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Forest Service
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File Code: 2540
Date: January 18, 2007

Mr. Steve Rosenbaum
California Regional Water Quality Control Board -
Central Valley Region
11020 Sun Center Drive, Suite #200
Rancho Cordova, CA 95670-6114

Dear Mr. Rosenbaum:

Attached please find a complete set of 2006 water quality monitoring reports by the U.S. Department of Agriculture, Forest Service, Plumas National Forest, for the Walker Mine Tailings in Plumas County. The four 2006 reports are (1-3) Quarterly Monitoring Report for June, July and September 2006 and (4) the Annual Monitoring Report for 2006.

Results of the 2006 sampling are very consistent with the results from 2000 – 2005. Copper remains the pollutant of concern and the sample results indicate that significant levels of copper enter solution as Dolly Creek flows over the tailings. Significantly elevated levels of dissolved copper are documented in samples from Little Grizzly Creek downstream of its confluence with Dolly Creek.

All water samples were transported to Henrici Water Laboratory near Quincy for analysis. The Henrici laboratory sent a portion of these samples to Sierra Foothill Laboratory at Jackson, California, for metals analyses.

The 2001 Amended Record of Decision for the Walker Mine Tailings site provides for the diversion of Dolly Creek around the tailings material. The construction contract for the diversion channel was awarded by the Plumas National Forest in fall 2006. Construction is scheduled to begin by June 2007. Negotiations with the Atlantic Richfield Company (ARCO), a Potentially Responsible Party for the site, were completed in 2005, with the Forest Service receiving a settlement that will cover a large portion of the anticipated site remediation costs.

Please call Joe Hoffman of this office at (530) 283-7868 if you have questions.

Sincerely, George Butler 530 283-7776

William Metz

WILLIAM METZ
Acting Forest Supervisor

cc:
Dennis J Geiser

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ANNUAL MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Monitoring Period: Calendar Year 2006

Findings:

(1) Surface Water. Samples were collected in June, July, and September 2006. Adjusting for hardness at the compliance station on Little Grizzly Creek (R-5), the calculated limitation for dissolved copper for the three sampling periods ranged from 3.7 ug/L to 7.1 ug/L. This limitation was exceeded during each of the sampled months (the average dissolved copper concentration at R-5 was 58 ug/L). The limitations for iron and zinc were not exceeded in any of the R-5 samples collected. In fact, for the 15 samples collected, the only limitation exceedance for iron or zinc occurred at R-2 on Dolly Creek at the downstream end of the tailings (a measured iron concentration of 1,100 ug/L)

Low concentrations of dissolved copper were detected at R-3 [illegible] kground station on Little Grizzly Creek, and R-4, Little Grizzly Creek abov[illegible] e with Dolly Creek, during two of the three sampling events (se[illegible] Map). Reviewing the 77 copper testing results from [illegible] R-4 indicates no significant trends. The average dissol[illegible] o sites over this period is very similar (2.9 ug/L [illegible] ncentrations above the laboratory detection [illegible] Creek above the confluence with D[illegible] However, the concentrations f[illegible] copper concentration in Little G[illegible] material. Only 17% of the sampl[illegible] ns at R-4 than at R-3 and about half th[illegible] at all downstream at R-4. There is ac[illegible] copper at the R-3 station. The only app[illegible] that location is the occasional drift of tailings [illegible] stream area. Even with this minor contamination [illegible] le that concentrations of copper in samples taken a[illegible]

USFS-2007_AnnMonRpt

Annual-Monitoring Rpt

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In all three of the sampling events, dissolved co[illegible] nd at R-1, Dolly Creek above the tailings area, in concentrations that equ[illegible] exceeded the limitations established for freshwater aquatic life protection. The results from the R-2 samples, Dolly Creek below the tailings area, confirm the tailings area as the primary source of copper to the receiving waters. Over the three sampling events, the increase in copper concentration from R-1 to R-2 amounted to (on average) 92% of the copper found at R-2 (see Table 2 and Chart 1).

The reduction in copper concentrations between stations R-2 and R-5, the compliance station on Little Grizzly Creek – presumably due to dilution - was 80% in June, 59% in July, and 60% in September. The 2006 water year was considered to be above average for precipitation and runoff. Table 3 displays flow rates for the sampling periods from 1991 through 2006.

(2) Groundwater. With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards Little Grizzly Creek all along its course with the tailings area. These site conditions indicate that the potential exists for contamination of Little Grizzly Creek due to groundwater seeping from the tailings pile.

No groundwater samples were collected in 2005 and 2006. Three monitoring wells (W-3, W-5, and W-7) were each sampled twice in 2000 - 2004, in May and September (see attached map). The results of this sampling do not indicate any significant trends for dissolved metal concentrations. Additionally, despite the almost continuous line of groundwater seeps along the base of the tailings area and the Little Grizzly Creek channel bank, the metals concentration results are nearly identical (as discussed above) for samples taken from Little Grizzly Creek above and below the tailings interface (at R-3 and R-4, both upstream of the confluence with Dolly Creek). Therefore, given the five years of data that demonstrate the groundwater pathway as being a decidedly unlikely pathway for tailings pollution in Little Grizzly Creek, the Forest Service determined that the cost of annual groundwater sampling and testing could not be justified.

A summary of the groundwater test results for sampling performed in 1994, 1995 and 2000 – 2004 is presented in Table 4 (samples were not collected from 1996 – 1999). Test results for total copper, iron and zinc in the 1994 and 1995 samples indicate that small concentrations of these metals are present in the tailings material, in both dissolved and non-dissolved states, throughout the site. The characterization of the tailings material in 1992 by Westec confirmed the presence of these constituents throughout the tailings area. The characterization program included not only the seven monitoring wells but also an additional seven boreholes.

However, the detection of dissolved iron or zinc is relatively rare in any of the wells. For the 30 samples analyzed for each metal from 2000 to 2004, iron was detected in 12 samples (40% detection) and zinc was detected in 10 samples (33% detection). The mean and median dissolved concentrations for samples with detected iron are 260 ug/L and 130 ug/L (respectively), both well below the prescribed water quality limitation at R-5 of 1000 ug/L. For zinc, the mean and median detected dissolved concentrations are 4.7 ug/L and 4.4 ug/L with a maximum detected concentration of 9.0 ug/L. All of these values are well below the prescribed limitation for zinc, which typically varies between 50 ug/L and 130 ug/L. (The zinc limitation is dependent upon the measured water hardness at R-5, which averaged 64 mg/L as $CaCO_3$ for the 2000 – 2004 surface water samples (with a median of 68 mg/L as $CaCO_3$). The resulting zinc limitation for this average hardness value is 81 ug/L).

Well W-7 is situated upgradient and off of the tailings site and is used as the background well. When compared with W-7 sample results, dissolved iron and zinc concentrations detected in downgradient wells W-3 and W-5 (both wells situated on the tailings) do not demonstrate an increase in the concentration of these metals as groundwater passes through the tailings material. For zinc, an increased downgradient concentration was observed in just 1 of the 20 sample events conducted from 2000 to 2004. For iron, an increased downgradient concentration in W-3 or W-5 is documented in just 4 of the 20 events.

In analyzing the groundwater sample results for copper, it is best to look closely at the samples collected between 2002 and 2004. These samples were analyzed using methods and instrumentation that allowed a very sensitive detection level of 1.0 ug/L (the 2000 samples were analyzed with a detection level of 5.0 ug/L and the 2001 detection level was 10 ug/L). For the average R-5 surface water hardness of 64 mg/L as CaCO3, the prescribed copper limitation is 6.1 ug/L. For the 18 samples analyzed between 2002 and 2004, dissolved copper was detected in 13 samples. However, the copper concentration results were very low, much less than the typical R-5 prescribed limitation. The average detected dissolved copper concentration is 1.8 ug/L and the maximum concentration observed is 2.8 ug/L (less than half of the typical copper limitation stated above). Additionally, only one of the 30 groundwater samples collected between 2000 and 2004 resulted in a dissolved copper concentration of more than 5.0 ug/L (the detection level used for the 2000 anlyses). The sample at W-3 for September 2001 resulted in a dissolved copper concentration of 12 ug/L. Well W-3 is situated on the tailings very close to the Dolly Creek channel. The well-documented high concentrations of dissolved copper in the Dolly Creek surface water are a likely source for the elevated copper concentration in this groundwater sample.

As stated above, the low levels of dissolved copper observed in the eighteen 2002 to 2004 groundwater samples measured between 1.0 and 2.8 ug/L. Moreover, a trend of increasing copper concentration as groundwater flows through the tailings is not demonstrated by the well data. For dissolved copper, an increased downgradient concentration in wells W-3 and W-7, when compared with the background well W-7, was observed in just 6 of the 12 sample events conducted from 2002 to 2004. This 50% trend indicates – as do the rest of the groundwater metal data – that low groundwater copper concentrations are distributed practically at random across the tailings pile.

One can basically conclude that even though copper and zinc are present in the tailings material throughout the site, they are not entering into solution (except in surface water along the Dolly Creek channel). This is confirmed by the surface water-sampling program, in which samples taken at the base of the tailings in Little Grizzly Creek (R-4) generally indicate that these constituents are at non-detectable levels. It's only after Little Grizzly Creek mixes with Dolly Creek that soluble copper and zinc are detected.

Therefore, the groundwater pathway is demonstrated to be a decidedly unlikely pathway for tailings pollution on Little Grizzly Creek. The Forest Service will continue to

monitor groundwater metals concentrations in wells W-3, W-5 and W-7, but at this point, annual monitoring is not warranted. Future groundwater quality will likely be sampled approximately every 3 years.

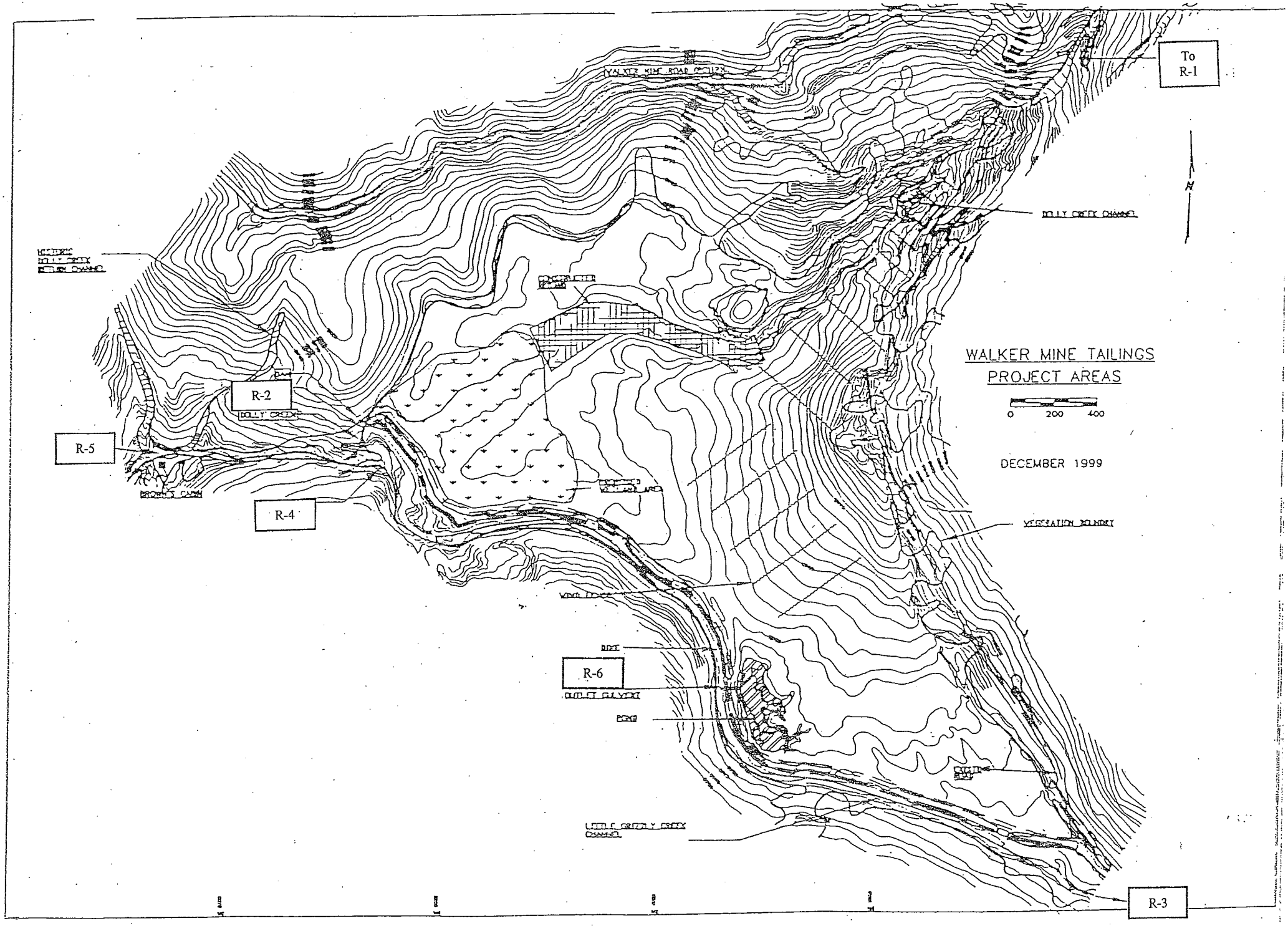
The water level in each well was measured in 2006 during each of the three sampling events. Maps displaying the groundwater flow gradient and direction were produced for each event (attached). Generally, the groundwater in the tailings area drains in two directions, towards the tailings dam near the end of Dolly Creek and towards the settling pond near R-6. The groundwater gradient steepens by the end of the summer season, dropping nearly five feet at the dam and ten feet at the settling pond.

Table 5 lists the measured groundwater depths for the years in which this data has been collected (1993 – 1995 and 2000 - 2006). Groundwater elevations at W-3 are important to look at from the standpoint of the proposed anaerobic wetland. The depth to water in 2006 dropped from 4.4 feet to 6.1 feet from June to September. The depth to groundwater at W-3 averages 5.4 feet and the seasonal water table drop is typically about two feet. Except for the driest year since monitoring began, water appears to flow over the tailings dam at all times; in August 1992, Dolly Creek flows did not reach the tailings dam during the heat of the day.

(3) Channel Substrate Analysis (Pebble Count). One of the measured changes that should occur as a result of rehabilitating the tailings area is a decreased transport of tailings material to Little Grizzly Creek. Though most of the material moves during times of high flows when sampling does not normally occur, evidence of its occurrence should be measurable by analyzing channel substrate size classes. In past years, a "Wolman pebble count" has been conducted once a year in the fall to analyze the channel substrate.

Pebble counts at the two established pebble count transects were not monitored in 2004, 2005 and 2006. However, pebble count data for the previous four years (2000-2003) exhibited very similar results: the R-5 transect (on Little Grizzly Creek below its confluence with Dolly Creek) did contain sand-sized material, including the medium, fine and very fine sands found over most of the tailings area, whereas the R-6 (on Little Grizzly Creek above its confluence with Dolly Creek) transect did not. Based on the data collected and visible evidence made at the time the transects were established, most of the sands are being washed downstream during winter and spring flows, but material from the tailings area apparently continues to wash into Little Grizzly Creek for an extended period of time and some of it is trapped around the coarser material of the R-5 channel section.

Pebble counts will again be performed at the two established transects in 2007.


