

PDR

WM-34

Certified Mail #748147



UNION CARBIDE CORPORATION
METALS DIVISION
URAVAN, COLORADO 81436

February 18, 1981



Colorado Department of Health
Radiological and Hazardous Wastes Division
4210 East 11th Avenue
Denver, Colorado 80220

Re: Union Carbide Corporation
Uravan, Colorado Mill
SUA 673
Tailing Report/January, 1981

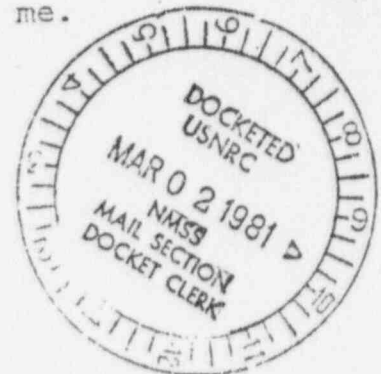
Gentlemen:

Enclosed is the report concerning data generated during the month of January, 1981 with regards to the Union Carbide Corporations' solid waste disposal system at Uravan.

If there are any questions, please contact me.

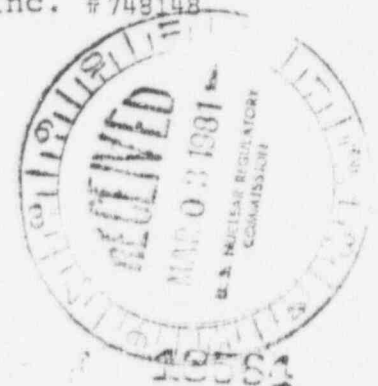
Sincerely,

Roger K. Jones
Environmental Engineer



RKJ:ns
enclosures

cc: Gonzalo Castro/GeoTechnical Engineering, Inc. #748149
Alan Pearson/Division of Water Resources #748150
Roy Person/Nuclear Regulatory Commission #748152
Rahe Junge/Division of Geological Survey #748154
Ken Waische/Solid Waste Control #748155
Ethan Axtmann/International Engineering, Inc. #748148
Dick Struble/Acres American #748151
Ralph Brown/UCC-Dravo Engineering #748153



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UNION CARBIDE CORPORATION

URAVAN, COLORADO

SUA-673

SOLID WASTE DISPOSAL

REPORT

JANUARY/1981

SOLID WASTE REPORT - 1981

DATA SUMMARY

1.0 MONITOR POINTS

The monitor points, under the current agreement, are to be read on a quarterly basis. The points are to be surveyed in March, 1981.

2.0 PIEZOMETRIC MEASUREMENTS

Location of the piezometers is illustrated on Plate 1.0.

2.1 POND ONE

Tailing Pile One continues to serve as a sump for runoff and seepage from the Club Mesa Spray System Area. Piezometers 2-24 and 2-25 continued to increase due to the active use of Pond Two. These piezometers have increased 0.73 and 2.27 feet, respectively, for the month of January. Piezometers 2-10, 2-17, and 2-18 are continuing to decrease on the average of 0.48 feet for the month.

2.2 POND TWO

The piezometers within Pond Two decreased on the average of 0.50 feet for the month even though the pond is in an active state. The increase in phreatic elevation was limited to piezometers 2-5 & 2-19S, 0.05 feet each, and 2-21, 0.02 feet. Greatest decrease was in piezometer 2-4 with a drop of 2.52 feet.

All piezometers were response tested during January, 1981, with all piezometers responding to artificial stimulation.

2.3 POND THREE

Tailing Pond Three was undergoing a lift in dike elevation during the early part of January. Piezometers 3-1, 3-2, and 3-3 showed increases of 0.73, 0.11, and 0.04 feet, respectively. Piezometer 3-4 dropped 0.40 feet. The pool on Pond Three was almost dry, thereby negating that cause for an elevational increase.

3.0 OPERATIONAL SUMMARY

3.1 POND ONE

Minimum freeboard on Pond One was eight feet. Pond One beach exceeded or equaled the two hundred/one-hundred and fifty foot beach requirement. Average freeboard was 9.06 feet.

3.2 POND TWO

Pond Two was utilized for tailing disposal through January 30, 1981. Minimum freeboard for the month was 6.5 feet, at the end of the month. Minimum beach width to slimes was 200 feet. Plate 2.0 shows the spigot locations system used in reference to the following listed spigot locations and dates used.

