Miller Geotechnical Consultants, Inc.

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August 28, 2008

Richard Chang
Project Manager
Special Projects Branch
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Re: Western Nuclear Inc., Split Rock Uranium Mill Tailings Facility, Source Materials License SUA-56, Diversion Channel Outlet Evaluation

Dear Mr. Chang:

On June 4, 2008 a site audit and inspection was conducted at Western Nuclear's Split Rock uranium mill tailings facility. During this inspection, concern was raised about the surface water diversion outlets in the southwest valleys. The visual inspection indicated that there was no obvious drainage path downstream from the diversion outlets and the outlets appeared to direct water towards the reclaimed CAP pond area. Since the surface water discharge from the diversion channels appeared to be directed towards the reclaimed CAP ponds, the long-term erosional stability of this area was questioned. Figure 1 shows the location of the reclaimed CAP pond area and the diversion channel outlets.

An analysis was performed to determine the potential impact discharge from the diversion outlets might have on the erosional stability of the reclaimed CAP pond area. The hydrologic evaluation that was performed to design the diversion channels was reviewed to understand the flow characteristics that could be expected during the possible maximum flood (PMF). The evaluation was included in "Western Nuclear, Inc. Split Rock Mill October 1993- Revision No. 5 to the June 30, 1987 Uranium Tailings Reclamation Plan" prepared by Shepherd Miller, Inc. which was submitted to support the approved reclamation plan. The results from that hydrologic study included the following:

- The possible maximum precipitation (PMP) is 9.2 inches for the one-hour event
- The PMP leads to a maximum discharge of 1609 cfs for the south central diversion channel and 4896 cfs for the south diversion channel
- The total flow from the PMP is 2.45 million cubic feet for the south central diversion channel and 5.89 million cubic feet for the south diversion channel.

A hydrograph was constructed for each diversion channel outlet using the Soil Conservation Service (SCS) dimensionless unit hydrograph procedure. The hydrograph curves were adjusted to fit to one hour in length while maintaining the computed peak flow for the respective drainage basins. These hydrographs and the cumulative discharges are presented on Figures 2 and 3.

The runoff hydrographs were then used with the topography near the outlets to determine where the flow from the PMF would occur. It was found that the depressions near the outlets and around the reclaimed CAP ponds would retain all the flow from the PMF. Figures 4 through 9 show the location of the ponded water at various increments of time.

As can be seen from the figures, all flow from the PMF will be retained in low areas and there will be no flow past or over the reclaimed ponds that could lead to erosion. During the initial portion of the storm event, depressions near the outlet of the diversions will fill with water and will provide energy dissipation during the peak flow. This combined with the fact that the reclaimed CAP ponds are covered with rock much with an average size of 2 inches and surrounded by a 22 inch deep erosion control toe trench will ensure that there will be no erosion.

In conclusion, an evaluation of the hydrologic conditions that could be anticipated at the diversion channel outlets near the reclaimed CAP pond area was conducted. This evaluation shows that the conditions resulting from a PMF would not cause erosion to the reclaimed CAP pond area. All of the runoff from the PMF would be retained in low areas and no erosive flows along or over the reclaimed area could occur.

If you have any questions or need additional information, please contact me at your convenience.

Sincerely,

Miller Geotechnical Consultants, Inc.

Louis Miller
Project Manager

cc: Brad DeWaard, Western Nuclear, Inc.
Anne Thomas, Western Nuclear, Inc.
Harley Shaver, Esq.
Steve Hall, Stoller – Grand Junction
Scott Surovchak, DOE

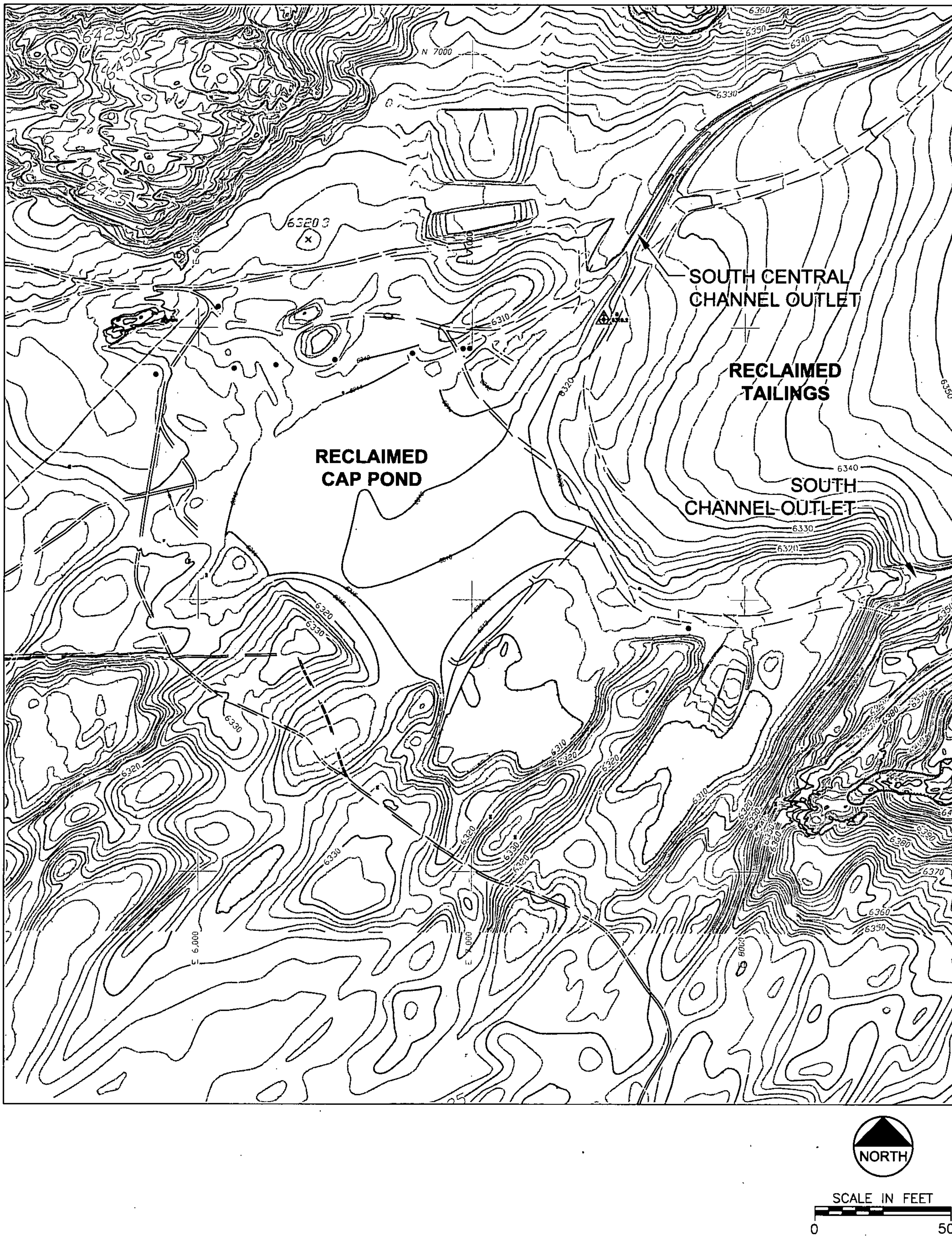

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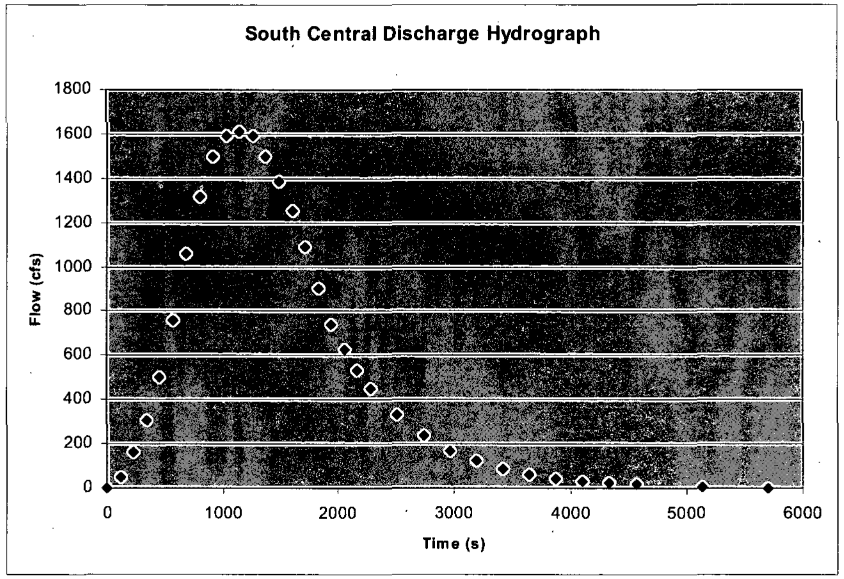
Figure 1
Location of Diversion Outlets and Reclamation Cap Pond

Time (min)	Time (s)	Flow (cfs)	Area (ft^3)	Cumulative (cf)
0	0	0	0	0
1.9	114	48.27	2751	2751
3.8	228	160.9	11923	14674
5.7	342	305.71	26597	**41271**
7.6	456	498.79	45857	87127
9.5	570	756.23	71536	158663
11.4	684	1061.94	103636	**262299**
13.3	798	1319.38	135735	398034
15.2	912	1496.37	160498	558532
17.1	1026	1592.91	176089	**734621**
19	1140	1609	182509	917130
20.9	1254	1592.91	182509	1099639
22.8	1368	1496.37	176089	1275728
24.7	1482	1383.74	164166	**1439894**
26.6	1596	1255.02	150409	1590303
28.5	1710	1094.12	133901	1724204
30.4	1824	901.04	113724	**1837929**
32.3	1938	740.14	93547	1931476
34.2	2052	627.51	77956	2009432
36.1	2166	530.97	66033	**2075465**
38	2280	450.52	55945	2131410
41.8	2508	333.063	89328	**2220739**
45.6	2736	236.523	64933	2285671
49.4	2964	172.163	46590	**2332262**
53.2	3192	123.893	33750	**2366012**
57	3420	88.495	24212	2390224
60.8	3648	64.36	17425	**2407650**
64.6	3876	46.661	12656	**2420306**
68.4	4104	33.789	9171	2429477
72.2	4332	24.135	6603	**2436081**
76	4560	17.699	4769	**2440850**
85.5	5130	8.045	7337	2448187
95	5700	0	2293	**2450480**



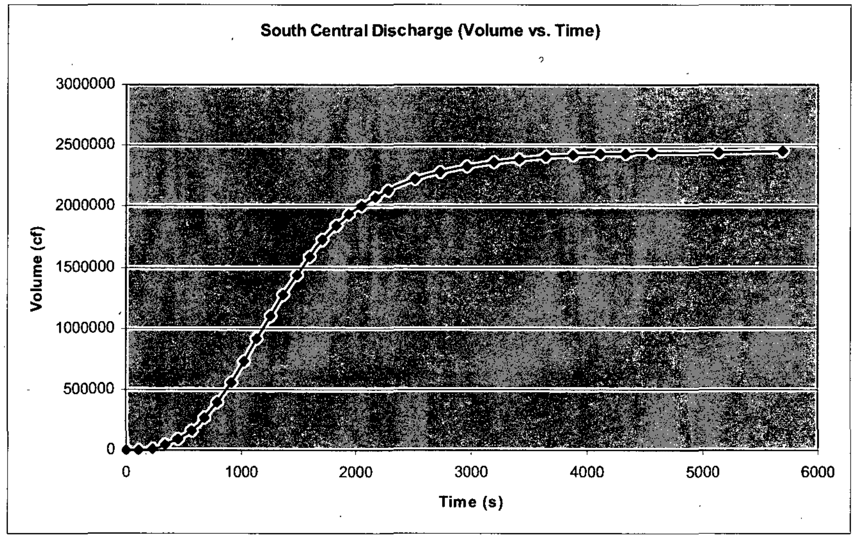


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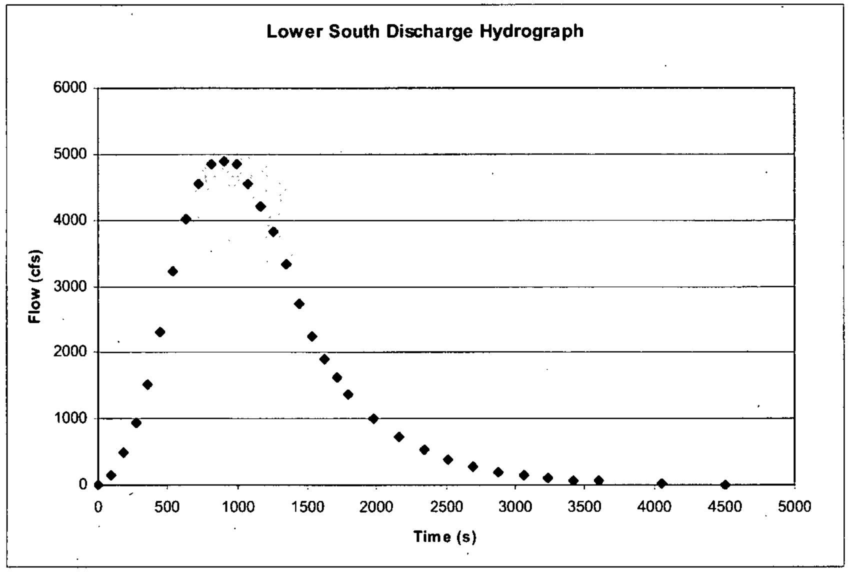
Figure 2
South Central Channel

Time (min)	Time (s)	Flow (cfs)	Area (ft^3)	Cumulative (cf)
0	0	0	0	0
1.5	90	147	6610	6610
3	180	490	28642	35251
4.5	270	930	63893	99144
6	360	1518	110160	**209304**
7.5	450	2301	171850	381154
9	540	3231	248962	630115
10.5	630	4015	326074	956189
12	720	4553	385560	**1341749**
13.5	810	4847	423014	1764763
15	900	4896	438437	2203200
16.5	990	4847	438437	2641637
18	1080	4553	423014	**3064651**
19.5	1170	4211	.394373	3459024
21	1260	3819	361325	3820349
22.5	1350	3329	321667	4142016
24	1440	2742	273197	**4415213**
25.5	1530	2252	224726	4639939
27	1620	1909	187272	4827211
28.5	1710	1616	158630	4985842
30	1800	1371	134395	**5120237**
33	1980	1013	214592	5334828
36	2160	720	155987	**5490815**
39	2340	524	111923	5602738
42	2520	377	81078	**5683815**
45	2700	269	58164	5741980
48	2880	196	41861	**5783841**
51	3060	142	30404	5814245
54	3240	103	22032	**5836277**
57	3420	73	15863	5852140
60	3600	54	11457	**5863596**
67.5	4050	24	17626	**5881222**
75	4500	0	5508	5886730



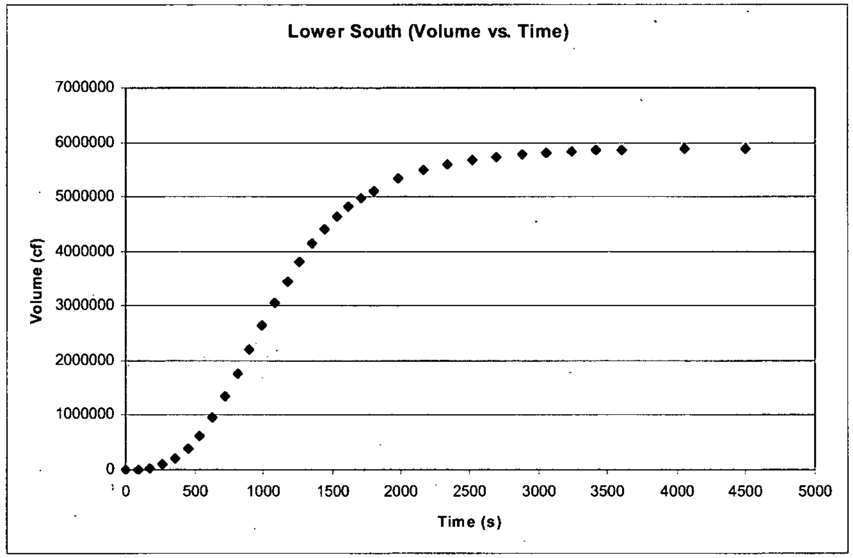


Figure 3
South Channel

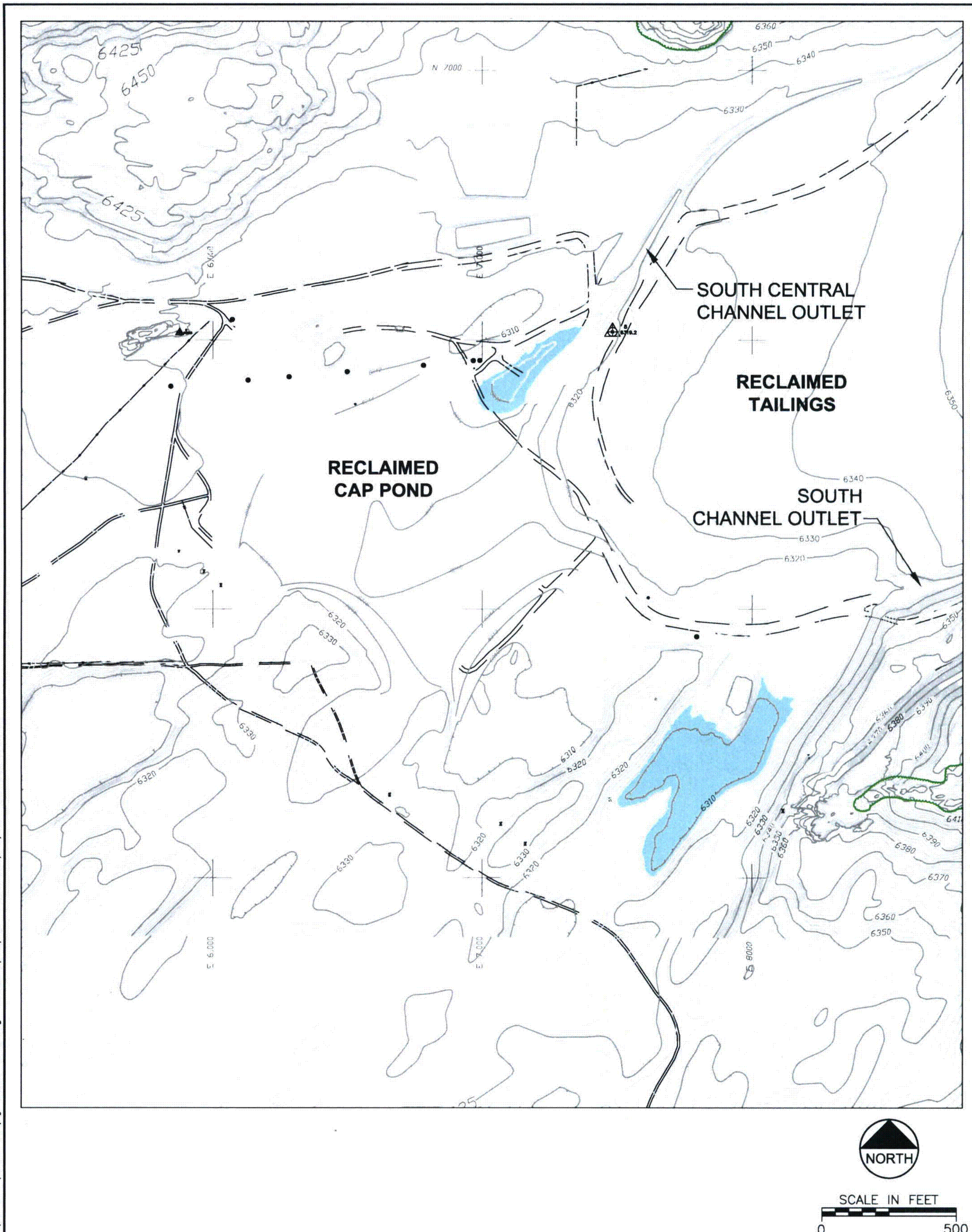


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Figure 4
Surface Water Contours at 6 Minutes