To
R-1
R-2
R-3
R-4
R-5
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0
200
400
DECEMBER 1999
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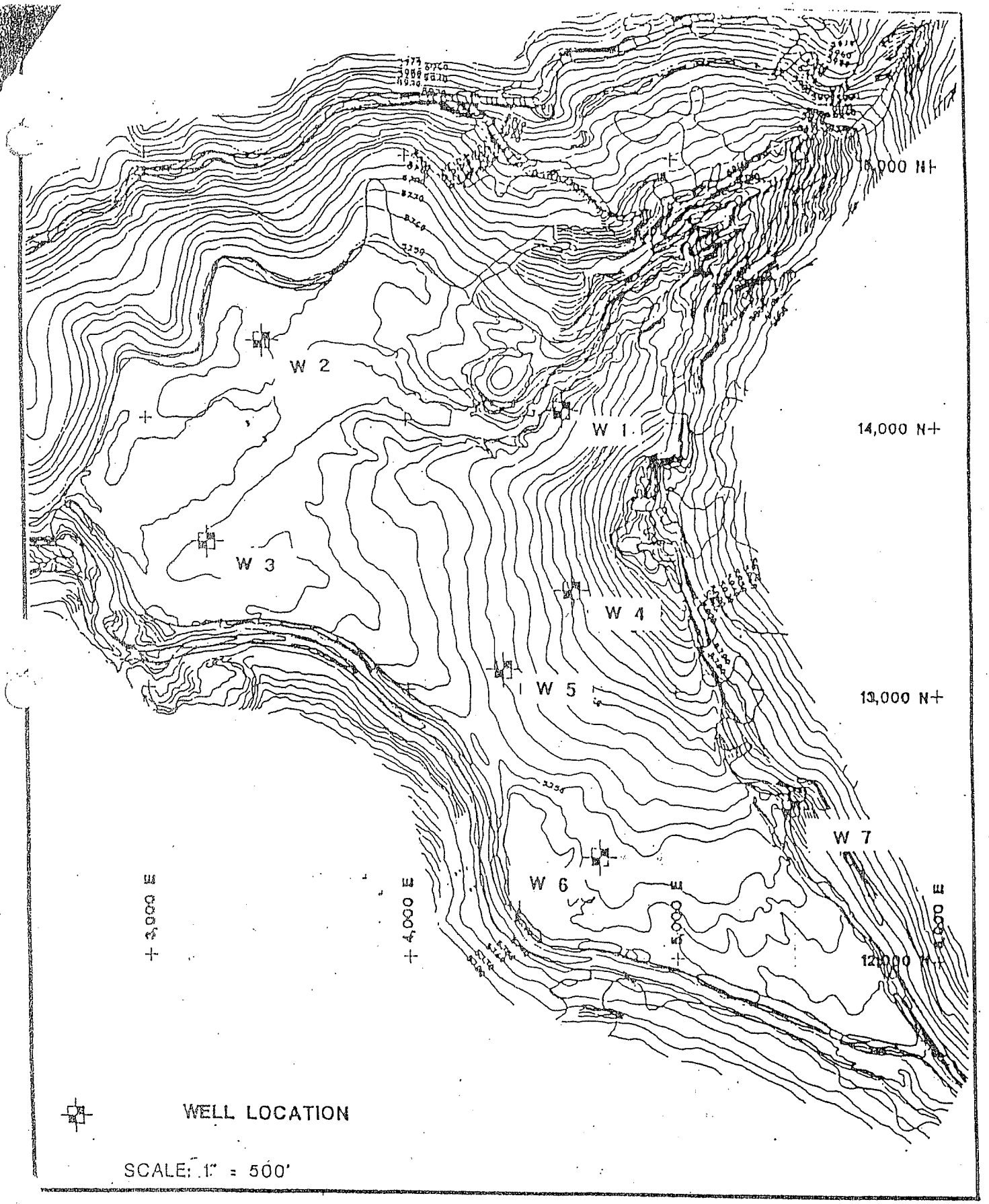

WALKER MINE TAILINGS

TERRAIN Plan	Scale 1:6000	P. 1
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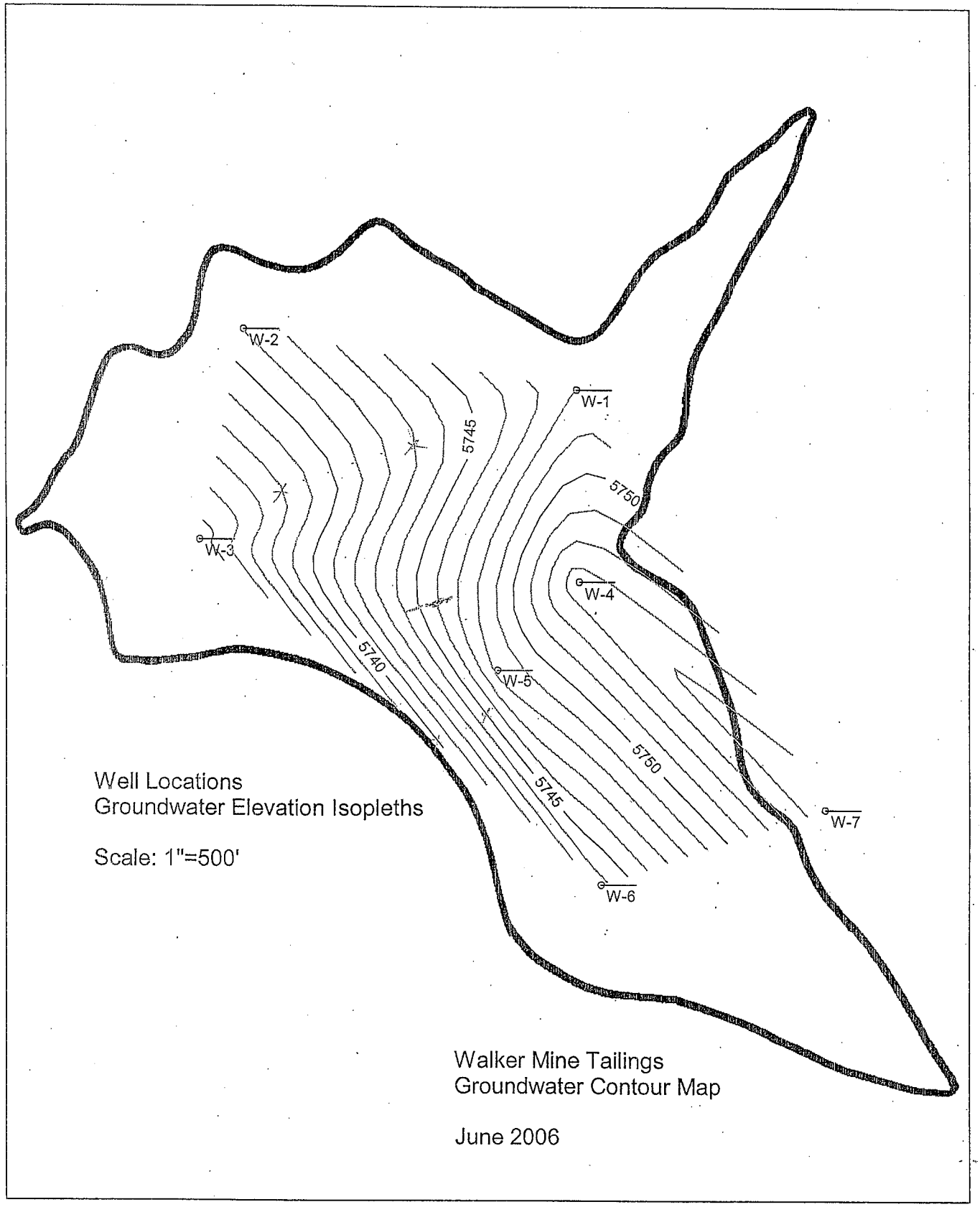

TERRAIN Plan	Scale 1:6000	P. 1
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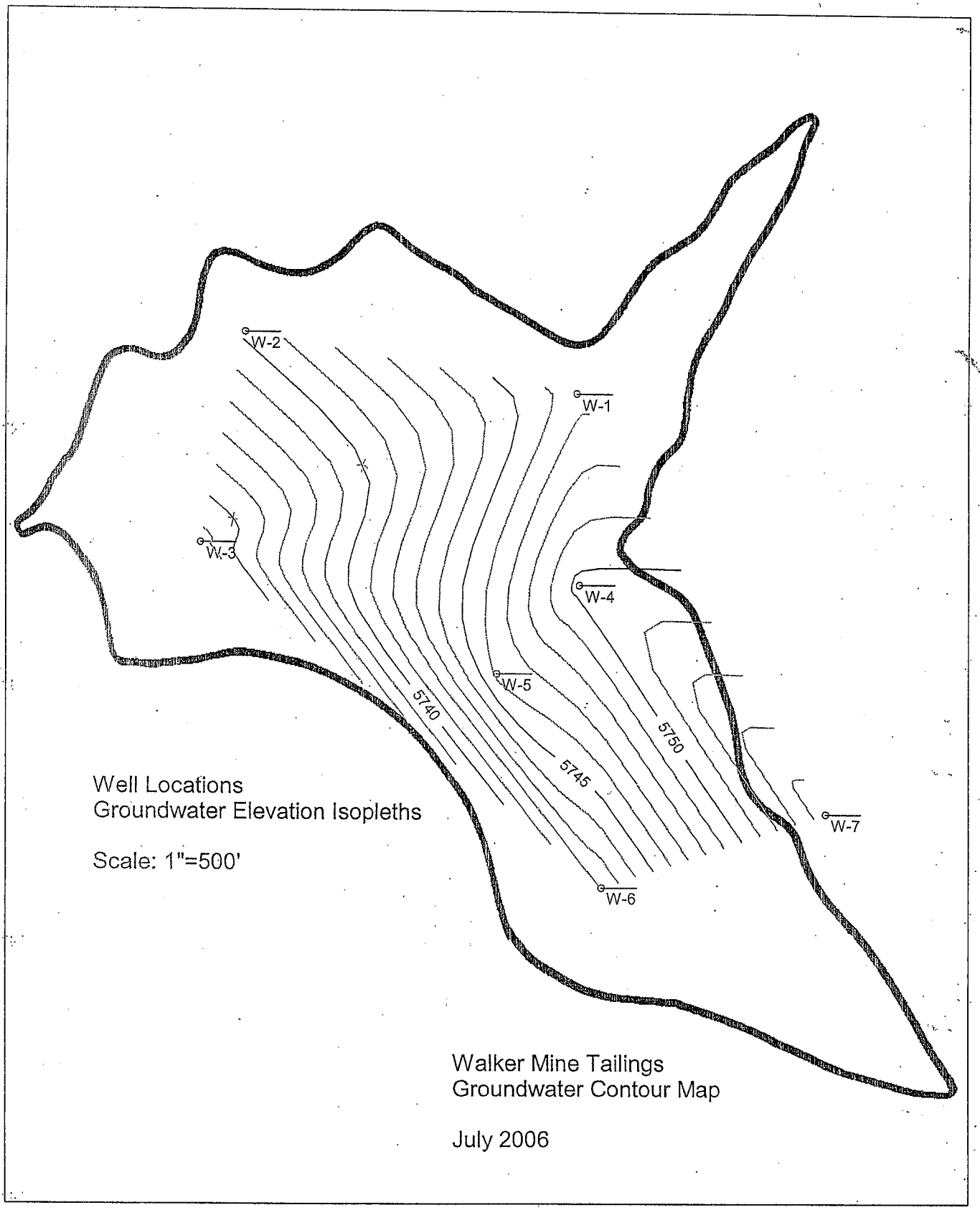

TERRAIN Plan	Scale 1:6000	P. 1
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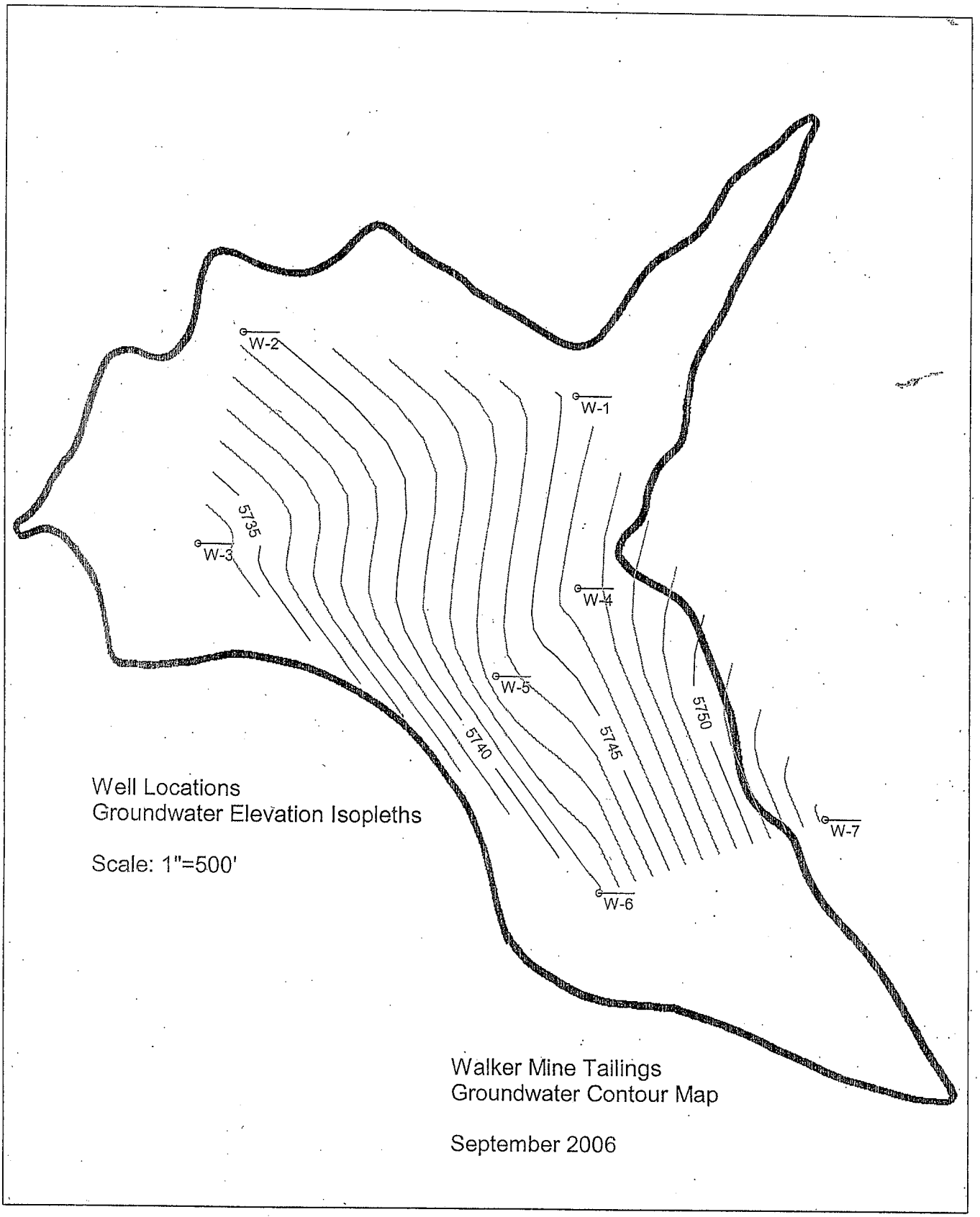


Copper Concentrations at R-3 and R-4
Little Grizzly Creek Above and Below Walker Tailings

Table 1

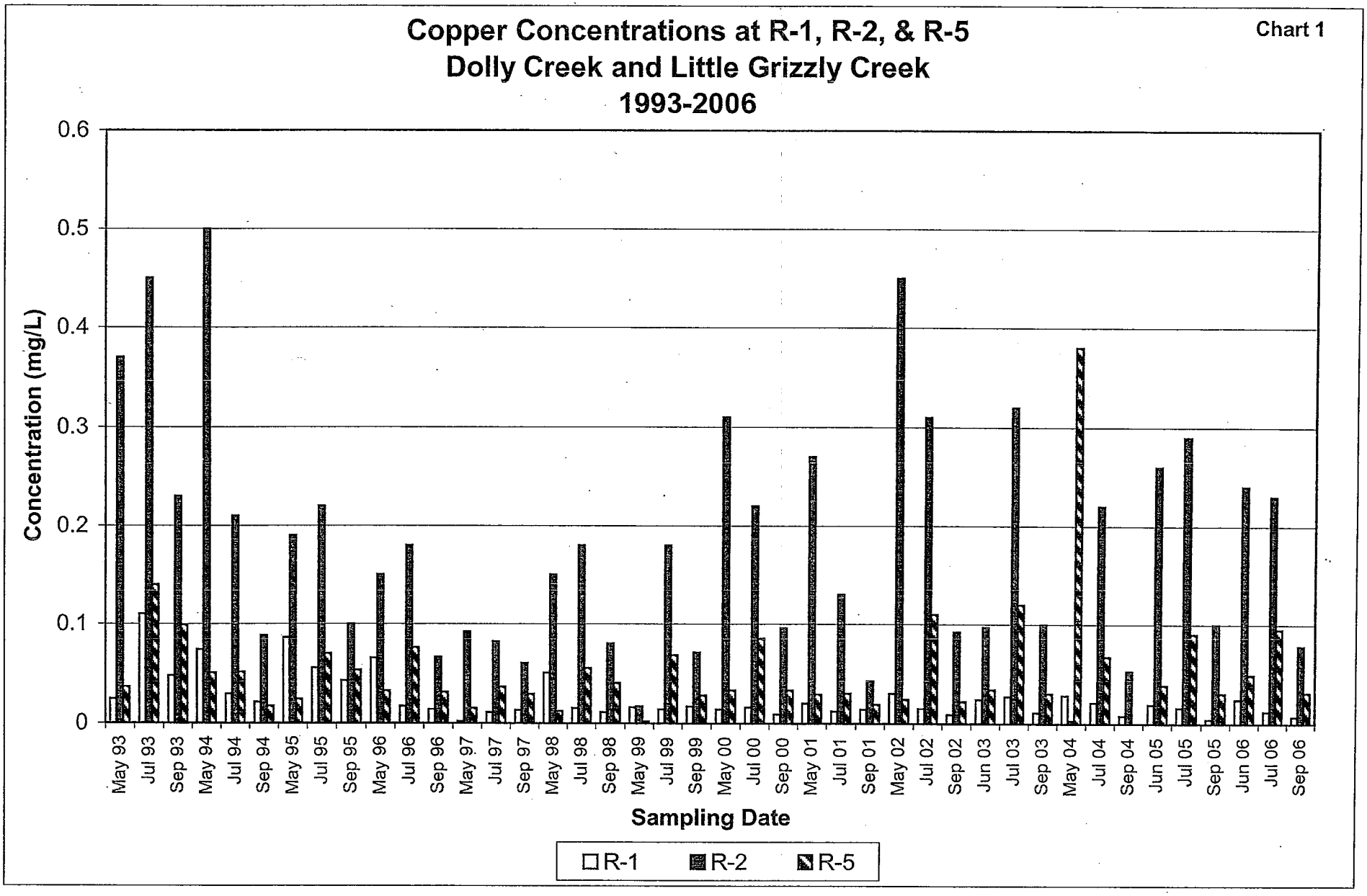
Date	R-3 Copper mg/L	R-4 Copper mg/L
May 91	0	0.0020
Jun 91	0	0
Jul 91	0	0
Aug 91	0	0.0030
Sep 91	0	0
Oct 91	0	0
Nov 91	0	0
Dec 91	0	0.0030
Apr 92	0	0
May 92	0	0.0390
Jun 92	0.0039	0
Jul 92	0	0
Aug 92	0.0036	0
Sep 92	0.1200	0.1200
Oct 92	0	0.0024
Nov 92	0	0
May 93	0	0
Jun 93	0.0028	0
Jul 93	0.0024	0.0070
Aug 93	0	0
Sep 93	0	0.0083
Oct 93	0	0
Nov 93	0	0.0040
May 94	0	0
Jun 94	0.0090	0.0057
Jul 94	0	0
Aug 94	0	0
Sep 94	0	0
Oct 94	0	0
Jun 95	0	0
Jul 95	0	0
Aug 95	0.0041	0
Sep 95	0	0
Oct 95	0	0
Nov 95	0	0.0023
May 96	0	0
June 96	0	0
July 96	0.0029	0
Aug 96	0.0022	0
Sept 96	0	0
May 97	0	0
June 97	0	0
July 97	0	0
Aug 97	0	0
Sept 97	0	0
Oct 97	0	0
June 98	0	0
July 98	0.0110	0.0034
Aug 98	0.0046	0.0015
Sept 98	0	0
Oct 98	0.0130	0.0088
Jun 99	0	0
Jul 99	0	0
Aug 99	0	0
Sept 99	0	0
Oct 99	0	0

Date	R-3 Copper mg/L	R-4 Copper mg/L
May 00	0	0
Jul 00	0.0230	0
Sep 00	0	0
May 01	0	0
Jul 01	0	0
Sep 01	0	0
May 02	0.0051	0
Jul 02	0.0039	0.0013
Sep 02	0	0.0037
June 03	0.0017	0.0013
Jul 03	0	0.0027
Sep 03	0.0032	0.0010
May-04	0.0034	0.0420
Jul-04	0	0
Sep-04	0	0
Jun-05	0	0
Jul-05	0	0
Sep-05	0	0
Jun-06	0.0032	0.0012
Jul-06	0.0033	0.0011
Sep-06	0	0
x	0.0029	0.0034
n	77	77
s	0.0140	0.0150
max	0.1200	0.1200
min	ND	ND

Summary of Copper Data for R-1, R-2 and R-5
1991-2006

Table 2

	R-1 Cu Conc. (mg/L)				R-2 Cu Conc. (mg/L)				R-5 Cu Conc. (mg/L)		
Year	May/June	July	September		May/June	July	September		May/June	July	September
1991	0.110	0.044	0.023		0.572	0.256	0.362		0.040	0.060	0.102
1992	0.034	0.034	0.033		0.250	0.360	0.240		0.000	0.066	0.000
1993	0.024	0.110	0.047		0.370	0.450	0.230		0.036	0.140	0.099
1994	0.074	0.029	0.021		0.500	0.210	0.088		0.050	0.051	0.017
1995	0.086	0.055	0.042		0.190	0.220	0.100		0.024	0.070	0.053
1996	0.065	0.017	0.014		0.150	0.180	0.066		0.032	0.076	0.031
1997	0.002	0.011	0.013		0.092	0.082	0.060		0.015	0.036	0.029
1998	0.050	0.015	0.011		0.150	0.180	0.080		0.012	0.055	0.040
1999	0.016	0.014	0.017		0.017	0.180	0.071		0.002	0.068	0.028
2000	0.014	0.016	0.009		0.310	0.220	0.096		0.033	0.085	0.033
2001	0.020	0.012	0.014		0.270	0.130	0.042		0.029	0.030	0.019
2002	0.030	0.015	0.009		0.450	0.310	0.092		0.024	0.110	0.022
2003	0.024	0.027	0.011		0.097	0.320	0.100		0.034	0.120	0.030
2004	0.028	0.021	0.008		0.003	0.220	0.052		0.380	0.067	0.000
2005	0.019	0.016	0.005		0.260	0.290	0.100		0.038	0.090	0.030
2006	0.024	0.012	0.007		0.240	0.230	0.078		0.048	0.095	0.031
x	0.04	0.03	0.02	x	0.25	0.24	0.12	x	0.05	0.08	0.04
n	16	16	16	n	16	16	16	n	16	16	16
s	0.03	0.03	0.01	s	0.17	0.09	0.09	s	0.09	0.03	0.03
max	0.110	0.110	0.047	max	0.572	0.450	0.362	max	0.380	0.140	0.102
min	0.002	0.011	0.005	min	0.003	0.082	0.042	min	0.000	0.030	0.000


Copper Concentrations at R-1, R-2, & R-5
Dolly Creek and Little Grizzly Creek
1993-2006
Chart 1
Concentration (mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0
May 93
Jul 93
Sep 93
May 94
Jul 94
Sep 94
May 95
Jul 95
Sep 95
May 96
Jul 96
Sep 96
May 97
Jul 97
Sep 97
May 98
Jul 98
Sep 98
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May 01
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May 02
Jul 02
Sep 02
Jun 03
Jul 03
Sep 03
May 04
Jul 04
Sep 04
Jun 05
Jul 05
Sep 05
Jun 06
Jul 06
Sep 06
Sampling Date
R-1
R-2
R-5

Summary of Flow Rates at R-1, R-2 and R-5
1991-2006

Table 3

	R-1 Flow Rate (cfs)				R-2 Flow Rate (cfs)				R-5 Flow Rate (cfs)		
Year	May/June	July	September		May/June	July	September		May/June	July	September
1991	0.88	0.52	0.60		1.28	0.31	0.28		19.62	0.84	1.35
1992	0.18	0.14	0.11		0.12	0.06	0.02		1.06	0.43	0.22
1993	7.28	1.31	0.73		7.28	1.25	0.57		46.10	3.53	1.10
1994	0.31	0.14	0.14		0.72	0.15	0.01		7.30	0.45	0.44
1995	6.97	2.48	1.05		8.22	2.38	2.01		97.20	7.46	1.88
1996	12.30	1.10	0.90		15.60	1.30	1.00		80.90	3.40	1.70
1997	5.05	1.24	0.66		5.69	1.18	0.86		54.09	1.43	1.34
1998	9.60	1.80	1.00		10.20	2.00	0.90		120.00	7.10	2.10
1999	5.24	1.30	0.78		5.74	1.13	0.72		34.97	3.74	1.35
2000	2.00	0.70	0.40		2.20	0.70	0.40		23.40	2.10	1.00
2001	0.44	0.18	0.24		0.42	0.13	0.28		3.99	0.52	0.73
2002	1.25	0.37	0.34		1.62	0.31	0.18		18.13	1.12	0.56
2003	3.41	0.77	0.45		3.78	0.75	0.38		22.05	1.67	1.20
2004	1.37	0.14	0.07		1.29	0.34	0.08		13.39	1.99	0.23
2005	2.88	0.66	0.52		2.91	0.98	0.57		22.78	2.34	1.16
2006	10.20	0.99	0.26		14.10	1.25	0.26		12.30	2.45	0.43
x	4.33	0.87	0.52	x	5.07	0.89	0.53	x	36.08	2.54	1.05
n	16	16	16	n	16	16	16	n	16	16	16
s	3.91	0.66	0.32	s	4.86	0.68	0.50	s	35.12	2.14	0.58
max	12.30	2.48	1.05	max	15.60	2.38	2.01	max	120.00	7.46	2.10
min	0.18	0.14	0.07	min	0.12	0.06	0.01	min	1.06	0.43	0.22

GROUNDWATER QUALITY AT WALKER MINE TAILINGS
1994-2004

Table 4

		Copper		Iron		Zinc	
Well No.	Sample Date	Total (mg/L)	Filtered (mg/L)	Total (mg/L)	Filtered (mg/L)	Total (mg/L)	Filtered (mg/L)
W-3	07/18/1994	0.02	-	1.4	-	ND	-
W-3	08/24/1994	0.02	ND	1.4	ND	ND	ND
W-3	09/22/1994	ND	ND	0.73	0.17	ND	ND
W-3	10/25/1994	ND	ND	1.1	0.70	ND	ND
W-3	06/24/1995	ND	ND	1.6	ND	ND	ND
W-3	11/13/1995	ND	ND	0.36	0.04	ND	ND
W-3	05/24/2000	-	ND	-	0.021	ND	ND
W-3	09/13/2000	-	ND	-	ND	ND	ND
W-3	05/22/2001	-	ND	-	ND	-	ND
W-3	09/25/2001	-	0.012	-	ND	-	ND
W-3	05/10/2002	-	ND	-	ND	-	ND
W-3	09/26/2002	-	0.0021	-	ND	-	ND
W-3	05/23/2003	-	0.0020	-	ND	-	0.0032
W-3	09/18/2003	-	0.0025	-	ND	-	ND
W-3	05/21/2004	-	0.0015	-	0.062	-	0.0069
W-3	09/05/2004	-	0.0024	-	ND	-	0.0016
W-4	08/24/1994	0.89	0.55	93	0.41	0.08	0.04
W-4	09/22/1994	1.7	0.62	120	0.41	0.15	0.05
W-4	10/25/1994	0.98	ND	100	32	0.12	ND
W-4	06/24/1995	ND	ND	28	28	ND	ND
W-4	11/13/1995	ND	ND	47	25	ND	ND
W-5	07/18/1994	0.11	-	32	-	ND	-
W-5	08/24/1994	0.04	ND	31	0.1	ND	ND
W-5	09/22/1994	0.05	ND	30	ND	ND	ND
W-5	10/25/1994	0.06	ND	32	2.2	ND	ND
W-5	06/24/1995	ND	ND	2.5	1.9	ND	ND
W-5	11/13/1995	ND	ND	17	0.15	ND	ND
W-5	05/24/2000	-	ND	-	0.068	ND	ND
W-5	09/13/2000	-	ND	-	0.74	ND	ND
W-5	05/22/2001	-	ND	-	1.2	-	ND
W-5	09/25/2001	-	ND	-	ND	-	ND
W-5	05/10/2002	-	ND	-	0.14	-	ND
W-5	09/26/2002	-	0.0013	-	0.12	-	ND
W-5	05/23/2003	-	0.0015	-	ND	-	ND
W-5	09/18/2003	-	0.0028	-	ND	-	0.0056
W-5	05/21/2004	-	0.0012	-	ND	-	0.0054
W-5	09/05/2004	-	0.0011	-	ND	-	ND
W-6	08/24/1994	0.46	ND	14	ND	0.04	ND
W-6	09/22/1994	0.99	0.01	31	0.69	0.08	ND
W-6	10/25/1994	0.72	0.01	23	0.27	0.02	ND
W-6	06/24/1995	ND	ND	ND	ND	ND	ND
W-6	11/13/1995	0.09	ND	3.9	0.06	ND	ND
W-7	07/18/1994	ND	ND	1.9	-	0.02	-
W-7	08/24/1994	0.02	ND	30	0.45	0.05	ND
W-7	09/22/1994	0.04	ND	43	0.96	0.07	ND
W-7	10/25/1994	0.04	ND	52	1.1	0.06	ND
W-7	06/24/1995	ND	ND	ND	ND	ND	ND
W-7	11/13/1995	0.01	ND	14	0.67	0.02	0.01
W-7	05/24/2000	-	ND	-	0.079	-	ND
W-7	09/13/2000	-	ND	-	0.18	-	ND
W-7	05/22/2001	-	ND	-	0.14	-	ND
W-7	09/25/2001	-	ND	-	ND	-	ND
W-7	05/10/2002	-	ND	-	0.28	-	ND
W-7	09/26/2002	-	0.0021	-	0.10	-	0.0034
W-7	05/23/2003	-	0.0010	-	ND	-	0.0034
W-7	09/18/2003	-	ND	-	ND	-	0.0039
W-7	05/21/2004	-	0.0023	-	ND	-	0.0090
W-7	09/05/2004	-	ND	-	ND	-	0.0049

Table 5

Groundwater Depths at Walker Mine Tailings
1993 - 2006

Depth to Groundwater From Top of Casing	Monitoring Well Number: Depth to Water (ft)							
	W-1	W-2	W-3	W-4	W-5	W-6	W-7	Average Depth (ft)
Top of Casing Elevation	5729.24	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91	
07-17-1993	13.34	2.14	5.12	16.96	7.90	5.64	1.06	7.45
07-18-1994	15.06	3.00	6.11	23.43	11.94	6.74	1.71	9.71
08-24-1994	15.35	3.26	6.59	24.52	12.88	7.63	2.07	10.33
09-22-1994	15.49	2.94	6.62	25.25	13.46	8.14	2.05	10.56
10-25-1994	15.59	2.60	6.28	25.90	13.97	8.33	1.91	10.65
06-24-1995	11.17	0.86	3.76	11.61	4.43	3.33	0.13	5.04
11-13-1995	14.75	2.34	5.98	22.64	11.32	7.09	1.03	9.31
05-24-2000	12.54	0.95	4.22	16.58	6.62	3.73	0.33	6.42
09-13-2000	14.80	2.77	6.08	22.76	11.34	7.09	0.25	9.30
05-22-2001	14.06	1.61	4.89	21.88	10.26	5.05	0.57	8.33
09-25-2001	15.27	3.16	6.69	25.21	13.39	8.25	1.68	10.52
05-10-2002	13.18	0.94	4.02	19.56	8.35	3.73	0.56	7.19
09-26-2002	14.96	2.92	6.40	24.37	12.59	7.87	1.43	10.08
05-23-2003	12.45	0.68	3.86	16.86	6.39	3.75	0.00	6.28
09-18-2003	14.54	2.58	6.08	22.84	11.35	7.16	0.79	9.33
05-21-2004	13.11	1.16	4.51	18.93	8.17	4.34	0.13	7.19
09-05-2004	14.57	2.63	6.30	23.52	11.89	7.44	1.20	9.65
06-16-2005	12.31	0.82	3.89	16.95	6.69	3.70	0.00	6.34
07-22-2005	13.26	1.63	5.26	18.96	8.45	5.66	0.42	7.66
09-15-2005	14.09	2.02	5.50	21.94	10.70	6.52	0.68	8.78
06-14-2006	11.19	0.68	4.39	14.24	5.68	4.20	0.00	5.77
06-24-2006	12.63	1.48	5.27	17.63	7.77	5.80	0.23	7.26
09-19-2006	13.88	2.31	6.05	21.34	10.29	7.06	0.59	8.79
Average Depth	13.81	1.98	5.39	20.60	9.82	6.01	0.82	8.35
n	23	23	23	23	23	23	23	23
s	1.33	0.89	1.00	3.86	2.78	1.70	0.70	1.70
max	15.59	3.26	6.69	25.90	13.97	8.33	2.07	10.65
min	11.17	0.68	3.76	11.61	4.43	3.33	0.00	5.04

Sev

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Monitoring Period: June 2006

Findings:

(1) Surface water. Samples were collected on June 14, 2006. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, remains in noncompliance with the limitation for copper (see Table 1). The remaining R-5 constituents are in compliance with the prescribed limitations. The release of copper from the tailings area to Dolly Creek, as measured at R-2, continues to far exceed the limitation. Concentrations of zinc were detected in all of the 5 samples taken but none of these concentrations exceeded the limitation for zinc. The concentration of iron, highest at R-2, was within the limitation at all of the stations.

(2) Groundwater. No groundwater samples were collected for this monitoring event.

Groundwater elevations were measured in all seven wells installed at the site. The results show a definite gradient towards Little Grizzly Creek of approximately 1% along the Dolly Creek channel and approximately 2.5% to the settling pond (R-6). With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards Little Grizzly Creek all along its course with the tailings area.