<u>DATE</u>	<u>SPIGOT LOCATION</u>	<u>DATE</u>	<u>SPIGOT LOCATION</u>
1/1/81	1280	1/17/81	1480
1/2/81	1320	1/18/81	1520
1/3/81	40	1/19/81	1560
1/4/81	80	1/20/81	1620
1/5/81	1410	1/21/81	1660
1/6/81	1410	1/22/81	1700
1/7/81	1500/1540	1/23/81	1800
1/8/81	1580	1/24/81	1840
1/9/81	1610	1/25/81	720
1/10/81	1650	1/26/81	880
1/11/81	1700	1/27/81	980
1/12/81	400	1/28/81	1020
1/13/81	350	1/29/81	1080
1/14/81	310	1/30/81	430
1/15/81	260	1/31/81	out of service
1/16/81	1440		

Freeboard, spigot locations, and beach are noted, once per shift, by the shift foreman. Documentation of the shift foreman logs are maintained at Uravan.

3.3 POND THREE

Pond Three's minimum freeboard was 8.5 feet. Beach width was two hundred feet. Pond Three dike was elevated to 5531.76 feet, using a slope surveyed at fourteen degrees from the horizontal. Maximum freeboard after the lift was 13.5 feet. Pond Three went into operation on January 30, 1981.

