Mid-Term Permit Review

APPENDICIES - VOLUME 2 OF 2
SECTIONS R645-301-700 thru 800

VALLEY CAMP OF UTAH, INC. February, 1993

SCOFIELD ROUTE * HELPER, UTAH 84526 * PHONE [801] 448-9413

APPENDIX 722.100a

Water Quality Data

RECEIVED
FEB 1 1 1993
DIVISION OF
OIL, GAS & MINING

CONSULTANTS/ENGINEERS
HANSEN
ALLEN
& LUCE inc
SALT LAKE CITY, UTAH

STATE OF UTAH—DEPARTMENT OF SOCIAL SERVICES

CALVIN L. RAMPTON
Governor

PAUL S. ROSE
Executive Director

DIVISION OF HEALTH
44 MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113
AREA CODE 801

Board of Health
Air Conservation Committee
Health Facilities Council
Medical Examiner Commit
Nursing Home Advisory Co
Water Pollution Committee

LYMAN J. OLSEN, M.D., M.P.H.
Director of Health

Environmental Health Services Bran
72 East 4th South
Salt Lake City, Utah

533-6146
August 16, 1976

RECEIVED
AUG 17 1976
WATER RIGHTS

Mr. Dan Guy
Project Engineer
Valley Camp of Utah, Inc.
P.O. Box 507
Clear Creek, Utah 84517

Re: Chemical Analysis of Well #2 Water
Utah #2 Mine

Dear Mr. Guy:

Enclosed is a copy of our laboratory report #76-0502 covering results of a chemical analysis of a water sample from the new #2 Well serving your #2 Mine located in Section 8, T13S, R7E, SLB&M in Carbon County, Utah.

This report indicates that none of the substances measured are present in concentrations exceeding maximum permissible levels prescribed in the U.S. Public Health Service Drinking Water Standards.

Total iron and turbidity were found in the sample to exceed the maximum recommended level as follows:

Substance	Concentration In Sample	USPHS Maximum Recommended Concentration
Turbidity	7.5 JTU	5.0 JTU
Total Iron	0.45 mg/l	0.30 mg/l

This water is considered to be of good chemical quality for culinary use provided the excessive levels of iron and turbidity can be lowered.

The use of water containing excessive iron in the concentration indicated does not constitute a health hazard but is objectionable because of staining

problems which will result with respect to plumbing fixtures, laundered items, etc. and because of the possible taste problems which may be involved.

Since this is a new well, we suggest another one gallon sample be submitted so a re-check of total iron and turbidity only can be made. Such a sample should be collected after the well has been pumped continuously for at least 24 hours.

This report in no way implies approval of the well as a source of public water supply as other determinations are necessary before such approval can be made. We will need a copy of the "Report of Well Driller", results of pumping tests and plans showing the connection of the well to the system.

If you have any questions, please let us know.

Very truly yours,

Larry P. Scanlan

Larry P. Scanlan
Water Quality Specialist
Bureau of Water Quality

APPROVED BY:

Richard C. Hansen

Richard C. Hansen
Assistant Director
Bureau of Water Quality

LPS:ndp
Enclosure
cc: Utah State Division of Water Rights
Southeastern District Health Dept

UTAH STATE DIVISION OF HEALTH
BUREAU OF WATER QUALITY

JUN 2 5 1976

760502

CHEMICAL, RADIOLOGIC & PESTICIDES ANALYSIS

Utah State Div. of Health
Environmental Health

Sample No.	Storet No.	Date Collected	Time Collected	Water System		Water Rights No.
760502 (701)	(702)	05 18 76 (mo. dy. yr. 714)	(610)	(703)	(704)	(707)

Supply Owned by	River Mile Code	Mer.	Township	Range	Section	QTRSC	QTRQTR
ALLY CAMP OF UT (712)	(706)		13S	07E	08		(705)

Samples Collected by: DAN GUY (713)

Exact Description of Sampling Point: JT #2 MING #2 WELL (646) 1050' N 9480' W OF SE (647) COR (710)

Name: VALLEY CAMP OF UTAH (715)

SEND REPORT TO:

Address: PO BOX 507 (648)
CLEAR CREEK UT 84517 (717)

Phone No.: 4489413 (718)

TYPE OF SOURCE TABLE		
01 Spring	11 Creek	
02 Well	12 Pond	
03 Stream	13 Street gutter	
04 Lake		
05 Canal	15 Tunnel	
06 Dist. syst.	16 Reservoir	
07 Effluent	17 Surface	
08 Storm sewer	18 Artesian well	
09 Irrigation	19 Swimming pool	
10 River	14 Other	

719 Sample Source: 02

WATER USE TABLE	
1. Culinary	
2. Agriculture	
3. Industrial	
4. Other	
708 Current	
709 Proposed	1

COUNTY CODE TABLE	
01 Beaver	16 Piute
02 Box Elder	17 Rich
03 Cache	18 Salt Lake
04 Carbon	19 San Juan
05 Daggett	20 Sanpete
06 Davis	21 Sevier
07 Duchesne	22 Summit
08 Emery	23 Tooele
09 Garfield	24 Uintah
10 Grand	25 Utah
11 Iron	26 Wasatch
12 Juab	27 Washingto
13 Kane	28 Wayne
14 Millard	29 Weber
15 Morgan	

611 County: 04

CHEMICAL ANALYSIS

me/l	CATIONS	mg/l	ug/l	
—	Ammonia as N	0.0		722
	Arsenic		0.3	723
	Barium		0.0	724
	Boron		870	725
	Cadmium		0.0	727
5.05	Calcium	101		728
	Chromium			739
	Chromium, Hex. as Cr		0.0	730
	Copper		0.0	732
	Iron		0.0	733
	Lead		0.0	734
2.99	Magnesium	34		737
	Manganese		350	738
	Mercury, Total		0.0	739
	Nickel		200	740
1.08	Potassium	3		742
	Selenium		0.8	743
	Silver		0.0	744
1.22	Sodium	5		745
	Zinc		200	749
8.14	TOTAL CATIONS	143		

me/l	ANIONS	mg/l	
	Bicarbonate	432	758
	Carbon Dioxide	218	759
	Carbonate	0	760
0.25	Chloride	9	763
7.12	CO_3 Solids	214	
	Fluoride	0.31	765
	Hydroxide	0.00	767
—	Nitrate as N	0.0	605
—	Nitrite as N	0.0	606
—	Phosphorus, Ortho as P	0.1	607
	Silica, dissolved as SiO_2	10	750
1.19	Sulphate	57	772
8.56	TOTAL ANIONS	290	
	GRAND TOTAL	433	

pH	6.5	782
TDS @ 180° C	416	786
Phosphorus, Tot.		785
Sufactant as MBAS		773
Total Alk. as $CaCO_3$	356	752
Total Hardness as $CaCO_3$	320	754
Iron, Total	0.45	755

Turbidity, as JTU	7.5	767
Sampling Depth, m		609
Specific Gravity		608
Specific Cond. @ 25° C, µ mhos/cm	720	762

RSbaker 6 21 76

PESTICIDES (ug/l)

Aldrin		641
Chlordane (cis and trans)		612
DDT (Total)		642
Dieldrin		643
Endrin		613
Heptachlor		614
Heptachlor Epoxide		615
Lindane		616
Methoxychlor		617
Toxaphene		618
Other _____		644
2,4-D		619
2,4,5-T		645

RADIOLOGICS

	pc/l		Sp. Act.	
Alpha, gross		621		622
Beta, gross		623		624
Tritium, ^3H		625		626
^{226}Radium		627		628
^{228}Radium		629		630
^{90}Sr		631		632
^{89}Sr		633		634
^{131}I		635		636
^{134}Cs		637		638
^{137}Cs		639		640