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Table 1. SURFACE WATER SUMMARY

Map of the tailings area with the surface water monitoring sites

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Table 2. GROUND WATER SUMMARY

Map of the tailings area with the ground water monitoring sites

Map of tailings area with ground water elevations and flow direction

Water Level Data

JUNE 2006

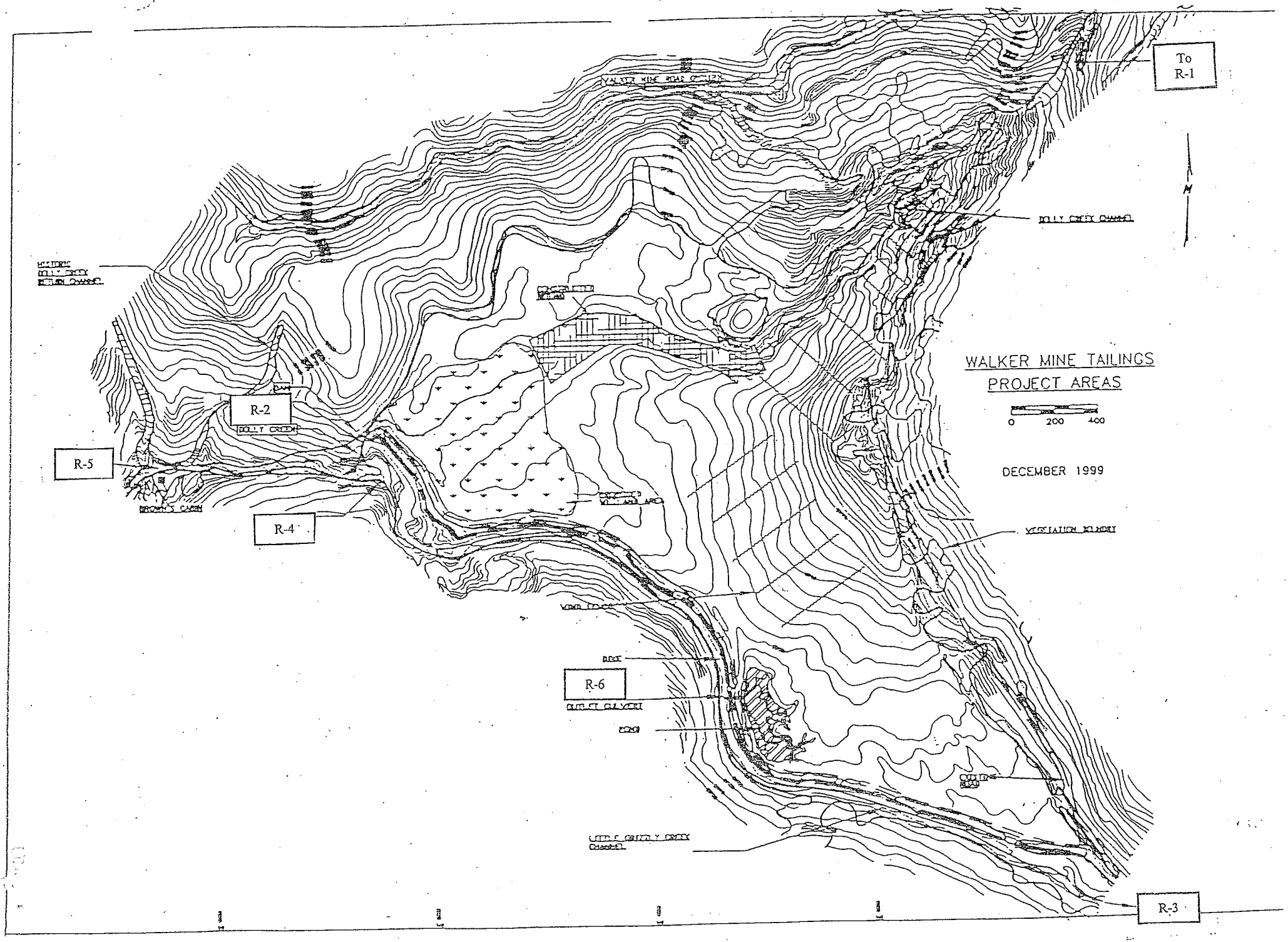
SURFACE WATER TEST RESULTS
AND
SUPPORTING DOCUMENTATION

Table 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
JUNE 2006

CONSTITUENT	UNITS	DETECTION LIMITS	MONITORING STATIONS R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	LIMITATION @ R-5[3]
Field Parameters									
Flow	cfs	N/A	4.92	4.43	14.16	15.79	19	0	N/A
pH	number	N/A	7.93	7.83	7.61	7.67	7.92	N/A	N/A
Specific Conductance	umhos/cm	N/A	66.2	76.8	46.6	48.7	55.9	N/A	N/A
Air Temperature	^{0}C	N/A	15.6	13.9	14.4	16.7	18.3	N/A	N/A
Water Temperature	^{0}C	N/A	10.2	14.1	11.5	9.9	12.3	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	5	44	44	30	28	36	N/A	N/A
Total Alkalinity	mg/l	1	49	53	40	42	42	N/A	N/A
Sulfate	mg/l	0.5	1.2	1.2	1.3	6.4	5.0	N/A	N/A
Turbidity	NTU	0.05	1.9	2.2	1.4	.99	1.4	N/A	2.4
Dissolved Iron	ug/l	50	87	650	89	120	260	N/A	1000
Dissolved Copper	ug/l	1.0	24	240	3.2	1.2	48	N/A	3.7
Dissolved Zinc	ug/l	2.0	3.9	14	2.1	1.2	5.9	N/A	49.7

[1] R-3 is the background station located above the tailings area on Little Grizzly Creek.
[2] R-5 is the compliance station located near Brown's Cabin, downstream from the confluence of Dolly Creek with Little Grizzly Creek.
[3] The compliance values for copper and zinc are calculated with the R-5 hardness value of 32 mg/l as CaCO3.


To
R-1
R-2
R-3
R-4
R-5
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0 200 400
DECEMBER 1999
N

WALKER MINE TAILINGS MONITORING PROGRAM

9-275a
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. .....
Comp. by .....
Checked by .....

DISCHARGE MEASUREMENT NOTES

Sta. No. R-1

Dolly Creek above Tailings @ Road 112

Date 6-14, 19 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter MMC

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Cloudy / Warm

Other ..... Air 60.F @ 1355

Gage ..... Water 10.2 °C @ 1353

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.93

CONDUCTANCE 66.2 umhos/cm

G. H. of zero flow ..... ft.

Sample @ 1352

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	0	—	—				—				
	.5		.30				Ø				
	1		.85				Ø				
	1.5		1.0				Ø				
	2		1.1				Ø				
	2.5		1.1				.34				
	3		1.05				.63				
	3.5		1.3				1.72				
	4		1.2				1.92				
	4.5		1.05				3.03				
	5		.75				.98				
	5.5		.65				Ø				
	6		.5				Ø				
RB	6.5										

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-1
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. .....
Comp. by .....
Checked by .....

DISCHARGE MEASUREMENT NOTES

Sta. No. R-2
Dolly Creek below Tailings Dam

Date 6-14 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter mmc

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Cool / partly Cloudy

Other ..... Air 51 °F @ 1127

Gage ..... Water 14.1 °C @ 1133

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.83

CONDUCTANCE 76.8 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1125

River at

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	0.3		—				—				
	0.5		0.1				0.22				
	1.0		.45				.65				
	1.5		0.7				.92				
	2.0		0.7				1.34				
	2.5		0.8				1.91				
	3.0		0.75				2.07				
	3.5		0.9				1.98				
	4.0		0.7				1.93				
	4.5		0.7				1.05				
	5.0		0.1				.26				
RB	5.2										

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-1
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-3
Little Grizzly Creek above Tailings

Date 6-14, 19 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter MMC

Date rated .... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found ..... changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Cloudy / Cool

Other ..... Air 58°F @ 1320

Gage ..... Water 11.5 °C @ 1321

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.61

CONDUCTANCE 46.6 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1315

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	Velocity At point	Velocity Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	1.0	—					—				
	1.5		.1				Ø				
	2		.2				Ø				
	2.5		.4				Ø				
	3		.4				Ø				
	3.5		.5				Ø				
	4		.5				Ø				
	4.5		.65				Ø				
	5		.75				.45				
	5.5		1.0				1.36				
	6		1.1				1.63				
	6.5		1.1				2.04				
	7		1.3				2.85				
	7.5		1.5				2.70				
⊙	8		1.7				2.19				
	8.5		1.55				2.70				
	9		.9				3.12				
	9.5		.8				2.93				
	10		.6				2.47				
	10.5		.2				1.85				
RB	10.8										

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-a
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. .....
Comp. by .....
Checked by .....

DISCHARGE MEASUREMENT NOTES

Sta. No. R-4
Little Grizzly Creek below Tailings
Date 6-14, 1996 Party Flynn
Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....
Method 6/16 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....
Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....
Type of meter MMC
Date rated ..... for rod, other.
Meter ..... ft. above bottom of weight.
Spin before meas. ..... after .....
Meas. plots ..... % diff. from rating .....
Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....
Check-bar, found ..... changed to ..... at .....
Correct .....
Levels obtained .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....
Flow ..... Weather Warm/Partly Cloudy
Other ..... Air 62°F @ 1210
Gage ..... Water 9.9 °C @ 1213
..... Record removed ..... Intake flushed .....
Observer .....
Control .....
pH 7.67
CONDUCTANCE 48.7 umhos/cm
G. H. of zero flow ..... ft.

Samples @ 1207

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	Velocity At point	Velocity Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	0.2		—				—				
	0.5		.15				Ø				
	1		.3				Ø				
	1.5		.4				.09				
	2		.6				.29				
	2.5		.85				.42				
	3		.75				.83				
	3.5		.9				1.21				
	4		.9				1.60				
	4.5		1.05				1.88				
	5		1.0				2.10				
	5.5		1.15				2.18				
	6		1.05				2.55				
	6.5		1.15				2.72				
⊙	7		1.2				2.86				
	7.5		1.25				2.42				
	8		1.2				1.9				
	8.5		1.1				1.65				
	9		1.1				1.18				
	9.5		1.05				1.05				
	10		.8				1.1				
	10.5		.8				.86				
	11		.65				.73				
	11.5		.5				.48				
	12		.35				.53				
	12.5		.3				.18				
	13		.1				.07				
	13.5		.2				Ø				
	14		.2				Ø				
	~~14.5~~										
RB	~~14.6~~										
	14.6										

WALKER MINE TAILINGS MONITORING PROGRAM

9-2754
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. .....
Comp. by .....
Checked by .....

DISCHARGE MEASUREMENT NOTES

Sta. No. R-5

Little Grizzly Creek @ Brown's Cabin

Date 6-14, 19 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method C/10 No. secs. ..... C. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter MMC

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm / Cloudy

Other ..... Air 65.0 °C @ 1427

Gage ..... 12.3 Water [redacted] °C @ 1429

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.92

CONDUCTANCE 55.9 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1424

.0 .10 .20 .30 .40 .50 .60 .70 .75

River at—

	Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	Velocity At point	Velocity Mean in vertical	Adjusted for hor. angle or	Area	Discharge
	LB	0.8		—				—				
		1.0		0.1				0				
		1.5		.2				1.05				
		2		.4				2.13				
		2.5		.4				2.37				
		3		.65				.80				
		3.5		.9				0				
		4		1.35				2.12				
		4.5		1.7				2.89				
		5		1.7				3.50				
		5.5		1.05				3.58				
		6		1.0				3.23				
		6.5		1.05				2.76				
		7		1.4				2.80				
	⊙	7.5		1.45				1.60				
		8		1.25				1.24				
		8.5		1.1				.90				
		9		1.2				1.34				
		9.5		.9				.95				
		10		.95				.57				
		10.5		.75				.10				
		11		.35				Ø				
		11.5		.25				Ø				
		12		.15				Ø				
		12.5		0.1				0				
	RB	13										

.0 .10 .20 .30 .40 .50 .60 .70 .75

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-F
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....

Comp. by .....

Checked by .....

Sta. No. R-6

Sediment Basin Outlet

Date 6/14, ~~19~~2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method ..... No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter .....

Date rated .... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow No Flow Weather .....

Other ..... Air .....°C@ .....

Gage ..... Water .....°C@ .....

..... Record removed ..... Intake flushed U .....

Observer .....

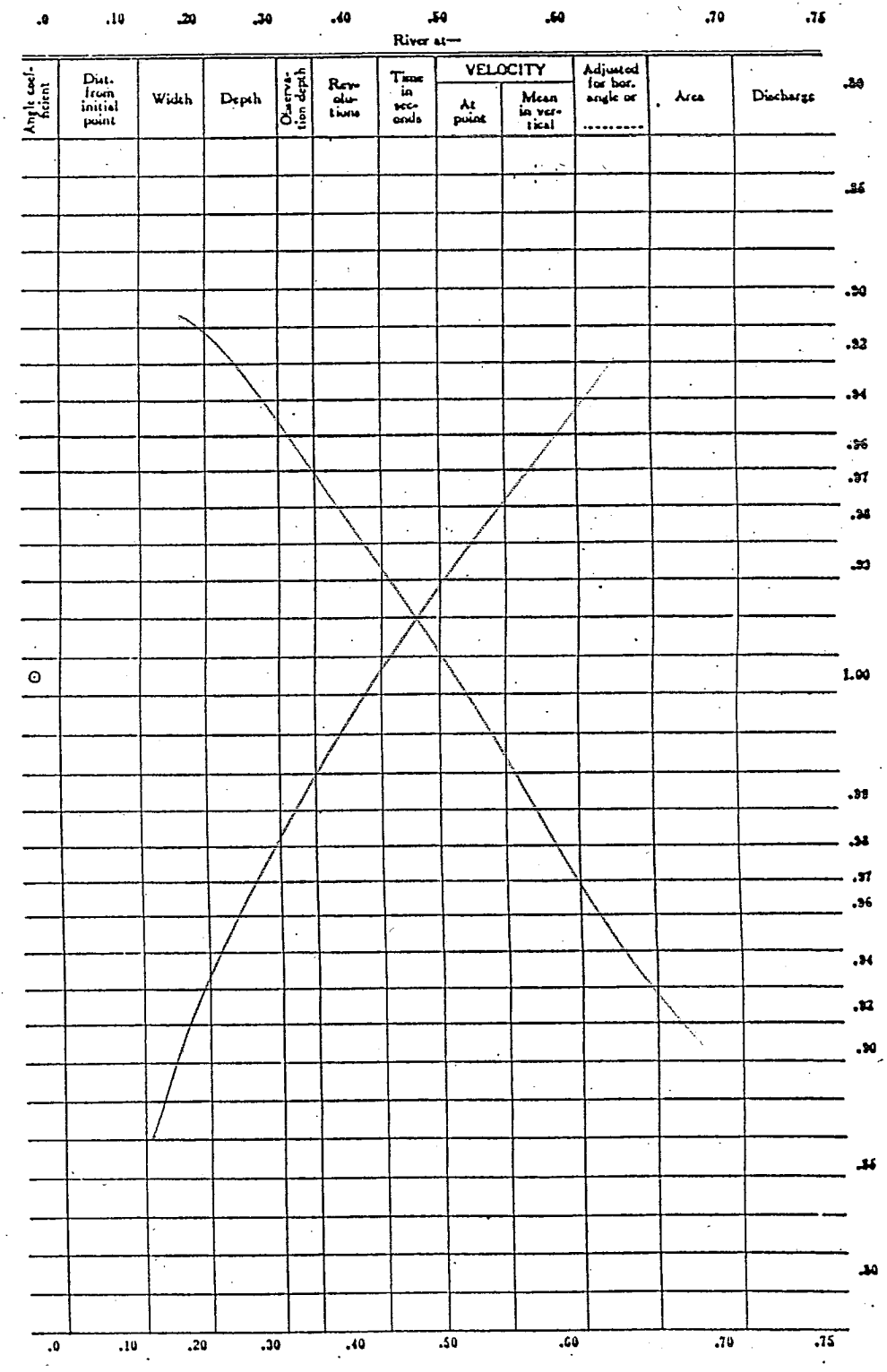
Control .....

pH .....

CONDUCTANCE ..... umhos/cm

G. H. of zero flow ..... ft.

No Flow – No Samples



Walker Mine Tailings Job # 5-00-028 Surface Water

Henrici Water Laboratory Chain of Custody

Purveyor: USFS Plumas Nat Forest
159 Lawrence St.
Quincy, CA 95971
Attn: Joe Hoffman (530) 283 7868

Sampler's Signature: [signature]

Type of Analyses

I.D. No.	Date	Time	Location	No. of Containers	Turbidity	Total Hardness as $CaCO_3$	Total Alkalinity as $CaCO_3$	Sulfate	Diss Copper	Diss Iron	Diss Zinc	Remarks
	6/14	1125	R-2	1	X	X	X	X	X	X	X	cu = 1 ug/L
		1207	R-4	1	X	X	X	X	X	X	X	zn = 2 ug/L
		1315	R-3	1	X	X	X	X	X	X	X	Fe = 50 ug/L
		1352	R-1	1	X	X	X	X	X	X	X	
		1424	R-5	1	X	X	X	X	X	X	X	
												Walker Mine Tailings Site: # 5-00-028

Relinquished By	Date	Time	Received By
[signature]	6/14/06	1635	DM Henton

1832 Butterfly Valley Road, Quincy, CA 95971 Telephone & Fax (530) 281-6588

HENRICI WATER LABORATORY
1832 BUTTERFLY VALLEY ROAD, QUINCY, CALIFORNIA 95971
PHONE (530) 281-6588

Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39494 Date Received: 06/14/06
Location: Walker Mine R-1
Date of Collection : 06/14/06 Time: 1352 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	44	mg/L
Total Alkalinity	06/15/06	SM 2320 B	1	49	mg/L
Sulfate	06/26/06	EPA 375.4	0.5	1.2	mg/L
Turbidity	06/15/06	SM 2130B	0.05	1.9	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.087	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	24	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	3.9	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

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PHONE (530) 281-6588

Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39495 Date Received: 06/14/06
Location: Walker Mine R-2
Date of Collection : 06/14/06 Time: 1125 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	44	mg/L
Total Alkalinity	06/15/06	SM 2320 B	1	53	mg/L
Sulfate	06/26/06	EPA 375.4	0.5	1.2	mg/L
Turbidity	06/15/06	SM 2130B	0.05	2.2	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.65	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	240	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	14	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

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Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39496 Date Received: 06/14/06
Location: Walker Mine R-3
Date of Collection : 06/14/06 Time: 1315 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	30	mg/L
Total Alkalinity	06/15/06	SM 2320 B	1	40	mg/L
Sulfate	06/26/06	EPA 375.4	0.5	1.3	mg/L
Turbidity	06/15/06	SM 2130B	0.05	1.4	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.089	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	3.2	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	2.1	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