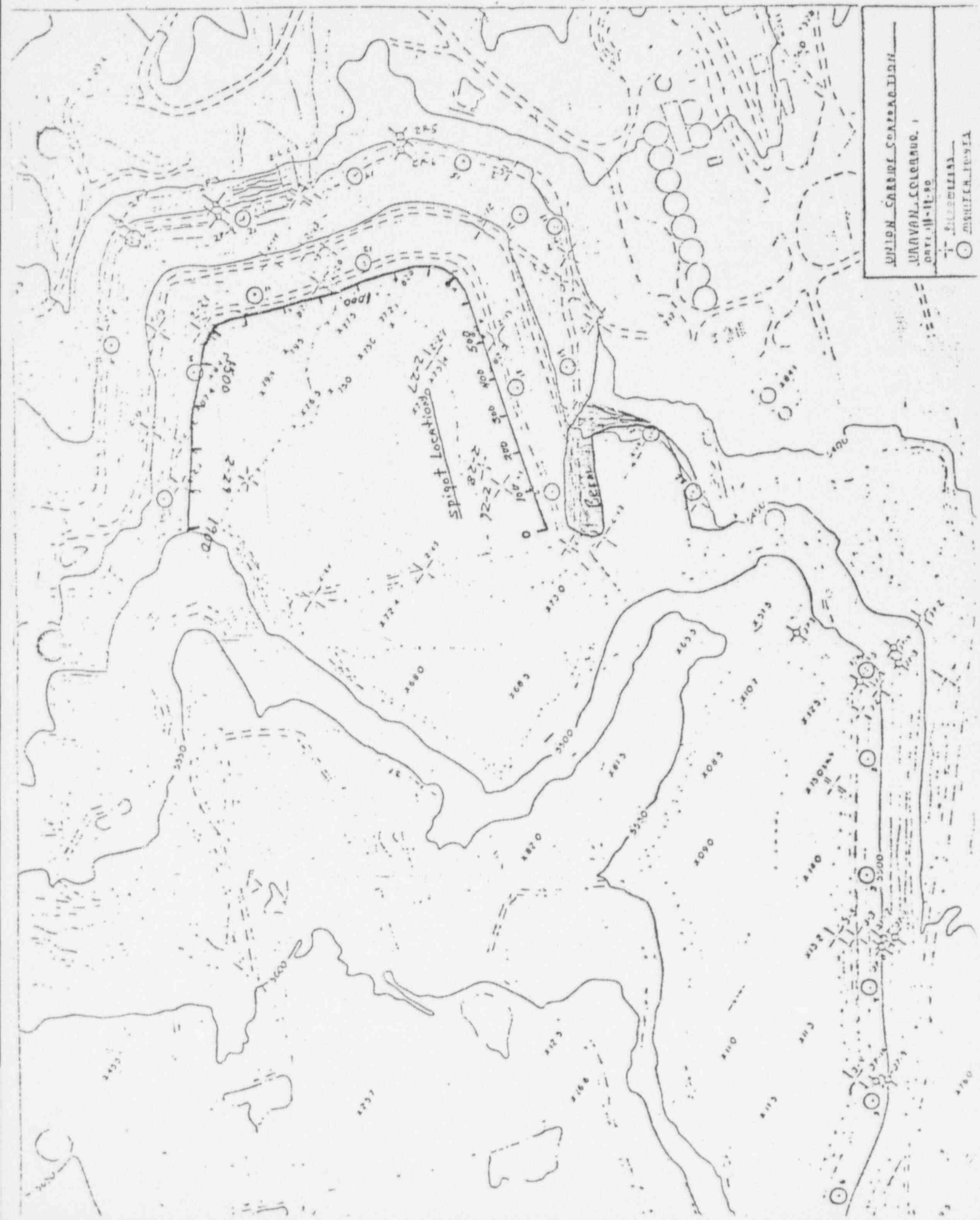
3.4 BERM AND DRAINAGE CONDITION

The wet areas on Pond Three's berm continue to fluctuate with atmospheric precipitation conditions but are remaining static over the month's period. Rainfall and/or snowfall is considerably below normal.

Drainage flows from Pond Three averaged 7.02 gallons per minute. December's average was 10 gallons per minute. We have and continue to experience about 500 to 600 milligrams per liter of chemical precipitate in the return drainage liquor, none of which tests to be of a silicate nature. This may well be the cause for decreased flows, or it could be that the phreatic migration rate within Pond Three is lower due to the lower hydraulic head.

This situation is being monitored closely during the filling phase of Pond Three.

Pond Two drainage averaged 28.73 gallons per minute. This compares favorably with the previous month. The drain system in Pond Two has the same chemical precipitate buildup as Pond Three drains except for the system utilizing Mirafi 500 fabric as the sand/gravel interface. This portion remains clear with no change in drainage flow rates.



PIEZOMETRIC MEASUREMENTS

URAVAN, COLORADO

WEEKLY MONITORING

[illegible]

WEEKLY MONITORING

[illegible]

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPT.

WEEKLY MONITORING

[illegible]

URAVAN ENVIRONMENTAL DEPT.

WEEKLY MONITORING

[illegible]

URAVAN ENVIRONMENTAL DEPT.

WEEKLY MONITORING

[illegible]

WEEKLY MONITORING

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UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: 1

Month January 1981

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	200	9 1/2	—		
2	200	9 1/2			
3	175	9 1/2			
4	175	9 1/2			
5	175	9 1/2			
6	175	9 1/2			
7	175	9 1/2			
8	175	9 1/2			
9	175	9 1/2			
10	175	9 1/2			
11	175	9 1/2			
12	175	9 1/2			
13	175	8 1/2			
14	175	9 1/2			
15	175-200	8			
16	175-200	8			
17	175-200	8			
18	175-200	8			
19	200	8			
20	200	8			
21	200	8			
22	200	9'			
23	200	9'			
24	200	9'			
25	200	9'			
26	200	9'			
27	200	9'			
28	200	9'			
29	200	10'			
30	200	10			
31	200	10'			

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: 2

Month January 1981-2

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	200	9	1280		
2	150 200	9	1320 - 40		
3	200	9	1320 - 40		
4	200	8' 9"	1360 - 80		
5	200	8' 4"	1410		
6	200	8' 4"	1410		
7	200	8' 6"	1500 / 1540		
8	200	8'	1580		
9	200	8'	1610		
10	200	8.25'	1650		
11	200	8' 4"	1700		
12	200	7' 9"	400		
13	200	7' 9"	350		
14	200	7' 8"	310		
15	200	7' 8"	260		
16	200	7' 8"	1440		
17	200	7' 8"	1480		
18	200	7' 6"	1520		
19	200	7' 6"	1560		
20	200	7' 8"	1620		
21	200	7' 4"	1660		
22	200	7' 4"	1700		
23	200	7'	1800		
24	200	7'	1840		
25	200	6' 11"	720		
26	200	7'	880		
27	200	6' 7"	620 780		
28	200	6' 6"	1020		
29	200	6' 6"	1080		
30	200	6' 1/2"	430		
31	200	7'	8 —		