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S7-11
Location

DATE	TIME	FLOW (cfs)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP. (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	DISSOLVED OXYGEN (mg/L)	OIL & GREASE (mg/L)	PHENOL (mg/L)	NITROGEN AMMONIA as NH3-N (mg/L)	NITROGEN NITRATE as NO3-N (mg/L)	NITROGEN NITRITE as NO2-N (mg/L)	NITROGEN TOTAL KJELDAHL (mg/L)	NITROGEN ORGANIC (mg/L)	PHOSPHORUS TOTAL as PO4-P (mg/L)	PHOSPHORUS ORTHO as PO4-P (mg/L)	SULFATE as SO4 (mg/L)	MANGANESE as Mn (mg/L)	SURFACTANT as MBAS (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL SETTLEABLE (ml/L)	SOLIDS T.S.S. (mg/L)	SOLIDS TOTAL (mg/L)	SOLIDS TOTAL VOLATILE (mg/L)	COND (µmhos)	TURBIDITY (FTU)	ALKALINITY ALK. as CaCO3 (mg/L)	BI-CARBONATE ALK. as HCO3 (mg/L)	TOTAL ALK. as CaCO3 (mg/L)	TOTAL HARDNESS as CaCO3 (mg/L)	ACIDITY as CaCO3 (mg/L)	ALPHA RADIO-ACTIVITY (pc/L)	BETA RADIO-ACTIVITY (pc/L)
6-26-80			In-Accessible																																		
8-27-80	11:25	0.01	9.0	3.0	8.6								<0.01	0.209	<0.01	0.30				0.095	0.090	12.00			1.0		169			260		183	150		8.0		
10-8-80	11:23	0.002	15	7	8.6									<0.001	<0.01					0.360		45			9.0		219			340		2608					
12-24-80	In-Accessible		Snow																																		
2-25-81	In-Accessible		Snow																																		
4-9-81	In-Accessible		- Snow																																		
6-24-81	11:40	0.001	19	18	8.7									<0.001	<0.01					0.210		99.5					172			230		1932	114		<0.01		
8-26-81	11:06	-0-																																			
10-28-81	11:55	-0-																																			
12-23-81			In-Accessible																																		
2-24-82			In-Accessible																																		
4-14-82			In-Accessible																																		
6-9-82			In-Accessible																																		
8-11-82	13:35	0.002	12	10	8.1									<0.001	0.16					0.110		3.5					146			131		131.30	107.60				
10-13-82	12:08		In-Accessible																																		
12-2-82			In-Accessible																																		
2-21-83			In-Accessible																																		
4-21-83			In-Accessible																																		
6-21-83			In-Accessible			Mudslide across road - snow drifts																															
8-25-83	09:20	0.004	11	5	6.8								<0.1	<0.001	<0.01	<0.01				0.13		6					260			442		244	200		<0.01		

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CHLORIDE DISS. (mg/L)	CHROMIUM HEXAVALENT (mg/L)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE DISS. (mg/L)	MANGANESE TOTAL (mg/L)	IRON DISS. (mg/L)	IRON TOTAL (mg/L)	LEAD TOTAL (mg/L)	MAGNESIUM TOTAL (mg/L)	MANGANESE TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	POTASSIUM TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	VANADIUM TOTAL (mg/L)				COMMENTS
6-26-80																																			Covered by Snow
8-27-80			<0.001	0.010		0.010	<0.001	48.00	2.0	<0.001		0.010		0.06		0.010	0.140	<0.002	8.64	<0.001	<0.0002			0.53	<0.001		<0.001	3.00	0.010					
10-8-80								65.60	0.6								0.350		7.68	0.020				0.64				9.00						
12-24-80																																			
2-25-81																																			
4-9-81																																			
6-24-81								45.60	13.30								0.100		9.12	0.010				0.46				4.00						
8-26-81																																			
10-28-81																																			Covered with Snow
12-23-81																																			Snow
2-24-82																																			Snow
4-14-82																																			Snow
6-9-82																																			Covered with Snow
8-11-82								44.80	24.50								0.025		6.72	0.003				0.95				3.0						Snow above Spring
10-13-82																																			Covered with Snow - Road Closed
12-2-82																																			Snow
2-21-83																																			Snow
4-21-83																																			Road Closed - Snow
6-21-83																																			
8-25-83			<0.001	0.045		0.050	<0.001	28.20	21.00	<0.001		0.005		0.12		0.210	0.350	<0.001	2.40	0.020	<0.0002			1.7	<0.001		<0.001	67.0	0.018					