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Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
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ANALYSIS REPORT

Laboratory Number: C39497 Date Received: 06/14/06
Location: Walker Mine R-4
Date of Collection : 06/14/06 Time: 1207 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	28	mg/L
Total Alkalinity	06/15/06	SM 2320 B	1	42	mg/L
Sulfate	06/26/06	EPA 375.4	0.5	6.4	mg/L
Turbidity	06/15/06	SM 2130B	0.05	0.99	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.12	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	1.2	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	1.2	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

HENRICI WATER LABORATORY
1832 BUTTERFLY VALLEY ROAD, QUINCY, CALIFORNIA 95971
PHONE (530) 281-6588

Plumas National Forest
Supervisor's Office
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Quincy, CA 95971

Account: 11616
Date: 08/20/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39498 Date Received: 06/14/06
Location: Walker Mine R-5
Date of Collection : 06/14/06 Time: 1424 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	36	mg/L
Total Alkalinity	06/15/06	SM 2320 B	1	42	mg/L
Sulfate	06/26/06	EPA 375.4	0.5	5.0	mg/L
Turbidity	06/15/06	SM 2130B	0.05	1.4	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.26	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	48	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	5.9	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

JUNE 2006

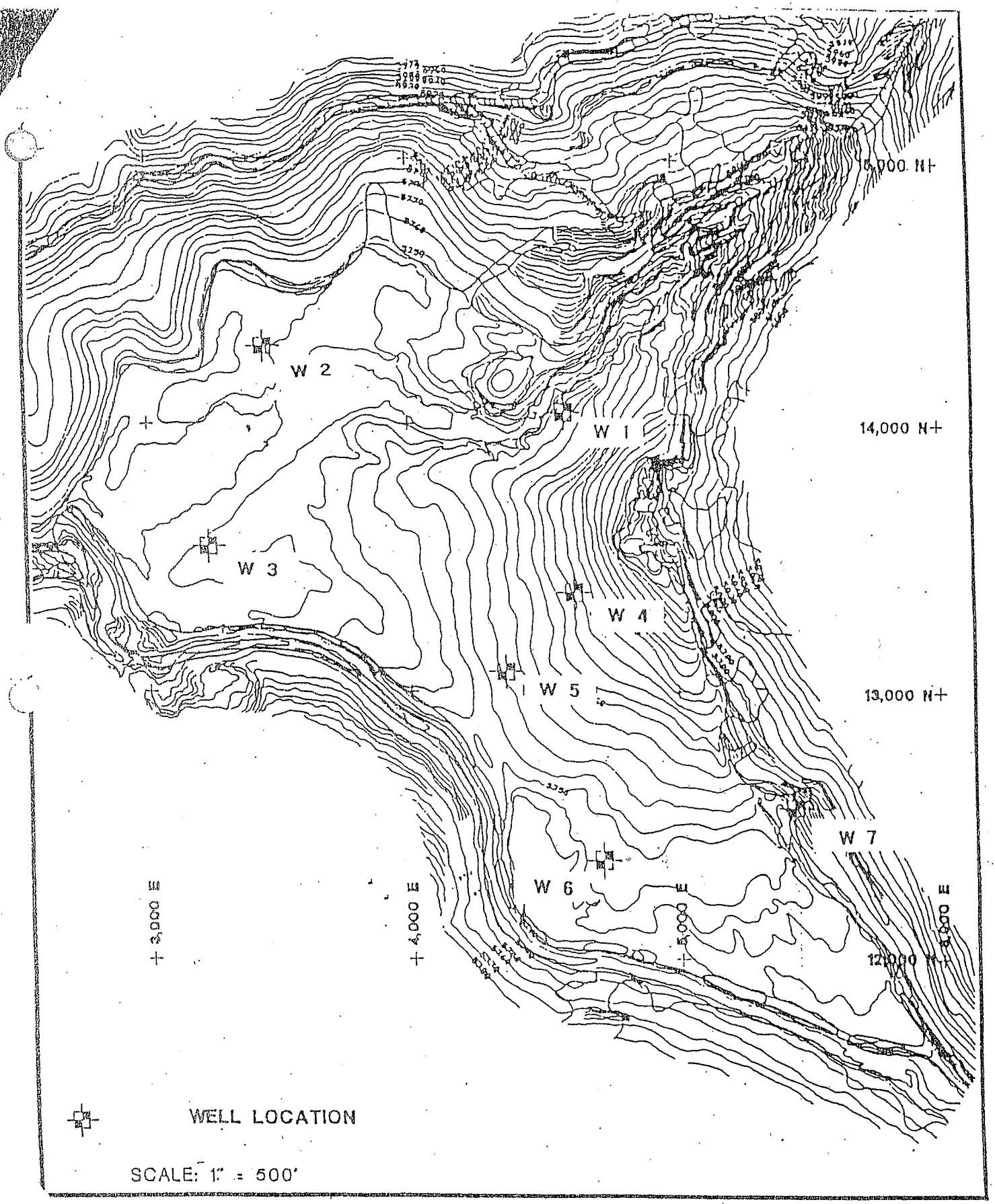
GROUND WATER TEST RESULTS
AND
SUPPORTING DOCUMENTATION

Table 2. GROUND WATER SUMMARY

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
June 2006

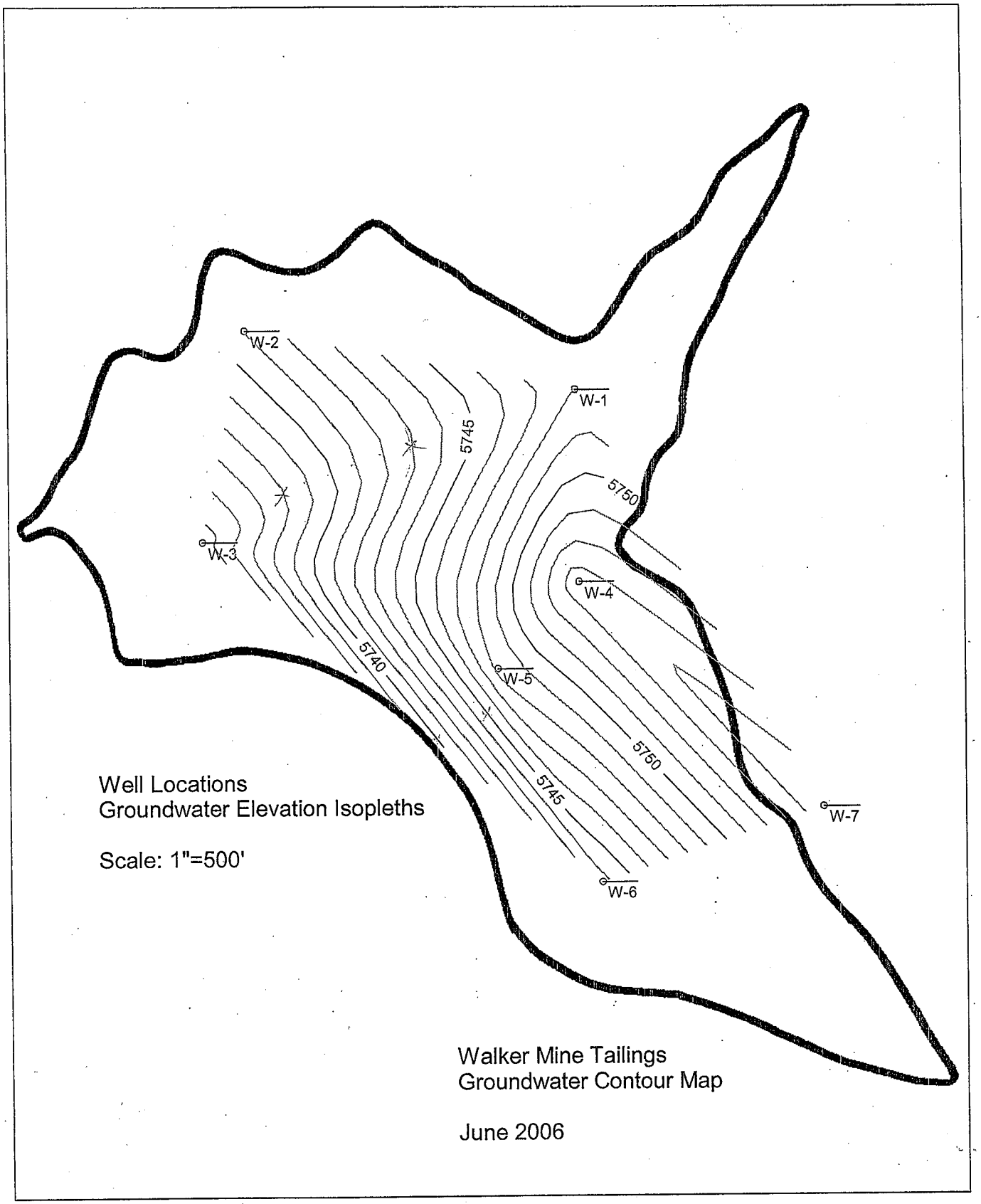
CONSTITUENT	UNIT	DETECTION LIMIT	WELL SITES W-1	W-2	W-3	W-4	W-5	W-6	W-7*
Field Parameters									
Ground Surface Elevation	ft	0.01	5759.50	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	5759.24	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	11.19	0.68	4.39	14.24	5.68	4.20	0.00
Water Surface Elevation	ft	0.01	5748.05	5741.06	5734.44	5753.76	5748.41	5743.67	5754.91
Laboratory									
Total Hardness as CaCO3	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Alkalinity	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sulfate	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Iron	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Copper	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Zinc	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*W-7 is located upgradient and off-site in a wet area. The data collected from this well are used for background comparisons.



WALKER MINE TAILINGS

TERRAIN Plan	Scale 1:6000	P. 1
K:\rso\ws\Walker_Tailings\Mo....6\Walker wells June 2006.ter		06/12/08



WALKER TAILINGS GROUNDWATER MONITORING PROGRAM
WATER LEVEL GAUGING

SITE LOCATION: Walker Tailings DATE : 6/14/06
COMPANY NAME: USFS
PERSONNEL: Flynn

WELL	TIME	DEPTH TO WATER	COMMENTS
MW-1	0919	11.19	
2	0945	0.68	
3	1053	4.39	
4	1010	14.24	
5	1016	5.68	
6	1039	4.20	
7	1303	Flowing	

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Monitoring Period: July 2006

Findings:

(1) Surface water. Samples were collected on July 24, 2006. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, remains in noncompliance with the limitation for copper (see Table 1). The remaining R-5 constituents are in compliance with the prescribed limitations. The release of copper from the tailings area to Dolly Creek, as measured at R-2, continues to far exceed the limitation. Concentrations of zinc were detected in all of the 5 samples taken but none of these concentrations exceeded the limitation for zinc. The concentration of iron, highest at R-2, was outside the limitation at only this station.

(2) Groundwater. No groundwater samples were collected for this monitoring event.

Groundwater elevations were measured in all seven wells installed at the site. The results show a definite gradient towards Little Grizzly Creek of approximately 1% along the Dolly Creek channel and approximately 2.1% to the settling pond (R-6). With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards Little Grizzly Creek all along its course with the tailings area.

TABLE OF CONTENTS

Table 1. SURFACE WATER SUMMARY

Map of the tailings area with the surface water monitoring sites

Discharge Measurement Notes

Chain-Of-Custody record for surface water samples

Henrici Water Laboratory Analysis Reports for surface water tests

Table 2. GROUND WATER SUMMARY

Map of the tailings area with the ground water monitoring sites

Map of tailings area with ground water elevations and flow direction

Water Level Data

JULY 2006

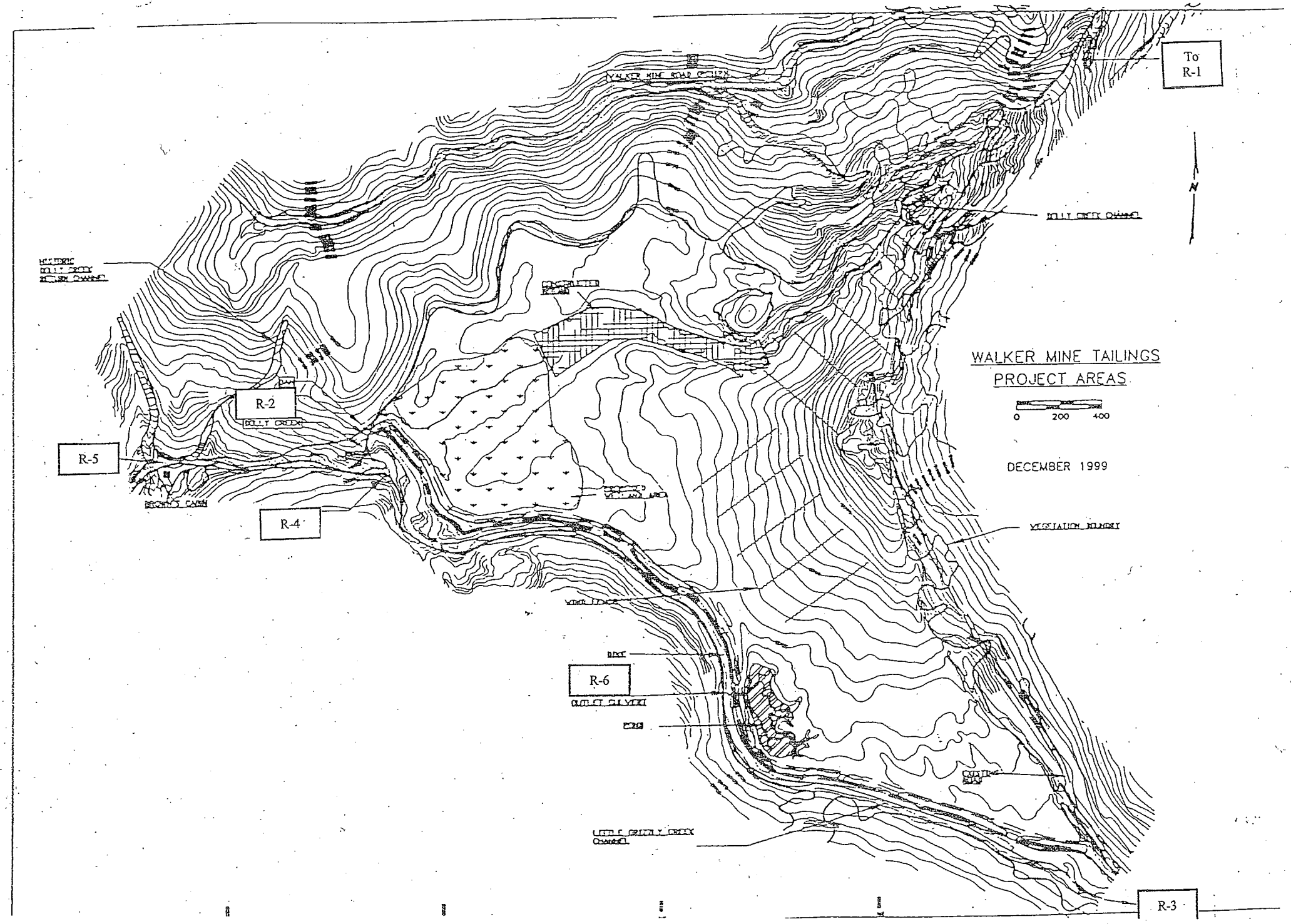
SURFACE WATER TEST RESULTS
AND
SUPPORTING DOCUMENTATION

Table 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
JULY 2006

CONSTITUENT	UNITS	DETECTION LIMITS	MONITORING STATIONS R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	LIMITATION @ R-5[3]
Field Parameters									
Flow	cfs	N/A	0.99	1.25	1	1.3	2.45	0	N/A
pH	number	N/A	8.16	8.06	8.10	7.94	7.81	N/A	N/A
Specific Conductance	umhos/cm	N/A	109.1	131.3	60.8	119.2	134.0	N/A	N/A
Air Temperature	^{0}C	N/A	31.1	31.1	32.2	28.9	30.0	N/A	N/A
Water Temperature	^{0}C	N/A	14.8	21.8	21.3	19.4	22.6	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	5	64	68	48	64	62	N/A	N/A
Total Alkalinity	mg/l	1	61	72	52	61	60	N/A	N/A
Sulfate	mg/l	0.5	1.3	5.2	1.1	9.8	7.5	N/A	N/A
Turbidity	NTU	0.05	1.8	3.4	1.6	2.4	2.2	N/A	2.6
Dissolved Iron	ug/l	50	160	1100	370	590	820	N/A	1000
Dissolved Copper	ug/l	1.0	12	230	3.3	1.1	95	N/A	6.0
Dissolved Zinc	ug/l	2.0	6.2	11	1.7	2.0	5.9	N/A	78.8

[1] R-3 is the background station located above the tailings area on Little Grizzly Creek.
[2] R-5 is the compliance station located near Brown's Cabin, downstream from the confluence of Dolly Creek with Little Grizzly Creek.
[3] The compliance values for copper and zinc are calculated with the R-5 hardness value of 32 mg/l as CaCO3.


