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File Code: 2540
Date: January 30, 2012

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 2011 water quality monitoring reports by the U.S. Department of Agriculture, Forest Service, Plumas National Forest, for the Walker Mine Tailings in Plumas County, California. The four reports are (1-3) Quarterly Monitoring Reports for June, August, and October 2011 and (4) the Annual Monitoring Report for 2011.

Results of the 2011 sampling show significant increase in pollutants resulting from increased surface water flow across the tailings. The reduction in pollutants is the expected result of construction of the Dolly Creek diversion structure and channel and subsequent Dolly Creek inlet structure retrofit separating the surface flow from the tailings material. Copper remains the pollutant of concern and the sample results indicate that significant levels of copper continue entering Dolly Creek from the Walker Mine Site.

All field sampling and testing was performed by Sierra Environmental of Quincy, CA and water samples were then analyzed by FLG ENVIRONMENTAL from Santa Paula, CA. Construction of the Dolly Creek Inlet Structure Retrofit was performed in September and October of 2007 by Stephens Construction, Inc. of Arnold, CA.

Please call Ryan Nupen of this office at (530) 283-7712 if you have any questions.

Sincerely,

EARL W. FORD
Forest Supervisor

cc: Ryan Nupen, Joseph A Hoffman, Jonathan D Berry, Brad Shipley

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2011 Walker Mine Tailings Monitoring Report

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ANNUAL MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Monitoring Period: Calendar Year 2011

Findings:

(1) Surface Water. Samples were collected in June, August and October 2011. 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 5.86 ug/L to 7.10 ug/L. The limitation for copper, 5 ug/L, set in Waste Discharge Requirements Order No. 5-00-028 was exceeded during the sampling times (the average dissolved copper concentration at R-5 was 6.78ug/L up from an average of 2.03 ug/L in 2010). The limitations for zinc were exceeded in the August with a reading of 73.59mg/l and October with a reading of 84.25mg/l for the R-5 samples collected. The reason for the exceeding could be because the surface water at R-2 gave the following reading from June to October, 64ug/L, 99.5ug/L and no samples were collected for October. The limitations for iron were not exceeded at R-2 Surface water.

Copper does not appear to be seeping out of the tailings because in 2007 and 2008 the average copper concentrations at R-3 were (4.3 ug/L and 0.9ug/L) and R-4 (5.2ug/L and 3.2ug/L) Low concentrations of dissolved copper were detected at R-3, the background station on Little Grizzly Creek, and R-4, Little Grizzly Creek above the confluence with Dolly Creek, during two of the three sampling events (see Table 1 and attached Map). After 2009 we started to dump Dolly creek between R-3 and R-4. Reviewing the 98 copper testing results from 1991 to present for R-3 and R-4 indicates no significant trends. The average dissolved copper concentration for the two sites over this period is very different (2.9 ug/L for R-3 and 3.6 ug/L for R-4). Copper concentrations above the laboratory detection limits were found in the waters of Little Grizzly Creek above the confluence with Dolly Creek just 33% (R-3) and 35% (R-4) of the time. Only 39% of the sampling events show higher dissolved copper concentrations at R-4 than at R-3 and about half the time that copper is detected at R-3 it is not detected at all downstream at R-4. There remains little concrete explanation for the detection of copper at the R-3 station. The only apparent contamination of Little Grizzly Creek at that location is the occasional drift of tailings material blown by the wind into this upstream area. Even with this minor contamination pathway, it does not seem plausible that concentrations of copper in samples taken at R-3 could be detected.

In all of the three sampling events (June, August and October) dissolved copper was found at R-1, Dolly Creek above the tailings area, in concentrations that exceeded the limitations established for freshwater aquatic life protection. The June and August results

from the R-2 samples, Dolly Creek below the tailings area, confirm the mine is 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 81%, in June, and 80.03%, in August, of the copper found at R-2 (see Table 2 and Chart 1). R-2 flow is very small due to the Dolly Creek diversion.
The reduction in copper concentrations between stations R-2 and R-5, the compliance station on Little Grizzly Creek – presumably due to dilution - was 94.4% in June and 92.1% in August. There was no flow at R-2 during the October sampling event as the Dolly Creek inlet diversion structure was sealed and functioning. According to the California DWR Northern Sierra Precipitation for 2011 was above average, Table 3 displays flow rates for the sampling periods from 1991 through 2011.

(2) Groundwater. Groundwater samples were collected from three monitoring wells (W-3, W-5 and W-7) in June and October of 2011 (see attached map). A summary of the groundwater test results for sampling performed in 1994, 1995, 2000-2004, 2007-2011 is presented in Table 4 (samples were not collected from 1996-1999 or 2005-2006). The characterization of the tailings material in 1992 by Westec confirmed presence of these constituents throughout the tailings area. The characterization program included not only seven monitoring well but also an additional seven boreholes.

Copper, iron, and zinc were detected in both wells during each sampling period. There was also a notable increase in dissolved iron in W-5 where the June and October test results were 32,500ug/L and 24,400 ug/L, respectively. In well W-7 the analysis done in June and August showed that it had 0.180mg/l iron in June and no iron in August.

Previously, the detection of dissolved iron has been relatively rare in any of the wells. For the 58 samples analyzed for iron from 2000 to 2004, and 2007-2011, iron was detected in 24 samples (41% detection). The mean and median dissolved concentrations for samples with detected iron are 4735 ug/L and 635 ug/L (respectively). The median falls well below the prescribed water quality limitation at R-5 of 1000 ug/L but the mean was greatly increased due to the unexpectedly high laboratory results for W-5 in 2007, 2008 , 2009 , 2010 and 2011 as well as an increase in W-7. For zinc, the mean and median detected dissolved concentrations are 6.8 ug/L and 5.4 ug/L with a maximum detected concentration of 21.0 ug/L. All of these values are well below the prescribed limitation for zinc which is 66 ug/L. Zinc concentrations are dependent upon the measured water hardness, which averaged 67.2 mg/L as CaCO3 for the 2000-2004 and 2007-2008 surface water samples at R-5 (with a median of 75 mg/L as CaCO3). Another way in which the presence of zinc can be predicted is by looking at the presence of copper at Walker Mine Tailings. Because of the physical similarities between copper and zinc and given the overall water quality records at this site, the presence of zinc when copper is present is 82% of the time.

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 to 2004 and 2007 to 2011. These samples were analyzed using methods and instrumentation that allowed a very sensitive detection level of 1.0 ug/L or less (the 2000 samples were analyzed with a detection level of 5.0 ug/L and the 2001 detection level was 10 ug/L).

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 analyses). 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 were observed in forty-two of the fifty-eight 2002 to 2004 and 2007 to 2011 groundwater samples. Of the forty-two instances twenty five were under 3.4 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-5, when compared with the background well W-7, was observed in 10 of the 20 sample events conducted from 2002 - 2004 and 2007 - 2011. 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.

Since September 2007 to present, copper concentrations have increased in W-5. Copper concentrations had also increased in W-7 since September of 2007 to September 2009. Copper concentrations were not detected in well W-7 for 2010 and 2011. It is hypothesized that during diversion of Dolly Creek and construction of the new lined channel the copper may have been mobilized locally by vibration and/or compaction of the strata that decreased pore space or caused pumping that disturbed the groundwater and temporarily increased the concentrations.

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.

The results of previous sampling did 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).

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-5 and W-7 due to increased iron concentrations.

The water level in each well was measured in 2011 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 (2000 - 2011). Groundwater elevations at W-3 are important to look at from the standpoint of the proposed anaerobic wetland. The depth of water in 2011 rose 2.11 feet from June to October. The depth to groundwater at W-3 averages 5.34 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. With the surface flow from Dolly Creek no longer contributing to the recharge of groundwater in the tailings it is expected that summer and fall groundwater levels will drop dramatically.

In September and October of 2009 the Dolly Creek inlet structure was retrofitted to remedy leakage and loss of surface flow. The retrofit included installation of a concrete settling basin and concrete outlet trough attached to the existing lined channel. Both additions were placed on a low permeability fill. The result of this retrofit is the capture of all surface flow and interception of some shallow groundwater. Results were immediate with a substantial reduction in flow from the toe of the inlet structure spillway and the simultaneous loss of flow over the tailings dam spillway at R-2.

(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.

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 the future. It is expected that the amount of sand sized material will now diminish with the now completed a functional diversion and lined channel separating Dolly Creek from the tailings material.

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	Date	R-3 Copper mg/L	R-4 Copper mg/L
May 91	0	0.0020	May 00	0	0
Jun 91	0	0	Jul 00	0.0230	0
Jul 91	0	0	Sep 00	0	0
Aug 91	0	0.0030	May 01	0	0
Sep 91	0	0	Jul 01	0	0
Oct 91	0	0	Sep 01	0	0
Nov 91	0	0	May 02	0.0051	0
Dec 91	0	0.0030	Jul 02	0.0039	0.0013
Apr 92	0	0	Sep 02	0	0.0037
May 92	0	0.0390	June 03	0.0017	0.0013
Jun 92	0.0039	0	Jul 03	0	0.0027
Jul 92	0	0	Sep 03	0.0032	0.0010
Aug 92	0.0036	0	May-04	0.0034	0.0420
Sep 92	0.1200	0.1200	Jul-04	0	0
Oct 92	0	0.0024	Sep-04	0	0
Nov 92	0	0	Jun-05	0	0
May 93	0	0	Jul-05	0	0
Jun 93	0.0028	0	Sep-05	0	0
Jul 93	0.0024	0.0070	Jun-06	0.0032	0.0012
Aug 93	0	0	Jul-06	0.0033	0.0011
Sep 93	0	0.0083	Sep-06	0	0
Oct 93	0	0	May 07	0.0049	0.0043
Nov 93	0	0.0040	July 07	0.0012	0.0035
May 94	0	0	Sep 07	0.0069	0.0078
Jun 94	0.0090	0.0057	Jun-08	0.0017	0.0050
Jul 94	0	0	Jul-08	0.0005	0.0029
Aug 94	0	0	Sep-08	0.0005	0.0016
Sep 94	0	0	May-09	0.0006	0.0020
Oct 94	0	0	Jul-09	0.0008	0.0030
Jun 95	0	0	Sep-09	0.0033	0.0035
Jul 95	0	0	Jul-10	0.0000	0.0000
Aug 95	0.0041	0	Aug-10	0.0034	0.0027
Sep 95	0	0	Sep-10	0.0034	0.0031
Oct 95	0	0	Jul-11	0.0079	0.0096
Nov 95	0	0.0023	Sep-11	0.0015	0.0068
May 96	0	0	Oct-11	0.0014	0.0079
June 96	0	0			
July 96	0.0029	0	x	0.0029	0.0036
Aug 96	0.0022	0	n	92	92
Sept 96	0	0	s	0.0128	0.0137
May 97	0	0	max	0.1200	0.1200
June 97	0	0	min	ND	ND
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			

Summary of Copper Data for R-1, R-2 and R-5
1991-2011

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
2007	0.017	0.014	0.015		0.076	0.059	0.034		0.012	0.021	0.012
2008	0.018	0.005	0.004		0.042	0.014	0.010		0.026	0.004	0.003
2009	0.045	0.008	0.045		0.103	0.083	N/A		0.003	0.012	0.004
2010	N/A	0.004	0.004		N/A	N/A	0.103		N/A	0.004	0.002
2011	0.023	0.019	0.010		0.128	0.095	N/A		0.007	0.007	0.006
x	0.04	0.02	0.02	x	0.21	0.20	0.11	x	0.04	0.06	0.03
n	20	21	21	n	20	20	19	n	20	21	21
s	0.03	0.02	0.01	s	0.16	0.11	0.08	s	0.08	0.04	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	0.004	0.004	min	0.003	0.014	0.010	min	0.000	0.004	0.000

Summary of Flow Rates at R-1, R-2 and R-5
1991-2011

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
2007	0.19	0.07	0.07	0.19	0.08	0.06	1.48	0.19	0.14
2008	0.20	0.23	0.29	0.09	0.11	0.06	2.66	0.60	0.38
2009	1.33	0.50	0.26	0.44	0.13	0.00	29.05	3.16	1.40
2010	1.01	0.44	0.35	0.13	ND	ND	8.80	0.93	1.82
2011	10.25	1.40	1.24	0.33	0.02	ND	54.79	3.71	1.40
x	3.92	0.78	0.50	3.92	0.73	0.45	32.10	2.34	1.04
n	21	21	21	21	20	19	21	21	21
s	3.97	0.64	0.34	4.71	0.69	0.49	32.89	2.02	0.60
max	12.30	2.48	1.24	15.60	2.38	2.01	120.00	7.46	2.10
min	0.18	0.07	0.07	0.09	0.02	0.00	1.06	0.19	0.14

GROUNDWATER QUALITY AT WALKER MINE TAILINGS

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	0.0200	-	1.4000	-	ND	-
W-3	08/24/1994	0.0200	ND	1.4000	ND	ND	ND
W-3	09/22/1994	ND	ND	0.7300	0.1700	ND	ND
W-3	10/25/1994	ND	ND	1.1000	0.7000	ND	ND
W-3	06/24/1995	ND	ND	1.6000	ND	ND	ND
W-3	11/13/1995	ND	ND	0.3600	0.0400	ND	ND
W-3	05/24/2000	-	ND	-	0.0210	ND	ND
W-3	09/13/2000	-	ND	-	ND	ND	ND
W-3	05/22/2001	-	ND	-	ND	-	ND
W-3	09/25/2001	-	0.0120	-	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	-	0.0620	-	0.0069
W-3	09/05/2004	-	0.0024	-	ND	-	0.0016
W-3	5/31/2007	-	0.0030	-	0.3600	-	0.0120
W-3	9/17/2007	-	0.0510	-	0.0330	-	0.0210
W-3	5/19/2009	-	0.0043	-	0.0881	-	0.0019
W-3	9/22/2009	-	0.0005	-	0.6810	-	0.0018
W-3	6/21/2010	-	ND	-	ND	-	ND
W-3	9/30/2010	-	ND	-	0.6000	-	0.0009
W-3	6/21/2011	-	0.0015	-	0.7400	-	0.0060
W-3	10/2/2011	-	0.0037	-	0.5500	-	0.0027
W-4	08/24/1994	0.8900	0.5500	93.0000	0.4100	0.0800	0.0400
W-4	09/22/1994	1.7000	0.6200	120.0000	0.4100	0.1500	0.0500
W-4	10/25/1994	0.9800	ND	100.0000	32.0000	0.1200	ND
W-4	06/24/1995	ND	ND	28.0000	28.0000	ND	ND
W-4	11/13/1995	ND	ND	47.0000	25.0000	ND	ND
W-5	07/18/1994	0.1100	-	32.0000	-	ND	-
W-5	08/24/1994	0.0400	ND	31.0000	0.1000	ND	ND
W-5	09/22/1994	0.0500	ND	30.0000	ND	ND	ND
W-5	10/25/1994	0.0600	ND	32.0000	2.2000	ND	ND
W-5	06/24/1995	ND	ND	2.5000	1.9000	ND	ND
W-5	11/13/1995	ND	ND	17.0000	0.1500	ND	ND
W-5	05/24/2000	-	ND	-	0.0680	ND	ND
W-5	09/13/2000	-	ND	-	0.7400	ND	ND
W-5	05/22/2001	-	ND	-	1.2000	-	ND
W-5	09/25/2001	-	ND	-	ND	-	ND
W-5	05/10/2002	-	ND	-	0.1400	-	ND
W-5	09/26/2002	-	0.0013	-	0.1200	-	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-5	5/31/2007	-	0.0020	-	9.4000	-	0.0088
W-5	9/17/2007	-	0.0060	-	19.0000	-	0.0140
W-5	6/3/2008	-	0.0013	-	11.200	-	0.0077
W-5	9/9/2008	-	0.0006	-	15.700	-	0.0107
W-5	5/19/2009	-	0.0019	-	21.400	-	0.0024
W-5	9/22/2009	-	0.0101	-	15.100	-	0.0048
W-5	6/21/2010	-	ND	-	1.1000	-	ND
W-5	9/30/2010	-	ND	-	30.000	-	0.0017
W-5	6/21/2011	-	ND	-	32.500	-	0.0130
W-5	10/2/2011	-	0.0045	-	24.400	-	0.0072
W-6	08/24/1994	0.4600	ND	14.0000	ND	0.0400	ND
W-6	09/22/1994	0.9900	0.0100	31.0000	0.6900	0.0800	ND
W-6	10/25/1994	0.7200	0.0100	23.0000	0.2700	0.0200	ND
W-6	06/24/1995	ND	ND	ND	ND	ND	ND
W-6	11/13/1995	0.0900	ND	3.9000	0.0600	ND	ND
W-7	07/18/1994	ND	ND	1.9000	-	0.0200	-
W-7	08/24/1994	0.0200	ND	30.0000	0.4500	0.0500	ND
W-7	09/22/1994	0.0400	ND	43.0000	0.9600	0.0700	ND

W-7	10/25/1994	0.0400	ND	52.0000	1.1000	0.0600	ND
W-7	06/24/1995	ND	ND	ND	ND	ND	ND
W-7	11/13/1995	0.0100	ND	14.0000	0.6700	0.0200	0.0100
W-7	05/24/2000	-	ND	-	0.0790	-	ND
W-7	09/13/2000	-	ND	-	0.1800	-	ND
W-7	05/22/2001	-	ND	-	0.1400	-	ND
W-7	09/25/2001	-	ND	-	ND	-	ND
W-7	05/10/2002	-	ND	-	0.2800	-	ND
W-7	09/26/2002	-	0.0021	-	0.1000	-	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
W-7	5/31/2007	-	0.0030	-	ND	-	0.0051
W-7	9/17/2007	-	0.0053	-	0.0880	-	0.0110
W-7	6/3/2008	-	0.0013	-	ND	-	0.0053
W-7	9/9/2008	-	0.0005	-	0.0310	-	0.0205
W-7	5/19/2009	-	0.0034	-	2.9600	-	0.0072
W-7	9/22/2009	-	0.0012	-	0.8280	-	0.0037
W-7	7/10/2010	-	ND	-	ND	-	ND
W-7	9/30/2010	-	ND	-	ND	-	0.0019
W-7	6/21/2011	-	0.0037	-	0.1800	-	0.0100
W-7	10/2/2011	-	ND	-	ND	-	ND

Table 5

Groundwater Depths at Walker Mine Tailings
1993 - 2011

Depth to Groundwater	Monitoring Well Number: Depth to Water (ft)							
From Top of Casing	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
05-31-2007	13.67	1.24	4.89	21.34	9.72	5.03	0.63	8.07
07-26-2007	14.11	2.19	5.90	22.86	11.32	6.18	1.44	9.14
09-17-2007	N/A	2.37	6.33	24.27	12.52	7.84	1.51	9.14
06-03-2008	N/A	0.47	4.23	20.77	9.41	4.21	0.87	6.66
07-31-2008	N/A	2.25	5.92	22.69	11.17	6.73	2.05	8.47
09-09-2008	N/A	2.49	6.29	23.93	12.20	7.59	2.05	9.09
05-19-2009	N/A	0.78	4.01	18.89	6.98	3.94	0.46	5.84
07-13-2009	N/A	1.62	5.36	20.17	9.23	5.82	1.39	7.27
09-22-2009	N/A	2.49	6.24	23.23	11.63	7.45	1.85	8.82
07-10-2010	N/A	1.17	4.61	17.73	7.38	4.63	0.75	6.05
08-31-2010	N/A	2.44	5.99	20.83	9.83	6.50	1.61	7.87
10-22-2010	N/A	0.78	4.01	18.89	6.98	3.94	0.46	5.84
30-Jun-2011	N/A	0.65	3.96	14.44	5.48	3.91	0.00	4.74
7-Aug-2011	N/A	1.59	5.31	17.66	7.76	5.82	0.31	6.41
2-Oct-2011	N/A	2.45	6.07	21.28	10.22	6.78	0.65	7.91
Average Depth	13.81	1.85	5.34	20.60	9.68	5.91	0.92 ~~148.46~~	29.38
n	25	38	38	38	38	38	38	38
s	1.27	0.84	0.96	3.41	2.52	1.58	0.69	1.64
max	15.59	3.26	6.69	25.90	13.97	8.33	2.07	10.65
min	11.17	0.47	3.76	11.61	4.43	3.33	0.00	4.74

Well W-1 was lost during construction summer 2007

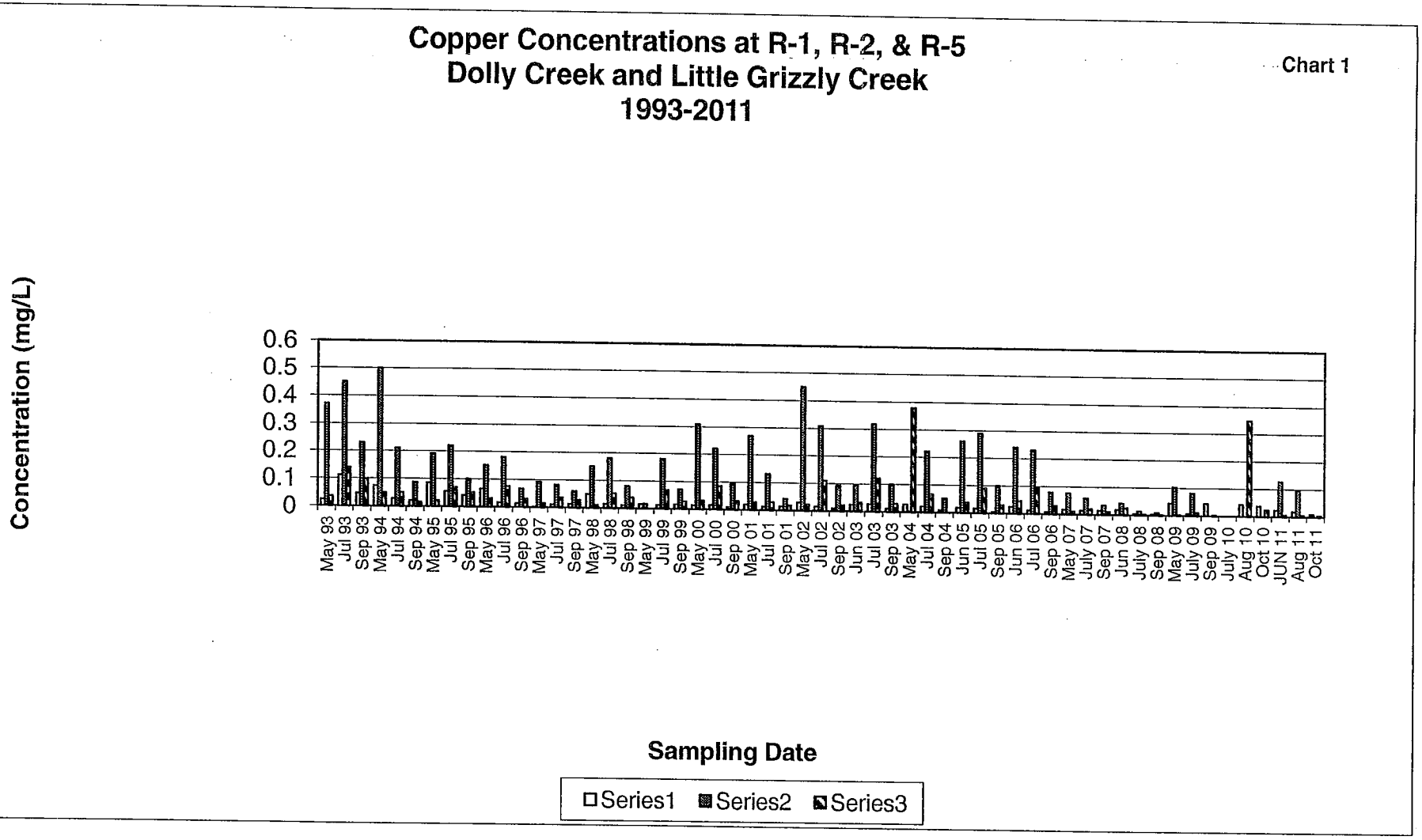
Groundwater Depths at Walk[illegible]Mine Tailings
1993 - 2011

Depth to Groundwater	Monitoring Well Number: Depth to Water (ft)							
From Top of Casing	W-1	W-2	W-3	W-4	W-5	W-6	W-7	Average Depth (ft)
Top of Casing Elevation	5759.24	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
05-31-2007	13.67	1.24	4.89	21.34	9.72	5.03	0.63	8.07
07-26-2007	14.11	2.19	5.90	22.86	11.32	6.18	1.44	9.14
09-17-2007	N/A	2.37	6.33	24.27	12.52	7.84	1.51	9.14
06-03-2008	N/A	0.47	4.23	20.77	9.41	4.21	0.87	6.66
07-31-2008	N/A	2.25	5.92	22.69	11.17	6.73	2.05	8.47
09-09-2008	N/A	2.49	6.29	23.93	12.20	7.59	2.05	9.09
05-19-2009	N/A	0.78	4.01	18.89	6.98	3.94	0.46	5.84
07-13-2009	N/A	1.62	5.36	20.17	9.23	5.82	1.39	7.27
09-22-2009	N/A	2.49	6.24	23.23	11.63	7.45	1.85	8.82
07-10-2010	N/A	1.70	4.61	17.73	7.38	4.63	0.75	6.13
08-12-2010	N/A	2.22	5.99	20.83	9.83	6.50	1.61	7.83
10-22-2010	N/A	0.78	4.01	18.84	6.98	3.94	0.46	5.84
06-30-2011	N/A	0.65	3.96	14.44	5.48	3.91	0.00	5.69
08-07-2011	N/A	1.59	5.31	17.66	7.76	5.82	0.31	7.63
10-02-2011	N/A	2.45	6.07	21.28	10.22	6.78	0.65	9.36
Average Depth	13.81	1.86	5.34	20.60	9.68	5.91	0.92	8.30
n	25	38	38	38	38	38	38	38
s	1.27	0.83	0.96	3.41	2.52	1.63	0.69	1.59
max	15.59	3.26	6.69	25.90	13.97	8.33	2.07	10.65
min	11.17	0.47	3.76	11.61	4.43	3.33	0.00	5.04

Well W-1 was lost during construction summer 2007

Copper Concentrations at R-1, R-2, & R-5
Dolly Creek and Little Grizzly Creek
1993-2011

Chart 1



June 2011

SURFACE AND GROUNDWATER TEST RESULTS AND SUPORTING DOCUMENTATION

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Reporting Frequency: Quarterly

Monitoring Period: June 2011

Findings:

(1) Surface Water. Samples were collected on June 30, 2011. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, exceeded the limitation for copper (see Table 1). The remaining R-5 constituents fell within the prescribed limitations for dissolved iron and zinc. The release of copper from the tailings area to Dolly Creek, as measured at R-2, continued to exceed the limitation. Concentrations of zinc were detected in all of the 5 samples taken but none of these concentrations exceeded the limitation of zinc. The concentration of iron exceeded the 1000 ug/l limitation at R-2 but was within the limitation at the remainder of the stations.

(2) Groundwater. Groundwater samples were collected for this monitoring event. Metals were only detected in wells W3, W5, and W7. Samples were collected on 06/30/2011. Table 2 summarizes the findings for groundwater samples collected from the site. No concentrations of dissolved copper (<0.0 ug/l) were found at the sampling well (W-5). Additionally, concentrations of dissolved zinc were found in wells (W-3, W-5 and W7), with a maximum concentration of 10.0 ug/l at W-7. Dissolved iron was found in wells (W-3, W-5 and W-7) with a maximum concentration of 32.5 mg/l. Dissolved iron at W-5 increase from (1.100mg/L to 32.500 mg/L) over the dissolved iron from the July of 2010 sample. Dissolved iron in W-7 drastically increased by a 180% from July 2010 it was found with a measured concentration of 0.18 mg/l compared to a no detection of last year. These results will require out-year testing of W-5 and W-7 to continually monitor the marked change that has occurred in the groundwater iron concentrations at these locations.
Groundwater elevations were measured in six of seven wells at the site; W-1 was destroyed during construction in 2007. Depths to water level remain slightly lower in comparison of those taken in July of 2010. The results continue to show a definite gradient towards Little Grizzly Creek along the Dolly Creek Channel 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 of its course adjacent to the tailings area.

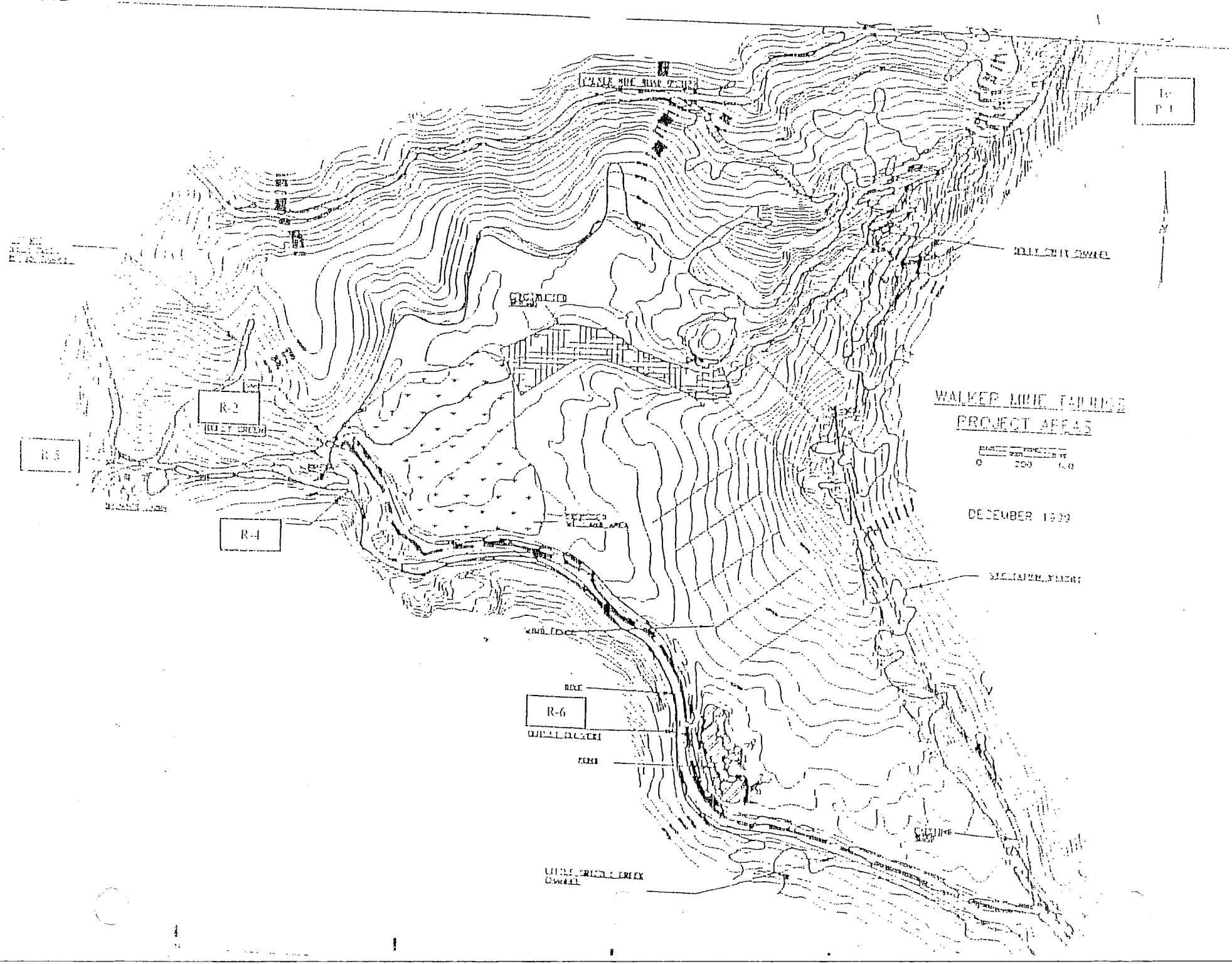

WALKER MINE TAILINGS
PROJECT AREAS
DECEMBER 1999
R-2
R-3
R-4
R-6
0
200
400

Table 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST

WALKER MINE TAILINGS, PLUMAS COUNTY

Jun-11

CONSTITUENT	UNITS	DETECTION LIMITS	R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	Limitation @R-5[3]
Field Parameters									
Flow	cfs	N/A	10.25	0.33	47.32	62.34	54.79	0	N/A
pH	number	N/A	7.61	7.91	7.18	7.36	7.56	N/A	N/A
Specific Conductance	umhos/cm	N/A	52.5	153.3	40.2	42.7	41.8	N/A	N/A
Air Temperature	℉	N/A	66	70	68	70	63	N/A	N/A
Water Temperature	℃	N/A	11	26.1	13.9	13.4	12.8	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	5	29.8	59.8	23.2	23.2	23.2	N/A	N/A
Total Alkalinity as CaCO3	mg/l	1	37	35	27	28	28	N/A	N/A
Sulfate	mg/l	0.5	ND	34	ND	ND	1	N/A	N/A
Turbidity	NTU	0.05	1.5	2.3	1.4	0.9	1.2	N/A	2.46
Dissolved Iron	ug/l	20	90	160	90	120	100	N/A	1000
Copper	ug/l	0.5	23.2	128	7.9	9.6	7.1	N/A	4.95
Dissolved Zinc	ug/l	1.0	6	64	4	6	5	N/A	65.66

[1] R-3 is the background station located above the tailiings 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 50 mg/l as CaCO3.

WALKER MINE TAILINGS MONITORING PROGRAM

(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 6/30 2001 Party Flynn / Clewes

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 Marsh McBirney

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 .....

Other .....

Gage .....

..... Record removed .....

Observer .....

Control .....

pH 7.61

CONDUCTANCE 52.5 umhos/cm

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

Samples @ 1745

Weather Cool - Clear

Air 66 F @ 1753

Water 11.0 °C @ 1755

Intake flushed

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	2.6										
	3		.15				0				
	3.5		.2				0				
	4		.5				0				
	4.5		1.1				0				
	5		1.25				0				
	5.5		1.15				.24				
	6		1.3				1.02				
	6.5		1.75				2.18				
	7		1.55				3.61				
	7.5		1.5				2.79				
	8		1.45				2.24				
	8.5		1.35				1.29				
	9		1.2				.14				
D	9.5		.75				.19				
	10		.15				0				
RB	10.25										

WALKER MINE TAILINGS MONITORING PROGRAM

0-275-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 6/30 2011 Party Flynn / Clewes

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 Marsh - McBirney

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 / Clean

Other ..... Air 70.0 °C @ 1427

Gage ..... Water 26.1 °C @ 1425

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

Observer .....

Control .....

pH 7.91

CONDUCTANCE 153.3 umhos/cm

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

mples @ 1420

River at — X

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	0.9										
	1.5		.25				.10				
	2		.40				.34				
	2.5		.15				.33				
	3		.40				.47				
	3.5		.40				.46				
	4		.30				.21				
	4.5		.25				.09				
RB	4.65										

9-276-T
(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-3

Little Grizzly Creek above Tailings

Date 6/30 2011 Party Flynn / Clowes

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 Marsh McBirney

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 68 F @ 1655

Gage ..... Water 13.9 °C @ 1653

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

Observer .....

Control .....

pH 7.18

CONDUCTANCE 40.2 umhos/cm

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

[illegible]les @ 1645

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	0.95										
	1		0				0				
	2		.15				0				
	3		.25				.45				
	4		.4				2.6				
	5		.45				3.16				
	6		.75				2.48				
	7		1.1				3.71				
	8		1.2				3.78				
	9		1.4				3.94				
	10		1.55				3.87				
	11		1.75				3.41				
	12		1.95				3.55				
	13		1.45				3.27				
	14		1.25				1.21				
	15		1.55				.49				
	16		1.0				0				
	17		.45				0				
RB	17.4										

WALKER MINE TAILINGS MONITORING PROGRAM

9-2776-P
(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 6/30, 2011 Party Flynn / Clowes

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

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

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

Type of meter Marsh McBirney

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 70.0 °F @ 1533

Gage ..... Water 13.4 °C @ 1530

..... Record removed ..... Intake flushed [U]

Observer .....

.....

Control .....

.....

pH 7.36

.....

CONDUCTANCE 42.7 umhos/cm

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

nples @ 1525

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	0.9										
	1.0		.35				0				.55
	2		.8				.70				
	3		1.25				.61				
	4		1.4				1.21				.90
	5		1.4				2.26				.82
	6		1.5				3.31				
	7		1.6				4.04				.91
	8		1.7				4.74				.96
	9		1.55				5.01				.97
	10		1.7				4.77				.98
	11		1.5				4.19				.93
	12		1.25				3.42				
	13		1.35				3.31				
D	14		1.1				2.75				1.00
	15		.65				2.03				
	16		.6				1.65				
	17		.35				1.24				.88
	18		0				0				.38
RB	18.4										.97
											.95
											.91
											.87
											.90
											.85
											.80

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-5

Little Grizzly Creek @ Brown's Cabin

Date 6/30 2011 Party Flynn / Clowes

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 Marsh McBirney

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 Cool / Clear

Other ..... Air 63° F @ 1847

Gage ..... Water 12.8 °C @ 1850

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

Observer .....

Control .....

pH 7.56

CONDUCTANCE 41.8 umhos/cm

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

Samples @ 1840

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	5.5										
	6		.35				1.02				
	7		.8				1.44				
	8		1.2				2.23				
	9		1.45				3.22				
	10		1.4				4.02				
	11		1.15				4.76				
	12		1.55				3.97				
	13		1.6				3.31				
	14		1.5				1.91				
	15		1.5				2.63				
	16		1.5				3.56				
	17		1.45				2.73				
	18		1.35				2.26				
⊙	19		1.0				2.13				
	20		.8				1.43				
	21		.65				1.24				
	22		.5				.47				
	23		.25				0				
	24		0				0				
RB	~~25~~										
	24.4										

WALKER MINE TAILINGS MONITORING PROGRAM

9-276
(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-6
Sediment Basin Outlet
Date 6/30 2011 Party Flynn Clowes
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 .....
Observer .....
.....
Control .....
.....
pH .....
.....
CONDUCTANCE umhos/cm
G. H. of zero flow ..... ft.

No Samples

.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	
												.00
												.05
	No Flow											.09
	No Samples											.12
												.14
												.16
												.17
												.19
												.22
⊙												1.00
												.08
												.28
												.27
												.26
												.24
												.22
												.20
												.35
												.30

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

	Limitation at R-5		
Tubidity at R-3 =			1.4
R-5 hardness =			23.2
Turbidity limitation at R-3 + 1			
Turbidity limitation at R-5 =			2.4
Iron limitation at R-5 =			1000
(EXP((LOG(Hardness at R-5,2.71828)*0.8545)-1.702))*0.96			
Copper limitation at R-5 =			2.57
(EXP((LOG(Hardness at R-5,2.71828)*0.8473)+0.884))*0.986			
Zinc limitation at R-5 =			34.26
	LN 50 =		3.912025637
	times		0.8545
			3.342825907
	minus		1.702
			1.640825907
	EXP(D21)		5.15942896
	times		0.96
			4.953051802
			4.953051802

Table 2. GROUND WATER SUMMARY

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
JUNE 2011

		DETECTION		WELL SITES					
CONSTITUENT	UNIT	LIMIT	W-1	W-2	W-3	W-4	W-5	W-6	W-7*
Field Parameters									
Ground Surface Elevation	ft	0.01	N/A	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	N/A	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	N/A	0.65	3.96	14.44	5.48	3.91	0.00
Water Surface Elevation	ft	0.01	N/A	5741.09	5734.87	5753.56	5748.61	5743.96	5754.91
Laboratory									
Total Hardness as CaCO3	mg/l	5.0	N/A	N/A	187.0	N/A	186.0	N/A	30.7
Total Alkalinity	mg/l	1.0	N/A	N/A	116.0	N/A	44.0	N/A	42.0
Sulfate	mg/l	0.5	N/A	N/A	79.0	N/A	158.0	N/A	ND
Dissolved Iron	ug/l	20.0	N/A	N/A	740.000	N/A	32500.000	N/A	180.000
Dissolved Copper	ug/l	0.5	N/A	N/A	1.500	N/A	ND	N/A	3.700
Dissolved Zinc	ug/l	1.0	N/A	N/A	6.0	N/A	13.000	N/A	10.000

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

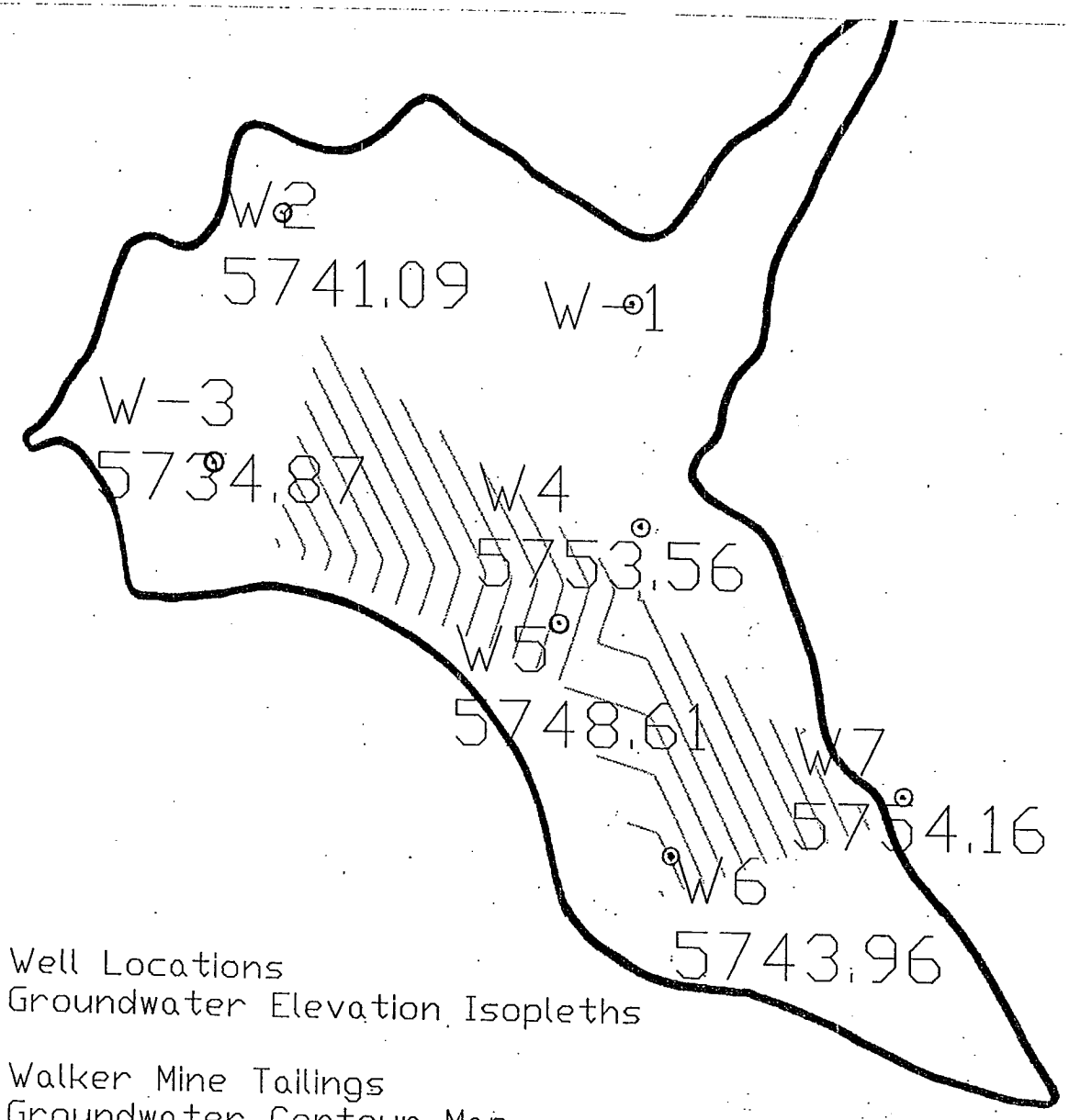
[1] ND is not detected at or above the detection limit

WALKER TAILINGS
GROUNDWATER MONITORING PROGRAM

FLUID LEVEL GAUGING

SITE LOCATION: Walker Mine DATE: 6/30/11
COMPANY NAME: Sierra Environmental
PERSONNEL: Flynn

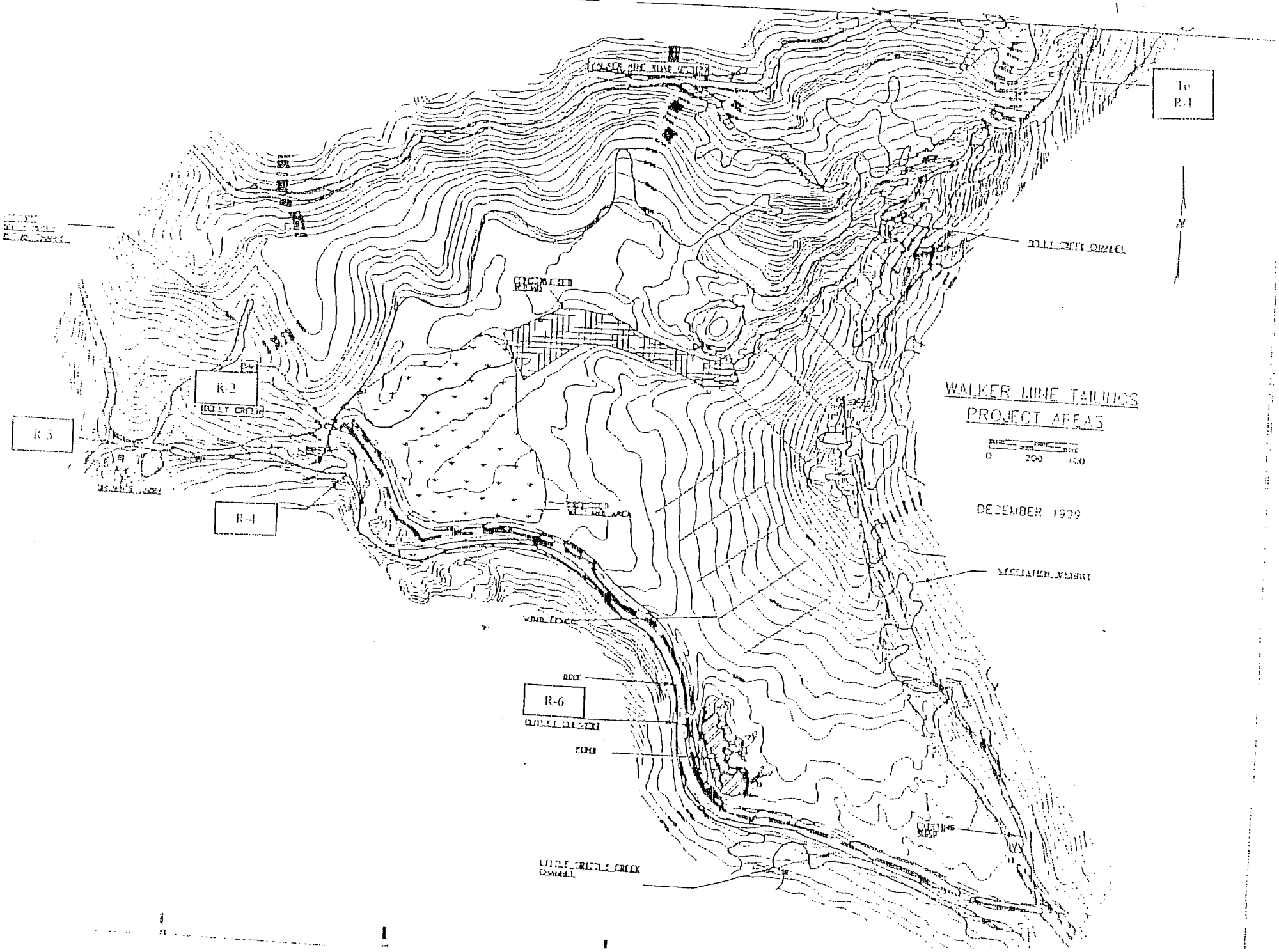
WELL	TIME	DEPTH TO WATER	COMMENTS
W-1A	1231	7.55	
2	1347	0.65	
3	1251	3.96	
4	1153	14.44	
5	1109	5.48	
6	1206	3.91	
7	1007	At survey point (TOC)	



Well Locations
Groundwater Elevation Isopleths

Walker Mine Tailings
Groundwater Contour Map

JUNE 2011


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

Water-Quality Sampling Information

Project Number: _____ Page 1 of 1

Project Name: Walker Mine Tailings Date: 6/30/11

Project Location: Walker Mine Day: M T W (Th) F S S

Site Conditions/Weather: Wet, Plants / Cool - Clear Staff: Flynn

Comments : _____

SAMPLING METHOD

- ☐ Centrifugal Pump
- ☐ Submersible Pump
- ☐ Hand Bail
- ☒ Disposable Bailer
- ☐ Teflon Bailer
- ☐ _____ (other)

Sample Number: W-7

- ☐ FB: _____
- ☐ DUP: _____

Analysis Requested: Diss Cu, Fe, Zn Hardness, SO_4, pH Alk

Number and Types of Bottle Used: _____

Method of shipment: FGL (lab name)

- ☒ Courier
- ☐ Hand Deliver

Well Number: W-7
Depth of Water: TOC
Well Depth: 11.00
Height of Water Column: 11.00
Volume in Well: (gallons) 1.76
3 Well Volumes: (gallons) 5.28

Well Diameter: 2"

- ☒ 2" (0.16 gallon / feet)
- ☐ 4" (0.65 gallon/ feet)
- ☐ 5" (1.02 gallon/ feet)
- ☐ 6" (1.47 gallon/ feet)

Calculation Area
Height of water column =
Depth to water =
80% DTW =

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1010								Start Purge
1014		2		7.3	6.40	57.6	12.4	Low Tb / Odor
1018		4		6.4	6.24	52.9	20.1	" / "
1023		6		5.9	6.12	51.4	57.2	Mod Tb / "
1030								Sample W-7

Inlet Depth: _____

_____ Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: _____ Page 1 of 1

Project Name: Walker Mine Tailings Date: 6/30/11

Project Location: Walker Mine Day: M T W (Th) F S S

Site Conditions/Weather: Dry / Warm - Clear Staff: Flynn

Comments : _____

SAMPLING METHOD

- ☐ Centrifugal Pump
- ☒ Submersible Pump 2" Grundfos
- ☐ Hand Bail
- ☐ Disposable Bailer
- ☐ Teflon Bailer
- ☐ _____ (other)

Sample Number: W-5

- ☐ FB: _____
- ☐ DUP: _____

Analysis Requested

Diss Cu, Fe, Zn
Hardness, SO4, pH
Alk

Number and Types of Bottle Used

_____
_____
_____

Method of shipment

FGL (lab name)

- ☒ Courier
- ☐ Hand Deliver

Well Number: W-5

Depth of Water: 5.48

Well Depth: 40.30

Height of Water Column: 34.82

Volume in Well: (gallons) 5.57

3 Well Volumes: (gallons) 16.71

Well Diameter: 2"

- ☒ 2" (0.16 gallon / feet)
- ☐ 4" (0.65 gallon/ feet)
- ☐ 5" (1.02 gallon/ feet)
- ☐ 6" (1.47 gallon/ feet)

Calculation Area
Height of water column =
Depth to water =
80% DTW _____

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1117								Start Purge
1122		7		10.2	6.68	358	6.3	Low Tb / No odor
1128		14		9.9	6.94	349	2.9	" "
1135		22		9.9	6.96	348	2.2	" "
1140								Sample W-5

Inlet Depth: _____

_____ Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: ——

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Day 1 Warm - Clear

Page 1 of 1

Date: 6/30/11

Day: M T W (Th) F S S

Staff: Flynn

Comments :

SAMPLING METHOD

- ☐ Centrifugal Pump
- ☒ Submersible Pump 2" Grundfos
- ☐ Hand Bail
- ☐ Disposable Bailer
- ☐ Teflon Bailer
- ☐ _____ (other)

Sample Number: W-3

- ☐ FB: _____
- ☐ DUP: _____

Analysis Requested

Diss Cu, Fe, Zn
Hardness, SO4, pH
Alk

Number and Types of Bottle Used

Method of shipment

FGL
(lab name)

- ☒ Courier
- ☐ Hand Deliver

Well Number: W-3
Depth of Water: 3.96
Well Depth: 34.25
Height of Water Column: 30.29
Volume in Well: (gallons) 4.85
3 Well Volumes: (gallons) 14.54

Well Diameter: 2"

- ☒ 2" (0.16 gallon / feet)
- ☐ 4" (0.65 gallon/ feet)
- ☐ 5" (1.02 gallon/ feet)
- ☐ 6" (1.47 gallon/ feet)

Calculation Area
Height of water column =
Depth to water =
80% DTW =

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1259								Start Purge
1306		6		13.7	7.45	301	7.4	Low Tb / No odor
1315		12		12.5	7.88	293	4.3	" "
1322		18		12.0	7.91	290	4.1	" "
1326								Sample W-3

Inlet Depth: _____

_____ Signed: _____ Date: _____

ENVIRONMENTAL

Monthly
www.fglinc.com

CHAIN OF CUSTODY

Laboratory Copy (1 of 3)

72914:07/04/2011

Client: **Plumas National Forest-Walker Mine**
Address: Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Phone: (530)283-7712 Fax:

Contact Person: Ryan Nupen

Project Name: **Water Quality Monitoring**

Purchase Order Number:

Quote Number:

Sampler(s) Pat Flynn

Sampling Fee: _____ Pickup Fee: _____

Compositor Setup Date: ___/___/___ Time: ___/___

Lab Number: **CH 1173446** 7-10917

TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite(C) Grab(G)	Type of Sample **SEE REVERSE SIDE**	Potable(P) Non-Potable(NP) Ag Water(AgW)	Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)	Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL)	Metals, Diss-Cu,Hardness,Fe,Zn 250ml(P)	Wet Chemistry-SO4,pH,Alk. (CaCO3) pH - Analyzed in CH 16oz(P), 8oz(P)	Wet Chemistry-Turbidity 250 ml(AGT)
1	R1	6/30/11	1745	G	DW				1	1,1	1
2	R2		1420	G	DW				1	1,1	1
3	R3		1645	G	DW				1	1,1	1
4	R4		1525	G	DW				1	1,1	1
5	R5		1840	G	DW				1	1,1	1
6	R6			G	DW				1	1,1	1
7	W3		1326	G	DW				1	1,1	
8	W5		1140	G	DW				1	1,1	
9	W7		1030	G	DW				1	1,1	

Remarks:
Seasonal: June-September
-Please set up as web Client (SE)
-Run analysis despite samples out of hold time per client

Relinquished	Date:	Time:
Pat Flynn	7/1/11	1015
Received By:	Date:	Time:
[illegible]	7/1/11	1015
Relinquished	Date:	Time:
Ryan N	7/5/11	1300
Received By:	Date:	Time:
SCE	↓	↓
Relinquished	Date:	Time:
SCE	7/5/11	1545
Received By:	Date:	Time:
CP	↓	↓

Rec CP 7-5-11 1700

Corporate Offices & Laboratory
805 Corporate
Santa Paula, 30
TEL: 805/30...
FAX: 805/625-4172

Office & Laboratory
2500 Stagecoach Road
Stockton, CA 95215
TEL: 209/942-0182
FAX: 209/942-0423

(SE)

Office & Laboratory
563 E. ... Avenue
Chico, ...5
TEL: 5... 818
FAX: 530/343-3807

Office & Laboratory
5142 Empresa Drive, Suite B
San Luis Obispo, CA 93401
TEL: 805/783-3940
FAX: 805/625-4172

Field Office
... California
T ...734-9473
M. ...737-2390
FAX: ...734-9480

Rec on the 1700

July 20, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R1
Project : Water Quality Monitoring

Lab ID : CH 1173446-001
Customer ID : 7-10917

Sampled On : June 30, 2011-17:45
Sampled By : Pat Flynn
Received On : July 5, 2011-15:45
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P1]								
Copper	23.2	0.5	ug/L	1000[2]	200.8	07/12/11:207474	200.8	07/12/11:209997
Total Hardness as CaCO3	29.8	2.5	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Calcium	7	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Magnesium	3	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Iron	0.09	0.03	mg/L	0.3[2]	200.7	07/07/11:207297	200.7	07/07/11:209722
Zinc	6	1	ug/L		200.8	07/12/11:207474	200.8	07/12/11:209997
Wet Chemistry[P1]								
Alkalinity (as CaCO3)	37	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Bicarbonate	45	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Carbonate	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Hydroxide	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
pH	8.2	--	units		4500-H B	07/05/11:700132	4500HB	07/05/11:700136
Sulfate	ND	1	mg/L	500[2]	300.0	07/11/11:207539	300.0	07/11/11:210052
Turbidity	1.5	0.2	NTU	5	2130B	07/06/11:207319	2130B	07/06/11:209713

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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July 20, 2011

Lab ID : CH 1173446-002
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : June 30, 2011-14:20
Sampled By : Pat Flynn
Received On : July 5, 2011-15:45
Matrix : Drinking Water

Description : R2
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	128	0.5	ug/L	1000[2]	200.8	07/12/11:207474	200.8	07/12/11:209997
Total Hardness as CaCO3	59.8	2.5	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Calcium	19	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Magnesium	3	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Iron	0.16	0.03	mg/L	0.3[2]	200.7	07/07/11:207297	200.7	07/07/11:209722
Zinc	64	1	ug/L		200.8	07/12/11:207474	200.8	07/12/11:209997
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	35	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Bicarbonate	42	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Carbonate	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Hydroxide	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
pH	8.1	--	units		4500-H B	07/05/11:700132	4500HB	07/05/11:700136
Sulfate	34	1	mg/L	500[2]	300.0	07/11/11:207539	300.0	07/11/11:210052
Turbidity	2.3	0.2	NTU	5	2130B	07/06/11:207319	2130B	07/06/11:209713

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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July 20, 2011

Lab ID : CH 1173446-003
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : June 30, 2011-16:45
Sampled By : Pat Flynn
Received On : July 5, 2011-15:45
Matrix : Drinking Water

Description : R3
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	7.9	0.5	ug/L	1000[2]	200.8	07/12/11:207474	200.8	07/12/11:209997
Total Hardness as CaCO3	23.2	2.5	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Calcium	6	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Magnesium	2	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Iron	0.09	0.03	mg/L	0.3[2]	200.7	07/07/11:207297	200.7	07/07/11:209722
Zinc	4	1	ug/L		200.8	07/12/11:207474	200.8	07/12/11:209997
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	27	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Bicarbonate	33	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Carbonate	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Hydroxide	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
pH	8.1	--	units		4500-H B	07/05/11:700132	4500HB	07/05/11:700136
Sulfate	ND	1	mg/L	500[2]	300.0	07/11/11:207539	300.0	07/11/11:210052
Turbidity	1.4	0.2	NTU	5	2130B	07/06/11:207319	2130B	07/06/11:209713

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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July 20, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R4
Project : Water Quality Monitoring

Lab ID : CH 1173446-004
Customer ID : 7-10917

Sampled On : June 30, 2011-15:25
Sampled By : Pat Flynn
Received On : July 5, 2011-15:45
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P,1]								
Copper	9.6	0.5	ug/L	1000[2]	200.8	07/12/11:207474	200.8	07/12/11:209997
Total Hardness as CaCO3	23.2	2.5	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Calcium	6	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Magnesium	2	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Iron	0.12	0.03	mg/L	0.3[2]	200.7	07/07/11:207297	200.7	07/07/11:209722
Zinc	6	1	ug/L		200.8	07/12/11:207474	200.8	07/12/11:209997
Wet Chemistry[P,1]								
Alkalinity (as CaCO3)	28	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Bicarbonate	35	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Carbonate	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Hydroxide	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
pH	8.1	--	units		4500-H B	07/05/11:700132	4500HB	07/05/11:700136
Sulfate	ND	1	mg/L	500[2]	300.0	07/11/11:207539	300.0	07/11/11:210052
Turbidity	0.9	0.2	NTU	5	2130B	07/06/11:207319	2130B	07/06/11:209713

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap. (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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July 20, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R5
Project : Water Quality Monitoring

Lab ID : CH 1173446-005
Customer ID : 7-10917

Sampled On : June 30, 2011-18:40
Sampled By : Pat Flynn
Received On : July 5, 2011-15:45
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P;1]								
Copper	7.1	0.5	ug/L	1000[2]	200.8	07/12/11:207474	200.8	07/12/11:209997
Total Hardness as CaCO3	23.2	2.5	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Calcium	6	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Magnesium	2	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Iron	0.10	0.03	mg/L	0.3[2]	200.7	07/07/11:207297	200.7	07/07/11:209722
Zinc	5	1	ug/L		200.8	07/12/11:207474	200.8	07/12/11:209997
Wet Chemistry[P;1]								
Alkalinity (as CaCO3)	28	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Bicarbonate	34	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Carbonate	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Hydroxide	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
pH	8.1	--	units		4500-H B	07/05/11:700132	4500HB	07/05/11:700136
Sulfate	1	1	mg/L	500[2]	300.0	07/11/11:207539	300.0	07/11/11:210052
Turbidity	1.2	0.2	NTU	5	2130B	07/06/11:207319	2130B	07/06/11:209713

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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July 20, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : W3
Project : Water Quality Monitoring

Lab ID : CH 1173446-007
Customer ID : 7-10917

Sampled On : June 30, 2011-13:26
Sampled By : Pat Flynn
Received On : July 5, 2011-15:45
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P;F]								
Copper	1.5	0.5	ug/L	1000[2]	200.8	07/12/11:207474	200.8	07/12/11:209997
Total Hardness as CaCO3	187	2.5	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Calcium	65	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Magnesium	6	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Iron	0.74	0.03	mg/L	0.3[2]	200.7	07/07/11:207297	200.7	07/07/11:209722
Zinc	6	1	ug/L		200.8	07/12/11:207474	200.8	07/12/11:209997
Wet Chemistry[P;F]								
Alkalinity (as CaCO3)	116	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Bicarbonate	142	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Carbonate	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Hydroxide	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
pH	8.2	–	units		4500-H B	07/05/11:700132	4500HB	07/05/11:700136
Sulfate	79	1	mg/L	500[2]	300.0	07/11/11:207539	300.0	07/11/11:210052

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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July 20, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : W5
Project : Water Quality Monitoring

Lab ID : CH 1173446-008
Customer ID : 7-10917

Sampled On : June 30, 2011-11:40
Sampled By : Pat Flynn
Received On : July 5, 2011-15:45
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P:1]								
Copper	ND	0.5	ug/L	1000[2]	200.8	07/12/11:207474	200.8	07/12/11:209997
Total Hardness as CaCO3	186	2.5	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Calcium	68	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Magnesium	4	1	mg/L		200.7	07/07/11:207297	200.7	07/07/11:209722
Iron	32.5	0.03	mg/L	0.3[2]	200.7	07/12/11:207518	200.7	07/12/11:209998
Zinc	13	1	ug/L		200.8	07/12/11:207474	200.8	07/12/11:209997
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	44	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Bicarbonate	54	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Carbonate	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Hydroxide	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
pH	6.7	--	units		4500-H B	07/05/11:700132	4500HB	07/05/11:700136
Sulfate	158	1	mg/L	500[2]	300.0	07/11/11:207539	300.0	07/11/11:210052

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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July 20, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : W7
Project : Water Quality Monitoring

Lab ID : CH 1173446-009
Customer ID : 7-10917

Sampled On : June 30, 2011-10:30
Sampled By : Pat Flynn
Received On : July 5, 2011-15:45
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P:1]								
Copper	3.7	0.5	ug/L	1000[2]	200.8	07/12/11:207474	200.8	07/12/11:209997
Total Hardness as CaCO3	30.7	2.5	mg/L		200.7	07/08/11:207394	200.7	07/08/11:209891
Calcium	9	1	mg/L		200.7	07/08/11:207394	200.7	07/08/11:209891
Magnesium	2	1	mg/L		200.7	07/08/11:207394	200.7	07/08/11:209891
Iron	0.18	0.03	mg/L	0.3[2]	200.7	07/08/11:207394	200.7	07/08/11:209891
Zinc	10	1	ug/L		200.8	07/12/11:207474	200.8	07/12/11:209997
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	42	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Bicarbonate	51	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Carbonate	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
Hydroxide	ND	2	mg/L		2320B	07/13/11:207573	WS 51.30	07/13/11:210042
pH	6.9	--	units		4500-H B	07/05/11:700132	4500HB	07/05/11:700136
Sulfate	ND	1	mg/L	500[2]	300.0	07/11/11:207539	300.0	07/11/11:210052

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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July 20, 2011
Plumas National Forest-Walker Mine

Lab ID : CH 1173446
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	(CC 1181561-001)	MS	mg/L	12.00	104 %	75-125	
			MSD	mg/L	12.00	114 %	75-125	
			MSRPD	mg/L	798.8	8.5%	≤20.0	
	200.7	07/07/11:209722rs	CCV	ppm	25.00	105 %	90-110	
			CCB	ppm		0.006	1.0	
			CCV	ppm	25.00	106 %	90-110	
			CCB	ppm		0.009	1.0	
			CCV	ppm	25.00	107 %	90-110	
			CCB	ppm		0.008	1.0	
	200.7	(CC 1181600-001)	MS	mg/L	12.00	90.0 %	75-125	
			MSD	mg/L	12.00	96.4 %	75-125	
			MSRPD	mg/L	798.8	1.0%	≤20.0	
	200.7	07/08/11:209891rs	CCV	ppm	25.00	108 %	90-110	
			CCB	ppm		-0.003	1.0	
			CCV	ppm	25.00	109 %	90-110	
			CCB	ppm		-0.002	1.0	
Iron	200.7	(CC 1181561-001)	MS	ug/L	3992	108 %	75-125	
			MSD	ug/L	3992	119 %	75-125	
			MSRPD	ug/L	798.8	9.0%	≤20.0	
	200.7	07/07/11:209722rs	CCV	ppm	4.990	104 %	90-110	
			CCB	ppm		0.0244	0.05	
			CCV	ppm	4.990	104 %	90-110	
			CCB	ppm		0.0277	0.05	
			CCV	ppm	4.990	105 %	90-110	
			CCB	ppm		0.0278	0.05	
	200.7	(CC 1181600-001)	MS	ug/L	3992	101 %	75-125	
			MSD	ug/L	3992	102 %	75-125	
			MSRPD	ug/L	798.8	1.1%	≤20.0	
	200.7	07/08/11:209891rs	CCV	ppm	4.990	105 %	90-110	
			CCB	ppm		0.0109	0.05	
			CCV	ppm	4.990	105 %	90-110	
			CCB	ppm		0.0143	0.05	
	200.7	(CH 1173446-008)	MS	ug/L	3992	78.9 %	75-125	
			MSD	ug/L	3992	59.6 %	<¼	
			MSRPD	ug/L	4.000	2.2%	≤20.0	
	200.7	07/12/11:209998rs	CCV	ppm	4.990	103 %	90-110	
			CCB	ppm		0.0458	0.05	
			CCV	ppm	4.990	100 %	90-110	
			CCB	ppm		0.0026	0.05	
Magnesium	200.7	(CC 1181561-001)	MS	mg/L	12.00	103 %	75-125	
			MSD	mg/L	12.00	113 %	75-125	
			MSRPD	mg/L	798.8	8.9%	≤20.0	
	200.7	07/07/11:209722rs	CCV	ppm	25.00	102 %	90-110	
			CCB	ppm		0.002	1.0	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.003	1.0	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.002	1.0	
	200.7	(CC 1181600-001)	MS	mg/L	12.00	98.0 %	75-125	
			MSD	mg/L	12.00	100 %	75-125	
			MSRPD	mg/L	798.8	0.5%	≤20.0	
	200.7	07/08/11:209891rs	CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.003	1.0	
			CCV	ppm	25.00	103 %	90-110	
			CCB	ppm		0.002	1.0	

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July 20, 2011
Plumas National Forest-Walker Mine

Lab ID : CH 1173446
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Copper	200.8	(CH 1173131-001)	MS	ug/L	5.000	93.8 %	75-125	
			MSD	ug/L	5.000	100 %	75-125	
			MSRPD	ug/L	4.992	6.4%	≤20	
	200.8	07/12/11:209997DT	ICV	ppb	120.0	98.2 %	90-110	
			ICB	ppb		-0.05	1	
			CCV	ppb	120.0	96.2 %	90-110	
			CCV	ppb	120.0	96.6 %	90-110	
			CCB	ppb		-0.02	1	
			CCB	ppb		-0.04	1	
			CCV	ppb	120.0	98.2 %	90-110	
			CCB	ppb		-0.009	1	
Zinc	200.8	(CH 1173131-001)	MS	ug/L	5.000	105 %	75-125	
			MSD	ug/L	5.000	107 %	75-125	
			MSRPD	ug/L	4.992	0.11	≤10	
	200.8	07/12/11:209997DT	ICV	ppb	120.0	97.4 %	90-110	
			ICB	ppb		-0.2	10	
			CCV	ppb	120.0	95.0 %	90-110	
			CCV	ppb	120.0	95.8 %	90-110	
			CCB	ppb		-0.2	10	
			CCB	ppb		-0.2	10	
			CCV	ppb	120.0	98.6 %	90-110	
			CCB	ppb		-0.1	10	
Wet Chem								
Turbidity	2130B	(CH 1173446-001)	Dup	NTU		0.7%	2.47	
	2130B	07/06/11:209713jam	CCB	NTU		0.105	0.2	
			CCV	NTU	2.000	104 %	90-110	
			CCB	NTU		0.103	0.2	
			CCV	NTU	2.000	106 %	90-110	
Alkalinity (as CaCO3)	2320B	(CH 1173446-001)	Dup	mg/L		0.75	10	
Bicarbonate	2320B	(CH 1173446-001)	Dup	mg/L		0.91	10	
Carbonate	2320B	(CH 1173446-001)	Dup	mg/L		0.0	10	
Hydroxide	2320B	(CH 1173446-001)	Dup	mg/L		0.0	10	
Sulfate	300.0	07/11/11:207539CHL	LCS	mg/L	50.00	102 %	90-110	
		(CH 1173446-001)	MS	mg/L	1000	103 %	78-137	
			MSD	mg/L	1000	103 %	78-137	
			MSRPD	mg/L	100.0	0.3%	≤12.3	
	300.0	07/11/11:210052CHL	ICV	ppm	100.0	103 %	90-110	
			ICB	ppm		0.52	2	
			CCB	ppm		-0.42	2	
			CCV	ppm	50.00	101 %	90-110	
			CCB	ppm		-0.56	2	
			CCV	ppm	50.00	103 %	90-110	
pH	4500-H B	(CH 1173666-001)	Dup	units		0.3%	4.80	
		(CH 1173446-005)	Dup	units		0.1%	4.80	
	4500HB	07/05/11:700136KAB	CCV	units	8.000	101 %	95-105	
			CCV	units	8.000	102 %	95-105	
Alkalinity (as CaCO3)	WS 51.30	07/13/11:210042SBL	CCV	mg/L	234.9	99.8 %	80-120	
			CCV	mg/L	234.9	100 %	80-120	

Definition

ICV : Initial Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
ICB : Initial Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
CCV : Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB : Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
LCS : Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.

July 20, 2011

Plumas National Forest-Walker Mine

Lab ID : CH 1173446
Customer : 7-10917

Quality Control - Inorganic

Definition	
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Location: R-1					
Date: 06/30/2011					
Measurement Method: 6/10					
Meter Type: Marsh McBirney					
Measurement Rating: Poor					
Channel Width (ft):		7.65	**X-sectional Area (ft^2):**		7.65
Hydraulic Depth (ft):		1.00	**Average Velocity (fps):**		0.91
			Discharge (cfs):		10.25
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**
2.6	Lew				
3	0.45	0.15	0.068	0.000	0.000
3.5	0.5	0.2	0.100	0.000	0.000
4	0.5	0.5	0.250	0.000	0.000
4.5	0.5	1.1	0.550	0.000	0.000
5	0.5	1.25	0.625	0.000	0.000
5.5	0.5	1.15	0.575	0.240	0.138
6	0.5	1.3	0.650	1.020	0.663
6.5	0.5	1.75	0.875	2.180	1.908
7	0.5	1.55	0.775	3.610	2.798
7.5	0.5	1.5	0.750	2.790	2.093
8	0.5	1.45	0.725	2.24	1.624
8.5	0.5	1.35	0.675	1.290	0.871
9	0.5	1.2	0.600	0.140	0.084
9.5	0.5	0.75	0.375	0.190	0.071
10	0.375	0.15	0.056	0.000	0.000
10.25	REW				
Percent Error (%)		27.3%			

Location: R-2							
Date: 06/30/2011							
Measurement Method: 6/10							
Meter Type: Marsh McBirney							
Measurement Rating: Poor							
Channel Width (ft):		3.75	**X-sectional Area (ft^2):**		1.04		
Hydraulic Depth (ft):		0.28	**Average Velocity (fps):**		0.29		
			Discharge (cfs):		0.33		
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**		
0.90	LEW						
1.50	0.55	0.25	0.138	0.100	0.014		
2.00	0.50	0.40	0.200	0.340	0.068		
2.50	0.50	0.15	0.075	0.330	0.025		
3.00	0.50	0.40	0.200	0.470	0.094		
3.50	0.50	0.40	0.200	0.460	0.092		
4.00	0.50	0.30	0.150	0.210	0.032		
4.50	0.33	0.25	0.081	0.090	0.007		
4.65	REW						
Percent Error (%)		28.4%					

Location: R-3						
Date: 06/30/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		16.45	**X-sectional Area (ft^2):**		16.58	
Hydraulic Depth (ft):		1.01	**Average Velocity (fps):**		2.11	
			Discharge (cfs):		47.32	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
0.95	LEW	0.00		0		
1.00	0.53	0	0.079	0.000	0.000	
2.00	1.00	0.15	0.250	0.000	0.000	
3.00	1.00	0.25	0.400	0.450	0.180	
4.00	1.00	0.40	0.450	2.600	1.170	
5.00	1.00	0.45	0.750	3.160	2.370	
6.00	1.00	0.75	1.100	2.480	2.728	
7.00	1.00	1.10	1.200	3.710	4.452	
8.00	1.00	1.20	1.400	3.780	5.292	
9.00	1.00	1.40	1.550	3.940	6.107	
10.00	1.00	1.55	1.750	3.870	6.773	
11.00	1.00	1.75	1.950	3.410	6.650	
12.00	1.00	1.95	1.450	3.550	5.148	
13.00	1.00	1.45	1.250	3.270	4.088	
14.00	1.00	1.25	1.550	1.210	1.876	
15.00	1.00	1.55	1.000	0.490	0.490	
16.00	1.00	1.00	0.450	0.000	0.000	
17.00	0.70	0.45	0.000	0.000	0.000	
17.40	REW					
Percent Error (%)		14.3%				

Location: R-4							
Date: 06/30/2011							
Measurement Method: 6/10							
Meter Type: Marsh McBirney							
Measurement Rating: Poor							
Channel Width (ft):		17.50	**X-sectional Area (ft^2):**		19.89		
Hydraulic Depth (ft):		1.14	**Average Velocity (fps):**		2.51		
			Discharge (cfs):		62.34		
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**		
0.90	LEW						
1.00	0.55	0.35	0.193	0.000	0.000		
2.00	1.00	0.80	0.800	0.700	0.560		
3.00	1.00	1.25	1.250	0.610	0.763		
4.00	1.00	1.40	1.400	1.210	1.694		
5.00	1.00	1.40	1.400	2.260	3.164		
6.00	1.00	1.50	1.500	3.310	4.965		
7.00	1.00	1.60	1.600	4.040	6.464		
8.00	1.00	1.70	1.700	4.740	8.058		
9.00	1.00	1.55	1.550	5.010	7.766		
10.00	1.00	1.70	1.700	4.770	8.109		
11.00	1.00	1.50	1.500	4.190	6.285		
12.00	1.00	1.25	1.250	3.420	4.275		
13.00	1.00	1.35	1.350	3.310	4.469		
14.00	1.00	1.10	1.100	2.750	3.025		
15.00	1.00	0.65	0.650	2.030	1.320		
16.00	1.00	0.60	0.600	1.650	0.990		
17.00	1.00	0.35	0.350	1.240	0.434		
18.00	0.70	0.00	0.000	0.000	0.000		
18.40	-9.00		0.000				
Percent Error (%)		13.0%					

Location: R-5						
Date: 06/30/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		16.5	**X-sectional Area (ft^2):**		19.91	
Hydraulic Depth (ft):		1.21	**Average Velocity (fps):**		2.23	
			Discharge (cfs):		54.79	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
5.50	LEW					
6.00	0.75	0.35	0.263	1.020	0.268	
7.00	1.00	0.80	0.800	1.440	1.152	
8.00	1.00	1.20	1.200	2.230	2.676	
9.00	1.00	1.45	1.450	3.220	4.669	
10.00	1.00	1.40	1.400	4.020	5.628	
11.00	1.00	1.15	1.150	4.760	5.474	
12.00	1.00	1.55	1.550	3.970	6.154	
13.00	1.00	1.60	1.600	3.310	5.296	
14.00	1.00	1.50	1.500	1.910	2.865	
15.00	1.00	1.50	1.500	2.630	3.945	
16.00	1.00	1.50	1.500	3.560	5.340	
17.00	1.00	1.45	1.450	2.730	3.959	
18.00	1.00	1.35	1.350	2.260	3.051	
19.00	1.00	1.00	1.000	2.130	2.130	
20.00	1.00	0.80	0.800	1.430	1.144	
21.00	1.00	0.65	0.650	1.240	0.806	
22	1.00	0.50	0.500	0.470	0.235	
23.00	1.00	0.25	0.250	0.000	0.000	
24.00	0.70	0.00	0.000	0.000	0.000	
24.40	REW					
Percent Error (%)		11.2%				

August 2011

SURFACE AND GROUNDWATER TEST RESULTS AND SUPORTING DOCUMENTATION

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Reporting Frequency: Quarterly

Monitoring Period: August 2011

Findings:

(1) Surface Water. Samples were collected on August 07, 2011. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, is over copper limitations (see Table 1). The remaining R-5 constituents fall within the prescribed limitations for dissolved iron and zinc. There was no measureable flow at R-2 (tailings dam spillway) which reduced the release of copper from the tailings area to Dolly Creek in August. Concentrations of zinc were detected in all of the four samples taken but none of these concentrations exceeded the limitation of zinc. Iron concentration was detected on all four samples, They were all below the limitation of 1000 ug/l.

(2) Groundwater. Samples were not collected on August 07, 2011. Table 2 summarizes the depth of the groundwater from the site.
Groundwater elevations were measured in six of seven wells at the site; W-1 was lost during construction in 2007. Water depths were slightly lower than 2010. 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 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST

WALKER MINE TAILINGS, PLUMAS COUNTY

Aug-11

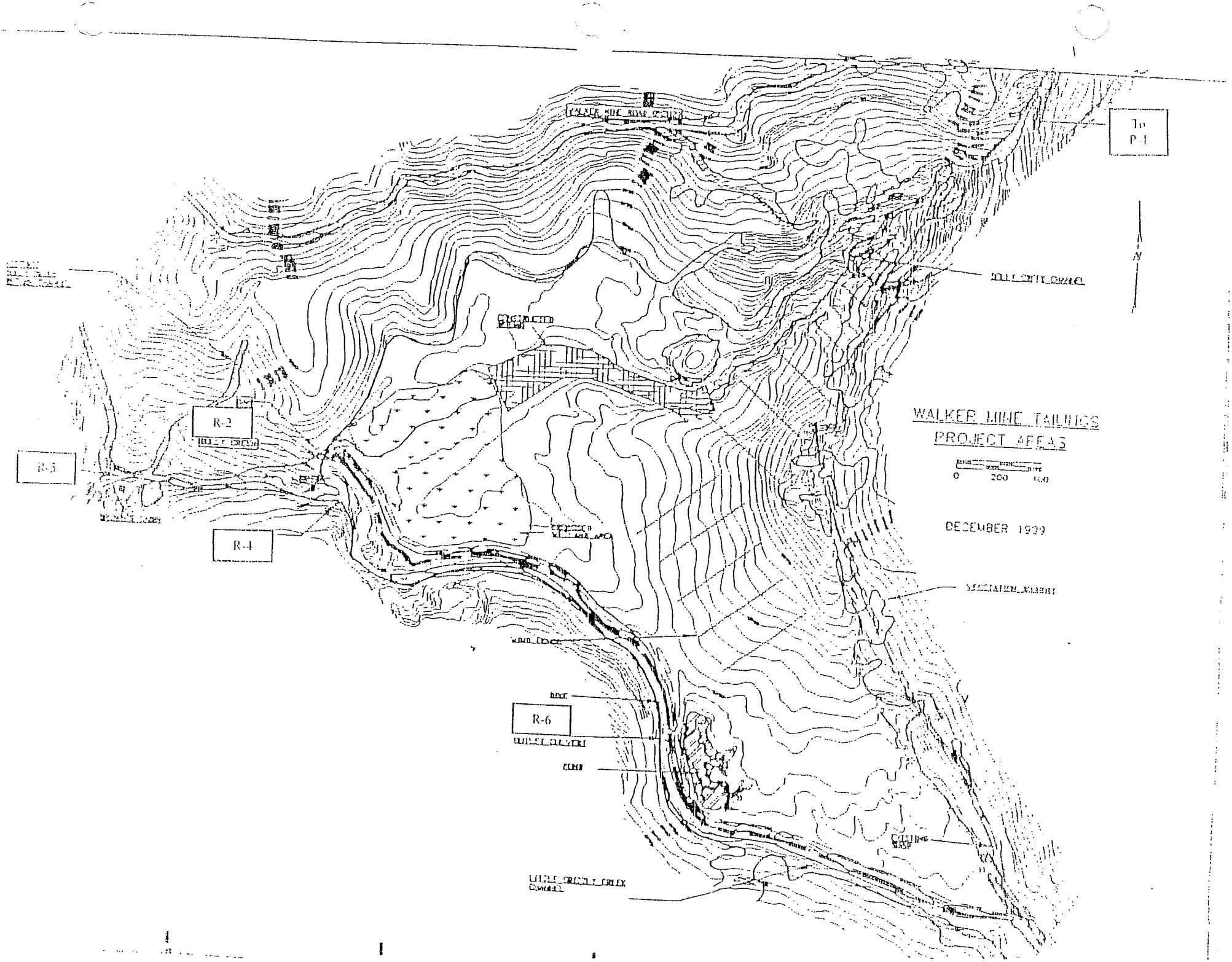
CONSTITUENT	UNITS	DETECTION LIMITS	R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	Limitation @R-5[3]
Field Parameters									
Flow	cfs		1.40	0.02	2.16	4.99	3.71	N/A	N/A
pH	number		8	7.25	7.9	7.96	8.15	N/A	N/A
Specific Conductance	umhos/cm		95.5	173.6	73	89.3	95.3	N/A	N/A
Air Temperature	F		76	69	70	71	70	N/A	N/A
Water Temperature	C		12.1	15.5	14.4	12.6	14.9	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	5	70.6	94.6	4305	57.5	57.2	N/A	N/A
Total Alkalinity as CaCO3	mg/l	1	60	40	50	40	50	N/A	N/A
Sulfate	mg/l	0.5	3	59	ND	3	4	N/A	N/A
Turbidity	NTU	0.05	NA	NO FLOW	NA	NA	NA	N/A	NOT MEASURED
Dissolved Iron	ug/l	20	162	345	287	372	374	N/A	1000
Copper	ug/l	0.5	18.9	94.6	1.48	6.82	7.4	N/A	5.56
Dissolved Zinc	ug/l	1.0	2.57	99.5	4.85	2.35	3	N/A	73.59

[1] R-3 is the background station located above the tailiings 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 75 mg/l as CaCO3.

	Limitation at R-5		
Tubidity at R-3 =			1.4
R-5 hardness =			57.2
Turbidity limitation at R-3 + 1			
Turbidity limitation at R-5 =			2.4
Iron limitation at R-5 =			1000
(EXP((LOG(Hardness at R-5,2.71828)*0.8545)-1.702))*0.96			
Copper limitation at R-5 =			5.56
(EXP((LOG(Hardness at R-5,2.71828)*0.8473)+0.884))*0.986			
Zinc limitation at R-5 =			73.59
	LN 50 =		3.912025637
	times		0.8545
			3.342825907
	minus		1.702
			1.640825907
	EXP(D21)		5.15942896
	times		0.96
			4.953051802
			4.953051802


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

WALKER MINE TAILINGS MONITORING PROGRAM

9-276.p
(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

Jolly Creek above Tailings @ Road 112

Date 8/7 2011 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 Marsh McBirney

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 76 °F @ 1438

Gage ..... Water 12.1 °C @ 1440

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

Observer .....

Control .....

pH 8.00

CONDUCTANCE 95.5 umhos/cm

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

samples @ 1436

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

River st—

Angle coef. Point	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	2.1										
	2.5		.55				0				.85
	3		.75				0				
	3.5		.75				0				
	4		.85				0				.50
	4.5		.8				.05				.33
	5		1.0				.41				.84
	5.5		.9				.62				.96
	6		.9				1.39				.97
	6.5		.85				.64				.98
	7		.6				0				.99
	7.5		.15				0				
RB	7.75										
⊙											1.00
											.33
											.56
											.97
											.96
											.94
											.92
											.90
											.85
											.50

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

WALKER MINE TAILINGS MONITORING PROGRAM

(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 8/7 2011 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 Marsh McBirney
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 69° F @ 1131
Gage ..... Water 15.5 °C @ 1128
..... Record removed ..... Intake flushed U
Observer .....
.....
Control .....
.....
pH 7.25
.....
CONDUCTANCE 173.6 umhos/cm
G. H. of zero flow ..... ft.

Samples @ 1124

River st—

Angle coeff. factors	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	1.7										
	2		.1				0				
	2.5		.1				0				
	3		.2				0				
	3.5		.2				.01				
	4		.3				.11				
	4.5		.2				.01				
	5		.15				0				
RB	5.3										

9-275-T
(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-3

Little Grizzly Creek above Tailings

Date 8/7 2011 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 Marsh McBirney

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 70.0 °F @ 1350

Gage ..... Water 14.4 °C @ 1348

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

Observer .....

Control .....

pH 7.90

CONDUCTANCE 73 umhos/cm

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

Samples @ 1345

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	3.1										
	3.5		.1				0				
	4		.3				0				
	4.5		.4				.36				
	5		.4				.98				
	5.5		.55				.50				
	6		.7				.74				
	6.5		.9				.19				
	7		1.0				.49				
	7.5		.9				1.03				
	8		1.0				.77				
	8.5		.9				.65				
	9		.4				.14				
	9.5		.25				0				
	10		.05				0				
RB	10.15										

9-276-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-4

Little Grizzly Creek below Tailings

Date 8/7 2011 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 Marsh McBirney

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 71° F @ 1230

Gage ..... Water 12.6 °C @ 1227

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

Observer .....

Control .....

pH 7.96

CONDUCTANCE 89.3 umhos/cm

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

ples @ 1225

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	2.5										
	3		.3				.67				
	3.5		.35				.78				
	4		.4				.71				
	4.5		.35				.73				
	5		.3				.84				
	5.5		.4				.75				
	6		.35				.89				
	6.5		.5				.77				
	7		.5				.78				
	7.5		.55				.91				
	8		.7				1.15				
	8.5		.6				1.12				
	9		.65				.86				
⊙	9.5		.6				1.08				
	10		.7				.86				
	10.5		.5				1.04				
	11		.45				.98				
	11.5		.35				.76				
	12		.1				.51				
RB	12.2										

WALKER MINE TAILINGS MONITORING PROGRAM

(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 8/7, 2011 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 Marsh McBirney
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 .....
Other .....
Gage .....
..... Record removed .....
Observer .....
.....
Control .....
.....
pH 8.15
.....
CONDUCTANCE 95.3 umhos/cm
G. H. of zero flow ..... ft.

samples @ 1525

Angle coef. Point	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	4.8										
	5		.05				0				
	5.5		.15				1.04				
	6		.3				.89				
	6.5		.5				1.87				
	7		.6				2.32				
	7.5		.55				1.02				
	8		.55				1.74				
	8.5		.7				1.11				
	9		.45				2.18				
	9.5		.4				.08				
	10		.4				2.40				
	10.5		.1				1.38				
	11		.4				1.06				
	11.5		.2				.81				
	12		.15				.08				
RB	12.4										

River at ....

9-275-T
(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 8/7 2011 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 None ⊖ Weather .....

Other ..... Air ..... °C@ .....

Gage ..... Water ..... °C@ .....

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

Observer .....

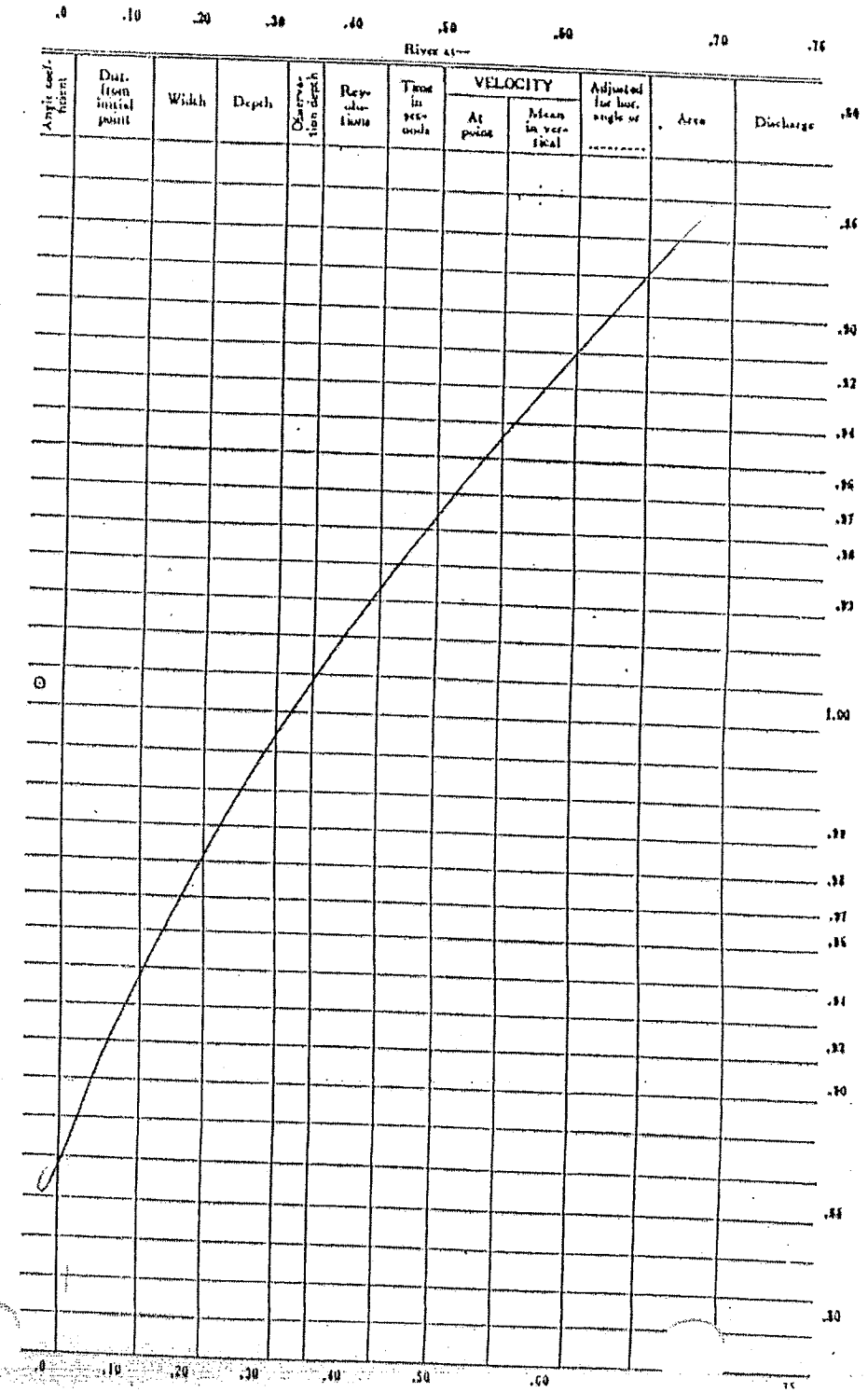
Control .....

pH .....

CONDUCTANCE umhos/cm

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

Flow — No Samples



ENVIRONMENTAL

Monthly
www.fglinc.com

CHAIN OF CUSTODY
Laboratory Copy (1 of 3)

72914:07/04/2011

TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information

Client: Plumas National Forest-Walker Mine
Address: Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971
Phone: (530)283-7712 Fax:
Contact Person: Ryan Nupen
Project Name: **Water Quality Monitoring**
Purchase Order Number:
Quote Number:
Sampler(s) Pat Flynn
Sampling Fee: _____ Pickup Fee: _____
Compositor Setup Date: __/__/__ Time: __/__
Lab Number: CH 1174946 7-10917

Note → Dissolved Metals "Not" Field Filtered or Preserved
Please Filter and Preserve at the lab!

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite(C) Grab(G)	Type of Sample **SEE REVERSE SIDE**	Potable(P) Non-Potable(NP) Ag Water(AgW)	Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)	Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL)	Metals, Diss-Cu,Hardness,Fe,Zn 250ml(P)	Wet Chemistry-SO4,pH,Alk. (CaCO3) pH - Analyzed in CH 16oz(P), 8oz(P)	~~Wet Chemistry-Turbidity~~ 250 ml(AGT)
1	R1	8/7/11	1436	G	DW				1	1,1	~~1~~
2	R2	↓	1124	G	DW				1	1,1	~~1~~
3	R3		1345	G	DW				1	1,1	~~1~~
4	R4		1225	G	DW				1	1,1	~~1~~
5	R5		1525	G	DW				1	1,1	~~1~~
~~6~~	~~R6~~			~~G~~	~~DW~~				~~1~~	~~1,1~~	~~1~~
~~7~~	~~W3~~			~~G~~	~~DW~~				~~1~~	~~1,1~~	
~~8~~	~~W5~~			~~G~~	~~DW~~				~~1~~	~~1,1~~	
~~9~~	~~W7~~			~~G~~	~~DW~~				~~1~~	~~1,1~~	

Remarks:
Seasonal: June-September
Do NOT SAMPLE W3, W5, W7 or for Turbidity per client via email (SE)

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
[signature]	8/8/11	1030	Ryan	8/9/11	1300	SCE	8/9/11	1530
Received By:	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**
[signature]	8/8/11	1030	SCE	↓	↓	CP	↓	↓
						Rep CP	8-9-11	1700

[signature] 8/10/11 Rec ontra

Corporate Offices & Laboratory
853 Corpor[illegible]
Santa Paul [illegible] 60
TEL. 805/[illegible]
FAX. 805/525-4172

Office & Laboratory
2500 Stagecoach Road
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563 B[illegible]
Chico, [illegible]
TEL: 53[illegible]
FAX: 530/343-3807

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San Luis Obispo, CA 93401
TEL: 805/783-2940
FAX: 805/525-4172

Field Office
[illegible]
M[illegible] 559/73[illegible]-2390
FAX: 559/734-8435

Table 2. GROUND WATER SUMMARY

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST

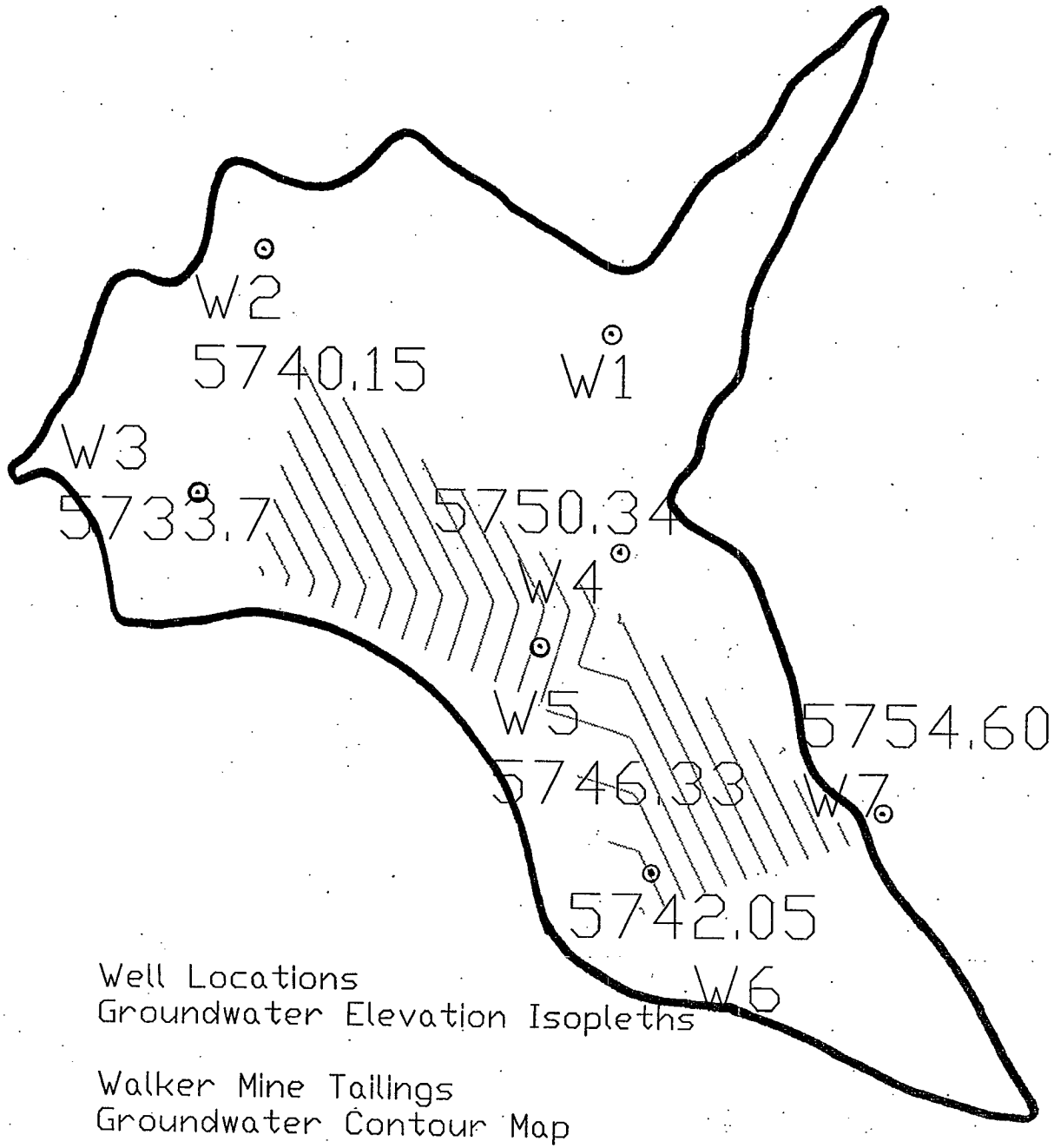
WALKER MINE TAILINGS, PLUMAS COUNTY

AUGUST2011

CONSTITUENT	UNIT	DETECTION LIMIT	W-1	WELL SITES W-2	W-3	W-4	W-5	W-6	W-7*
Field Parameters									
Ground Surface Elevation	ft	0.01	N/A	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	N/A	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	N/A	1.59	5.31	17.66	7.76	5.82	0.31
Water Surface Elevation	ft	0.01	N/A	5740.15	5733.52	5750.34	5746.33	5742.05	5754.60
Laboratory									
Total Hardness as CaCO3	mg/l	5.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Alkalinity	mg/l	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sulfate	mg/l	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Iron	ug/l	20.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Copper	ug/l	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dissolved Zinc	ug/l	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A

The data collected from this well are used for background comparisons. During this month no tests were done for dissolved metals

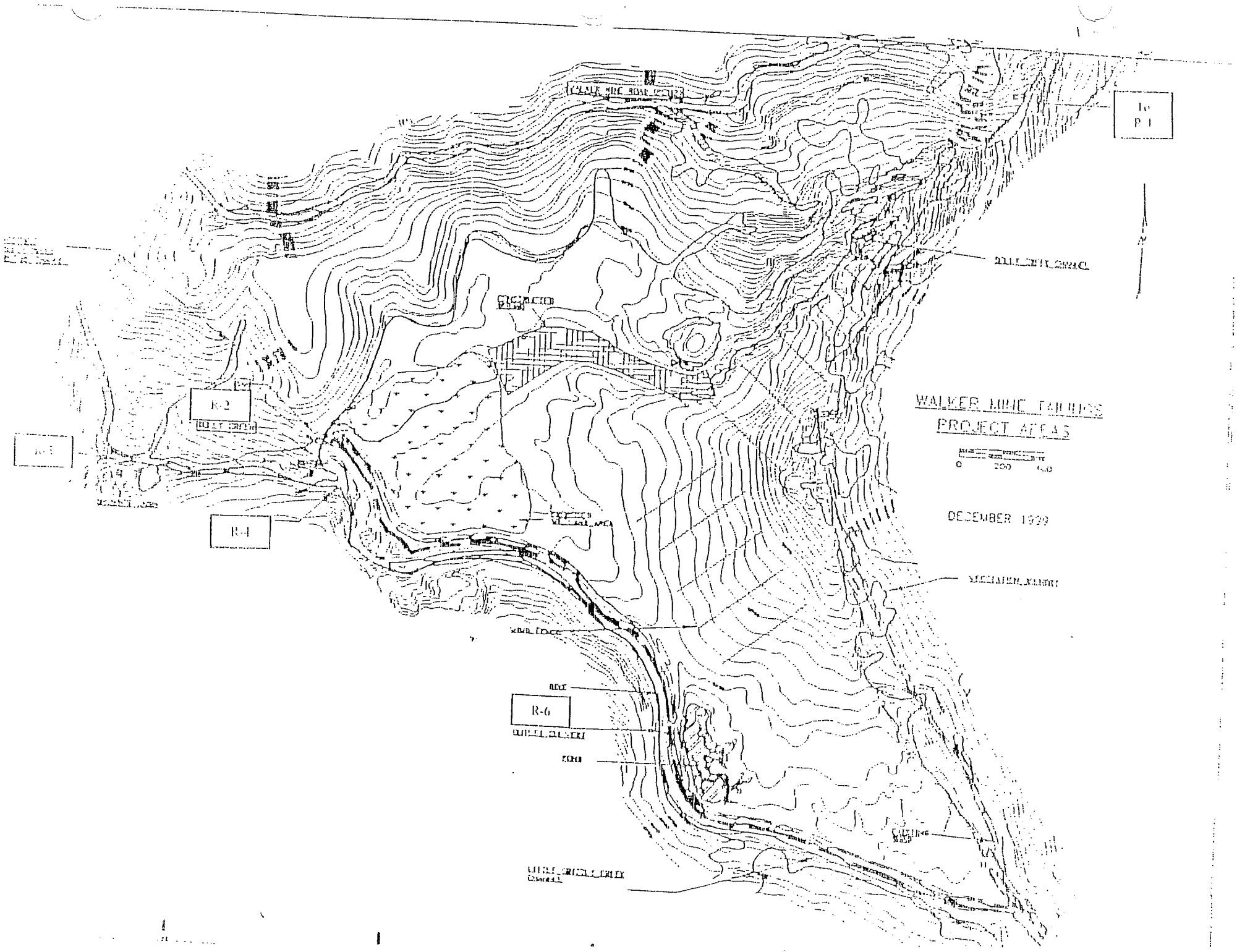
[1] N/A is not detected at or above the detection limit



Well Locations
Groundwater Elevation Isopleths

Walker Mine Tailings
Groundwater Contour Map

August 2011


R-2
R-4
R-6
WALKER MINE TAILINGS
PROJECT AREAS
DECEMBER 1999

WALKER TAILINGS
GROUNDWATER MONITORING PROGRAM

FLUID LEVEL GAUGING

SITE LOCATION: Walker Mine DATE: 8/7/11
COMPANY NAME: Sierra Env
PERSONNEL: Flynn

WELL	TIME	DEPTH TO WATER	COMMENTS
W-1A	1025	8.79	
2	1044	1.59	
3	1052	5.31	
4	0958	17.66	
5	1005	7.76	
6	1013	5.92	
7	0947	0.31	

Location: R-1					
Date: 8/07/2011					
Measurement Method: 6/10					
Meter Type: Marsh McBirney					
Measurement Rating: good					
Channel Width (ft):		5.65	**X-sectional Area (ft^2):**		4.00
Hydraulic Depth (ft):		0.71	**Average Velocity (fps):**		0.28
			Discharge (cfs):		1.40
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**
2.1	Lew				
2.5	0.45	0.55	0.248	0.000	0.000
3	0.5	0.75	0.375	0.000	0.000
3.5	0.5	0.75	0.375	0.000	0.000
4	0.5	0.85	0.425	0.000	0.000
4.5	0.5	0.8	0.400	0.050	0.020
5	0.5	1	0.500	0.410	0.205
5.5	0.5	0.9	0.450	0.620	0.279
6	0.5	0.9	0.450	1.390	0.626
6.5	0.5	0.85	0.425	0.640	0.272
7	0.5	0.6	0.300	0.000	0.000
7.5	0.375	0.15	0.056	0.000	0.000
7.75	REW				
Percent Error (%)		44.6%			

September 2, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Lab ID : CH 1174946
Customer : 7-10917

Laboratory Report

Introduction: This report package contains total of 9 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(5 pages)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
R1	08/07/2011	08/09/2011	CH 1174946-001	DW
R2	08/07/2011	08/09/2011	CH 1174946-002	DW
R3	08/07/2011	08/09/2011	CH 1174946-003	DW
R4	08/07/2011	08/09/2011	CH 1174946-004	DW
R5	08/07/2011	08/09/2011	CH 1174946-005	DW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CH 1174946-001	pH	15	2953.8 Minutes
CH 1174946-002	pH	15	3147 Minutes
CH 1174946-003	pH	15	3007.2 Minutes
CH 1174946-004	pH	15	3088.2 Minutes
CH 1174946-005	pH	15	2908.8 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Corporate Offices & Laboratory
853 Corporation Street
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FAX: 805/525-4172
CA NELAP Certification No. 01110CA

Office & Laboratory
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Stockton, CA 95215
TEL: 209/942-0182
FAX: 209/942-0423
CA ELAP Certification No. 1563

Office & Laboratory
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TEL: 530/343-5818
FAX: 530/343-3807
CA ELAP Certification No. 2670

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TEL: 805/783-2940
FAX: 805/525-4172
CA ELAP Certification No. 2775

Field Office
Visalia, California
TEL: 559/734-9473
Mobile: 559/737-2399
FAX: 559/734-8435

September 2, 2011
Plumas National Forest

Lab ID : CH 1174946
Customer : 7-10917

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	08/26/2011:212529 All analysis quality controls are within established criteria.
	08/23/2011:209253 All preparation quality controls are within established criteria, except: The following note applies to Magnesium: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
200.8	08/23/2011:212430 All analysis quality controls are within established criteria.
	08/23/2011:209300 All preparation quality controls are within established criteria.

Inorganic - Wet Chemistry QC

2320B	08/10/2011:211625 All analysis quality controls are within established criteria.
	08/10/2011:208756 All preparation quality controls are within established criteria.
300.0	08/15/2011:211817 All analysis quality controls are within established criteria.
	08/15/2011:208917 All preparation quality controls are within established criteria.
4500-H B	08/09/2011:700159 All preparation quality controls are within established criteria.
4500HB	08/09/2011:700164 All analysis quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2011-09-02

September 2, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R1
Project : Water Quality Monitoring

Lab ID : CH 1174946-001
Customer ID : 7-10917

Sampled On : August 7, 2011-14:36
Sampled By : Pat Flynn
Received On : August 9, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P,1]								
Copper	18.9	0.5	ug/L	1000[2]	200.8	08/23/11:209300	200.8	08/23/11:212430
Total Hardness as CaCO3	70.6	2.5	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Calcium	16.8	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Magnesium	6.98	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Iron	0.162	0.02	mg/L	0.3[2]	200.7	08/23/11:209253	200.7	08/26/11:212529
Zinc	2.57	1	ug/L		200.8	08/23/11:209300	200.8	08/23/11:212430
Wet Chemistry[P,1]								
Alkalinity (as CaCO3)	60	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Bicarbonate	70	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Carbonate	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Hydroxide	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
pH	8.0	--	units		4500-H B	08/09/11:700159	4500HB	08/09/11:700164
Sulfate	3	2	mg/L	500[2]	300.0	08/15/11:208917	300.0	08/15/11:211817

ND=Non-Detected, PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 2, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R2
Project : Water Quality Monitoring

Lab ID : CH 1174946-002
Customer ID : 7-10917

Sampled On : August 7, 2011-11:24
Sampled By : Pat Flynn
Received On : August 9, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P;1]								
Copper	94.6	0.5	ug/L	1000[2]	200.8	08/23/11:209300	200.8	08/23/11:212430
Total Hardness as CaCO3	93.1	2.5	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Calcium	30.8	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Magnesium	3.95	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Iron	0.345	0.02	mg/L	0.3[2]	200.7	08/23/11:209253	200.7	08/26/11:212529
Zinc	99.5	1	ug/L		200.8	08/23/11:209300	200.8	08/23/11:212430
Wet Chemistry[P;1]								
Alkalinity (as CaCO3)	40	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Bicarbonate	50	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Carbonate	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Hydroxide	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
pH	7.9	--	units		4500-H B	08/09/11:700159	4500HB	08/09/11:700164
Sulfate	59	2	mg/L	500[2]	300.0	08/15/11:208917	300.0	08/15/11:211817

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 2, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R3
Project : Water Quality Monitoring

Lab ID : CH 1174946-003
Customer ID : 7-10917

Sampled On : August 7, 2011-13:45
Sampled By : Pat Flynn
Received On : August 9, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P;I]								
Copper	1.48	0.5	ug/L	1000[2]	200.8	08/23/11:209300	200.8	08/23/11:212430
Total Hardness as CaCO3	43.5	2.5	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Calcium	11.3	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Magnesium	3.71	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Iron	0.287	0.02	mg/L	0.3[2]	200.7	08/23/11:209253	200.7	08/26/11:212529
Zinc	4.85	1	ug/L		200.8	08/23/11:209300	200.8	08/23/11:212430
Wet Chemistry[P;I]								
Alkalinity (as CaCO3)	50	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Bicarbonate	70	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Carbonate	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Hydroxide	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
pH	8.2	--	units		4500-H B	08/09/11:700159	4500HB	08/09/11:700164
Sulfate	ND	2	mg/L	500[2]	300.0	08/15/11:208917	300.0	08/15/11:211817

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 2, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R4
Project : Water Quality Monitoring

Lab ID : CH 1174946-004
Customer ID : 7-10917

Sampled On : August 7, 2011-12:25
Sampled By : Pat Flynn
Received On : August 9, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P;1]								
Copper	6.82	0.5	ug/L	1000[2]	200.8	08/23/11:209300	200.8	08/23/11:212430
Total Hardness as CaCO3	57.5	2.5	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Calcium	14.6	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Magnesium	5.11	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Iron	0.372	0.02	mg/L	0.3[2]	200.7	08/23/11:209253	200.7	08/26/11:212529
Zinc	2.35	1	ug/L		200.8	08/23/11:209300	200.8	08/23/11:212430
Wet Chemistry[P;1]								
Alkalinity (as CaCO3)	40	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Bicarbonate	50	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Carbonate	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Hydroxide	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
pH	8.1	--	units		4500-H B	08/09/11:700159	4500HB	08/09/11:700164
Sulfate	3	2	mg/L	500[2]	300.0	08/15/11:208917	300.0	08/15/11:211817

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 2, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R5
Project : Water Quality Monitoring

Lab ID : CH 1174946-005
Customer ID : 7-10917

Sampled On : August 7, 2011-15:25
Sampled By : Pat Flynn
Received On : August 9, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	7.40	0.5	ug/L	1000[2]	200.8	08/23/11:209300	200.8	08/23/11:212430
Total Hardness as CaCO3	57.2	2.5	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Calcium	14.7	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Magnesium	5.00	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Iron	0.374	0.02	mg/L	0.3[2]	200.7	08/23/11:209253	200.7	08/26/11:212529
Zinc	3.00	1	ug/L		200.8	08/23/11:209300	200.8	08/23/11:212430
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	50	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Bicarbonate	60	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Carbonate	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Hydroxide	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
pH	8.2	--	units		4500-H B	08/09/11:700159	4500HB	08/09/11:700164
Sulfate	4	2	mg/L	500[2]	300.0	08/15/11:208917	300.0	08/15/11:211817

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 2, 2011
Plumas National Forest-Walker Mine

Lab ID : CH 1174946
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	(SP 1108423-001)	MS	mg/L	12.50	204 %	<¼	
			MSD	mg/L	12.50	173 %	<¼	
			MSRPD	mg/L	798.8	5.3%	≤20.0	
	200.7	08/26/11:212529AC	CCV	ppm	25.00	98.8 %	90-110	
			CCB	ppm		-0.05	1.0	
			CCV	ppm	25.00	97.1 %	90-110	
			CCB	ppm		-0.05	1.0	
Iron	200.7	(SP 1108423-001)	MS	ug/L	3992	125 %	75-125	
			MSD	ug/L	3992	118 %	75-125	
			MSRPD	ug/L	798.8	5.9%	≤20.0	
	200.7	08/26/11:212529AC	CCV	ppm	4.990	97.6 %	90-110	
			CCB	ppm		-0.0109	0.05	
			CCV	ppm	4.990	95.8 %	90-110	
			CCB	ppm		-0.0080	0.05	
Magnesium	200.7	(SP 1108423-001)	MS	mg/L	12.50	126 %	75-125	435
			MSD	mg/L	12.50	121 %	75-125	
			MSRPD	mg/L	798.8	1.9%	≤20.0	
	200.7	08/26/11:212529AC	CCV	ppm	25.00	97.5 %	90-110	
			CCB	ppm		-0.002	1.0	
			CCV	ppm	25.00	94.1 %	90-110	
			CCB	ppm		-0.003	1.0	
Copper	200.8	(STK1136919-001)	MS	ug/L	5.000	83.0 %	75-125	
			MSD	ug/L	5.000	106 %	75-125	
			MSRPD	ug/L	4.992	7.0%	≤20	
	200.8	08/23/11:212430EMV	CCV	ppb	120.0	100 %	90-110	
			CCB	ppb		-0.006	1	
			CCV	ppb	120.0	98.0 %	90-110	
			CCB	ppb		0.02	1	
Zinc	200.8	(STK1136919-001)	MS	ug/L	5.000	94.9 %	75-125	
			MSD	ug/L	5.000	90.3 %	75-125	
			MSRPD	ug/L	4.992	0.23	≤10	
	200.8	08/23/11:212430EMV	CCV	ppb	120.0	97.9 %	90-110	
			CCB	ppb		-0.08	10	
			CCV	ppb	120.0	97.4 %	90-110	
			CCB	ppb		0.01	10	
Wet Chem								
Alkalinity (as CaCO3)	2320B	(STK1136890-001)	Dup	mg/L		0.007%	3.42	
	2320B	08/10/11:211625SBL	CCV	mg/L	234.9	93.8 %	90-110	
			CCV	mg/L	234.9	93.8 %	90-110	
Bicarbonate	2320B	(STK1136890-001)	Dup	mg/L		0.0%	4.78	
Carbonate	2320B	(STK1136890-001)	Dup	mg/L		0.0	10	
Hydroxide	2320B	(STK1136890-001)	Dup	mg/L		0.0	10	
Sulfate	300.0	08/15/11:208917CHL	LCS	mg/L	50.00	105 %	90-110	
		(CH 1174946-001)	MS	mg/L	1000	105 %	78-137	
			MSD	mg/L	1000	106 %	78-137	
			MSRPD	mg/L	100.0	0.6%	≤12.3	
	300.0	08/15/11:211817CHL	CCB	ppm		-0.67	2	
			CCV	ppm	50.00	104 %	90-110	
			CCB	ppm		-0.57	2	
			CCV	ppm	50.00	107 %	90-110	
pH	4500-H B	(CH 1174631-013)	Dup	units		0.1%	4.80	
	4500HB	08/09/11:700164KAB	CCV	units	8.000	100 %	95-105	
			CCV	units	8.000	99.8 %	95-105	

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September 2, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R5
Project : Water Quality Monitoring

Lab ID : CH 1174946-005
Customer ID : 7-10917

Sampled On : August 7, 2011-15:25
Sampled By : Pat Flynn
Received On : August 9, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P1]								
Copper	7.40	0.5	ug/L	1000[2]	200.8	08/23/11:209300	200.8	08/23/11:212430
Total Hardness as CaCO3	57.2	2.5	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Calcium	14.7	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Magnesium	5.00	1	mg/L		200.7	08/23/11:209253	200.7	08/26/11:212529
Iron	0.374	0.02	mg/L	0.3[2]	200.7	08/23/11:209253	200.7	08/26/11:212529
Zinc	3.00	1	ug/L		200.8	08/23/11:209300	200.8	08/23/11:212430
Wet Chemistry[P1]								
Alkalinity (as CaCO3)	50	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Bicarbonate	60	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Carbonate	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
Hydroxide	ND	10	mg/L		2320B	08/10/11:208756	2320B	08/10/11:211625
pH	8.2	--	units		4500-H B	08/09/11:700159	4500HB	08/09/11:700164
Sulfate	4	2	mg/L	500[2]	300.0	08/15/11:208917	300.0	08/15/11:211817

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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September 2, 2011

Plumas National Forest-Walker Mine

Lab ID : CH 1174946

Customer : 7-10917

Quality Control - Inorganic

Definition	
CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
<¼	: High Sample Background - Spike concentration was less than one forth of the sample concentration.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.
Explanation	
435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

Location: R-2						
Date: 8/07/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: good						
Channel Width (ft):		3.60	**X-sectional Area (ft^2):**		0.60	
Hydraulic Depth (ft):		0.17	**Average Velocity (fps):**		0.02	
			Discharge (cfs):		0.02	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
1.70	LEW					
2.00	0.40	0.10	0.040	0.000	0.000	
2.50	0.50	0.10	0.050	0.000	0.000	
3.00	0.50	0.20	0.100	0.000	0.000	
3.50	0.50	0.20	0.100	0.010	0.001	
4.00	0.50	0.30	0.150	0.110	0.017	
4.50	0.50	0.20	0.100	0.010	0.001	
5.00	0.40	0.15	0.060	0.000	0.000	
5.30	REW					
Percent Error (%)		89.2%				

Location: R-3						
Date: 8/07/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: good						
Channel Width (ft):		7.05	**X-sectional Area (ft^2):**		3.91	
Hydraulic Depth (ft):		0.55	**Average Velocity (fps):**		0.42	
			Discharge (cfs):		2.16	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
3.10	LEW					
3.50	0.45	0.10	0.045	0.000	0.000	
4.00	0.50	0.30	0.150	0.000	0.000	
4.50	0.50	0.40	0.200	0.360	0.072	
5.00	0.50	0.40	0.200	0.980	0.196	
5.50	0.50	0.55	0.275	0.500	0.138	
6.00	0.50	0.70	0.350	0.740	0.259	
6.50	0.50	0.90	0.450	0.190	0.086	
7.00	0.50	1.00	0.500	0.490	0.245	
7.50	0.50	0.90	0.450	1.030	0.464	
8.00	0.50	1.00	0.500	0.770	0.385	
8.50	0.50	0.90	0.450	0.650	0.293	
9.00	0.50	0.40	0.200	0.140	0.028	
9.50	0.50	0.25	0.125	0.000	0.000	
10.00	0.33	0.05	0.016	0.000	0.000	
10.15	REW					
Percent Error (%)		21.4%				

Location: R-4						
Date: 8/07/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: GOOD						
Channel Width (ft):		9.70	**X-sectional Area (ft^2):**		5.66	
Hydraulic Depth (ft):		0.58	**Average Velocity (fps):**		0.85	
			Discharge (cfs):		4.99	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
2.50	LEW					
3.00	0.50	0.30	0.150	0.670	0.101	
3.50	0.50	0.35	0.175	0.780	0.137	
4.00	0.50	0.40	0.200	0.710	0.142	
4.50	0.50	0.35	0.175	0.730	0.128	
5.00	0.50	3.00	1.500	0.840	1.260	
5.50	0.50	0.40	0.200	0.750	0.150	
6.00	0.50	0.35	0.175	0.890	0.156	
6.50	0.50	0.50	0.250	0.770	0.193	
7.00	0.50	0.50	0.250	0.780	0.195	
7.50	0.50	0.55	0.275	0.910	0.250	
8.00	0.50	0.70	0.350	1.150	0.403	
8.50	0.50	0.60	0.300	1.120	0.336	
9.00	0.50	0.65	0.325	0.860	0.280	
9.50	0.50	0.60	0.300	1.080	0.324	
10.00	0.50	0.70	0.350	0.860	0.301	
10.50	0.50	0.50	0.250	1.040	0.260	
11.00	0.50	0.45	0.227	0.980	0.222	
11.50	0.50	0.35	0.175	0.760	0.133	
12.00	0.35	0.10	0.035	0.510	0.018	
12.20	REW					
Percent Error (%)		25.3%				

Location: R-5						
Date: 8/07/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: good						
Channel Width (ft):		7.60	**X-sectional Area (ft^2):**		2.59	
Hydraulic Depth (ft):		0.34	**Average Velocity (fps):**		1.20	
			Discharge (cfs):		3.71	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
4.80	LEW					
5.00	0.35	0.05	0.018	0.000	0.000	
5.50	0.50	0.15	0.075	1.040	0.078	
6.00	0.50	0.30	0.150	0.890	0.134	
6.50	0.50	0.50	0.250	1.870	0.468	
7.00	0.50	0.60	0.300	2.320	0.696	
7.50	0.50	0.55	0.275	1.020	0.281	
8.00	0.50	0.55	0.275	1.740	0.479	
8.50	0.50	0.40	0.200	1.110	0.222	
9.00	0.50	0.45	0.225	2.180	0.491	
9.50	0.50	0.40	0.200	0.080	0.016	
10.00	0.50	0.40	0.200	2.400	0.480	
10.50	0.50	0.10	0.050	1.380	0.069	
11.00	0.50	0.40	0.200	1.060	0.212	
11.50	0.50	0.20	0.100	0.810	0.081	
12.00	0.45	0.15	0.068	0.080	0.005	
12.40	REW					
Percent Error (%)		18.8%				

October 2011

SURFACE AND GROUNDWATER TEST RESULTS AND SUPORTING DOCUMENTATION

MONITORING REPORT

Discharger: USDA Forest Service, Plumas National Forest

Facility: Walker Mine Tailings, Plumas County

Reporting Frequency: Quarterly

Monitoring Period: October 2011

Findings:

(1) Surface Water. Samples were collected on 10/02/2011. The surface water sample collected at the compliance station, R-5, Little Grizzly Creek near Brown's Cabin, was over the limitation for copper (see Table 1). The remaining R-5 constituents fall within the prescribed limitations for dissolved iron and zinc (.23 mg/L and 8.13ug/L). Concentrations of zinc were detected in 4 of the 5 samples taken but none of these concentrations exceeded the limitation of zinc.

(2) Groundwater. Samples were collected on 10/02/2011. Table 2 summarizes the findings for groundwater samples collected from the site. No concentrations of dissolved copper (<1.0 ug/l) were found at the sampling well (W-7). Additionally, concentrations of dissolved zinc were found in wells (W-3, W-5), with a maximum concentration of .0072 mg/l at W-5. Dissolved iron was found in W-5 with a measured concentration of 24.4 mg/l. Dissolved iron at W-5 decrease 8.1% over the dissolved iron from the September of 2010 sample. Dissolved iron in W-7 was not detected in September 2010 and October 2011 These results will require out-year testing of W-5 and W-7 to continually monitor the marked change that has occurred in the groundwater iron concentrations at these locations.

Groundwater elevations were measured in six of seven wells at the site; W-1 was destroyed during construction in 2007. Depth to water measurements decreased slightly from September 2010. The results continue to show a definite gradient towards Little Grizzly Creek along the Dolly Creek Channel 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 of its course adjacent to the tailings area.

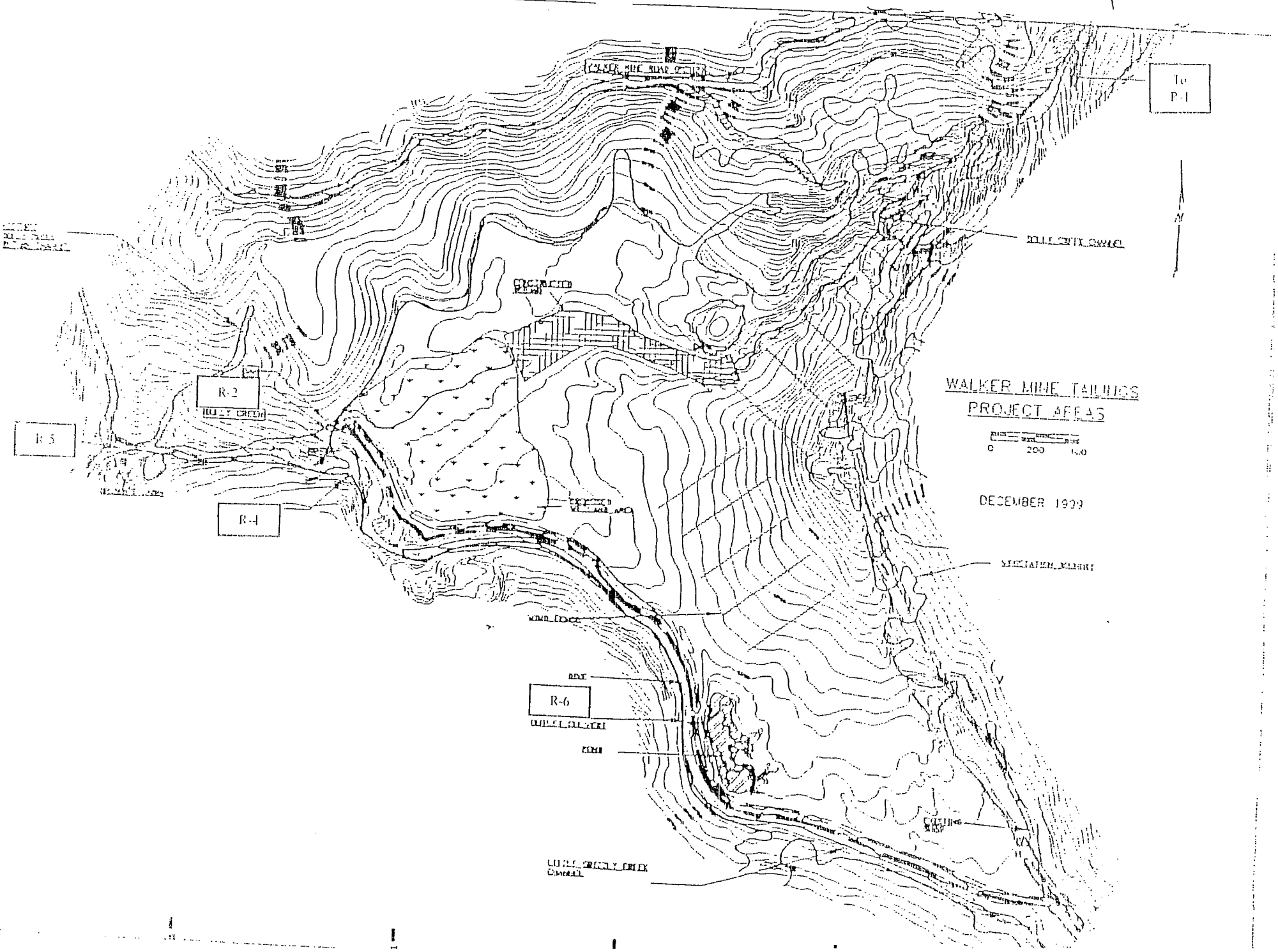
R-1
R-2
R-3
R-4
R-6
WALKER MINE TAILINGS
PROJECT AREAS
0
200
DECEMBER 1999

Table 1. SURFACE WATER SUMMARY REPORT

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST

WALKER MINE TAILINGS, PLUMAS COUNTY

Oct-11

CONSTITUENT	UNITS	DETECTION LIMITS	R-1	R-2	R-3[1]	R-4	R-5[2]	R-6	Limitation @R-5[3]
Field Parameters									
Flow	cfs	N/A	1.24	N/A	0.4	1.79	1.4	0	N/A
pH	number	N/A	8.22	N/A	8.09	7.97	8.27	N/A	N/A
Specific Conductance	umhos/cm	N/A	100.2	N/A	94.3	115	113.7	N/A	N/A
Air Temperature	℉	N/A	58	N/A	60	53	57	N/A	N/A
Water Temperature	℃	N/A	9.3	N/A	12.7	11.5	11.2	N/A	N/A
Laboratory									
Total Hardness as CaCO3	mg/l	5	66.2	N/A	53	67.1	67.1	N/A	N/A
Total Alkalinity as CaCO3	mg/l	1	71	N/A	61.7	69.8	71.2	N/A	N/A
Sulfate	mg/l	0.5	0.915	N/A	ND	6.56	6.92	N/A	N/A
Turbidity	NTU	0.05	1.18	N/A	1.1	1.77	3.8	N/A	2.1
Dissolved Iron	ug/l	20	0.2	N/A	0.3	0.34	0.23	N/A	1000
Copper	ug/l	0.5	9.59	N/A	1.44	7.92	5.86	N/A	6.37
Dissolved Zinc	ug/l	1.0	1.66	N/A	1.29	5.73	8.13	N/A	84.25

[1] R-3 is the background station located above the tailiings 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 50 mg/l as CaCO3.

	Limitation at R-5			
Tubidity at R-3 =			1.1	
R-5 hardness =			67.1	
Turbidity limitation at R-3 + 1				
Turbidity limitation at R-5 =			2.1	
Iron limitation at R-5 =			1000	
(EXP((LOG(Hardness at R-5,2.71828)*0.8545)-1.702))*0.96				
Copper limitation at R-5 =			6.37	
(EXP((LOG(Hardness at R-5,2.71828)*0.8473)+0.884))*0.986				
Zinc limitation at R-5 =			84.25	
	LN 50 =		3.912025637	
	times		0.8545	
			3.342825907	
	minus		1.702	
			1.640825907	
	EXP(D21)		5.15942896	
	times		0.96	
			4.953051802	
			4.953051802	

WALKER MINE TAILINGS MONITORING PROGRAM

9-276.2
(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 10/2 2011 Party Flynn

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

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

Method coef. ..... Her. angle coef. ..... Susp. coef. ..... Meter No. .....

Type of meter Marsh McBirney.

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 .....

Other .....

Gage .....

..... Record removed .....

Observer .....

Control .....

pH 8.22

CONDUCTANCE 100.2 umhos/cm

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

Samples @ 1704

Weather Cool - Clear

Air 58 °C @ 1711

Water 9.3 °C @ 1709

Intake flushed

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Quarter-section depth	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	Adjusted for ice, angle or	Area	Discharge
CB	1.9										
	2		.1				0				
	2.5		.4				0				
	3		.6				0				
	3.5		.7				0				
	4		.7				0				
	4.5		.8				0				
	5		.75				.08				
	5.5		1.0				.28				
	6		.9				.56				
	6.5		.65				.78				
	7		.85				1.32				
	7.5		.5				0				
	8		.1				0				
RB	8.2										

WALKER MINE TAILINGS MONITORING PROGRAM

8-2755
(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 10/2 19 2011 Party Flynn
Width ..... Area ..... Vel. ..... G. H. ..... Disch. .....
Method ..... No. sects. ..... G. H. change ..... in ..... hrs. Susp. .....
Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. .....
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 .....
Current .....
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 "No Flow"
Flow ..... Weather .....
Other ..... Air .....°C@ .....
Gage ..... Water .....°C@ .....
..... Record removed ..... Intake flushed "
Observer .....
.....
Control .....
.....
pH .....
.....
CONDUCTANCE ..... umhos/cm
G. H. of zero flow ..... ft.

N Samples - No Flow (Dry)

River at —

Angle coef. Notes	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
	"					"					
		No Flow									

WALKER MINE TAILINGS MONITORING PROGRAM

9-2764 (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-3

Little Grizzly Creek above Tailings

Date 10/2 2011 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 Marsh-McBirney

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 Clear

Other ..... Air 60° F @ 1631

Gage ..... Water 12.7 °C @ 1633

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

Observer .....

.....

Control .....

.....

pH 8.09

.....

CONDUCTANCE 94.3 umhos/cm

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

Samples @ 1626

River at—

Angle coef.	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in secs.	VELOCITY: At point	VELOCITY: Mean in vertical	Adjusted for hor. angle or	Area	Discharge
LB	3.2										
	3.5		.1				0				
	4		.2				0				
	4.5		.2				.15				
	5		.4				.19				
	5.5		.6				.14				
	6		.65				.09				
	6.5		.8				.07				
	7		.9				.21				
	7.5		.8				.08				
	8		.65				.44				
	8.5		.35				.16				
	9		.1				0				
RB	9.35										
0											

9-276-1
(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-4

Little Grizzly Creek below Tailings

Date 10/2 2011 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 Marsh McBirney

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 Cool - Clear

Other ..... Air 53 °F @ 1538

Gage ..... Water 11.5 °C @ 1540

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

Observer .....

Control .....

pH 7.97

CONDUCTANCE 115 umhos/cm

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

...yles @ 1525

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	2.6										
	3		.15				.39				
	3.5		.2				.56				
	4		.2				.52				
	4.5		.2				.45				
	5		.15				.47				
	5.5		.25				.14				
	6		.2				.49				
	6.5		.3				.37				
	7		.3				.50				
	7.5		.4				.42				
	8		.5				.71				
	8.5		.5				.36				
	9		.5				.55				
⊙	9.5		.5				.51				
	10		.45				.43				
	10.5		.4				.57				
	11		.45				.32				
	11.5		.4				.24				
RB	12										

WALKER MINE TAILINGS MONITORING PROGRAM

9-2764
(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 10/2/2011 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 Marsh McBirney

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

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

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

Meas. pluts .... % 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 Cool - Clear

Other ..... Air 57 °F @ 1752

Gage ..... Water 11.2 °C @ 1750

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

Observer .....

Control .....

pH 8.27

CONDUCTANCE 113.7 umhos/cm

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

Sample 1745

River at —

Angle coef. factor	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	3.6										
	4		.1				.25				
	4.5		.2				1.31				
	5		.35				1.82				
	5.5		.45				.58				
	6		.3				.39				
	6.5		.35				.61				
	7		.25				.64				
	7.5		.3				0				
	8		.3				.83				
	8.5		.25				1.39				
	9		.2				1.93				
	9.5		.2				.69				
	10.		.1				0				
0	10.5		.05				0				
RB	10.7										

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 10/2 2011 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 ......

Gage ...... Air ......°C@ ......

...... Water ......°C@ ......

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

Observer ......

Control ......

pH ......

CONDUCTANCE ...... umhos/cm

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

No samples - No Flow

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
	"	No Flow					"				

ENVIRONMENTAL

Monthly

www.fglinc.com

CHAIN OF CUSTODY

Laboratory Copy (1 of 3)

72914:09/05/2011

Client: Plumas National Forest-Walker Mine

Address: Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Phone: (530)283-7712 Fax:

Contact Person: Ryan Nupen

Project Name: **Water Quality Monitoring**

Purchase Order Number:

Quote Number:

Sampler(s) Pat Flynn

Sampling Fee: _____ Pickup Fee: _____

Compositor Setup Date: __/__/__ Time: __/__

Lab Number: CH 1176245 7-10917

Samp Num	Location Description	Date Sampled	Time Sampled	Method of Sampling: Composite(C) Grab(G)	Type of Sample **SEE REVERSE SIDE**	Potable(P) Non-Potable(NP) Ag Water(AgW)	Bacti Type: Other(O) System(SYS) Source(SR) Waste(W)	Bacti Reason: Routine(ROUT) Repeat(RPT) Replace(RPL) Other(O) Special(SPL)	TEST DESCRIPTION - See Reverse side for Container, Preservative and Sampling information: Metals: Diss-Cu,Hardness,Fe,Zn 250ml(P)	Wet Chemistry-SO4,pH,Alk. (CaCO3)	pH - Analyzed in CH 16oz(P), 8oz(P)	Wet Chemistry-Turbidity 250 ml(AGT)
1	R1	10/2/11	1704	G	DW				1	1,1		1
2	[redacted]			G	DW							
2	R3	10/2/11	1626	G	DW				1	1,1		1
3	R4	10/2/11	1525	G	DW				1	1,1		1
4	R5	10/2/11	1745	G	DW				1	1,1		1
5	[redacted]			G	DW							
5	W3	10/2/11	1140	G	DW				1	1,1		
6	W5	10/2/11	1248	G	DW				1	1,1		
7	W7	10/2/11	1418	G	DW				1	1,1		

Remarks:

Seasonal: June-September

Relinquished	Date:	Time:	Relinquished	Date:	Time:	Relinquished	Date:	Time:
Pat Flynn	10/3/11	0720	Nupen	10/3/11	1240	SCE	10/3/11	1530
Received By:	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**	**Received By:**	**Date:**	**Time:**
Tom Nupen	10/3/11	0720	SCE			CP		
Rel CP	10.3.11	1700						

Rec on Ice 1700

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Table 2. GROUND WATER SUMMARY

U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, PLUMAS NATIONAL FOREST
WALKER MINE TAILINGS, PLUMAS COUNTY
OCTOBER 2011

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	N/A	5742.05	5739.15	5768.27	5754.28	5748.04	5753.85
Top of Cap Elevation	ft	0.01	N/A	5741.74	5738.83	5768.00	5754.09	5747.87	5754.91
Depth to Water	ft	0.01	N/A	2.45	6.07	21.28	10.22	6.78	0.65
Water Surface Elevation	ft	0.01	N/A	5739.29	5732.76	5746.72	5743.87	5741.09	5754.26
Laboratory									
Total Hardness as CaCO3	mg/l	5.0	N/A	N/A	177.0	N/A	165.0	N/A	28.2
Total Alkalinity	mg/l	1.0	N/A	N/A	111.0	N/A	51.2	N/A	36.6
Sulfate	mg/l	0.5	N/A	N/A	77.9	N/A	155.0	N/A	0.0
Dissolved Iron	mg/l	20.0	N/A	N/A	0.001	N/A	0.024	N/A	0.000
Dissolved Copper	ug/l	0.5	N/A	N/A	0.002	N/A	0.005	N/A	N/A
Dissolved Zinc	ug/l	1.0	N/A	N/A	0.0	N/A	0.007	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.

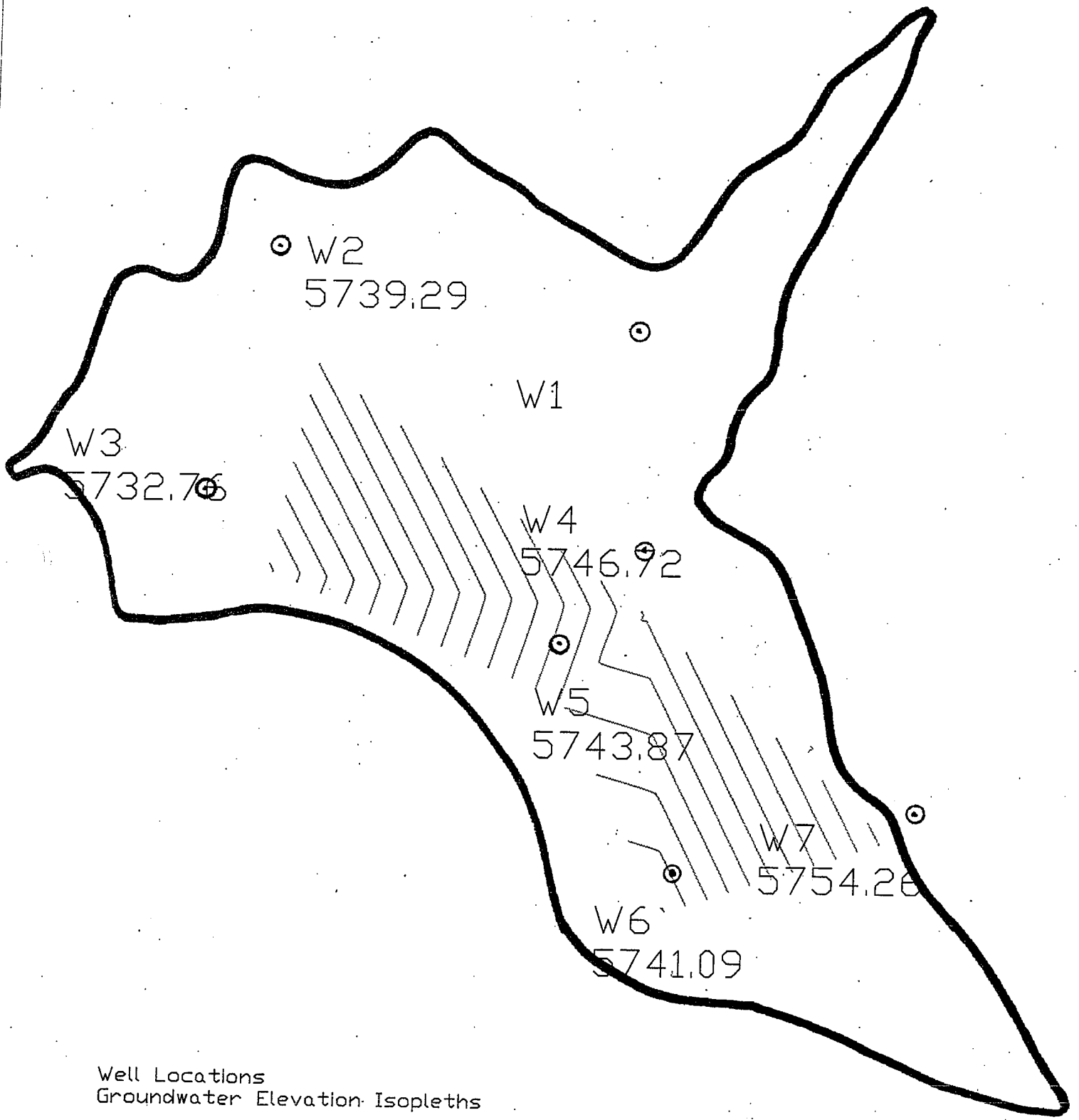
[1] ND is not detected at or above the detection limit

WALKER TAILINGS
GROUNDWATER MONITORING PROGRAM

FLUID LEVEL GAUGING

SITE LOCATION: Walker Mine DATE: 10/2/11
COMPANY NAME: Sierra Env
PERSONNEL: Flynn

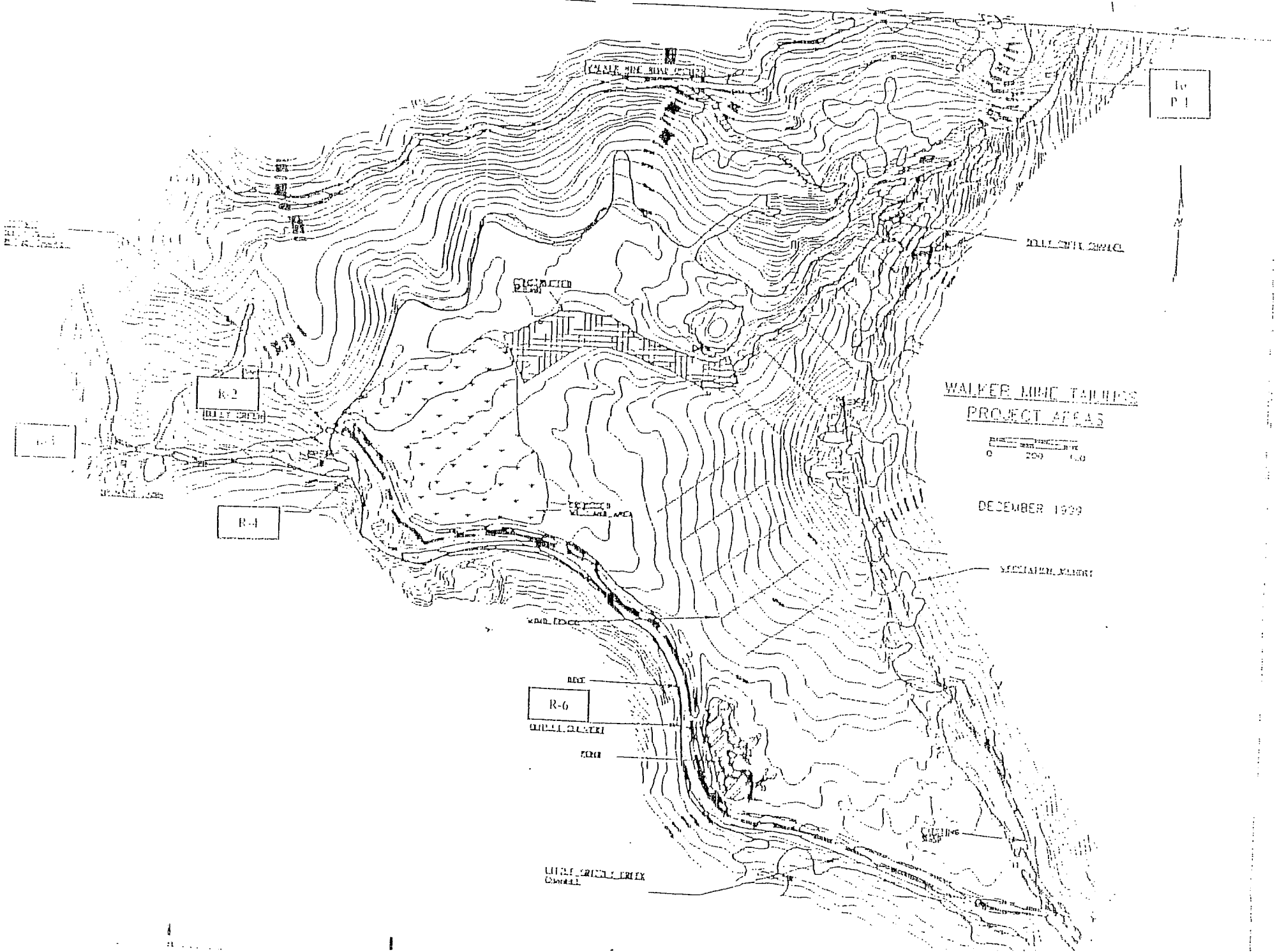
WELL	TIME	DEPTH TO WATER	COMMENTS
W-1A	1200	9.94	
2	1040	2.45	
3	1049	6.07	
4	1312	21.28	
5	1216	10.22	
6	1319	6.78	
7	1351	0.65	



Well Locations
Groundwater Elevation Isopleths

Walker Mine Tailings
Groundwater Contour Map

OCTOBER 2011


R-2
R-4
R-6
WALKER MINE TAILINGS
PROJECT AREAS
DECEMBER 1999

Water-Quality Sampling Information

Project Number: (W)

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Dry / Cool - Clear - Breezy

Page 1 of 1

Date: 10/2/11

Day: M T W Th F S (S)

Staff: Flynn

Comments :

SAMPLING METHOD

- ☐ Centrifugal Pump
- ☒ Submersible Pump Grundfos
- ☐ Hand Bail
- ☐ Disposable Bailer
- ☐ Teflon Bailer
- ☐ _____ (other)

Sample Number: W-3

- ☐ FB: _____
- ☐ DUP: _____

Analysis Requested: Diss Cu, Fe, Zn Hardness, Alk, pH

Number and Types of Bottle Used

Method of shipment: FGL (lab name)

- ☐ Courier
- ☐ Hand Deliver

Well Number: W-3
Depth of Water: 6.07
Well Depth: 34.25
Height of Water Column: 28.18
Volume in Well: (gallons) 4.51
3 Well Volumes: (gallons) 13.53

Well Diameter: 2"

- ☒ 2" (0.16 gallon / feet)
- ☐ 4" (0.65 gallon/ feet)
- ☐ 5" (1.02 gallon/ feet)
- ☐ 6" (1.47 gallon/ feet)

Calculation Area
Height of water column =
Depth to water =
80% DTW =

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1107								Start Purge
1114		5		12.5	7.58	309	5.86	Low Tb/No odor
1122		10		11.4	7.89	288	3.97	" "
1131		15		11.0	7.99	288	3.69	" "
1140								Sample W-3

Inlet Depth: _____

_____ Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: ——

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Dry / Warm - Clear - Windy

Page 1 of 1

Date: 10/2/11

Day: M T W Th F S (S)

Staff: Flynn

Comments : _____

SAMPLING METHOD

- ☐ Centrifugal Pump
- ☒ Submersible Pump Grundfos
- ☐ Hand Bail
- ☐ Disposable Bailer
- ☐ Teflon Bailer
- ☐ _____ (other)

Sample Number: W-5

- ☐ FB: _____
- ☐ DUP: _____

Analysis Requested: Diss Cu, Fe, Zn, Hardness, Alk, pH

Number and Types of Bottle Used: _____

Method of shipment: FGL (lab name)

- ☐ Courier
- ☐ Hand Deliver

Well Number: W-5

Depth of Water: 10.22

Well Depth: 40.30

Height of Water Column: 30.08

Volume in Well: (gallons) 4.81

3 Well Volumes: (gallons) 14.44

Well Diameter: 2"

- ☒ 2" (0.16 gallon / feet)
- ☐ 4" (0.65 gallon/ feet)
- ☐ 5" (1.02 gallon/ feet)
- ☐ 6" (1.47 gallon/ feet)

Calculation Area
Height of water column =
Depth to water =
80% DTW _____

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1221								Start Purge
1227		5		11.2	7.16	350	9.35	Low Tb / Wonder
1235		10		10.1	7.03	345	3.67	" "
1242		16		10.0	7.02	342	2.84	" "
1248								Sample W-5

Inlet Depth: _____

_____ Signed: _____ Date: _____

Water-Quality Sampling Information

Project Number: —

Project Name: Walker Mine Tailings

Project Location: Walker Mine

Site Conditions/Weather: Sample area Moist / Warm - Clear

Page 1 of 1

Date: 10/2/11

Day: M T W Th F S (S)

Staff: Flynn

Comments : _____

SAMPLING METHOD

- ☐ Centrifugal Pump
- ☐ Submersible Pump
- ☐ Hand Bail
- ☒ Disposable Bailer
- ☐ Teflon Bailer
- ☐ _____ (other)

Sample Number: W-7

- ☐ FB: _____
- ☐ DUP: _____

Analysis Requested: Diss Cu, Fe, Zn Hardness, Alk, pH

Number and Types of Bottle Used: _____

Method of shipment: FGL (lab name)

- ☐ Courier
- ☐ Hand Deliver

Well Number: W-7

Depth of Water: 0.65

Well Depth: 11.00

Height of Water Column: _____

Volume in Well: (gallons) _____

3 Well Volumes: (gallons) _____

Well Diameter: 2"

- ☒ 2" (0.16 gallon / feet)
- ☐ 4" (0.65 gallon/ feet)
- ☐ 5" (1.02 gallon/ feet)
- ☐ 6" (1.47 gallon/ feet)

Calculation Area
Height of water column =
Depth to water =
80% DTW _____

Time	Depth to Water	Volume Purged (gallons)	Totalizer Reading	Temperature ▼ °C	pH	Cond. ms/ cm	Turbidity (NTU)	Remarks
1354								Start Purge
1358		2		9.8	6.74	59.3	12.2	Low To / No odor
1403		4		8.6	6.34	56.2	39.8	mod To / "
1408		6		8.3	6.24	55.4	68.5	" "
1418								Sample W-7

Inlet Depth: _____

_____ Signed: _____ Date: _____

October 21, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Lab ID : CH 1176245
Customer : 7-10917

Laboratory Report

Introduction: This report package contains total of 11 pages divided into 3 sections:

Case Narrative	(2 pages)	: An overview of the work performed at FGL.
Sample Results	(7 pages)	: Results for each sample submitted.
Quality Control	(2 pages)	: Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
R1	10/02/2011	10/03/2011	CH 1176245-001	DW
R3	10/02/2011	10/03/2011	CH 1176245-002	DW
R4	10/02/2011	10/03/2011	CH 1176245-003	DW
R5	10/02/2011	10/03/2011	CH 1176245-004	DW
W3	10/02/2011	10/03/2011	CH 1176245-005	DW
W5	10/02/2011	10/03/2011	CH 1176245-006	DW
W7	10/02/2011	10/03/2011	CH 1176245-007	DW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
CH 1176245-001	pH	15	1375.2 Minutes
CH 1176245-002	pH	15	1414.8 Minutes
CH 1176245-003	pH	15	1477.2 Minutes
CH 1176245-004	pH	15	1338 Minutes
CH 1176245-005	pH	15	1704 Minutes
CH 1176245-006	pH	15	1636.8 Minutes
CH 1176245-007	pH	15	1548 Minutes

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FAX: 559/734-8435

October 21, 2011
Plumas National Forest

Lab ID : CH 1176245
Customer : 7-10917

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	10/05/2011:214699 All analysis quality controls are within established criteria.
	10/05/2011:211023 All preparation quality controls are within established criteria.
200.8	10/06/2011:214881 All analysis quality controls are within established criteria.
	10/06/2011:211125 All preparation quality controls are within established criteria, except: The following note applies to Zinc: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

Inorganic - Wet Chemistry QC

2130B	10/04/2011:214682 All analysis quality controls are within established criteria.
	10/04/2011:211063 All preparation quality controls are within established criteria.
2320B	10/10/2011:214941 All analysis quality controls are within established criteria.
	10/10/2011:211223 All preparation quality controls are within established criteria.
300.0	10/15/2011:215265 All analysis quality controls are within established criteria.
	10/14/2011:211507 All preparation quality controls are within established criteria.
4500-H B	10/03/2011:700193 All preparation quality controls are within established criteria.
4500HB	10/03/2011:700198 All analysis quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.** Digitally signed by Kelly A. Dunnahoo, B.S. Title: Laboratory Director Date: 2011-10-24

October 21, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R1
Project : Water Quality Monitoring

Lab ID : CH 1176245-001
Customer ID : 7-10917

Sampled On : October 2, 2011-17:04
Sampled By : Pat Flynn
Received On : October 3, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	9.59	0.5	ug/L	1000[2]	200.8	10/06/11:211125	200.8	10/06/11:214881
Total Hardness as CaCO3	66.2	2.5	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Calcium	15	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Magnesium	7	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Iron	0.20	0.05	mg/L	0.3[2]	200.7	10/05/11:211023	200.7	10/05/11:214699
Zinc	1.66	2	ug/L		200.8	10/06/11:211125	200.8	10/06/11:214881
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	71.0	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Bicarbonate	86.6	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Carbonate	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Hydroxide	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
pH	8.3	--	units		4500-H B	10/03/11:700193	4500HB	10/03/11:700198
Sulfate	0.915	1	mg/L	500[2]	300.0	10/14/11:211507	300.0	10/15/11:215265
Turbidity	1.18	0.2	NTU	5	2130B	10/04/11:211063	2130B	10/04/11:214682

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 21, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R3
Project : Water Quality Monitoring

Lab ID : CH 1176245-002
Customer ID : 7-10917

Sampled On : October 2, 2011-16:26
Sampled By : Pat Flynn
Received On : October 3, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P,1]								
Copper	1.44	0.5	ug/L	1000[2]	200.8	10/06/11:211125	200.8	10/06/11:214881
Total Hardness as CaCO3	53.0	2.5	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Calcium	13	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Magnesium	5	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Iron	0.30	0.05	mg/L	0.3[2]	200.7	10/05/11:211023	200.7	10/05/11:214699
Zinc	1.29	2	ug/L		200.8	10/06/11:211125	200.8	10/06/11:214881
Wet Chemistry[P,1]								
Alkalinity (as CaCO3)	61.7	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Bicarbonate	75.4	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Carbonate	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Hydroxide	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
pH	8.2	--	units		4500-H B	10/03/11:700193	4500HB	10/03/11:700198
Sulfate	ND	1	mg/L	500[2]	300.0	10/14/11:211507	300.0	10/15/11:215265
Turbidity	1.10	0.2	NTU	5	2130B	10/04/11:211063	2130B	10/04/11:214682

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 21, 2011

Lab ID : CH 1176245-003
Customer ID : 7-10917

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Sampled On : October 2, 2011-15:25
Sampled By : Pat Flynn
Received On : October 3, 2011-15:30
Matrix : Drinking Water

Description : R4
Project : Water Quality Monitoring

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P:1]								
Copper	7.92	0.5	ug/L	1000[2]	200.8	10/06/11:211125	200.8	10/06/11:214881
Total Hardness as CaCO3	67.1	2.5	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Calcium	17	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Magnesium	6	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Iron	0.34	0.05	mg/L	0.3[2]	200.7	10/05/11:211023	200.7	10/05/11:214699
Zinc	5.73	2	ug/L		200.8	10/06/11:211125	200.8	10/06/11:214881
Wet Chemistry[P:1]								
Alkalinity (as CaCO3)	69.8	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Bicarbonate	85.2	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Carbonate	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Hydroxide	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
pH	8.2	--	units		4500-H B	10/03/11:700193	4500HB	10/03/11:700198
Sulfate	6.56	1	mg/L	500[2]	300.0	10/14/11:211507	300.0	10/15/11:215265
Turbidity	1.77	0.2	NTU	5	2130B	10/04/11:211063	2130B	10/04/11:214682

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 21, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : R5
Project : Water Quality Monitoring

Lab ID : CH 1176245-004
Customer ID : 7-10917

Sampled On : October 2, 2011-17:45
Sampled By : Pat Flynn
Received On : October 3, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P;I]								
Copper	5.86	0.5	ug/L	1000[2]	200.8	10/06/11:211125	200.8	10/06/11:214881
Total Hardness as CaCO3	67.1	2.5	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Calcium	17	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Magnesium	6	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Iron	0.23	0.05	mg/L	0.3[2]	200.7	10/05/11:211023	200.7	10/05/11:214699
Zinc	8.13	2	ug/L		200.8	10/06/11:211125	200.8	10/06/11:214881
Wet Chemistry[P;I]								
Alkalinity (as CaCO3)	71.2	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Bicarbonate	86.9	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Carbonate	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Hydroxide	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
pH	8.3	--	units		4500-H B	10/03/11:700193	4500HB	10/03/11:700198
Sulfate	6.92	1	mg/L	500[2]	300.0	10/14/11:211507	300.0	10/15/11:215265
Turbidity	3.80	0.2	NTU	5	2130B	10/04/11:211063	2130B	10/04/11:214682

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 21, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : W3
Project : Water Quality Monitoring

Lab ID : CH 1176245-005
Customer ID : 7-10917

Sampled On : October 2, 2011-11:40
Sampled By : Pat Flynn
Received On : October 3, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Diss[P;1]								
Copper	3.67	0.5	ug/L	1000[2]	200.8	10/06/11:211125	200.8	10/06/11:214881
Total Hardness as CaCO3	177	2.5	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Calcium	61	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Magnesium	6	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Iron	0.55	0.05	mg/L	0.3[2]	200.7	10/05/11:211023	200.7	10/05/11:214699
Zinc	2.65	2	ug/L		200.8	10/06/11:211125	200.8	10/06/11:214881
Wet Chemistry[P;1]								
Alkalinity (as CaCO3)	111	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Bicarbonate	136	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Carbonate	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Hydroxide	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
pH	8.0	--	units		4500-H B	10/03/11:700193	4500HB	10/03/11:700198
Sulfate	77.9	1	mg/L	500[2]	300.0	10/14/11:211507	300.0	10/15/11:215265

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 21, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : W5
Project : Water Quality Monitoring

Lab ID : CH 1176245-006
Customer ID : 7-10917

Sampled On : October 2, 2011-12:48
Sampled By : Pat Flynn
Received On : October 3, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P,1]								
Copper	4.53	0.5	ug/L	1000[2]	200.8	10/06/11:211125	200.8	10/06/11:214881
Total Hardness as CaCO3	165	2.5	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Calcium	61	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Magnesium	3	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Iron	24.4	0.05	mg/L	0.3[2]	200.7	10/05/11:211023	200.7	10/05/11:214699
Zinc	7.16	2	ug/L		200.8	10/06/11:211125	200.8	10/06/11:214881
Wet Chemistry[P,1]								
Alkalinity (as CaCO3)	51.2	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Bicarbonate	62.5	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Carbonate	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Hydroxide	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
pH	6.9	--	units		4500-H B	10/03/11:700193	4500HB	10/03/11:700198
Sulfate	155	1	mg/L	500[2]	300.0	10/14/11:211507	300.0	10/15/11:215265

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 21, 2011

Plumas National Forest
Walker Mine Tailings
159 Lawerence St
Quincy, CA 95971

Description : W7
Project : Water Quality Monitoring

Lab ID : CH 1176245-007
Customer ID : 7-10917

Sampled On : October 2, 2011-14:18
Sampled By : Pat Flynn
Received On : October 3, 2011-15:30
Matrix : Drinking Water

Sample Result - Inorganic

Constituent	Result	PQL	Units	MCL/AL	Sample Preparation Method	Sample Preparation Date/ID	Sample Analysis Method	Sample Analysis Date/ID
Metals, Diss[P;1]								
Total Hardness as CaCO3	28.2	2.5	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Calcium	8	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Magnesium	2	1	mg/L		200.7	10/05/11:211023	200.7	10/05/11:214699
Iron	0.47	0.05	mg/L	0.3[2]	200.7	10/05/11:211023	200.7	10/05/11:214699
Wet Chemistry[P;1]								
Alkalinity (as CaCO3)	36.6	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Bicarbonate	44.7	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Carbonate	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
Hydroxide	ND	10	mg/L		2320B	10/10/11:211223	2320B	10/10/11:214941
pH	6.6	--	units		4500-H B	10/03/11:700193	4500HB	10/03/11:700198
Sulfate	0.342	1	mg/L	500[2]	300.0	10/14/11:211507	300.0	10/15/11:215265

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (P) Plastic Preservatives: N/A ‡Surrogate. * PQL adjusted for dilution.
MCL = Maximum Contamination Level. 2 - Secondary Standard. 3 - CDPH Notification Level. AL = Regulatory Action Level.

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October 21, 2011
Plumas National Forest-Walker Mine

Lab ID : CH 1176245
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Metals								
Calcium	200.7	(CC 1182545-001)	MS	mg/L	12.50	101 %	75-125	
			MSD	mg/L	12.50	100 %	75-125	
			MSRPD	mg/L	798.8	0.4%	≤20.0	
	200.7	10/05/11:214699AC	CCV	ppm	25.00	95.1 %	90-110	
			CCB	ppm		0.008	1.0	
			CCV	ppm	25.00	95.2 %	90-110	
			CCB	ppm		0.007	1.0	
			CCV	ppm	25.00	95.7 %	90-110	
			CCB	ppm		0.01	1.0	
Iron	200.7	(CC 1182545-001)	MS	ug/L	3992	102 %	75-125	
			MSD	ug/L	3992	102 %	75-125	
			MSRPD	ug/L	798.8	0.08%	≤20.0	
	200.7	10/05/11:214699AC	CCV	ppm	4.990	98.1 %	90-110	
			CCB	ppm		-0.0042	0.05	
			CCV	ppm	4.990	98.3 %	90-110	
			CCB	ppm		-0.0015	0.05	
			CCV	ppm	4.990	98.7 %	90-110	
			CCB	ppm		0.0004	0.05	
Magnesium	200.7	(CC 1182545-001)	MS	mg/L	12.50	102 %	75-125	
			MSD	mg/L	12.50	101 %	75-125	
			MSRPD	mg/L	798.8	0.3%	≤20.0	
	200.7	10/05/11:214699AC	CCV	ppm	25.00	96.5 %	90-110	
			CCB	ppm		0.0007	1.0	
			CCV	ppm	25.00	96.0 %	90-110	
			CCB	ppm		-0.002	1.0	
			CCV	ppm	25.00	96.2 %	90-110	
			CCB	ppm		0.0002	1.0	
Copper	200.8	(VI 1142374-001)	MS	ug/L	5.000	99.1 %	75-125	
			MSD	ug/L	5.000	101 %	75-125	
			MSRPD	ug/L	4.992	1.4%	≤20	
	200.8	10/06/11:214881EMV	CCV	ppb	120.0	96.7 %	90-110	
			CCB	ppb		-0.05	1	
			CCV	ppb	120.0	96.5 %	90-110	
			CCV	ppb	120.0	98.9 %	90-110	
			CCB	ppb		-0.009	1	
			CCB	ppb		-0.05	1	
			CCV	ppb	120.0	95.6 %	90-110	
			CCB	ppb		-0.01	1	
Zinc	200.8	(VI 1142374-001)	MS	ug/L	5.000	175 %	75-125	435
			MSD	ug/L	5.000	131 %	75-125	435
			MSRPD	ug/L	4.992	2.2	≤10	
	200.8	10/06/11:214881EMV	CCV	ppb	120.0	95.8 %	90-110	
			CCB	ppb		-0.7	10	
			CCV	ppb	120.0	95.5 %	90-110	
			CCV	ppb	120.0	98.8 %	90-110	
			CCB	ppb		-0.5	10	
			CCB	ppb		-0.7	10	
			CCV	ppb	120.0	97.2 %	90-110	
			CCB	ppb		-0.3	10	
Wet Chem								
Turbidity	2130B	(CH 1176245-001)	Dup	NTU		0.9%	2.47	
	2130B	10/04/11:214682jam	CCB	NTU		0.094	0.2	
			CCV	NTU	2.000	102 %	90-110	
			CCB	NTU		0.10	0.2	
			CCV	NTU	2.000	100 %	90-110	

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October 21, 2011
Plumas National Forest-Walker Mine

Lab ID : CH 1176245
Customer : 7-10917

Quality Control - Inorganic

Constituent	Method	Date/ID	Type	Units	Conc.	QC Data	DQO	Note
Wet Chem								
Alkalinity (as CaCO3)	2320B	(CC 1182532-001)	Dup	mg/L		3.2%	3.42	
	2320B	10/10/11:214941AMB	CCV	mg/L	234.9	97.8 %	90-110	
			CCV	mg/L	234.9	98.9 %	90-110	
Bicarbonate	2320B	(CC 1182532-001)	Dup	mg/L		3.1%	4.78	
Carbonate	2320B	(CC 1182532-001)	Dup	mg/L		0.0	10	
Hydroxide	2320B	(CC 1182532-001)	Dup	mg/L		0.0	10	
Sulfate	300.0	10/14/11:211507CHL	LCS	mg/L	50.00	101 %	90-110	
			MS	mg/L	1000	105 %	78-137	
		(CH 1176245-001)	MSD	mg/L	1000	104 %	78-137	
			MSRPD	mg/L	100.0	1.3%	≤12.3	
	300.0	10/15/11:215265CHL	CCB	ppm		-0.02	2	
			CCV	ppm	50.00	102 %	90-110	
			CCB	ppm		0.03	2	
			CCV	ppm	50.00	104 %	90-110	
pH	4500-H B	(CH 1176245-001)	Dup	units		0.2%	4.80	
	4500HB	10/03/11:700198RNH	CCV	units	8.000	100 %	95-105	
			CCV	units	8.000	101 %	95-105	

Definition

CCV	: Continuing Calibration Verification - Analyzed to verify the instrument calibration is within criteria.
CCB	: Continuing Calibration Blank - Analyzed to verify the instrument baseline is within criteria.
LCS	: Laboratory Control Standard/Sample - Prepared to verify that the preparation process is not affecting analyte recovery.
MS	: Matrix Spikes - A random sample is spiked with a known amount of analyte. The recoveries are an indication of how that sample matrix affects analyte recovery.
MSD	: Matrix Spike Duplicate of MS/MSD pair - A random sample duplicate is spiked with a known amount of analyted. The recoveries are an indication of how that sample matrix affects analyte recovery.
Dup	: Duplicate Sample - A random sample with each batch is prepared and analyzed in duplicate. The relative percent difference is an indication of precision for the preparation and analysis.
MSRPD	: MS/MSD Relative Percent Difference (RPD) - The MS relative percent difference is an indication of precision for the preparation and analysis.
DQO	: Data Quality Objective - This is the criteria against which the quality control data is compared.

Explanation

435	: Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.

Location: R-1
Date: 10/02/2011
Measurement Method: 6/10
Meter Type: Marsh McBirney
Measurement Rating: Poor

Channel Width (ft):	6.3	**X-sectional Area (ft^2):**	3.99	
Hydraulic Depth (ft):	0.63	**Average Velocity (fps):**	0.23	
		Discharge (cfs):	1.24	

Distance (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (fps)	Discharge (cfs)
1.9	Lew				
2	0.3	0.100	0.030	0.000	0.000
2.5	0.5	0.400	0.200	0.000	0.000
3	0.5	0.600	0.300	0.000	0.000
3.5	0.5	0.700	0.350	0.000	0.000
4	0.5	0.700	0.350	0.000	0.000
4.5	0.5	0.800	0.400	0.000	0.000
5	0.5	0.750	0.375	0.080	0.030
5.5	0.5	1.000	0.500	0.280	0.140
6	0.5	0.900	0.450	0.560	0.252
6.5	0.5	0.650	0.325	0.780	0.254
7	0.5	0.850	0.425	1.32	0.561
7.5	0.5	0.500	0.250	0.000	0.000
8	0.35	0.100	0.035	0.000	0.000
8.2	REW				

Percent Error (%) 45.4%

Location: R-2						
Date: 10/02/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		0.00	**X-sectional Area (ft^2):**		0.00	
Hydraulic Depth (ft):			**Average Velocity (fps):**			
			Discharge (cfs):			
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
		NO FLOW				
Percent Error (%)						

Location: R-3						
Date: 10/02/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		6.15	**X-sectional Area (ft^2):**		2.81	
Hydraulic Depth (ft):		0.46	**Average Velocity (fps):**		0.13	
			Discharge (cfs):		0.40	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
3.20	LEW					
3.50	0.40	0.1	0.080	0.000	0.000	
4.00	0.50	0.20	0.100	0.000	0.000	
4.50	0.50	0.20	0.200	0.150	0.030	
5.00	0.50	0.40	0.300	0.190	0.057	
5.50	0.50	0.60	0.325	0.140	0.046	
6.00	0.50	0.65	0.400	0.090	0.036	
6.50	0.50	0.80	0.450	0.070	0.032	
7.00	0.50	0.90	0.400	0.210	0.084	
7.50	0.50	0.80	0.325	0.080	0.026	
8.00	0.50	0.65	0.175	0.440	0.077	
8.50	0.50	0.35	0.050	0.160	0.008	
9.00	0.43	0.10	0.000	0.000	0.000	
9.35	REW					
Percent Error (%)		21.3%				

Location: R-4						
Date: 10/02/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		9.40	**X-sectional Area (ft^2):**		4.82	
Hydraulic Depth (ft):		0.51	**Average Velocity (fps):**		0.44	
			Discharge (cfs):		1.79	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
2.60	LEW					
3.00	0.45	0.15	0.068	0.390	0.026	
3.50	0.50	0.20	0.100	0.560	0.056	
4.00	0.50	0.20	0.100	0.520	0.052	
4.50	0.50	0.20	0.100	0.450	0.045	
5.00	0.50	0.15	0.075	0.470	0.035	
5.50	0.50	0.25	0.125	0.140	0.018	
6.00	0.50	0.20	0.100	0.490	0.049	
6.50	0.50	0.30	0.150	0.370	0.056	
7.00	0.50	0.30	0.150	0.500	0.075	
7.50	0.50	0.40	0.200	0.420	0.084	
8.00	0.50	0.50	0.250	0.710	0.178	
8.50	0.50	0.50	0.250	0.360	0.090	
9.00	0.50	0.50	0.250	0.550	0.138	
9.50	0.50	0.50	0.250	0.510	0.128	
10.00	0.50	0.45	0.225	0.430	0.097	
10.50	0.50	0.40	0.200	0.570	0.114	
11.00	0.50	0.45	0.225	0.320	0.072	
11.50	0.50	4.00	2.000	0.240	0.480	
12.00						
Percent Error (%)		26.8%				

Location: R-5						
Date: 10/02/2011						
Measurement Method: 6/10						
Meter Type: Marsh McBirney						
Measurement Rating: Poor						
Channel Width (ft):		7.10	**X-sectional Area (ft^2):**		1.69	
Hydraulic Depth (ft):		0.24	**Average Velocity (fps):**		0.75	
			Discharge (cfs):		1.40	
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**	
3.60	LEW					
4.00	0.45	0.10	0.045	0.250	0.011	
4.50	0.50	0.20	0.100	1.310	0.131	
5.00	0.50	0.35	0.175	1.820	0.319	
5.50	0.50	0.45	0.225	0.580	0.131	
6.00	0.50	0.30	0.150	0.390	0.059	
6.50	0.50	0.35	0.175	0.610	0.107	
7.00	0.50	0.25	0.125	0.640	0.080	
7.50	0.50	0.30	0.150	0.000	0.000	
8.00	0.50	0.30	0.150	0.830	0.125	
8.50	0.50	0.25	0.125	1.390	0.174	
9.00	0.50	0.20	0.100	1.930	0.193	
9.50	0.50	0.20	0.100	0.690	0.069	
10.00	0.50	0.10	0.050	0.000	0.000	
10.50	0.35	0.05	0.018	0.000	0.000	
10.70	REW					
Percent Error (%)		22.8%				

Location: R-6					
Date: 10/02/2011					
Measurement Method: 6/10					
Meter Type: Marsh McBirney					
Measurement Rating: Poor					
Channel Width (ft):		0.00	**X-sectional Area (ft^2):**		0.00
Hydraulic Depth (ft):			**Average Velocity (fps):**		
			Discharge (cfs):		0.00
Distance (ft)	**Width (ft)**	**Depth (ft)**	**Area (ft^2)**	**Velocity (fps)**	**Discharge (cfs)**
		NO FLOW			
Percent Error (%)					