8-1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S7-11
Location

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL mg/L	NITROGEN ORGANIC mg/L	PHOSPHATE TOTAL as PO_4 mg/L	PHOSPHATE ORTHO as PO_4 mg/L	SULFATE as SO_4 mg/L	MERCURY as Hg mg/L	SURFACTANT as MBAS mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL DISSOLVED mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL mg/L	SOLIDS TOTAL VOLATILE mg/L	SPECIFIC COND micromhos	TURBIDITY FTU	ALK. as CO_3 mg/L	BI-CARBONATE ALK. as HCO_3 mg/L	TOTAL ALK. as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
3-26-84	12:25	0.001	8	8	7.2										<0.1	2.56	0.014				0.036	20.2					259			215			230		175				
4-27-85			Inaccessible																																				
5-9-85	11:35		Inaccessible																																				
6-18-85	12:00	0.098	17	2	6.7										<0.1	1.32	0.036				0.051	15.2					180			124			88		64				
7-17-85	11:00	0.002	21	13	6.8																	17.2					239			326			255						
10-1-85	12:20	0.001	5	2	7.2										<0.1	0.992	0.016				0.048	27.4					243			338			190		224				
6-27-86	15:00		In-accessible																																				
7-29-86	15:50	0.005	20	12	7.5																	<0.5					203			64			102						
10-5-86	15:40	0.001	4	3	6.6										<0.1	0.421	0.025				0.016	8.6					252			246			292	239	194				
4-23-87	14:00		In Accessible																																				
6-17-87	09:30		Inaccessible																																				
7-1-87	14:40	0.002	18	12	7.5										<0.1	1.47	0.008				0.012	1.3					209			339			148		167				
9-9-87	12:30	0.001	14	10	8.1										0.11	1.50	0.0081				<0.01	18					351			465			212	215	260				
4-22-88			Inaccessible																																				
5-31-88			Inaccessible																																				
6-29-88	10:30	0.003	19	11	7.6										0.14	0.41	0.012				0.018	1.9					91			174			88.6		83.3				
7-28-88	13:15	0.003	20	17	7.8																	67.5					274			371			186						
8-23-88	14:15	0.0003	15	7	6.8																	38.2					318			441		0	218	178	254				

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE mg/L	CHROMIUM HEXavalent CR mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE mg/L	GERMANIUM TOTAL mg/L	IRON mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/l	MAJOR ANIONS meq/l	C-A / C+A x 100 C-A	COMMENTS
3-26-84	<0.1						<0.01	69.9	10.9	-		0.01				<0.01		<0.01	11.0	0.034		<0.1	<0.01	0.53				3.72	0.055			4.57	4.50		
4-27-85																																					Covered with Snow
5-30-85																																					Covered with Snow
6-18-85	<0.1						<0.01	26.9	4.6			<0.01				0.24		<0.01	3.13	<0.01		<0.01	<0.01	0.38	0.008			0.92	<0.01		<0.1	1.66	1.89		
7-17-85								83.4	4.8										10.1					0.4				3.42				5.16	4.68		
10-1-85	2.56						<0.01	63.7	16.8			<0.01				<0.01		0.06	13.3	<0.01		<0.01	<0.01	1.15	<0.002			3.75	0.028		<0.1	4.47	4.16		
6-27-86																																					Covered with Snow
7-29-86								27.8	6.36										4.06					0.09				0.79				1.758	1.851	-5.45	Mostly Snow melt
10-5-86	<0.1						<0.01	52.4	4.64			<0.01				0.072		0.045	29.6	<0.01		<0.01	<0.01	0.5	<0.002			1.38	0.025		<0.01	5.1796	6.1036	0.410	
4-23-87																																					Covered with Snow
6-17-87																																					Road Closed - Blocked
7-1-87	0.14						<0.01	36.5	15.8			<0.01				0.12	0.66	0.028	14.0	0.032		<0.01	<0.01	0.3	<0.002			2.2	0.034		<0.1	3.08	2.90	3.00	
9-9-87	<0.1		<0.01				<0.01	79	21.6			<0.01		0.13		0.080	0.36	<0.01	23.1	<0.01		<0.01	<0.01	0.4	<0.002			0.1	0.112		<0.1	5.86	5.28	5.29	
4-22-88																																					Road Closed - Snow
5-31-88																																					Road inaccessible
6-29-88	<0.1						<0.01	28.1	3.82			0.012				0.170		<0.01	5.0	<0.01		<0.01	<0.01	0.1	<0.002			1.0	<0.01		<0.1	1.86	1.60	7.57	
7-28-88								77.2	20.4										18.1					0.4				3.6				5.51	5.03	4.61	
8-23-88								64.9	14.2							<0.01	0.378		17.1	0.025				0.5				5.9				4.92	4.77	1.51	