To R-1
R-2
R-5
R-4
R-6
R-3
WALKER MINE TAILINGS
PROJECT AREAS
0 200 400
DECEMBER 1999
N

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-T
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. _____
Comp. by _____
Checked by _____

Sta. No. R-1
Dolly Creek above Tailings @ Road 112
Date 7/24, 2006 Party Flynn
Width _____ Area _____ Vel. _____ G. H. _____ Disch. _____
Method 6/10 No. secs. _____ G. H. change _____ in _____ hrs. Susp. _____
Method coef. _____ Hor. angle coef. _____ Susp. coef. _____ Meter No. _____

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter mm C
Date rated _____ for rod, other.
Meter _____ ft. above bottom of weight.
Spin before meas. _____ after _____
Meas. plots _____ % diff. from rating _____
Wading, cable, ice, boat, upstr., downstr., side bridge _____ feet, mile, above, below gage, and _____
Check-bar, found _____ changed to _____ at _____
Correct _____
Levels obtained _____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section _____
Flow _____ Weather Hot / Clear
Other _____ Air 88° F @ 1523
Gage _____ Water 14.8 °C @ 1517
_____ Record removed _____ Intake flushed _____
Observer _____
Control _____
pH 8.16
CONDUCTANCE 109.1 umhos/cm
G. H. of zero flow _____ ft.

Samples @ 1513

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or _____	Area	Discharge
~~LB~~											
LB	0.5										
	1.0		.6				.25				
	1.5		.65				~~0~~				
	2		.8				~~0~~				
	2.5		.85				~~0~~				
	3		.9				.14				
	3.5		.85				.52				
	4		.75				.41				
	4.5		.60				.85				
	5		.325				1.38				
	5.5		.35				~~0~~				
	6		.05				~~0~~				
RB	6.2										

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-P
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....

Comp. by .....

Checked by .....

Sta. No. R-2

Dolly Creek below Tailings Dam

Date 7/24, 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter MMC

Date rated .... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Hot / Clear

Other ..... Air 88° F @ 1305

Gage ..... Water 21.8 °C @ 1303

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 8.06

CONDUCTANCE 131.3 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1258

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	.4										
	1		.2				0				
	1.5		.25				0				
	2		.15				.15				
	2.5		.6				.77				
	3		.75				1.09				
	3.5		.6				1.43				
	4		.5				0.67				
	4.5		.6				0				
RB	5.1										

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-T
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-3
Little Grizzly Creek above Tailings

Date 7/24, 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter mm C

Date rated .... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found ..... changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Hot / Clear

Other ..... Air 90°F @ 1433

Gage ..... Water 21.3 °C @ 1431

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 8.10

CONDUCTANCE 60.8 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1428

.0 .10 .20 .30 .40 .50 .60 .70 .75

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	1.6										
	2		.15				0				
	2.5		.3				0				
	3		.35				0				
	3.5		.55				.07				
	4		.6				.24				
	4.5		.6				.22				
	5		.7				.62				
	5.5		.8				.43				
	6		1.0				.49				
	6.5		1.1				.24				
	7		.85				.17				
	7.5		.15				0				
RB	7.9										
⊙											

.0 .10 .20 .30 .40 .50 .60 .70 .75

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-T
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-4

Little Grizzly Creek below Tailings

Date 7/24, 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter MMC

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Hot / Clear

Other ..... Air 84° F @ 1343

Gage ..... Water 19.4 °C @ 1338

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 7.94

CONDUCTANCE 119.2 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1337

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	.7										
	1.0		.2				0				
	1.5		.3				.04				
	2		.4				.56				
	2.5		.25				.55				
	3		.3				.54				
	3.5		.35				.41				
	4		.4				.62				
	4.5		.3				.68				
	5		.3				.74				
	5.5		.35				.51				
	6		.35				.52				
	6.5		.5				.60				
	7		.35				.31				
⊙	7.5		.35				.64				
	8		.5				.36				
	8.5		.4				.18				
	9		.2				0				
	9.5		.15				0				
	10		.05				0				
RB	10.2										

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-T
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-5

Little Grizzly Creek @ Brown's Cabin

Date 7/24, 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter MMC

Date rated .... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots ..... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....
changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Hot Clear

Other ..... Air 86°F @ 1604

Gage ..... Water 22.6°C @ 1554

..... Record removed ..... Intake flushed .....

Observer .....

Control .....

pH 5.74? Recalibrate pH then Read @ 7.81

CONDUCTANCE 134.0 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1552

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	Velocity At point	Velocity Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	1.0										
	1.5		.55				1.05				
	2		.6				2.06				
	2.5		.3				1.29				
	3		.5				0.47				
	3.5		.55				0.12				
	4		.65				0				
	4.5		1.00				0				
	5		.8				0.08				
	5.5		.8				0				
	6		.9				0				
	6.5		.9				0.08				
	7		.9				0.43				
	7.5		.8				0.91				
⊙	8		.65				1.32				
	8.5		.6				.35				

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-T
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....

Comp. by .....

Checked by .....

Sta. No. R-6

Sediment Basin Outlet

Date 7/24, 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method ..... No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter .....

Date rated .... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow No Flow Weather Hot/Clear

Other ..... Air .....°C@ .....

Gage ..... Water .....°C@ .....

..... Record removed ..... Intake flushed .....

Observer .....

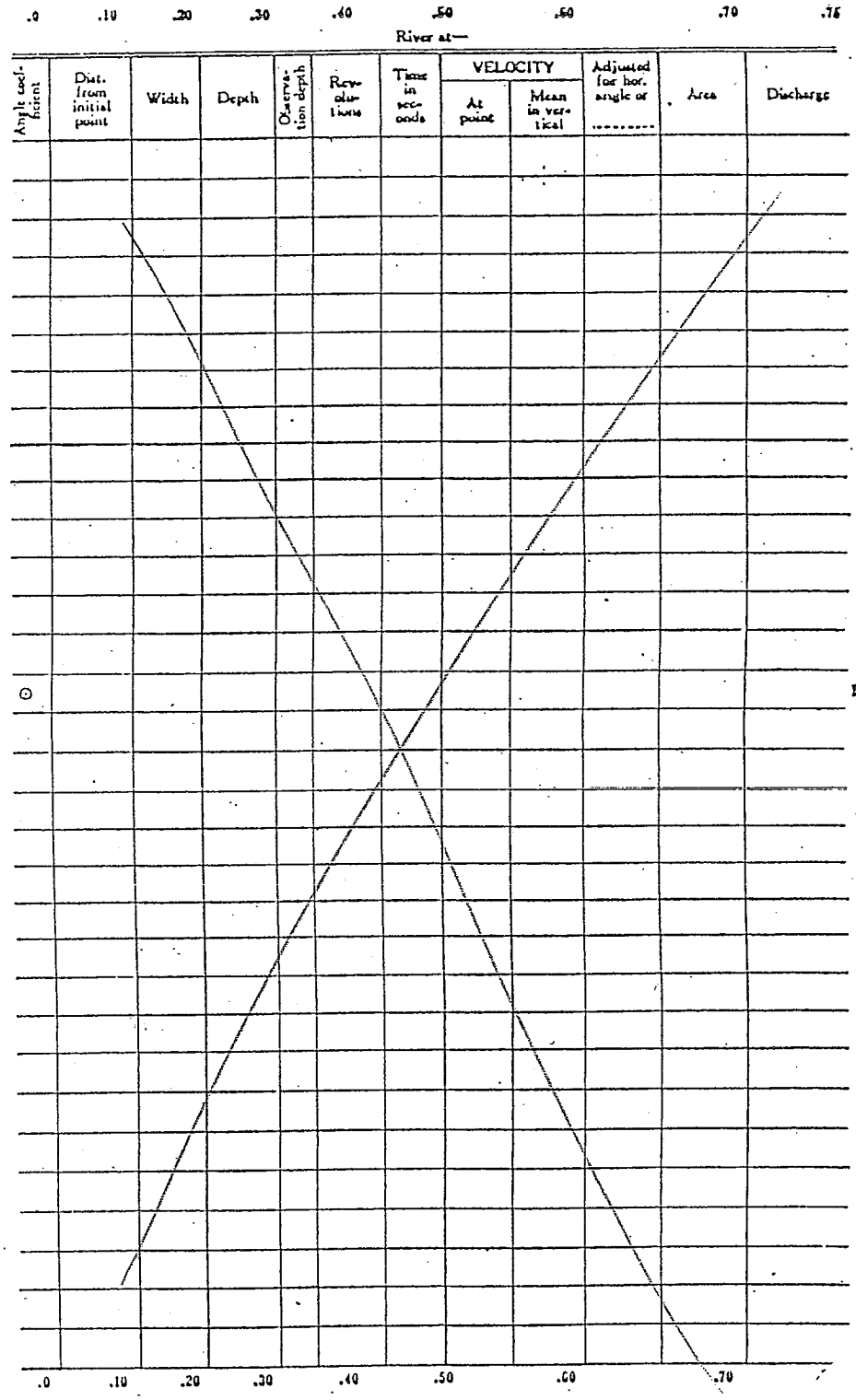
Control .....

pH .....

CONDUCTANCE ..... umhos/cm

G. H. of zero flow ..... ft.

No Flow - No Samples



Walker Mine tailings Job # 5-00-028 Surface Water

Henrici Water Laboratory Chain of Custody

Purveyor: USFS Plumas Nat Forest
159 Lawrence St.
Quincy, CA 95971
Attn Joe Hoffman (530) 283 7868

Sampler's Signature

Type of Analyses

I.D. No.	Date	Time	Location Walker Mine Tailings Job # 5-00-028	No. of Containers	Total Hardness as $CaCO_3$	Total Alkalinity as $CaCO_3$	Sulfate	Diss Copper	Diss Iron	Diss Zinc	Turbidity	Remarks
	7/24	1258	R-2	1	X	X	X	X	X	X	X	cu = 1 ug/L
		1337	R-4	1	X	X	X	X	X	X	X	zn = 2 ug/L
		1428	R-3	1	X	X	X	X	X	X	X	fe = 50 ug/L
		1513	R-1	1	X	X	X	X	X	X	X	
		1552	R-5	1	X	X	X	X	X	X	X	

Relinquished By	Date	Time	Received By
	7/25/06	0830	DM Henton

1832 Butterfly Valley Road, Quincy, CA 95971

Telephone & Fax (530) 281-6588

HENRICI WATER LABORATORY
1832 BUTTERFLY VALLEY ROAD, QUINCY, CALIFORNIA 95971
PHONE (530) 281-6588

Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39656 Date Received: 07/25/06
Location: Walker Mine R-1
Date of Collection : 07/24/06 Time: 1513 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	64	mg/L
Total Alkalinity	07/25/06	SM 2320 B	1	61	mg/L
Sulfate	08/07/06	EPA 375.4	0.5	1.3	mg/L
Turbidity	07/25/06	SM 2130B	0.05	1.8	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.16	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	12	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	6.2	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

HENRICI WATER LABORATORY
1832 BUTTERFLY VALLEY ROAD, QUINCY, CALIFORNIA 95971
PHONE (530) 281-6588

Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39657 Date Received: 07/25/06
Location: Walker Mine R-2
Date of Collection : 07/24/06 Time: 1258 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	68	mg/L
Total Alkalinity	07/25/06	SM 2320 B	1	72	mg/L
Sulfate	08/07/06	EPA 375.4	0.5	5.2	mg/L
Turbidity	07/25/06	SM 2130B	0.05	3.4	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	1.1	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	230	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	11	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

HENRICI WATER LABORATORY
1832 BUTTERFLY VALLEY ROAD, QUINCY, CALIFORNIA 95971
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Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39658 Date Received: 07/25/06
Location: Walker Mine R-3
Date of Collection : 07/24/06 Time: 1428 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	48	mg/L
Total Alkalinity	07/25/06	SM 2320 B	1	52	mg/L
Sulfate	08/07/06	EPA 375.4	0.5	1.1	mg/L
Turbidity	07/25/06	SM 2130B	0.05	1.6	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.37	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	3.3	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	1.7	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

HENRICI WATER LABORATORY
1832 BUTTERFLY VALLEY ROAD, QUINCY, CALIFORNIA 95971
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Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
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ANALYSIS REPORT

Laboratory Number: C39659 Date Received: 07/25/06
Location: Walker Mine R-4
Date of Collection : 07/24/06 Time: 1337 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	64	mg/L
Total Alkalinity	07/25/06	SM 2320 B	1	61	mg/L
Sulfate	08/07/06	EPA 375.4	0.5	9.8	mg/L
Turbidity	07/25/06	SM 2130B	0.05	2.4	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.59	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	1.1	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	2.0	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

HENRICI WATER LABORATORY
1832 BUTTERFLY VALLEY ROAD, QUINCY, CALIFORNIA 95971
PHONE (530) 281-6588

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Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 08/20/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39660 Date Received: 07/25/06
Location: Walker Mine R-5
Date of Collection : 07/24/06 Time: 1552 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	08/08/06	SM 2340C	5.0	62	mg/L
Total Alkalinity	07/25/06	SM 2320 B	1	60	mg/L
Sulfate	08/07/06	EPA 375.4	0.5	7.5	mg/L
Turbidity	07/25/06	SM 2130B	0.05	2.2	NTU
Dissolved Iron	08/04/06	EPA 236.1	0.050	0.82	mg/L
Dissolved Copper	08/15/06	EPA 200.8	0.5	95	ug/L
Dissolved Zinc	08/15/06	EPA 200.8	1.0	5.9	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