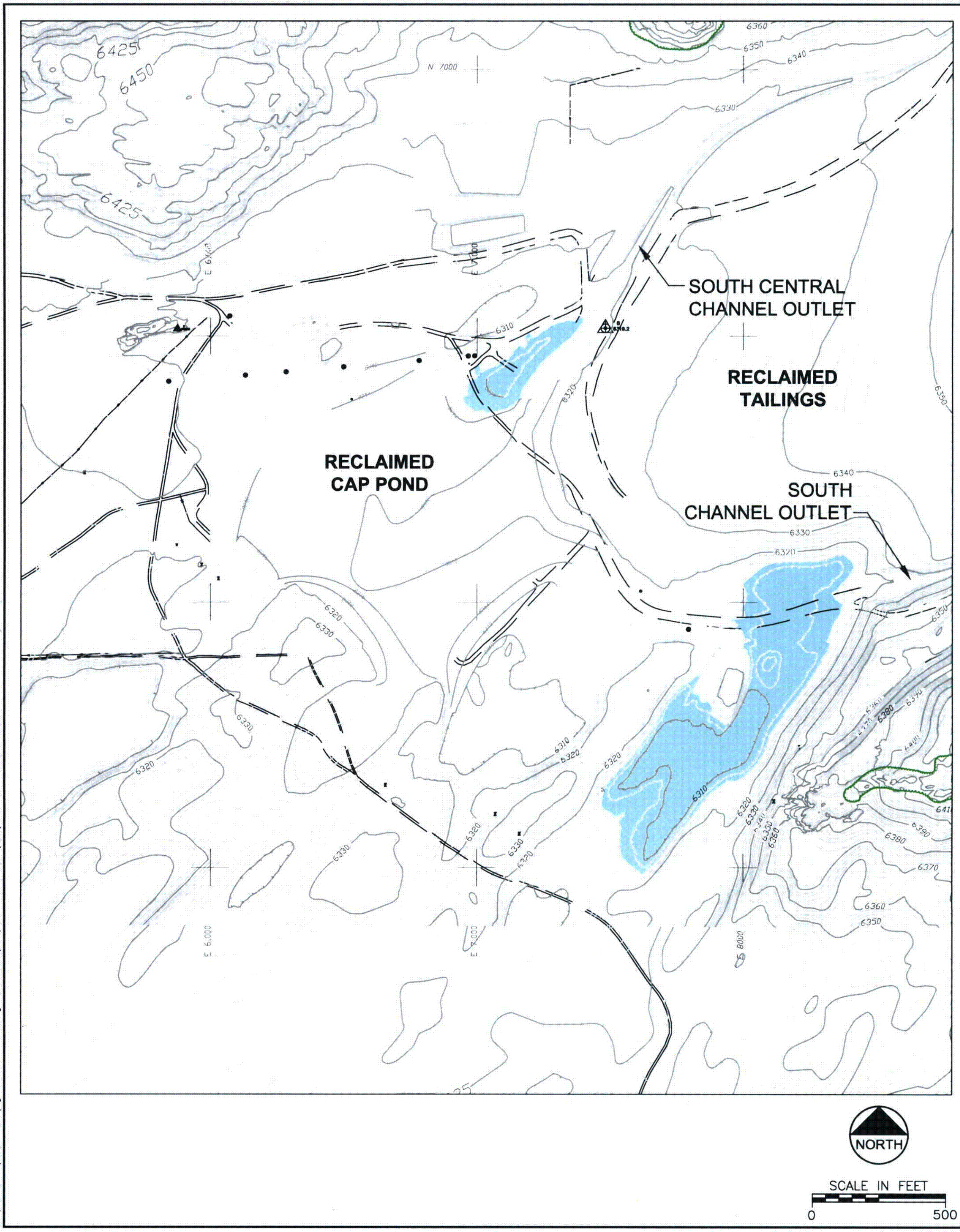

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Figure 5
Surface Water Contours at 12 Minutes