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: 3

Month January 1981

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	225	8'10"	—		
2	200	8'9"			
3	200	8'9"			
4	200	8'6"			
5	200	8'10"			
6	225	8'6"			
7	200	8'10"			
8	200	8'6"			
9	250	8'6"			
10	250	8'6"			
11	250	8'6"			
12	250	8'6"			
13	250	9'1/2'			
14	250	8'6"			
15	225-250	8'8"			
16	225-250	8'8"			
17	225-250	8'10"			
18	225-250	8'10"			
19	225-250	8'10"			
20	250	8'10"			
21	250	8'10"			
22	200	8'10"			
23	200	8'10"			
24	200	8'10"			
25	200	8'10"			
26	200	8'10"			
27	200	9			
28	200	9			
29	200	13.5' - new Lt			
30	200	13.5	1620		
31	-	12'2"	1440		

ENVIRONMENTAL DEPARTMENT

TRAILING PILE TOE DRAINAGE

FLOW
GPH

Month

January

1981

DATE	SUMP 1	SUMP 2	SUMP 3	SUMP 4	PILE #3	
1	1.13	6.70	8.88	10.34	12.97	27.1
2	0.96	7.67	5.54	15.31	9.14	29.1
3	0.57	7.34	11.09	12.25	9.14	31.1
4	2.03	7.12	7.75	14.36	10.99	31.2
5	0.53	7.53	7.59	13.31	10.99	23.1
6	1.05	6.93	9.44	14.81	9.14	32.2
7	1.07	7.13	5.73	11.85	9.14	25.1
8	1.46	7.98	12.15	10.03	12.97	31.6
9	16.96	—	0.01	15.97	12.97	28.1
10	4.11	8.72	2.39	21.74	7.42	36.1
11	1.1	7.40	8.01	2.58	7.42	19.1
12	0.45	6.97	7.43	14.15	7.42	23.1
13	1.15	7.83	6.29	13.01	8.28	23.1
14	0.91	11.08	4.85	0.30	8.28	17.1
15	1.25	2.23	12.78	11.68	9.14	27.1
16	0.48	7.55	9.83	13.54	9.14	31.1
17	1.13	6.70	8.88	14.20	9.14	30.1
18	1.00	7.35	4.65	12.78	9.14	25.1
19	1.05	6.93	9.44	11.23	8.28	23.1
20	0.55	7.87	7.92	13.89	8.28	30.2
21	1.02	6.08	8.06	12.90	8.28	28.0
22	0.92	8.02	6.40	11.47	8.28	26.3
23	0.00	6.79	6.80	13.66	9.14	27.2
24	1.79	6.91	7.89	14.11	8.28	30.7
25	1.15	7.65	8.28	14.53	8.28	31.6
26	0.78	7.54	7.67	12.96	7.42	29.2
27	0.78	7.84	7.67	12.96	8.28	27.2
28	1.03	6.86	7.43	11.26	9.14	26.5
29	1.27	7.54	10.00	13.82	7.42	32.6
30	0.45	1.43	13.19	14.37	7.44	29.1
31	1.36	6.58	8.20	11.86	8.52	28.0
MEAN					7.02	28.1
STD. DEV.						

UNION CARBIDE CORPORATION

URAVAN ENVIRONMENTAL DEPT.

WEEKLY MONITORING

Piezometer #	2-28	2-29-				
Casing Elevation	5476.94	5495.27				
Notification Elevation						
Date Monitored						
9-15-80						
9-22-80						
9-29-80						
10-6-80	5435.06	plugged				
10-15-80	CANT GET TO	"				
11-10-80	5438.40	"				
	5422.10	"				
11-17-80	5434.94	"				
11-24-80	5435.27	"				
12-1-80	CANT GET TO	"				
12-8-80	D.H.	"				
12-17-80	"	"				
12-23-80	"	"				
12-29-80	"	"				

OPERATION SUMMARY

DATA

URAVAN, COLORADO

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: ONE

Month December 1980

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	200	8			
2	200	8			
3	200	9			
4	200	10			
5	200	7			
6	200	9 1/2"			
7	200	9			
8	200	9			
9	200	9			
10	200	9			
11	200	8			
12	200	8			
13	200	8			
14	200	8			
15	75-200	8			
16	175-200	8			
17	200	8			
18	200	9			
19	200	9			
20	200	9			
21	200	9			
22	200	9			
23	200	9			
24	200	9			
25	200	9			
26	200	9			
27	200	9			
28	200	9			
29	200	9			
30	200	8			
31	200	8'			