JULY 2006

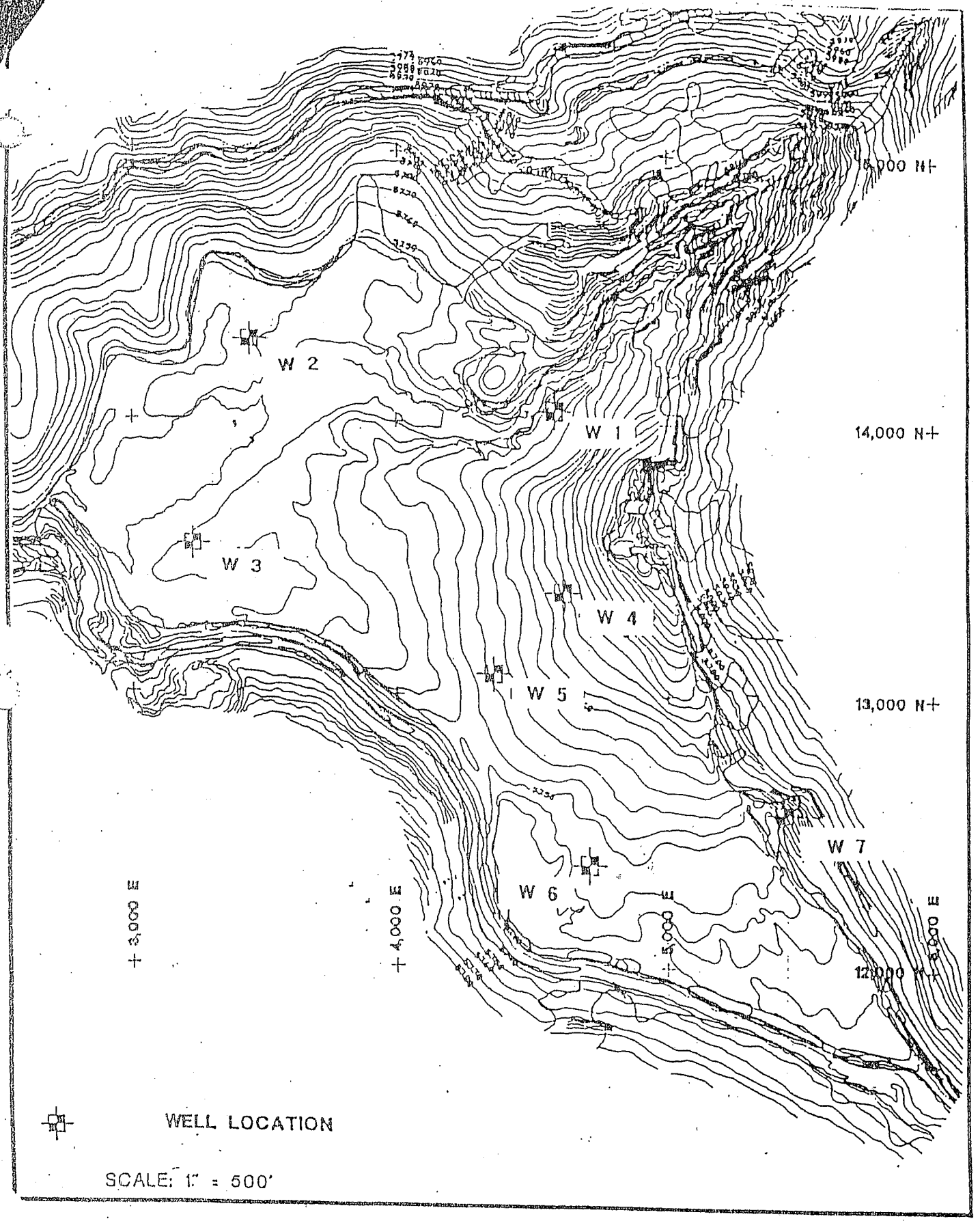
GROUND WATER TEST RESULTS
AND
SUPPORTING DOCUMENTATION

Table 2. GROUND WATER SUMMARY

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
July 2006

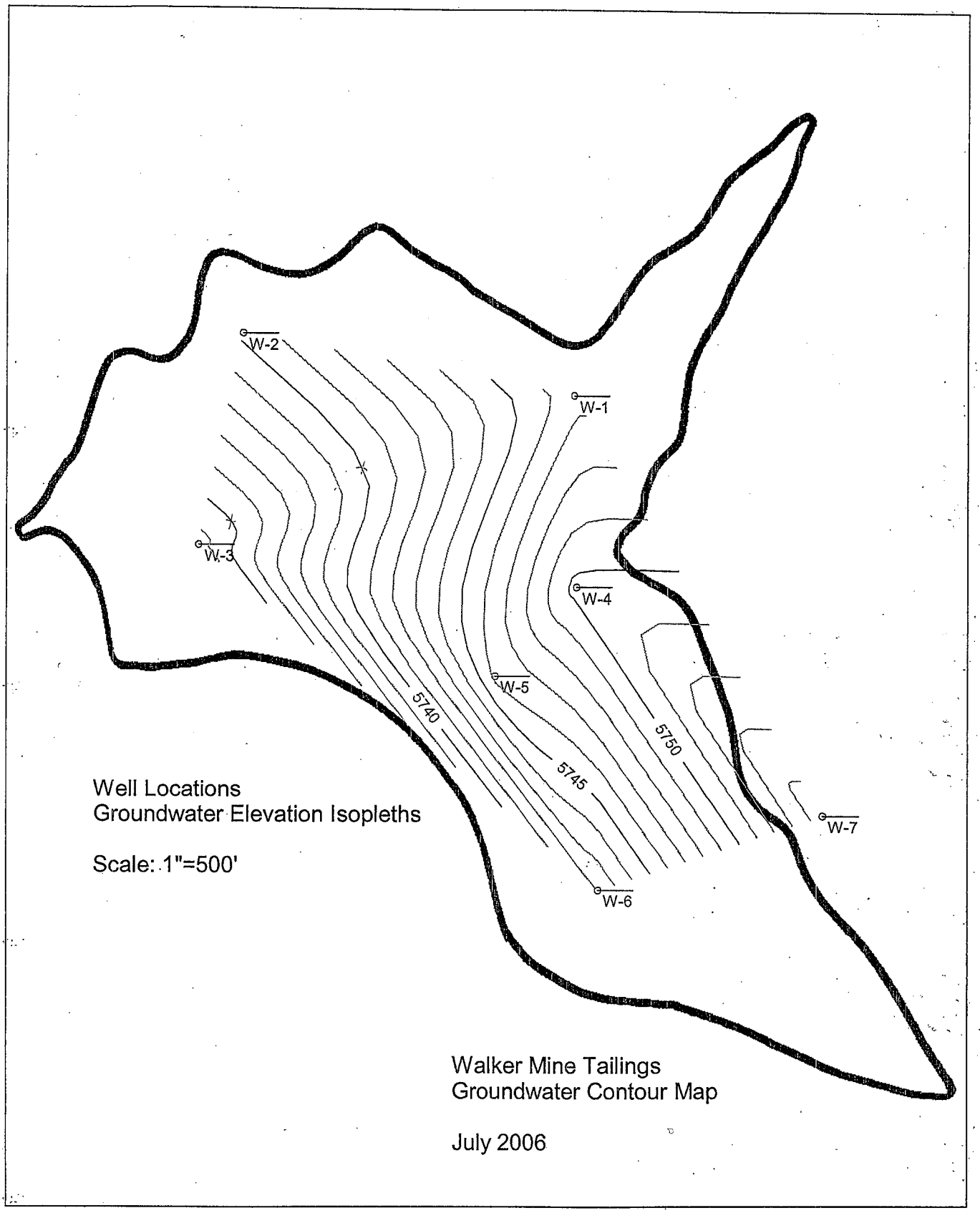
CONSTITUENT	UNIT	DETECTION LIMIT	WELL SITES W-1	W-2	W-3	W-4	W-5	W-6	W-7*
Field Parameters									
Ground Surface Elevation	ft	0.01	5759.50	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	5759.24	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	12.63	1.48	5.27	17.63	7.77	5.80	0.23
Water Surface Elevation	ft	0.01	5746.61	5740.26	5733.56	5750.37	5746.32	5742.07	5754.68
Laboratory									
Total Hardness as CaCO3	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Alkalinity	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sulfate	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Iron	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Copper	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Zinc	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*W-7 is located upgradient and off-site in a wet area. The data collected from this well are used for background comparisons.



WALKER MINE TAILINGS

TERRAIN Plan	Scale 1:6000	P. 1
K:\rso\ws\Walker_Tailings\Mo....6\Walker wells July 2006.ter		06/12/08



WALKER MINE GROUNDWATER MONITORING PROGRAM
WATER LEVEL GAUGING

SITE LOCATION: Walker Tailings DATE: 7/24/06
COMPANY NAME: USFS
PERSONNEL: P Flynn

WELL	TIME	DEPTH TO WATER	COMMENTS
MW-1	1123	12.63	
2	1137	1.48	
3	1223	5.27	
4	1156	17.63	
5	1202	7.77	
6	1208	5.80	
7	1105	0.23	

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Monitoring Period: September 2006

Findings:

(1) Surface water. Samples were collected on September 19, 2006. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, remains in noncompliance with the limitation for copper (see Table 1). The remaining R-5 constituents are in compliance with the prescribed limitations with the exception of turbidity, which was measured to be 2.8 NTU (more than 1.0 NTU greater than the turbidity at the background station, R-3). The release of copper from the tailings area to Dolly Creek, as measured at R-2, continues to far exceed the limitation. Concentrations of zinc were detected in all of the 5 samples taken but none of these concentrations exceeded the limitation for zinc. The concentration of iron, highest at R-2, was within the limitation at all stations.

(2) Groundwater. No groundwater samples were collected for this monitoring event.

Groundwater elevations were measured in all seven wells installed at the site. The results show a definite gradient towards Little Grizzly Creek of approximately 0.9% along the Dolly Creek channel and approximately 1.7% to the settling pond (R-6). With the elevation of the Little Grizzly Creek channel approximately 20 feet below the surface of the tailings area, there is a strong gradient towards Little Grizzly Creek all along its course with the tailings area.

TABLE OF CONTENTS

Table 1. SURFACE WATER SUMMARY

Map of the tailings area with the surface water monitoring sites

Discharge Measurement Notes

Henrici Water Laboratory Analysis Reports for surface water tests

Table 2. GROUND WATER SUMMARY

Map of the tailings area with the ground water monitoring sites

Map of tailings area with ground water elevations and flow direction

Water Level Data

SEPTEMBER 2006

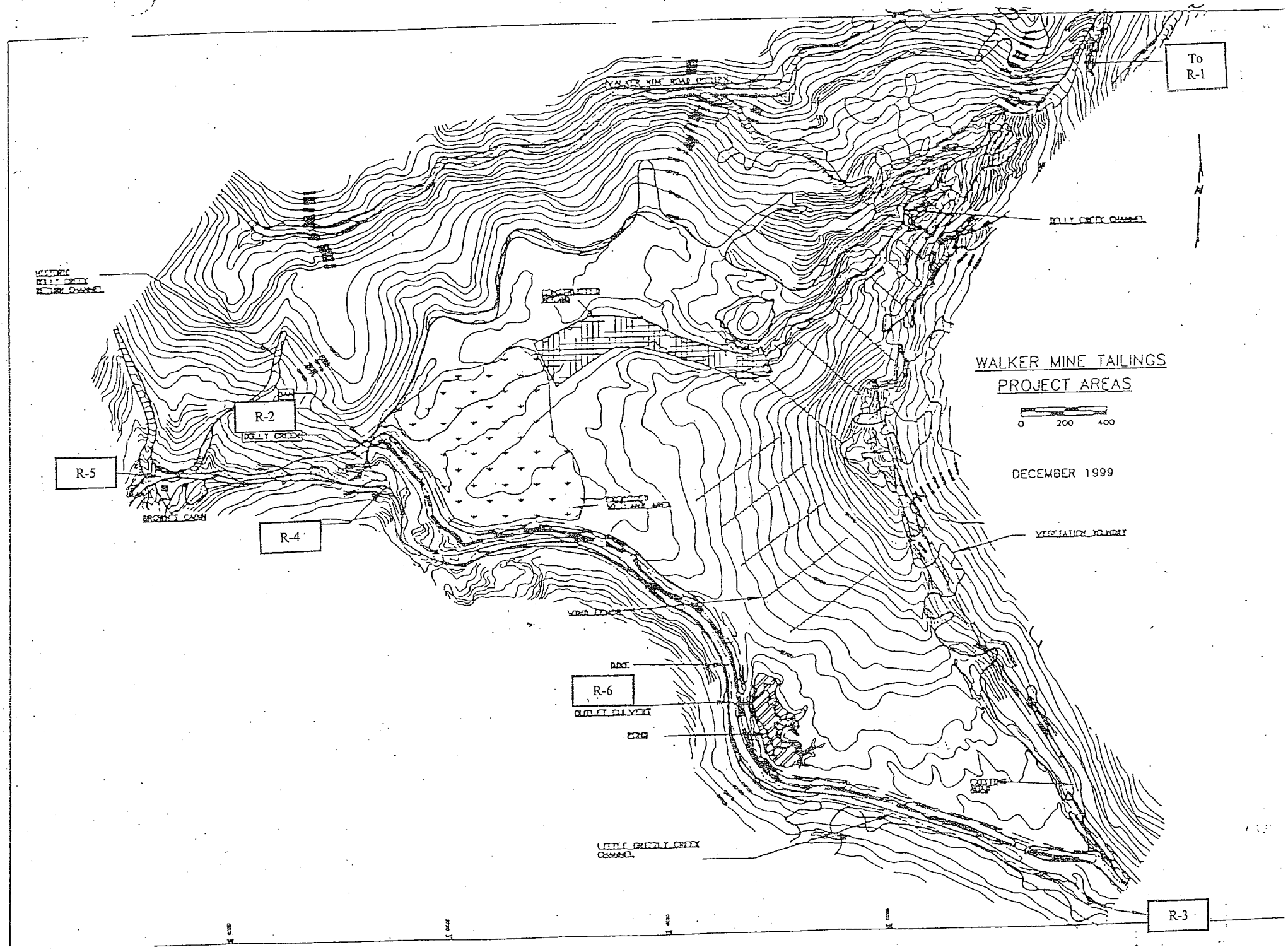
SURFACE WATER TEST RESULTS
AND
SUPPORTING DOCUMENTATION

Table 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
SEPTEMBER 2006

CONSTITUENT	UNITS	DETECTION LIMITS	MONITORING STATIONS R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	LIMITATION @ R-5[3]
Field Parameters									
Flow	cfs	N/A	0.26	0.26	0.11	0.2	0.43	0	N/A
pH	number	N/A	8.14	8.11	8.03	7.87	8.25	N/A	N/A
Specific Conductance	umhos/cm	N/A	102.3	110.9	97.6	128.7	122.1	N/A	N/A
Air Temperature	^{0}C	N/A	17.8	17.8	17.2	14.4	17.2	N/A	N/A
Water Temperature	^{0}C	N/A	9.9	12.1	12.4	11.0	12.4	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	5	70	70	60	78	76	N/A	N/A
Total Alkalinity	mg/l	1	69	81	64	73	71	N/A	N/A
Sulfate	mg/l	0.5	1.8	2.3	1.8	15.1	9.0	N/A	N/A
Turbidity	NTU	0.05	1.2	2.7	1.0	2.1	2.8	N/A	2.0
Dissolved Iron	ug/l	50	180	780	110	180	470	N/A	1000
Dissolved Copper	ug/l	1.0	7.1	78	<1.0	<1.0	31	N/A	7.1
Dissolved Zinc	ug/l	2.0	1.6	6.1	3.3	2.0	3.4	N/A	93.6

[1] R-3 is the background station located above the tailings area on Little Grizzly Creek.
[2] R-5 is the compliance station located near Brown's Cabin, downstream from the confluence of Dolly Creek with Little Grizzly Creek.
[3] The compliance values for copper and zinc are calculated with the R-5 hardness value of 32 mg/l as CaCO3.


To
R-1
R-2
R-3
R-4
R-5
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0
200
400
DECEMBER 1999
N

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-P
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-1

Dolly Creek above Tailings @ Road 112

Date 9/19, 2006 Party Flynn

Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....

Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....

Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter mm c

Date rated ..... for rod, other.

Meter ..... ft. above bottom of weight.

Spin before meas. ..... after .....

Meas. plots .... % diff. from rating .....

Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....

Check-bar, found .....

changed to ..... at .....

Correct .....

Levels obtained .....

GAGE READINGS

Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....

Flow ..... Weather Warm/Clear

Other ..... Air 64°F @ 1446

Gage ..... Water 9.9 °C @ 1443

..... Record removed ..... Intake flushed U .....

Observer .....

Control .....

pH 8.14

CONDUCTANCE 102.3 umhos/cm

G. H. of zero flow ..... ft.

Samples @ 1440

.0 .10 .20 .30 .40 .50 .60 .70 .75

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
~~LB~~	~~1.5~~										
	~~2~~										
	~~2.5~~										
	~~3~~										
	~~3.5~~										
	~~4~~										
	~~4.5~~										
	~~5~~										
	~~5.5~~										
	~~6~~										
	~~6.5~~										
~~RB~~	~~6.6~~										
LB	0										
	.7										
	1		.4				.07				
	1.5		.675				.04				
	2		.675				.01				
	2.5		.95				0				
	3		1.0				0.01				
	3.5		.9				.06				
	4		.8				.09				
	4.5		.45				.25				
	5		.4				.52				
	5.5		.4				0				
	6		.1				0				
	6.5		<.5				0				
RB	6.6										

.0 .10 .20 .30 .40 .50 .60 .70 .75

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-P
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. _____

Comp. by _____

Checked by _____

Sta. No. R-2

Dolly Creek below Tailings Dam

Date 9/19, 2006 Party Flynn

Width _____ Area _____ Vel. _____ G. H. _____ Disch. _____

Method 6/10 No. secs. _____ G. H. change _____ in _____ hrs. Susp. _____

Method coef. _____ Hor. angle coef. _____ Susp. coef. _____ Meter No. _____

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter MMC

Date rated _____ for rod, other.

Meter _____ ft. above bottom of weight.

Spin before meas. _____ after _____

Meas. plots _____ % diff. from rating _____

Wading, cable, ice, boat, upstr., downstr., side bridge _____ feet, mile, above, below gage, and _____

Check-bar, found _____ changed to _____ at _____

Correct _____

Levels obtained _____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section _____

Flow _____ Weather Partly Cloudy / Warm

Other _____ Air 64°F @ 1159

Gage _____ 12.1°C Water [redacted] °C @ 1156

_____ Record removed _____ Intake flushed _____

Observer _____

Control _____

pH 8.11

CONDUCTANCE 110.9 umhos/cm

G. H. of zero flow _____ ft.

Samples @ 1152

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	.3										
	.5		.1				.03				
	1.0		.35				.05				
	1.5		.4				.15				
	2.0		.4				.24				
	2.5		.5				.22				
	3.0		.55				.26				
	3.5		.45				.19				
	4.0		.35				0				
RB	4.45										

WALKER MINE TAILINGS MONITORING PROGRAM

9-2754
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. _____
Comp. by _____
Checked by _____

Sta. No. R-3

Little Grizzly Creek above Tailings

Date 9/19 2006, Party Flynn

Width _____ Area _____ Vel. _____ G. H. _____ Disch. _____

Method 6/10 No. secs. _____ G. H. change _____ in _____ hrs. Susp. _____

Method coef. _____ Hor. angle coef. _____ Susp. coef. _____ Meter No. _____

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter MM C

Date rated _____ for rod, other.

Meter _____ ft. above bottom of weight.

Spin before meas. _____ after _____

Meas. plots _____ % diff. from rating _____

Wading, cable, ice, boat, upstr., downstr., side

bridge _____ feet, mile, above, below

gage, and _____

Check-bar, found _____

changed to _____ at _____

Correct _____

Levels obtained _____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section _____

Flow _____ Weather Warm / Clear

Other _____ Air 63°F @ 1357

Gage _____ Water 12.4°C @ 1355

_____ Record removed _____ Intake flushed _____

Observer _____

Control _____

pH 8.03

CONDUCTANCE 97.6 umhos/cm

G. H. of zero flow _____ ft.

Samples @ 1348

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	1.5										
	2		.05				0				
	2.5		.15				0				
	3		.25				0				
	3.5		.425				.09				
	4		.45				.08				
	4.5		.575				.02				
	5		.7				.07				
	5.5		.9				0				
	6		.9				.03				
	6.5		.95				0				
	7		.5				.11				
RB	7.5										

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-T
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. _____
Comp. by _____
Checked by _____

Sta. No. R-4

Little Grizzly Creek below Tailings

Date 9/19, 2006 Party Flynn

Width _____ Area _____ Vel. _____ G. H. _____ Disch. _____

Method 6/10 No. secs. _____ G. H. change _____ in _____ hrs. Susp. _____

Method coef. _____ Hor. angle coef. _____ Susp. coef. _____ Meter No. _____

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter MMC

Date rated _____ for rod, other.

Meter _____ ft. above bottom of weight.