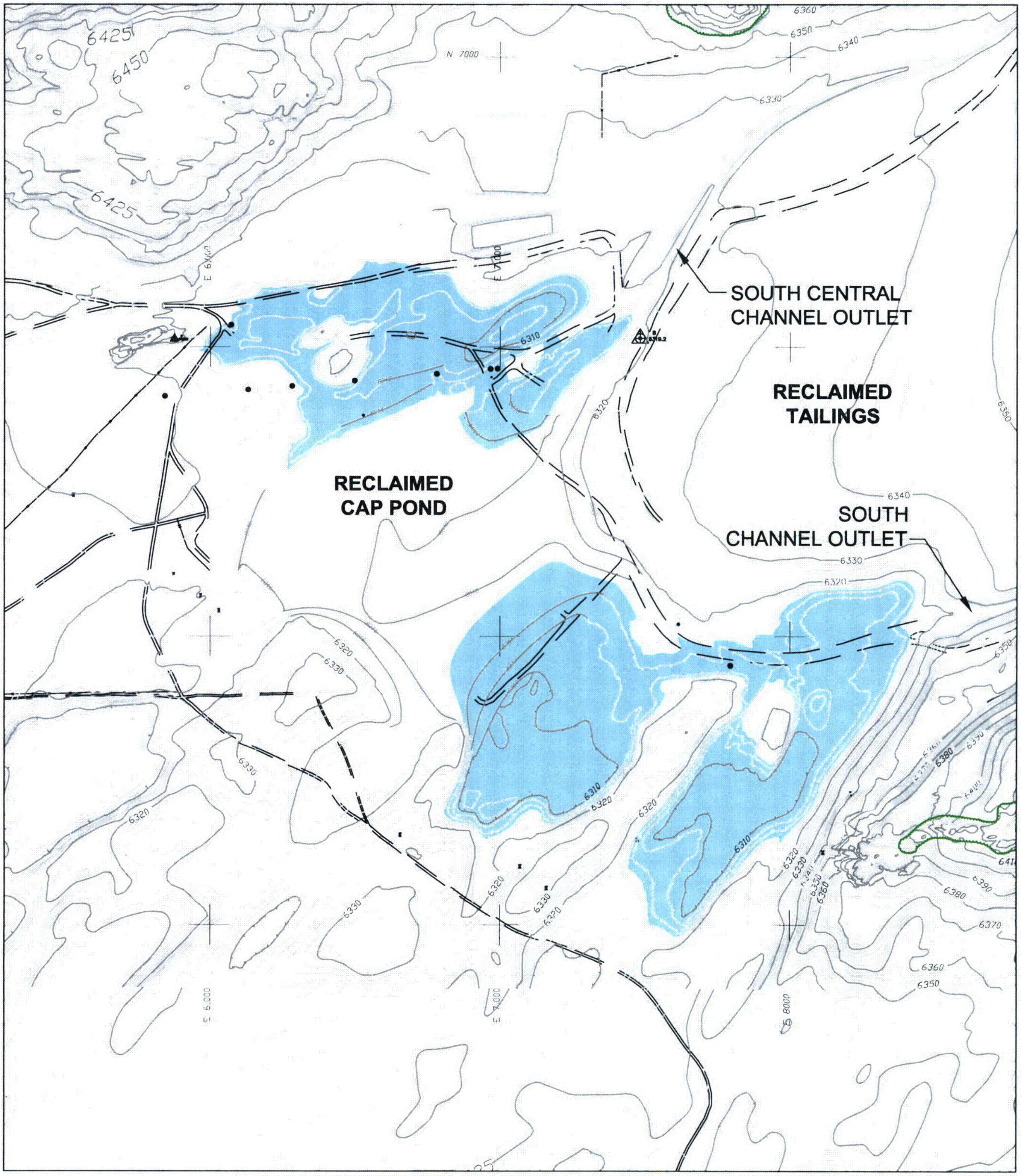

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Figure 6
Surface Water Contours at 18 Minutes