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: Two

Month December 1980

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	225	10'3"	220/260		
2	225	10'2"	260/300		
3	200	10'2"	300/340		
4	200	10'3"	350-390		
5	200	10	390-430		
6	250	9'10"	430-470		
7	200	9'6"	470-510		
8	200	9'6"	510-580		
9	200	9'6"	580		
10	200	9'6"	180 1580		
11	200	9'6"	1680		
12	200	9'6"	1740		
13	200	9'5"	1740		
14	200	9'10"	1740		
15	200	9'3"	1650		
16	200	9'8"	1550		
17	200	10	1500		
18	200	9'0"	580		
19	200	9'6"	620		
20	200	9'8"	650		
21	200	9'6"	750-820		
22	200	9'6"	860		
23	200	9'6"	810		
24	200	9'8"	900		
25	200	9'4"	940		
26	200	9'4"	1040		
27	200	9'6"	1100 1040		
28	200	9'5"	1150		
29	200 230	9	180		
30	200	8'10"	180 1220		
31	200	9 9	1280		

UNION CARBIDE CORPORATION
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: Three

Month Dec. 1980

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	250	8'6"			
2	250	8'6"			
3	250	8'6"			
4	250	8'10"			
5	200	8'10"			
6	250	8'6"			
7	200	8'6"			
8	200	8'6"			
9	200	8'6"			
10	200	8'6"			
11	225-250	8'10"			
12	225-250	8'10"			
13	225-250	8'10"			
14	225-250	8'10"			
15	225-250	8'10"			
16	225-250	8'10"			
17	225	8'10"			
18	250	8'8"			
19	250	8'8"			
20	250	8'5"			
21	250	8'6"			
22	250	8'5"			
23	250	8'6"			
24	250	8'6"			
25	250	8'6"			
26	250	8'6"			
27	200	8'10"			
28	250	8'6"			
29	250	8'10"			
30	250	8'6"			
31	250	8'10"			

ENVIRONMENTAL DEPARTMENT

TAILING PILE TOE DRAINAGE

FLOW
GPM

Month 12/80

DATE	SUMP 1	SUMP 2	SUMP 3	SUMP 4	PILE #3	
1	No Data			→		
2	1.07	7.11	7.70	15.34	9.14	31.2
3	1.30	7.36	7.89	14.12	9.14	30.7
4	1.73	4.87	4.61	9.53	9.14	20.
5	1.54	7.73	7.85	16.32	12.97	33.
6	1.60	8.06	10.18	13.21	15.05	33.
7	1.54	7.73	7.85	16.32	15.05	33.
8	2.14	11.99	3.73	15.19	12.97	33.0
9	1.37	6.23	9.30	14.38	12.97	31.
10	1.03	11.09	3.10	11.18	10.99	26.
11	1.05	10.6	3.89	13.22	12.97	28.
12	0.51	6.61	8.09	14.7	10.37	29.
13	1.54	7.76	7.89	12.85	11.32	30.
14	1.03	6.81	7.38	12.94	10.37	28.
15	1.03	7.53	6.66	16.46	10.99	31.
16	1.03	7.53	6.66	12.94	12.97	28.
17	1.03	5.39	10.7	12.8	10.37	29.
18	1.42	8.45	5.93	15.06	9.14	30.
19	0.5	7.18	9.09	14.26	9.14	31.
20	1.58	7.22	8.82	13.15	9.14	30.
21	1.06	7.02	5.64	15.29	9.14	29.
22	0.51	7.33	9.28	13.50	10.37	24.
23	1.00	7.35	6.51	14.35	9.14	29.
24	1.46	6.64	8.12	13.79	10.37	30.
25	0.00	4.97	4.98	8.97	10.37	18.
26	1.14	8.40	9.56	16.25	10.37	35.
27	0.46	5.88	5.50	11.63	10.37	23.
28	1.32	6.62	8.36	13.86	10.37	30.
29	0.58	9.02	5.35	12.71		27.
30	1.01	6.02	7.98	14.50	9.14	29.
31	0.56	7.95	8.01	15.95	15.47	32.
MEAN					10.24	2
STD. DEV.						

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