Spin before meas. _____ after _____

Meas. plots _____ % diff. from rating _____

Wading, cable, ice, boat, upstr., downstr., side bridge _____ feet, mile, above, below gage, and _____

Check-bar, found _____ changed to _____ at _____

Correct _____

Levels obtained _____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section _____

Flow _____ Weather Warm / Clear

Other _____ Air 58°F @ 1240

Gage _____ Water 11.0 °C @ 1242

_____ Record removed _____ Intake flushed _____

Observer _____

Control _____

pH 7.87

CONDUCTANCE 128.7 umhos/cm

G. H. of zero flow _____ ft.

Samples @ 1245

.0 .10 .20 .30 .40 .50 .60

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or
LB	.6								
	1		.15				0		
	1.5		.25				0		
	2		.3				.07		
	2.5		.1				.03		
	3		.15				.09		
	3.5		.3				.07		
	4		.35				.14		
	4.5		.3				.12		
	5		.2				.14		
	5.5		.3				.09		
	6		.4				.16		
	6.5		.45				.06		
	7		.3				.15		
⊙	7.5		.35				.12		
	8		.4				.07		
	8.5		.25				.01		
	9		.3				.01		
	9.5		.25				0		
	10		.1				0		
RB	10.2								

.0 .10 .20 .30 .40 .50 .60

WALKER MINE TAILINGS MONITORING PROGRAM

9-275-1
(May 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. .....
Comp. by .....
Checked by .....

Sta. No. R-5
Little Grizzly Creek @ Brown's Cabin
Date 9/19 2006, 19.... Party Flynn
Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....
Method 6/10 No. secs. ..... G. H. change ..... in ..... hrs. Susp. .....
Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter MMC
Date rated ..... for rod, other.
Meter ..... ft. above bottom of weight.
Spin before meas. ..... after .....
Meas. plots .... % diff. from rating .....
Wading, cable, ice, boat, upstr., downstr., side bridge ..... feet, mile, above, below gage, and .....
Check-bar, found .....
changed to ..... at .....
Correct .....
Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section .....
Flow ..... Weather Warm / Clear
Other ..... Air 63°F @ 1529
Gage ..... Water 12.4 °C @ 1531
..... Record removed ..... Intake flushed .....
Observer .....
Control .....
pH 8.25
CONDUCTANCE 122.1 umhos/cm
G. H. of zero flow ..... ft.

Samples @ 1522

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	1.1										
	1.5		.65				.26				
	2		.8				.29				
	2.5		.75				.31				
	3		.5				.09				
	3.5		.6				.03				
	4		.6				.09				
	4.5		.6				.01				
	5		.3				0				
RB	5.2										

9-275-F
(May 1971)

WALKER MINE TAILINGS MONITORING PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. ....
Comp. by ....
Checked by ....

Sta. No. R-6
Sediment Basin Outlet
Date 9/19 2006 Party Flynn
Width .... Area .... Vel. .... G. H. .... Disch. ....
Method .... No. secs. .... G. H. change .... in .... hrs. Susp. ....
Method coef. .... Hor. angle coef. .... Susp. coef. .... Meter No. ....

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter ....
Date rated .... for rod, other.
Meter .... ft. above bottom of weight.
Spin before meas. .... after ....
Meas. plots .... % diff. from rating ....
Wading, cable, ice, boat, upstr., downstr., side bridge .... feet, mile, above, below gage, and ....
Check-bar, found ....
changed to .... at ....
Correct ....
Levels obtained ....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section ....
Flow NA Weather Warm/Partly Cloudy
Other No flow to Sample Air .... °C@ ....
Gage .... Water .... °C@ ....
.... Record removed .... Intake flushed ....
Observer ....
Control ....
pH ....
CONDUCTANCE .... umhos/cm
G. H. of zero flow .... ft.
No Samples

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	Adjusted for hor. angle or	Area	Discharge

.0 .10 .20 .30 .40 .50 .60 .70 .75

HENRICI WATER LABORATORY
1832 BUTTERFLY VALLEY ROAD, QUINCY, CALIFORNIA 95971
PHONE (530) 281-6588

Plumas National Forest
Supervisor's Office
P.O. Box 11500
Quincy, CA 95971

Account: 11616
Date: 12/14/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39890 Date Received: 09/20/06
Location: Walker Mine R-1
Date of Collection : 09/19/06 Time: 1440 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	12/11/06	SM 2340C	5.0	70	mg/L
Total Alkalinity	09/21/06	SM 2320 B	1	69	mg/L
Sulfate	09/22/06	EPA 375.4	0.5	1.8	mg/L
Turbidity	09/21/06	SM 2130B	0.05	1.2	NTU
Dissolved Iron	12/11/06	EPA 236.1	0.050	0.18	mg/L
Dissolved Copper	12/12/06	EPA 200.7	1.0	7.1	ug/L
Dissolved Zinc	12/12/06	EPA 200.7	1.0	1.6	ug/L

These results were obtained by following standard laboratory procedures; the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

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Quincy, CA 95971

Account: 11616
Date: 12/14/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39891 Date Received: 09/20/06
Location: Walker Mine R-2
Date of Collection : 09/19/06 Time: 1132 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	12/11/06	SM 2340C	5.0	70	mg/L
Total Alkalinity	09/21/06	SM 2320 B	1	81	mg/L
Sulfate	09/22/06	EPA 375.4	0.5	2.3	mg/L
Turbidity	09/21/06	SM 2130B	0.05	2.7	NTU
Dissolved Iron	12/11/06	EPA 236.1	0.050	0.78	mg/L
Dissolved Copper	12/12/06	EPA 200.7	1.0	78	ug/L
Dissolved Zinc	12/12/06	EPA 200.7	1.00	6.1	ug/L

These results were obtained by following standard laboratory procedures; the liability of the laboratory shall not exceed the amount paid for this report.

Dawn M. Henton
Laboratory Director

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Account: 11616
Date: 12/14/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39892 Date Received: 09/20/06
Location: Walker Mine R-3
Date of Collection : 09/19/06 Time: 1348 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	12/11/06	SM 2340C	5.0	60	mg/L
Total Alkalinity	09/20/06	SM 2320 B	1	64	mg/L
Sulfate	09/22/06	EPA 375.4	0.5	1.8	mg/L
Turbidity	09/20/06	SM 2130B	0.05	1.0	NTU
Dissolved Iron	12/11/06	EPA 236.1	0.050	0.11	mg/L
Dissolved Copper	12/12/06	EPA 200.7	1.0	<1.0	ug/L
Dissolved Zinc	12/12/06	EPA 200.7	1.0	3.3	ug/L

These results were obtained by following standard laboratory procedures: the liability of the laboratory shall not exceed the amount paid for this report.

Dawn M. Henton
Laboratory Director

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Account: 11818
Date: 12/14/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39893 Date Received: 09/20/06
Location: Walker Mine R-4
Date of Collection : 09/19/06 Time: 1245 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	12/11/06	SM 2340C	5.0	78	mg/L
Total Alkalinity	09/20/06	SM 2320 B	1	73	mg/L
Sulfate	09/22/06	EPA 375.4	0.5	15.1	mg/L
Turbidity	09/20/06	SM 2130B	0.05	2.1	NTU
Dissolved Iron	12/11/06	EPA 236.1	0.050	0.18	mg/L
Dissolved Copper	12/12/06	EPA 200.7	1.0	<1.0	ug/L
Dissolved Zinc	12/12/06	EPA 200.7	1.0	2.0	ug/L

These results were obtained by following standard laboratory procedures; the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

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Account: 11616
Date: 12/14/06
Page: 1

ANALYSIS REPORT

Laboratory Number: C39894 Date Received: 09/20/06
Location: Walker Mine R-5
Date of Collection : 09/19/06 Time: 1522 Collector: Flynn

Hardness, Dissolved Iron, Dissolved Copper and Dissolved Zinc analysis by Sierra Foothill Laboratory, Jackson, CA.

Analysis	Date of Analysis	Method	Detection Limits	Results	Units
Total Hardness	12/11/06	SM 2340C	5.0	76	mg/L
Total Alkalinity	09/20/06	SM 2320 B	1	71	mg/L
Sulfate	09/22/06	EPA 375.4	0.5	9.0	mg/L
Turbidity	09/20/06	SM 2130B	0.05	2.8	NTU
Dissolved Iron	12/11/06	EPA 236.1	0.050	0.47	mg/L
Dissolved Copper	12/12/06	EPA 200.7	1.0	31	ug/L
Dissolved Zinc	12/12/06	EPA 200.7	1.0	3.4	ug/L

These results were obtained by following standard laboratory procedures; the liability of the laboratory shall not exceed the amount paid for this report.

DMH
Dawn M. Henton
Laboratory Director

SEPTEMBER 2006

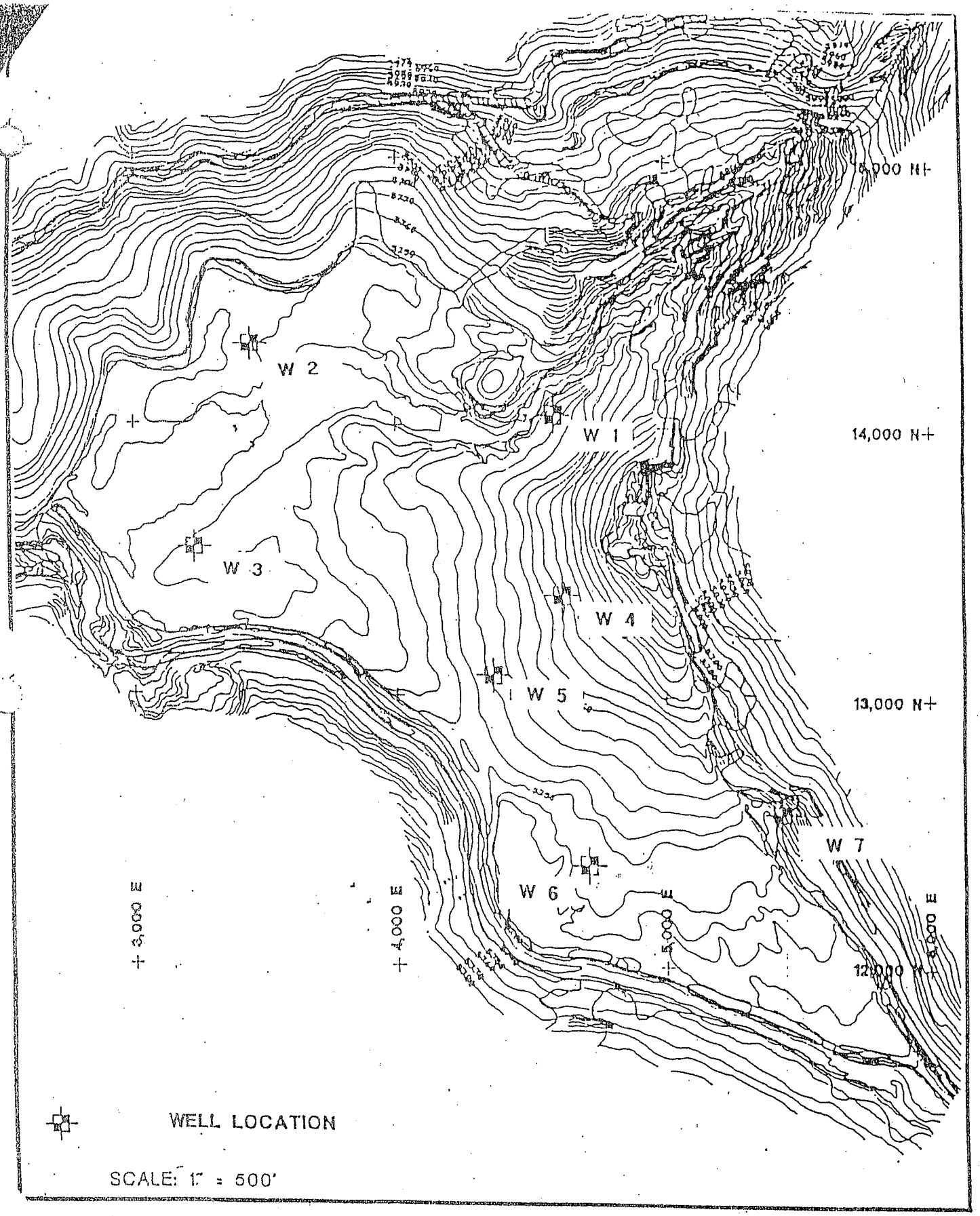
GROUND WATER TEST RESULTS
AND
SUPPORTING DOCUMENTATION

Table 2. GROUND WATER SUMMARY

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
September 2006

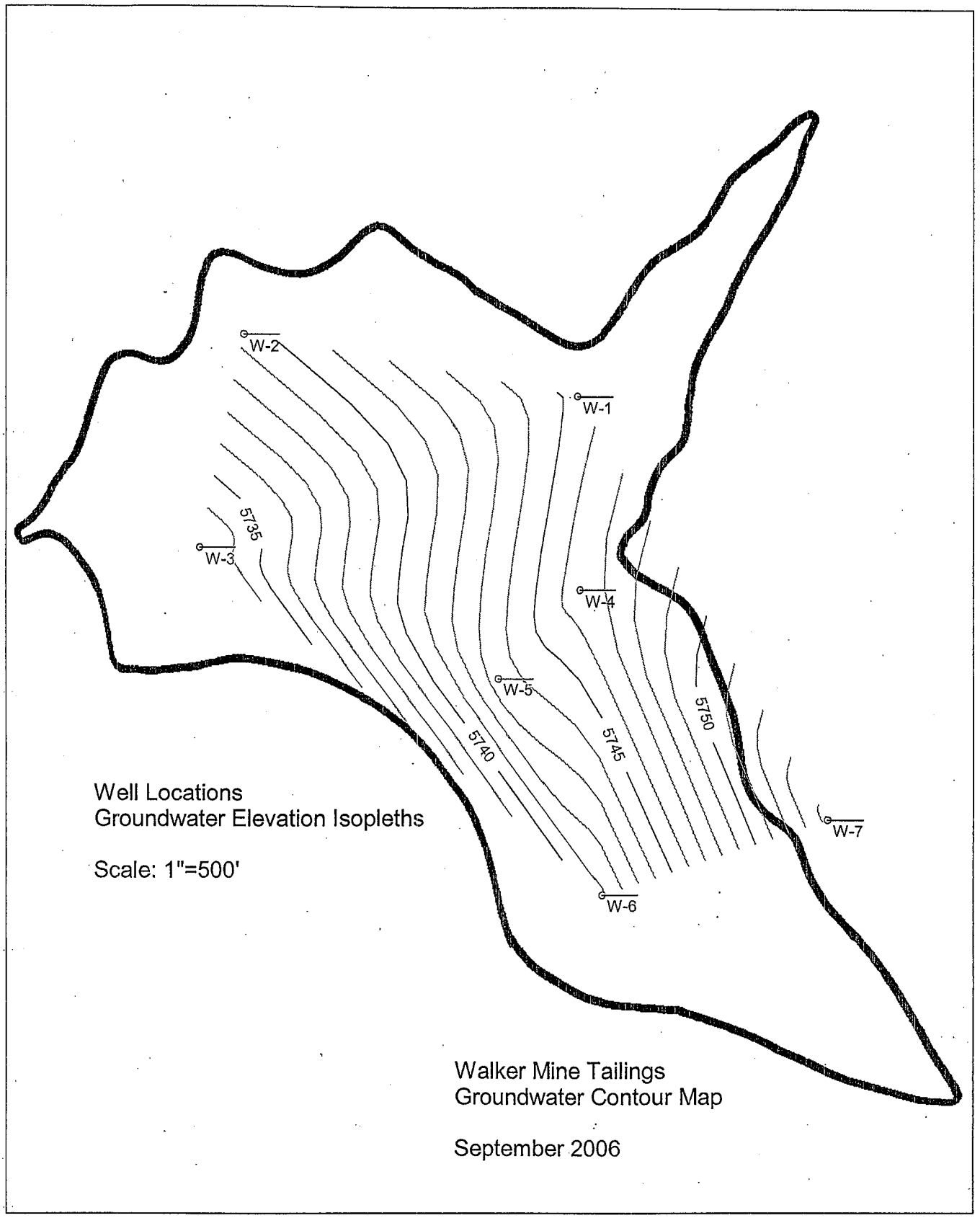
CONSTITUENT	UNIT	DETECTION LIMIT	WELL SITES W-1	W-2	W-3	W-4	W-5	W-6	W-7*
Field Parameters									
Ground Surface Elevation	ft	0.01	5759.50	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	5759.24	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	13.88	2.31	6.05	21.34	10.29	7.06	0.59
Water Surface Elevation	ft	0.01	5745.36	5739.43	5732.78	5746.66	5743.80	5740.81	5754.32
Laboratory									
Total Hardness as CaCO3	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Alkalinity	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sulfate	mg/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Iron	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Copper	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Zinc	ug/l	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*W-7 is located upgradient and off-site in a wet area. The data collected from this well are used for background comparisons.



WALKER MINE TAILINGS

TERRAIN Plan	Scale 1:6000	P. 1
K:\rso\ws\Walker_Tailings\Mo....6\Walker wells Sept 2006.ter		06/12/08



WALKER MINE GROUNDWATER MONITORING PROGRAM
WATER LEVEL GAUGING

SITE LOCATION: Walker Mine
COMPANY NAME: USFS
PERSONNEL: P. Flynn

DATE : 9/19/06

WELL	TIME	DEPTH TO WATER	COMMENTS
MW-1	0941	13.88	
2	0956	2.31	
3	1107	6.05	
4	1026	21.34	New Well Seal Installed
5	1034	10.29	
6	1042	7.06	New Well Seal Installed
7	1054	0.59	