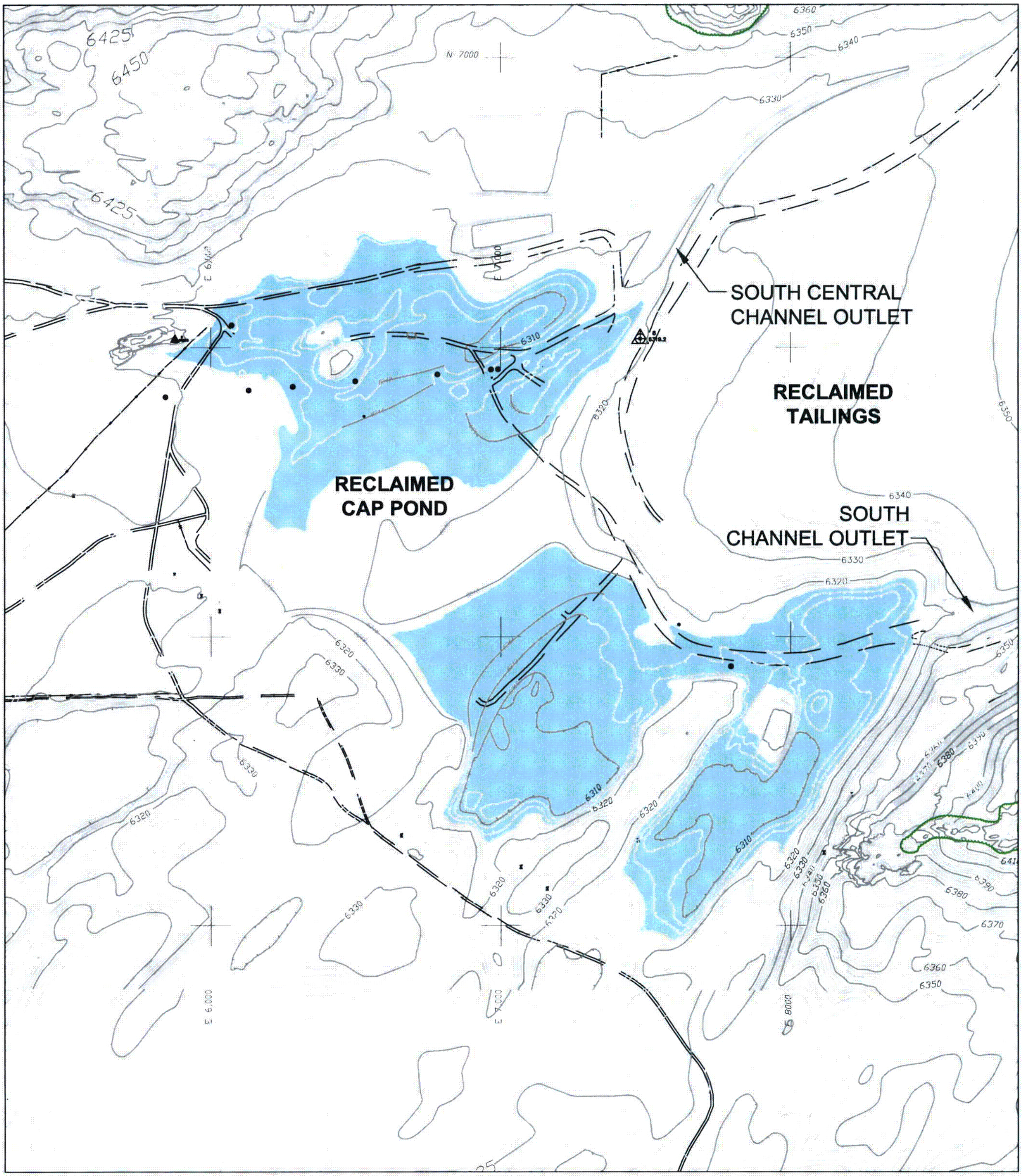

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Figure 7
Surface Water Contours at 24 Minutes

