM

Month SEPTEMBER 1981

DATE	SUMP 1	SUMP 2	SUMP 3	SUMP 4	PILE #3	
1	2.41	4.29	9.40	13.70	5.83	29.81
2	1.54	9.86	1.91	28.92	5.83	42.23
3	1.57	6.43	5.59	9.77	5.83	23.36
4	2.05	5.79	3.57	29.06	5.83	40.47
5	1.54	6.30	5.47	30.68	5.83	43.99
6	2.56	5.99	8.57	67.35	5.83	84.86
7	2.07	5.85	5.53	2.55	5.83	16.00
8	1.27	6.37	4.91	25.20	5.83	37.75
9	1.83	5.80	5.95	49.24	5.83	62.82
10	1.12	5.87	4.50	61.99	5.35	73.98
11	2.51	6.56	7.69	38.39	5.35	55.16
12	1.57	5.71	4.38	44.05	5.35	55.71
13	1.50	6.82	6.48	38.27	4.86	53.07
14	6.63	6.67	3.78	64.30	4.86	76.38
15	1.96	5.54	5.24	143.84	5.35	156.57
16	0.50	5.72	4.85	89.61	5.35	100.67
17	2.14	8.27	1.50	34.00	5.83	45.90
18	1.49	7.49	3.93	89.47	5.35	102.38
19	1.54	10.58	-0.70	27.30	5.35	38.71
20	2.16	1.60	8.28	8.38	5.35	20.42
21	0.00	6.69	7.20	285.39	4.86	299.28
22	2.72	6.46	3.79	24.37	5.35	37.34
23	1.53	6.28	7.35	12.90	5.35	28.06
24	1.47	6.70	5.46	39.32	5.35	52.95
25	1.59	6.50	3.36 3.69	13.65	5.83	25.43
26	1.57	7.16	4.86	9.77	5.83	23.36
27	2.03	6.43	2.83	7.86	5.83	19.16
28	1.51	8.27	1.41	9.51	5.83	20.68
29	1.45	7.97	3.15	10.69	5.83	23.26
30	1.56	7.86	4.12	7.94	5.35	21.49
31						
MEAN					5.54	57.03
STD. DEV.						

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: ONE

Month September 1981

DAY	BEACH FT.	FREEBOARD FT.	SPICOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	150/200	10	not used		
2	150/200	10	-		
3	150/200	10	-		
4	150/200	10	-		
5	150/200	10	-		
6	150/200	10	-		
7	150/200	10	-		
8	150/200	10	-		
9	150/200	10	-		
10	150/200	10	-		
11	150/200	10	-		
12	150/200	10	-		
13	150/200	10	-		
14	150/200	10	-		
15	150/200	10	-		
16	150/200	10	-		
17	150/200	10	-		
18	150/200	10	-		
19	150/200	10	-		
20	150/200	10	-		
21	150/200	10	-		
22	150/200	10	-		
23	150/200	10	-		
24	150/200	10	-		
25	150/200	10	-		
26	150/200	10	-		
27	150/200	10	-		
28	150/200	10	-		
29	150/200	10	-		
30	150/200	10	-		
31					

REMARKS:

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: Two

Month September 1981

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	200	9	not used		
2	200	9	—		
3	200	9	—		
4	200	9	—		
5	200	9	—		
6	200	9	—		
7	200	9	—		
8	200	9	—		
9	200	9	—		
10	200	9	—		
11	200	9	—		
12	200	9	—		
13	200	9	—		
14	200	9	—		
15	200	9	—		
16	200	9	—		
17	200	9	—		
18	200	8.75	—		
19	250	8.5	—		
20	250	8.67	—		
21	200	8.67	—		
22	200 ⁺	8.5	—		
23	200 ⁺	8.5	—		
24	200 ⁺	8.5	—		
25	200	8.5	—		
26	200	8.5	—		
27	200	8.5	—		
28	200	8.5	—		
29	200	8.5	—		
30	200	8.5	—		
31					

REMARKS:

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: THREE

Month September 1981

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	150	10	Not used 0 N.A.		
2	150	10	0		
3	150	10	0		
4	150	10	0		
5	150	10	0		
6	150	10	0		
7	150	10	—		
8	150	10	—		
9	150	10	—		
10	150	10	—		
11	150	10	—		
12	150	10	—		
13	150	10	—		
14	150	10	—		
15	150	10	—		
16	150	10	—		
17	150	10	—		
18	150	10.16	—		
19	150	10.16	—		
20	150	10.16	0		
21	150	10.25	0		
22	150	10.16	0		
23	150	10.08	0		
24	150	10.25	0		
25	150	10.25	40		
26	150	10	80		
27	150	10.42	120		
28	150	10.33	160		
29	150	10.33	200		
30	150	10.67	240		
31					

REMARKS:

