INTERIM
UNDERGROUND REPORT

December 2002 to December 2003

PREPARED BY:

COLORADO DIVISION OF MINERALS AND GEOLOGY
WILLOW CREEK RECLAMATION COMMITTEE

DECEMBER 31, 2003

Background

In December of 2000 the Willow Creek Reclamation Committee (WCRC) began underground investigations of the Amethyst Vein Complex, accessed through the Commodore 5 Level Tunnel, in the hopes of determining the source and hopefully a solution for the metal laden discharge at the Nelson Tunnel portal. The Amethyst Vein Complex encompasses the Nelson/Wooster/Humphries Tunnel, Amethyst Mine, Happy Thought Mine, Park Regent Mine, Commodore Mine and the Last Chance Mine. All of these mines are located along the Amethyst vein system, which is a north-south trending fault that is heavily mineralized. The Nelson/Wooster/Humphries Tunnel, which will be referred to as the Nelson Tunnel for convenience, appears to be the single largest discharge point to the surface for all water entering the Amethyst Vein Complex. The Nelson Tunnel drains into Willow Creek approximately ½ mile above the confluence with East Willow Creek (Figure 1). As shown by ongoing water quality characterizations of Willow Creek by the WCRC, the Nelson Tunnel drainage, averaging 250 gpm, remains the single largest heavy metals contributor to the watershed.

The Nelson Tunnel and Commodore 5 Tunnel were driven by competing mining interests to gain access to the rich silver deposits along the Amethyst Vein Complex. Eventually the Nelson Tunnel became the drainage tunnel for all subsurface water entering the mine workings. The Nelson Tunnel is located approximately 40 feet lower in elevation than the Commodore 5 Tunnel at their respective entrances. Approximately 3 miles north of the entrances, the two mine entries converge near the Park Regent shaft. There are several intermediate connections including the Daylight Corner Winze, Javelin Shaft (winze), Berkshire Shaft (winze), Commodore Shaft (winze), No Name Winze, Last Chance Shaft, Amethyst Shaft, Del Monte Raise, Berkshire Shaft (winze), Happy Thought Shaft and Hospital Decline.

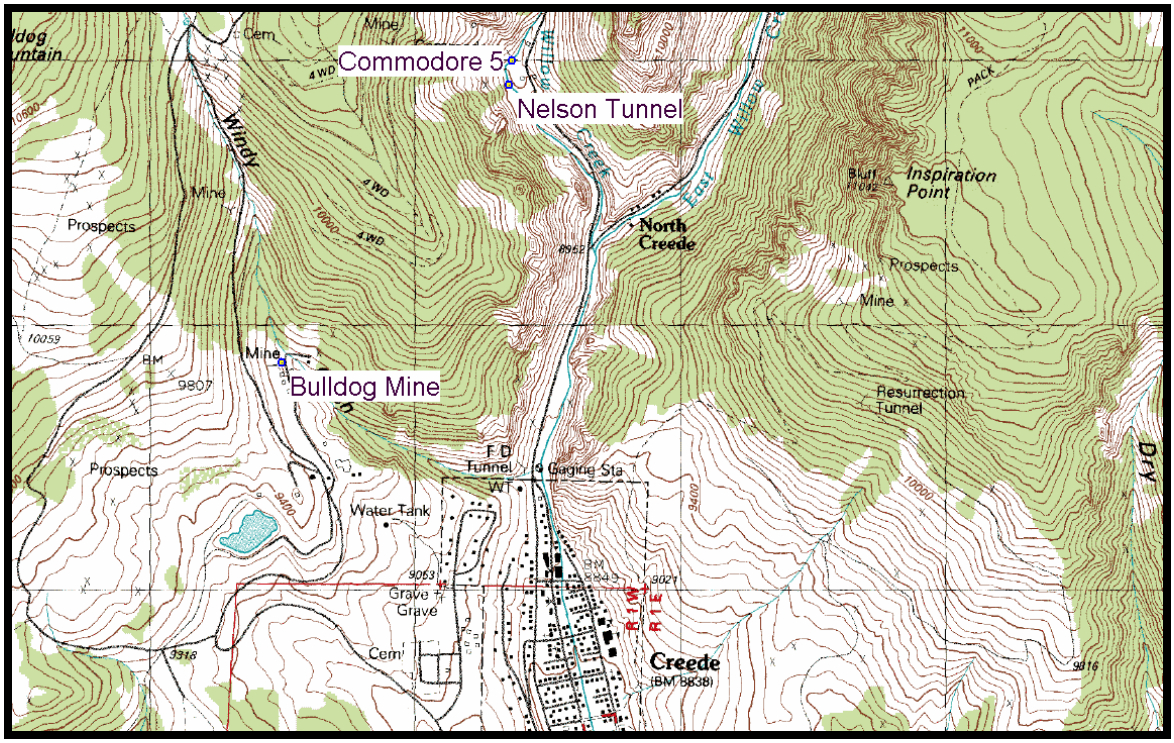


Figure 1. Commodore/Nelson Location Map

Because of the large cost to treat the mine drainage, the WCRC decided to investigate whether the source of the mine drainage can be intercepted before it enters the mine workings and/or whether the metals concentrations can be reduced through source controls.

Table 1. Dissolved metals in Nelson Tunnel drainage (6/6/03).

Site	pH	Cond. (uS/cm)	AL_D (ug/L)	CD_D (ug/L)	CU_D (ug/L)	FE_D (ug/L)	MN_D (ug/L)	ZN_D (ug/L)
Nelson Adit	4.19	1098	160.8	35.7	26.5	148	12110	63740

Rehabilitation and Safety Work

Due to the desire of the WCRC to safely investigate possible source control for the Nelson Portal drainage an extensive rehabilitation project was begun. Initial investigations of the Commodore 5 Level by members of the WCRC in 2001 yielded a number of sites requiring rehab work. With the assistance of members from the Colorado Division of Minerals and Geology (CDMG) a bid document was developed encompassing all of the rehab work necessary to safely investigate the mine. The project went out for bids during the fall of 2001. Due to circumstances surrounding the final outcome of the bid process, the WCRC decided not to award the work under the constraints of the bid, but to instead have the work completed on an hourly basis by qualified individuals.

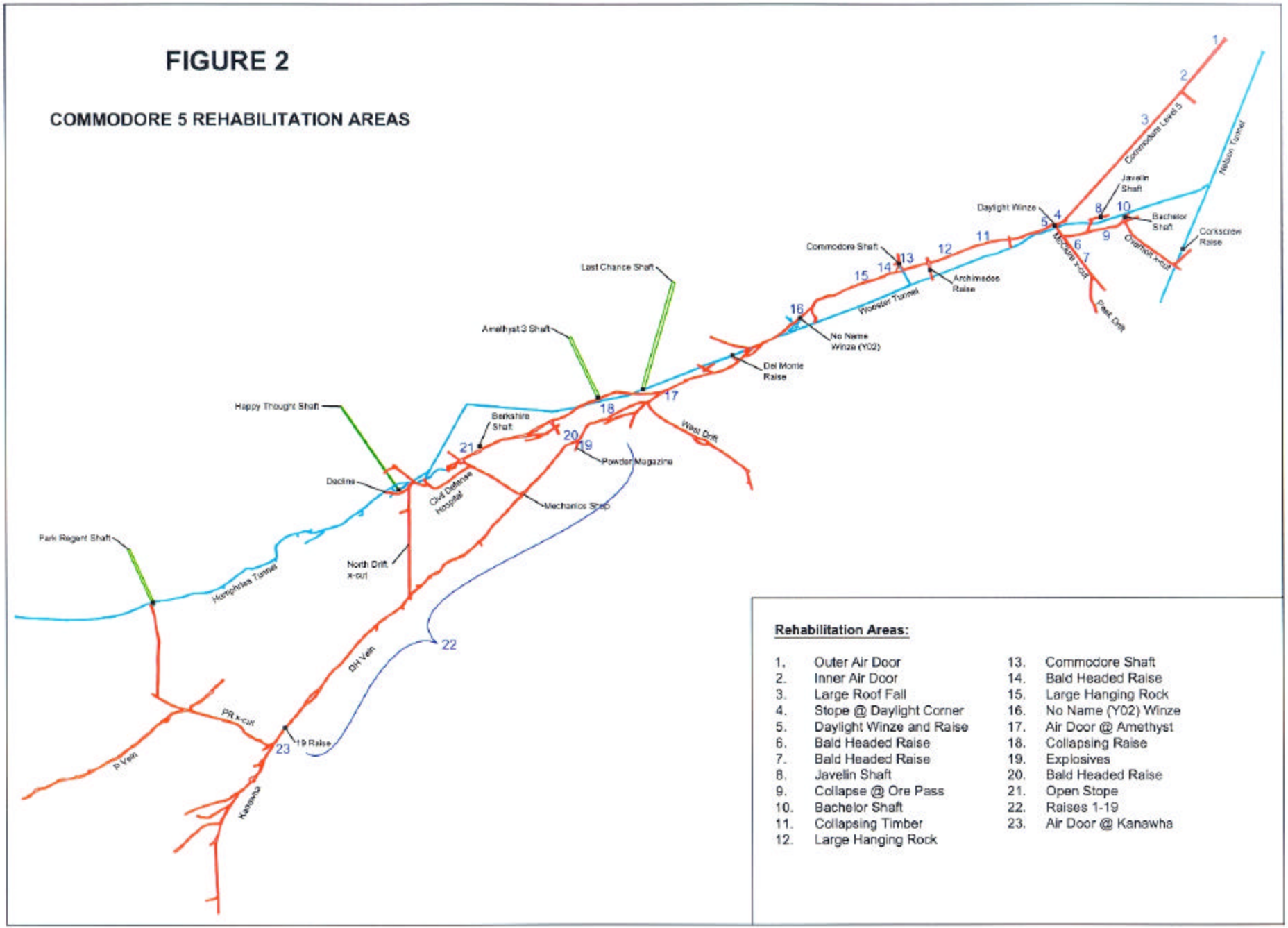
During the fall of 2002 and spring of 2003 the WCRC hired Ken Wyley and Jerry Wintz, both of Creede, to complete the necessary rehabilitation work on an hourly basis. Under the direction of the WCRC, Jim Herron (CDMG), and Jeff Graves (CDMG), Ken Wyley and Jerry Wintz completed all the rehabilitation work listed in the original bid document and some necessary additional work. Figure 2 shows all the areas where rehabilitation work was performed.

Air doors were installed at locations 1 and 2, which successfully prevent ice buildup in the mine entry and allow for year round access to the workings. Stabilization and cleanup work was conducted at many locations including: Areas 3, 4, 6, 7, 9, 11, 12, 14, 15, 18, 20, and 21. The stabilization work required at the above locations involved the installation of new timbers, stulls, cribbing and lagging to support unstable workings and prevent potential roof fall in the future. Additionally, a substantial amount of collapsed material, muck, was removed from the main haulage way to provide easy passage by foot or rail.

A substantial portion of the rehabilitation work has involved improving access to the Nelson Tunnel wherever possible. Five access points from the Commodore 5 Level to the Nelson Tunnel were rehabilitated so that water level measurements and samples of the Nelson Tunnel water could be safely taken. Ladders and landings were installed at the Bachelor Shaft (Figures 3 & 4) allowing safe access to the Nelson Tunnel Level (Location 10).

FIGURE 2

COMMODORE 5 REHABILITATION AREAS



Rehabilitation Areas:

1. Outer Air Door
2. Inner Air Door
3. Large Roof Fall
4. Stope @ Daylight Corner
5. Daylight Winze and Raise
6. Bald Headed Raise
7. Bald Headed Raise
8. Javelin Shaft
9. Collapse @ Ore Pass
10. Bachelor Shaft
11. Collapsing Timber
12. Large Hanging Rock
13. Commodore Shaft
14. Bald Headed Raise
15. Large Hanging Rock
16. No Name (Y02) Winze
17. Air Door @ Amethyst
18. Collapsing Raise
19. Explosives
20. Bald Headed Raise
21. Open Stope
22. Raises 1-19
23. Air Door @ Kanawha

Ladders and landings were also installed at the Javelin Shaft and Daylight Winze (Locations 8 & 5), allowing for easy water sampling. Establishing access down the 40 foot Commodore Shaft to the Nelson Tunnel required considerable effort, but was successfully completed (Location 13). The establishment of access to the Nelson Tunnel at No Name Winze (Y02 Raise) has proven to be one of the most beneficial rehabilitations, leading to accurate flow gauging and sampling of water moving through the Nelson Tunnel. (Location 16).

Figure 3. Bachelor Shaft Before Rehab

Figure 4. Bachelor Shaft After Rehab

Additional rehabilitation work involved the improvement of airflow to the northern workings of the mine. Airflow was redirected by the improvement of air doors at the Amethyst Shaft cut-off and at Kanawha (Locations 17 & 23). The loss of airflow to upper workings was mitigated through the rehabilitation of air stoppings at numerous raises along the OH vein on the Commodore 5 Level (Location 22).

Throughout the work listed above, the mine rail was rehabilitated in hopes of allowing access by rail at some point in the future. By May 2003, rail access was established from the Commodore 5 Level portal to the Nelson Tunnel junction at the Park Regent Shaft. Also in May 2003, Ken Wyley, Jerry Wintz and many others completed construction of a very creative locomotive, which provides improved haulage and access (Figure 5). A mantrip and timber car were also constructed to complement the locomotive.

Figure 5. Locomotive

In May of 2003 an investigation of all possible Polychlorinated Biphyenyl (PCB) electrical equipment within the accessible portions of the Commodore Mine Complex was conducted. Dan Bench, Environmental Engineer, Pollution Prevention Pesticides and Toxics Program, US EPA Region VIII initiated this investigation, after discussions with members of the WCRC, EPA, MSHA and CDMG. On May 6, 2003 Dan Bench (EPA), Joel Tankersley (MSHA), Leigh Ann Vradenburg (WCRC), Jim Herron, Jeff Graves, Al Amundson, Kirstin Fisher, Ken Wyley and Jerry Wintz performed investigations of the Amethyst 5 Level, and Commodore 5 Level to substantiate claims of PCB contamination

made by Richard Bratina, former employee of Minerals Engineering Company. No PCB contaminated electrical equipment or sites were discovered during the investigations.

Explosives Removal

As part of the ongoing safety improvements to the mine, removal of explosives in the powder magazine (Location 19) remained a top priority. By May 2003, all safety and rehab work was completed allowing for the safe removal of explosives from the powder magazines. CDMG was asked by the WCRC to develop and implement an explosives removal plan. Initial investigations of the explosives magazine indicated that approximately 30 cases of Tovex type explosive were present. Additional investigations throughout the mine resulted in the discovery of numerous undetonated nitroglycerine (nitro) type explosives in the Kanawha portion of the mine and at the base of the Amethyst 3 Shaft, and the discovery of undetonated blasting caps at P2 South. Al Amundson (CDMG) acted as supervisor for the explosives removal plan. Considerable discussion and debate occurred over the best possible method of disposal for the explosives. Numerous explosives experts and both state and federal agencies, including ATF, MSHA and CDPHE, were consulted regarding safe handling and disposal of the explosives. Finally, a plan was developed involving transportation of all explosives in the magazine to the Trapper Mine in northwest Colorado, and subsequent detonation (if possible) in conjunction with current mining operations. It was also decided that all nitro type explosives and blasting caps were too dangerous to transport and should be detonated in place and rendered harmless. Jay Parker, a bomb technician with Pitkin County, was hired to assist with detonation and transportation of the explosives.

During the first full week of May 2003, CDMG employees, Al Amundson, Jeff Graves, Jim Herron and Kirsten Fisher with assistance from Jay Parker, Ken Wyley and Jerry Wintz completed the removal of explosives from the Commodore 5 Level magazine (Figure 6). Thirty-nine miscellaneous boxes containing varying amounts of Tovex, Hercules, and Unigel were logged, packaged and transported to the Trapper Mine for disposal (see attached manifest). After removal of all explosives from the magazine, all nitro explosives from the Kanawha portion of the mine were consolidated and detonated by Jay Parker and Al Amundson (Figure 7). Also, blasting caps at P2 South and nitro explosives at the Amethyst 3 shaft were detonated. By the end of the first week in May 2003 all known explosive hazards in the Commodore 5 Level of the mine were rendered safe.

Figure 6. Loading Explosives

Figure 7. Detonating Explosives

Water Sampling and Water Levels

With the completion of rehabilitation and safety work for the Commodore 5 Level and five access points to the Nelson Tunnel, a more complete picture of water movement through the Commodore Mine Complex was developed. Figure 9 shows all current water sample and water level measurement points within the Commodore 5/Nelson Tunnel workings.

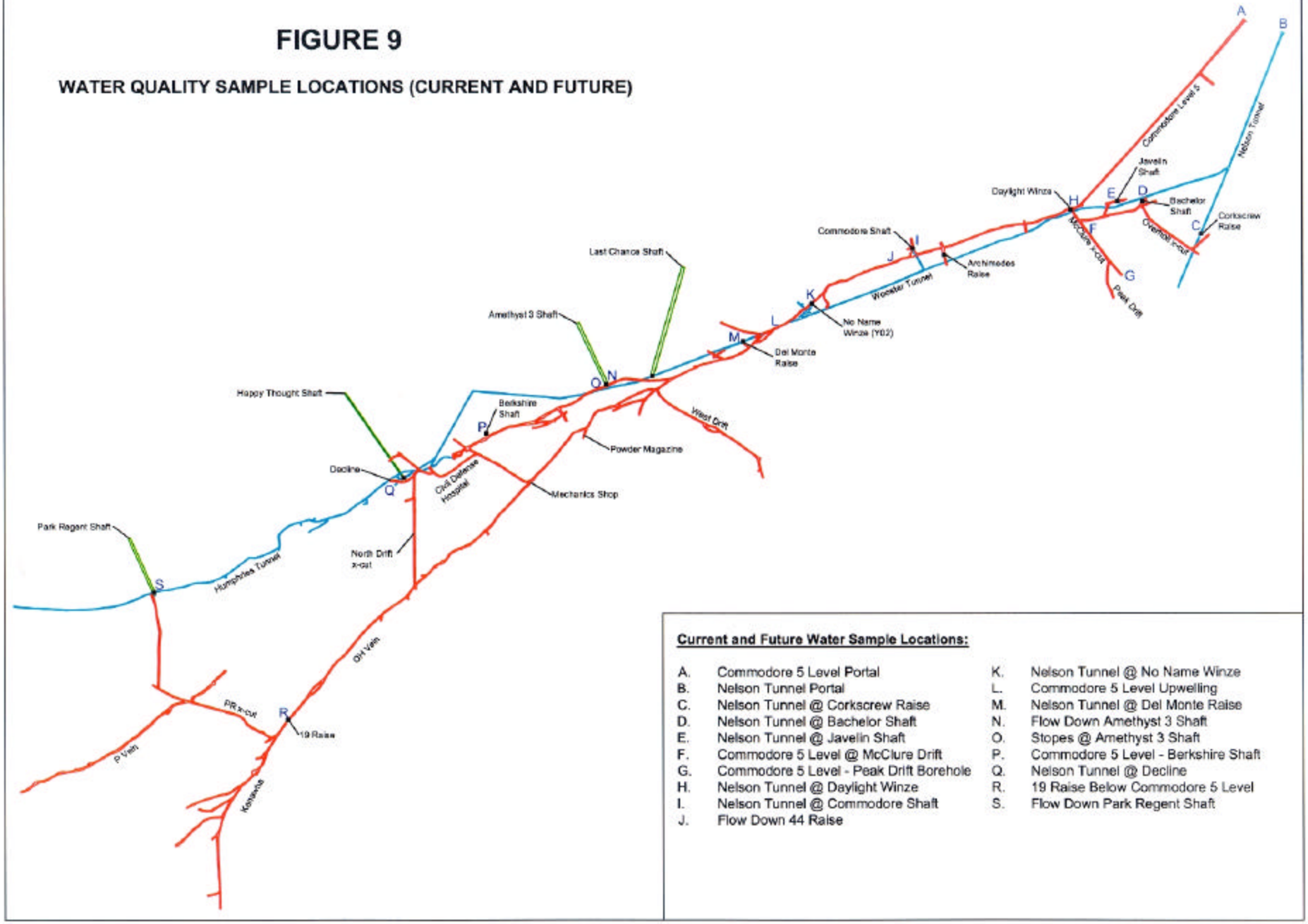
On December 5, 2002, Jim Herron, Jeff Graves, Mike Wireman (EPA), and Bob Kirkham (CGS), conducted underground investigations of the Commodore 5 Level and Nelson Tunnel workings. With the completion of safe access to the Nelson Tunnel Level at the Bachelor Shaft, a new elevation spad (9206.81 ft) was set above pooled water in the Nelson Tunnel to provide accurate water level measurements (Figure 8).

Figure 8. Installing Spad @ Bachelor Shaft

Exploration was conducted both north and south along the Nelson Tunnel from the Bachelor Shaft. Progress northward along the Nelson Tunnel was blocked approximately 75 feet from the Bachelor Shaft by a floor to back roof/stope collapse, which appeared to be backing up a substantial amount of water. Investigations south along the Nelson Tunnel became impassible due to deep water approximately 540 ft south of the Bachelor Shaft. A new measurement spad (9218.32 ft) was also set in the Nelson Tunnel Level at No Name Winze (Y02 Raise), and investigations of the Nelson Tunnel were conducted from that point. Travel north along the Nelson Tunnel was eventually blocked by a gradually sloped collapse approximately 500 ft north of No Name Winze. The collapse was substantial in length and volume due to its gradual slope and appeared to be blocking a great deal of water. A 4-inch cutthroat flume was temporarily installed to gauge water flow at the head of the collapse and yielded a flow of approximately 180 gallons per minute (gpm). Exploration was also conducted south of No Name Winze along the Nelson Tunnel, but was blocked about 500 ft south of No Name Winze due to high water. Finally, a new measurement spad (9244.11 ft) was installed in the Hospital Decline to facilitate easier water level measurements. All water levels taken on December 5, 2002 and subsequent dates are shown graphically in Figure 10, and listed in the attached table (Table 2).

FIGURE 9

WATER QUALITY SAMPLE LOCATIONS (CURRENT AND FUTURE)



Current and Future Water Sample Locations:

A.	Commodore 5 Level Portal	K.	Nelson Tunnel @ No Name Winze
B.	Nelson Tunnel Portal	L.	Commodore 5 Level Upwelling
C.	Nelson Tunnel @ Corkscrew Raise	M.	Nelson Tunnel @ Del Monte Raise
D.	Nelson Tunnel @ Bachelor Shaft	N.	Flow Down Amethyst 3 Shaft
E.	Nelson Tunnel @ Javelin Shaft	O.	Stopes @ Amethyst 3 Shaft
F.	Commodore 5 Level @ McClure Drift	P.	Commodore 5 Level - Berkshire Shaft
G.	Commodore 5 Level - Peak Drift Borehole	Q.	Nelson Tunnel @ Decline
H.	Nelson Tunnel @ Daylight Winze	R.	19 Raise Below Commodore 5 Level
I.	Nelson Tunnel @ Commodore Shaft	S.	Flow Down Park Regent Shaft
J.	Flow Down 44 Raise		

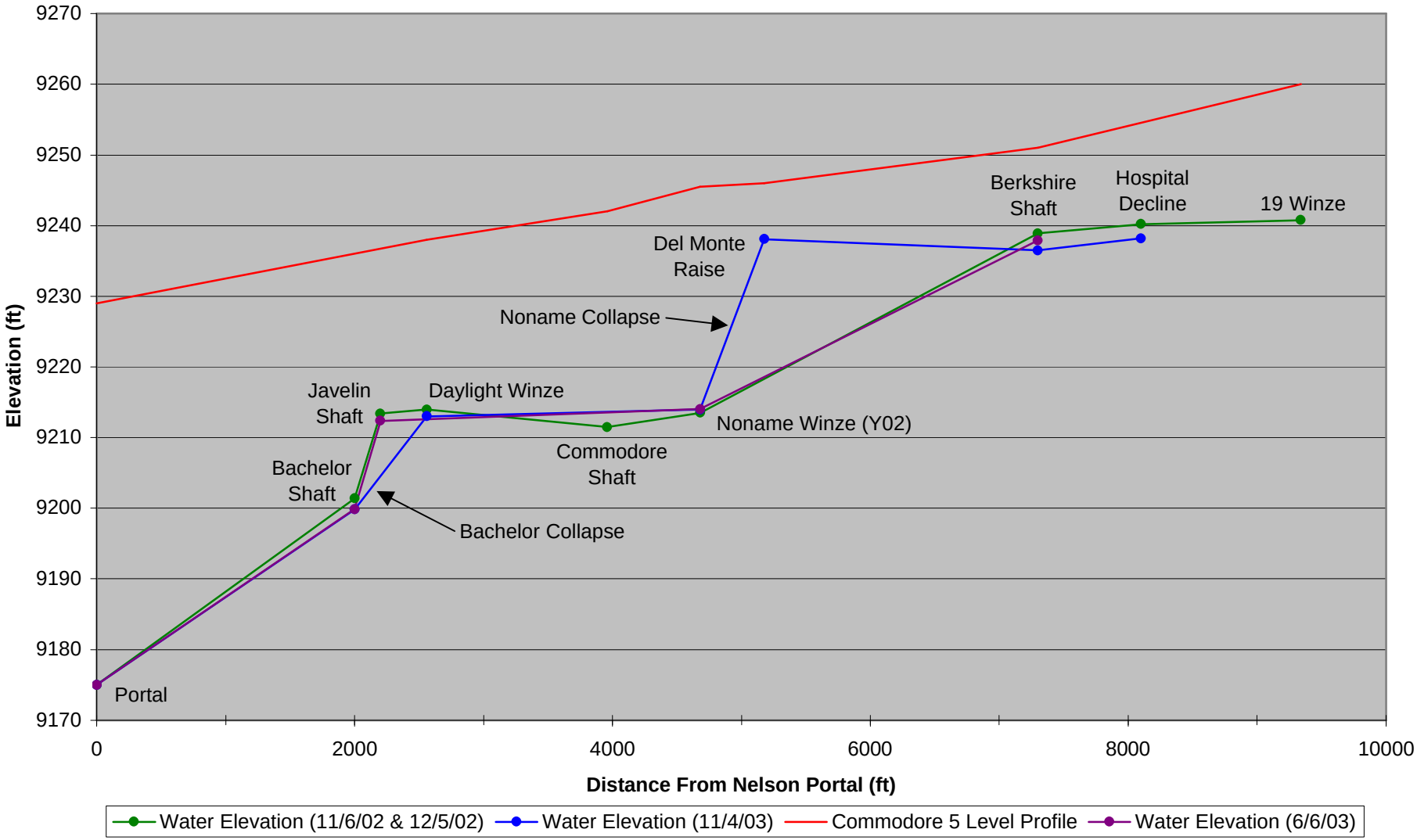
During March 2003 additional underground investigations of water flow in the Nelson Tunnel took place. With the assistance of Ken Wyley and Jerry Wintz, a partial collapse south of the Bachelor Shaft in the Nelson Tunnel was removed. This allowed the water level in the Nelson Tunnel at the Bachelor Shaft to drop enough for an investigation past the Nelson-Wooster Junction. It was discovered that very little water (<5 gpm) is flowing down the Nelson Tunnel at the Nelson-Wooster Junction. This water appears to originate both from fractures in the floor and ribs of the workings and from the Corkscrew Raise. Less iron precipitation and greater manganese precipitation appear to indicate a different water chemistry and possible origin than water flowing through the main workings. An exploration down the Javelin Shaft revealed that the Nelson Tunnel is flooded at that point, and that there appears to be some segregation of the water moving through the tunnel. This possible segregation of water in the Nelson Tunnel resulted in the addition of water samples at depth in the Javelin and Bachelor Shafts during the June 2003 sampling.

A comprehensive water sampling of all accessible sites in the Commodore 5 and Nelson Tunnel levels was undertaken by the WCRC on June 6, 2003. Figure 9 lists all water quality sample points and their respective locations within the mine workings. All sites were sampled for pH, conductivity, temperature, and total and dissolved metals. If possible, flow measurements were taken, otherwise water levels were measured. All results are listed on the attached table (Table 2).

Jeff Graves (CDMG), Jim Herron (CDMG), Ken Wyley and Jerry Wintz in July 2003 established horizontal control along the Commodore 5 Level from the portal to the Berkshire Shaft. Horizontal distances were recorded for major intersections and all known vertical control spads set by Davis Engineering. Additionally, all airline in the Commodore 5 Level was assessed for size, length and condition. Approximately 4100 ft of moderately good condition 4” airline was found. A substantial amount of heavy gauge, 3-phase copper wiring was also discovered in the mine, which could be utilized in the future.

During October 2003 the WCRC attempted to fix a long-standing problem at the Nelson Tunnel portal, inaccurate flow measurements. The WCRC was concerned that the current flume configuration at the Nelson portal was allowing a substantial amount of Nelson Tunnel discharge to bypass the flume and go unrecorded. Under the direction of Jeff Graves (CDMG) and Leigh Ann Vradenburg (WCRC), McCollum’s Excavating attempted to reconfigure the flume to capture all unrecorded flow. The attempt was unsuccessful due to a flow increase that overwhelmed the current flume, the mobilization of iron precipitate, and an increased risk of blowout. Any further attempts to modify the flume should be made with extreme caution and should take into account the blowout potential of the portal collapse. A final investigation for 2003 was undertaken on November 4 to measure water levels in the Nelson Tunnel and to investigate the possibility of constructing underground settlement ponds. The results of the water level measurements are listed in the attached Table 2. The West Drift of the Commodore 5 Level was explored as a possible settlement pond for pumped and treated mine water. The investigation determined that, although limited, the West Drift would provide a viable water storage and settlement option with minor modifications. During exploration of the mine workings in the vicinity of the Del Monte Raise, it was discovered that the Del Monte Raise might provide an additional access point to the Nelson Tunnel, and warranted further investigation.

Figure 10. Water Level Data



Summary and Conclusions

Between December 2002 and December 2003 the Commodore Mine Complex underwent an astounding transformation with the help of numerous government agencies and invaluable efforts by members of the WCRC. Safety improvements to the Commodore 5 Level and the Nelson Tunnel Level provided incredible access to areas within the mine resulting in a vastly improved understanding of water movement through the Nelson Tunnel and possible source oriented solutions.

Water level data collected during December 2002 indicated a series of collapses in the Nelson Tunnel resulting in the formation of at least two major mine pools, shown graphically in Figure 10. One mine pool appears to extend from the Hospital Decline through the Berkshire Shaft and OH-Amethyst junction to within 500 ft of No Name Winze. The other mine pool extends from that point to a collapse just north of the Bachelor Shaft. These two collapses explain the various flooded portions of the Nelson Tunnel. Additional collapses may be present within the major mine pools, but they do not seem to affect the various water levels within those mine pools. One of the largest remaining unknowns is the collapse sequence from the Nelson Tunnel portal to the Bachelor Shaft. Discussions with former employees of the mine indicate a complex pattern of poor rock conditions resulting in the possibility of numerous collapses along this portion of the mine.

One interesting trend that is obvious from the water level data collected in the last year and to all WCRC members who have been investigating the mine over the past few years is the steady decline of water levels throughout the mine. High water marks denoted by orange, iron precipitate on the ribs indicate water levels have dropped up to 10 ft in some portions of the mine. Some of the large drops in water level may be due to changes in the collapse pattern within the mine.

Water quality data collected for the past year has helped in establishing baseline values and assisted in the overall understanding of water migration through the mine workings. Interesting to many are the high water temperature readings recorded throughout the mine. This appears to indicate a deeper source and possibly longer residence time for water entering the mine. Water quality data continues to show elevated levels of heavy metals at most sample locations.

Investigations and water data collection to date support a theory that groundwater is entering the mine workings on the Nelson Tunnel Level between the Berkshire Shaft and the Amethyst-OH-P junction. Any effort to substantiate this theory will require gaining access to that portion of the Nelson Tunnel, which is currently flooded. Plans are currently being devised to dewater the Nelson Tunnel from the Berkshire Shaft or the Del Monte Raise. There are numerous financial, engineering and environmental constraints, which may dictate a different course of action. Hope continues that if a definitive point source can be defined, then some type of source control can be installed to improve water quality at the Nelson Tunnel portal. Additional work at the Commodore Mine should address the Nelson Portal flume and portal collapse, to ensure accurate flow measurements and alleviate portal blowout concerns. As investigations and data collection continue within the Commodore Mine Complex, the WCRC serves as a shining example of cooperation between local citizens and government agencies working to achieve a mutually beneficial outcome.

Attachment
Table 2

Table 2. Water level and water quality data collected at underground sites.

Site	Notes	Date	Time	Flow	pH	Cond. (uS/cm)	Temp. (C)	Depth from spad to water (ft)	Elevation (ft)
Berkshire Shaft		12/7/2000	14:00						
Peak Drift Borehole		12/7/2000	16:13						
small bore		12/7/2000	16:40						
140 drill		12/7/2000	16:50						
Nelson Adit		11/7/2002	9:47	0.39	4.44	1615	17.1		
Nelson Tunnel at Bachelor Shaft		11/7/2002	10:50		4.50	1696	17.7	39.22	9201.4
Javelin Shaft		11/7/2002	11:39		5.32	877	17.0	28.14	9213.41
Bachelor Shaft in shaft		11/7/2002	12:18		5.97	239	15.8		
McClure X-cut		11/7/2002	12:30		6.28	147	12.7		
Peak Drift Borehole		11/7/2002	13:00		6.12	175	13.5		
Daylight Winze		11/7/2002	13:42		5.10	703	15.2	27.59	9213.95
Commodore Shaft		11/7/2002	14:12		5.79	973	16.1	31.39	9211.29
No Name Winze		11/7/2002	15:10		5.39	1820	19.3		9213.49
Commodore Adit		11/7/2002	9:45	<5gpm	7.38	136.3	1.4		
Upwelling 1100'N of No Name Winze	120' of stagnant water	11/7/2002	10:45		3.88	1136	10.9		9245.37
Amethyst Shaft	est. flow 4 gpm	11/7/2002	11:05		6.74	102.3	11.4		
Stope North of Amethyst	source appears to be predominantly Amethyst shaft drainage	11/7/2002	11:15		6.68	99.1	11.4		
Berkshire Shaft		11/7/2002	12:01		5.54	1347	18.2	11.4375	9238.9
Decline	stagnant; water level 8.33" below high water mark;water appears to be lowering	11/7/2002	13:00		4.05	1464	17.4		9240.2
19 Raise (upper work)	19.854'; muddy with water pockets	11/7/2002							9240.79
Park Regent	est. flow 0.25 gpm	11/7/2002							
No Name Winze Dup		11/7/2002							
No Name Winze Blank		11/7/2002							
Berkshire Shaft Dup		11/7/2002							
Nelson Tunnel at Bachelor Shaft		6/6/2003	1005	164.40 gpm	4.42	1584	18.1	6.95	9199.86
Daylight Winze		6/6/2003	1100		4.9	838	17.1	24.45	9217.09
44 Raise		6/6/2003	1155		5.13	88	9.5		
Commodore Shaft		6/6/2003	1135					4.82(low spad)	
No Name		6/6/2003	1306	233 gpm	5.21	1688	19.1	4.3	9214.02
No Name Blank		6/6/2003	1326						
Berkshire Shaft Surface		6/6/2003			5.23	1879	18.7	12.42	9237.92
Berkshire Shaft Subsurface	depth integrated from 20-27'	6/6/2003			5.34	1650	17.5		
Javelin Shaft Surface		6/6/2003	1030		5.26	1046	16.4	29.17	9212.38
Javelin Shaft Subsurface	total water depth 12'	6/6/2003			4.48	1436	15.5		
Park Regent		6/6/2003	1342	<5 gpm	2.85	1859	21.1		
Commodore Adit		6/6/2003	940	3.24 gpm	6.28	118	4.4		
Nelson Adit	took sulfur 35 sample	6/6/2003	950	184.02 gpm	4.19	1098	17.3		
Nelson Adit dup		6/6/2003							
McClure X-cut		6/6/2003	1100	5.06 gpm	6.37	113	12.3		
Nelson above Wooster	~350' above Wooster; Mn precip on walls	6/6/2003	1200	~0.5 gpm	6	87	12.3		
Bachelor Shaft		11/4/2003	932					7	9199.81
Daylight Winze		11/4/2003	945					28.55	9212.99
No Name (YO2)		11/4/2003	1007					4.35	9213.97
Berkshire Shaft		11/4/2003	1105					13.85	9236.49
Del Monte Winze		11/4/2003							9238.09
Hospital Decline		11/4/2003							9238.19

Table 2. (continued)

Site	Date	AL_D (ug/L)	AL_T (u/L)	AS_D (ug/L)	AS_T (ug/L)	CA_T (ug/L)	CD_D (ug/L)	CD_T (ug/L)	CU_D (ug/L)	CU_T (ug/L)	FE_D (ug/L)	FE_T (ug/L)	PB_D (ug/L)	PB_T (ug/L)	MG_T (ug/L)	MN_D (ug/L)	MN_T (ug/L)	ZN_D (ug/L)	ZN_T (ug/L)	NA (mg/L)	K (mg/L)	SO4_T (mg/L)	CL_T (mg/L)	HCO3 (mg/L)	NO3 (mg/L)
Berkshire Shaft	12/7/2000	218	400	<1	<1		48.0	66.0	63	77	1,516	1,520	132	229		3,429	5,033	11,667	13,920						
Peak Drift Borehole	12/7/2000	<3	<3	<1	<1		25.0	55.0	<1	4	2,417	2,490	256	335		10,132	13,220	4,336	4,411						
small bore	12/7/2000	<3	8	<1	<1		12.0	16.0	12	30	89	119	6	8		46	63	1,864	2,485						
140 drill	12/7/2000	<3	<3	<1	<1		16.0	22.0	<1	3	4,633	4,770	121	276		4,691	7,592	963	1,711						
Nelson Adit	11/7/2002	480.4	570.5				121.5	127.4	32.5	31.9	32.7	1780	716.1	784.3		9993	13690	69970	71230						
Nelson Tunnel at Bachelor Shaft	11/7/2002	474.5	475.4				138.5	168.2	31.5	37.1	892	3350	756.1	854.3		13680	14380	74580	77580						
Javelin Shaft	11/7/2002	74.4	74.5				107	124.9	168.9	171.1	155	198	33.5	36.6		2842	2859	32460	33430						
Bachelor Shaft in shaft	11/7/2002	<3	19.2				1.8	2.6	<1	5.1	56.3	345	10.6	148.2		568.7	618.4	2124	2218						
McClure X-cut	11/7/2002	3.6	31.8				9.6	10.6	3.9	5.4	94.5	119	3.2	14.9		2411	2451	2012	2023						
Peak Drift Borehole	11/7/2002	11.4	15.3				46.2	49.4	2.7	9	552	3310	280.3	1462.5		10590	11380	3883	4164						
Daylight Winze	11/7/2002	141.8	178				38.5	48.4	42.8	44.9	83.8	197	57.4	854.3		3365	3402	22675	24800						
Commodore Shaft	11/7/2002	117.7	1690				57.2	71.7	9.3	26.7	<10	6520	33.2	768.7		6978	8228	32600	33240						
No Name Winze	11/7/2002	434.9	492.2				189.5	209.5	33.7	34.8	6450	6910	952.1	1041.9		15050	15220	80455	82810						
Commodore Adit	11/7/2002	54.5	267.2				7.1	7.4	5.3	5.9	67.4	114	7.7	13.2		589.3	596	2078	2089						
Upwelling 1100'N of No Name Winze	11/7/2002	4114	5635				118.3	162.3	78	79.7	1750	2190	988.5	1000.3		44390	54070	125000	133100						
Amethyst Shaft	11/7/2002	148.4	228				29.8	35.1	7	9.5	205	284	235	241.2		193.6	217.1	4744	5177						
Stope North of Amethyst	11/7/2002	15.4	125.3				27.5	38.1	12.2	18.7	<10	47.5	698.7	997		77.5	116.5	7977	9186						
Berkshire Shaft	11/7/2002	441	570.1				95.9	124	21.8	25.8	51.3	2480	277.9	620.8		10380	10900	53350	61330						
Decline	11/7/2002	1914.5	2301.5				78	80	14.3	14.9	8020	10700	1294	1318.5		13660	14350	57150	57270						
19 Raise (upper work)	11/7/2002																								
Park Regent	11/7/2002																								
No Name Winze Dup	11/7/2002	435.8	478.6				183.4	198.8	33.4	33.9	6230	7270	959.6	1038.4		15070	15295	81180	83510						
No Name Winze Blank	11/7/2002	<3	<3				0.1	0.2	<1	<1	75.5	110	16.7	18.8		51.7	80.6	22.1	24.9						
Berkshire Shaft Dup	11/7/2002	460.5	557.3				97.6	134.1	22.6	26.7	46.8	2550	300.9	629		10690	11005	54430	56540						
Nelson Tunnel at Bachelor Shaft	6/6/2003	195.5	252.7			168100	64.5	64.7	23.7	24.2	157	1940	203.7	231.1	12500	10080	10380	67550	70220	55.3	4.6	1018.4	<1	<1	0.2
Daylight Winze	6/6/2003	52	128.2			79900	41.4	43.1	40.4	41.8	<10	<10	58.5	61.5	6700	4404	4444	29940	30380	34	4.2	514.5	<1	<1	0.2
44 Raise	6/6/2003	201.2	256.9			4900	18.8	31.3	397.4	441.1	<10	326	595.6	708.8	1900	2080	2136	3267	3286	1.3	4.9	38	<1	2.2	0.2
Commodore Shaft	6/6/2003																								
No Name	6/6/2003	150.2	223.3			186.6	110.1	119	16.8	19	4730	8005	250.7	265.7	13400	13780	13910	69170	72600	57.6	4.3	1124.9	<1	<1	0.2
No Name Blank	6/6/2003	<3	6.8			4500	<0.1	<0.1	<1	<1	<10	<10	<2	<2	2100	<10	<10	<5	<5	<1	<0.5	<1	<1	33.8	0.1
Berkshire Shaft Surface	6/6/2003	276.3	735			173500	30.9	35.4	8.7	255.7	2730	21900	199.4	649	11900	11190	14990	56100	62570	54.4	4.5	1066	<1	3.3	0.2
Berkshire Shaft Subsurface	6/6/2003	36.2	63.7				35.3	36.8	18.8	28.7	2740	5380	163.6	246		12180	12440	66120	66130						
Javelin Shaft Surface	6/6/2003	<3	<3			81600	50.7	51.1	131.6	309.4	<10	42.5	35.4	120.9	6900	2231	2425	14760	14960	30	4.5	509.7	<1	4.4	0.2
Javelin Shaft Subsurface	6/6/2003	33.9	42.4				34	34.1	57	58.4	591	1990	162.7	166.9		10970	10270	56440	59470						
Park Regent	6/6/2003	1326.8	2051.3			43.9	27.2	27.5	251.1	257.5	5390	7110	334.2	359.3	30800	20330	20370	38585	43640	3.8	2.1	779	<1	<1	0.4
Commodore Adit	6/6/2003	<3	<3			11900	5.3	5.4	<1	2.7	47.8	216	20.4	23.2	1700	369.3	375.2	1753	1760	7.2	2.2	45.9	3.1	18.3	0.3
Nelson Adit	6/6/2003	160.8	167.8			162800	35.7	37.4	26.5	26.9	148	1200	187.7	225.8	12700	12110	12170	63740	64730	50.2	4.3	940.2	<1	<1	0.2
Nelson Adit dup	6/6/2003	159.4	185.3			171100	35.4	37.2	25.9	26.4	164	1110	189.9	210.7	12900	12240	12300	62850	63790	50	4.4	911.4	<1	<1	0.2
McClure X-cut	6/6/2003	<3	<3			11400	7.5	7.8	<1	<1	302	473	3	7.3	1300	984	1006	1687	1685	3.9	2	39.3	<1	16.6	0.2
Nelson above Wooster	6/6/2003	<3	<3			7.7	3.2	4.6	<1	3.3	556	709	4	9.7	1000	107	300.9	2120	2517	2.5	2.5	28	<1	11.1	<0.1
Bachelor Shaft	11/4/2003																								
Daylight Winze	11/4/2003																								
No Name (YO2)	11/4/2003																								
Berkshire Shaft	11/4/2003																								
Del Monte Winze	11/4/2003																								
Hospital Decline	11/4/2003																								