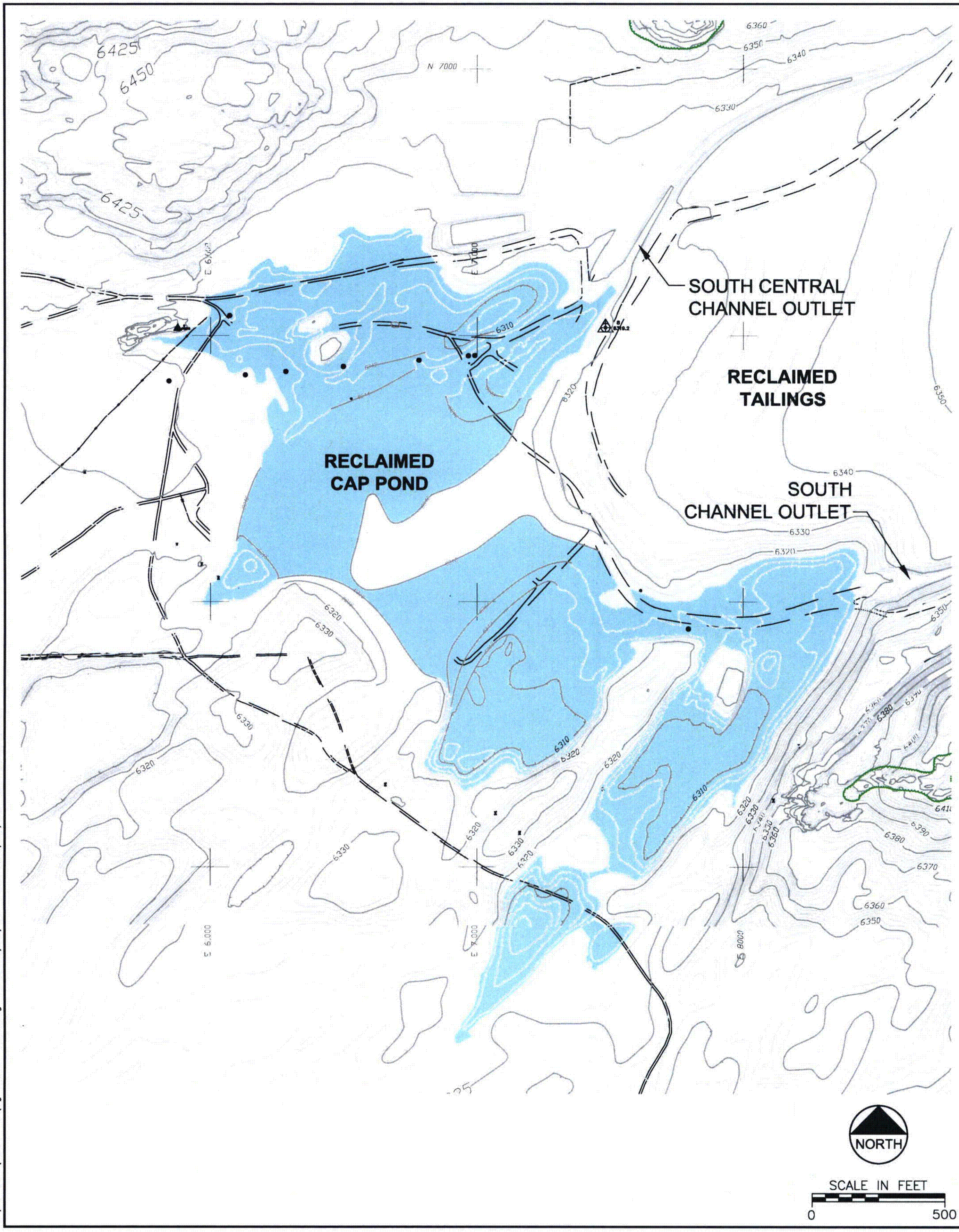

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Figure 8
Surface Water Contours at 30 Minutes

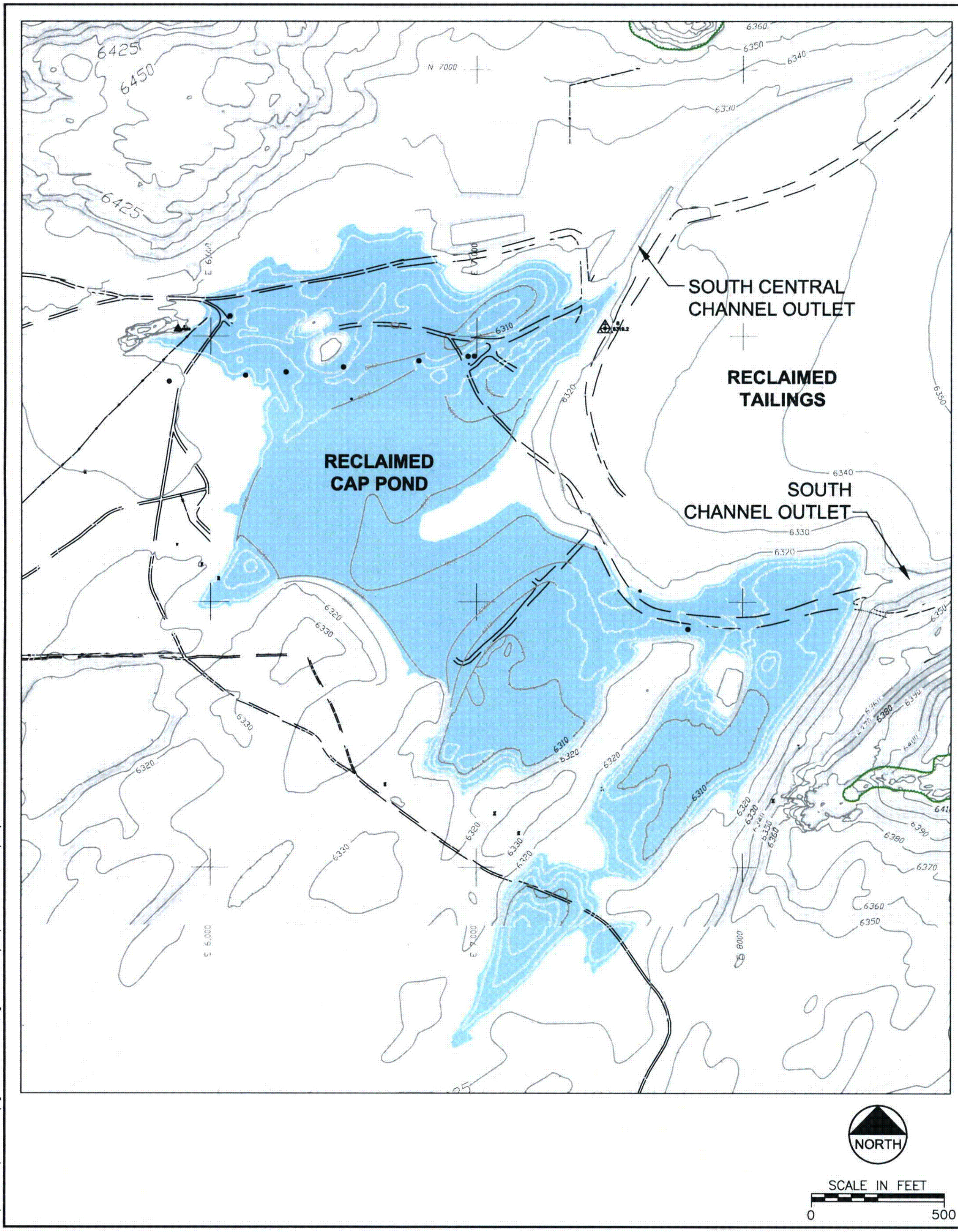

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Figure 9
Surface Water Contours at 90 Minutes