R 1-78

CONSULTANTS ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station S 7-11

Location

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	TOC	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TSS	SOLIDS TOTAL DISSOLVED	SOLIDS TDS	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND	TURBIDITY	ALK as CO_3	ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		#/ml	#/ml	#/ml	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µmhos	FTU	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L
4-25-89	11:00		Inaccessible																																				
5-23-89	11:30		Inaccessible																																				
6-21-89	12:37	0.013	7	7	7.8																	8.8					86			89		0	55.8		8.2	35.4		
7-19-89	10:30	0.0003	21	16	7.4																						193			299		0	176					
9-25-89	17:40	Seep		10	7.6																	16.4					284			410		0	199		210			
4-4-90	09:30		Inaccessible																																				

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE as Cl	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE as F	MANGANESE TOTAL	IRON as Fe	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	$\frac{C-A}{C+A} \times 100$	COMMENTS
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	MEQ/L	MEQ/L		
4-25-89																																			Road impassible - Snow
5-23-89																																			Road impassible - Snow
6-21-89								24.4	7.9							<0.01		<0.01	2.4					0.2			0.8					1.45	1.32	4.84	
7-19-89								42.4	11.4										9.6					<0.1			12.8					3.46	2.35	1.59	
9-25-89								50.8	15.7							<0.01	0.455		18.2	0.020				1.0			4.2					4.24	4.05	2.35	
4-4-90																																			Road impassible - Snow

8-7-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S24-12
Location

DATE	TIME	FLOW (cfs)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP. (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	DISSOLVED OXYGEN (mg/L)	OIL & GREASE (mg/L)	PHENOL (mg/L)	NITROGEN AMMONIA as NH3-N (mg/L)	NITROGEN NITRATE as NO3-N (mg/L)	NITROGEN NITRITE as NO2-N (mg/L)	NITROGEN TOTAL (mg/L)	NITROGEN ORGANIC (mg/L)	PHOSPHATE TOTAL as PO4-P (mg/L)	PHOSPHATE ORTHO as PO4-P (mg/L)	SULFATE as SO4 (mg/L)	CHLORIDE as Cl (mg/L)	SODIUM as NaCl (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL DISSOLVABLE (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL DISSOLVABLE (mg/L)	SOLIDS TOTAL VOLATILE (mg/L)	DENS. (g/cm³)	TURBIDITY (FTU)	HARDNESS ALK. as CaCO3 (mg/L)	HARDNESS ALK. as HCO3 (mg/L)	TOTAL ALK. as CaCO3 (mg/L)	TOTAL HARDNESS as CaCO3 (mg/L)	ACIDITY as CaCO3 (mg/L)	ALPHA RADIOACTIVITY (pc/L)	BETA RADIOACTIVITY (pc/L)
6-26-80	09:27	0.002	17	4	7.4									0.022	<0.01					0.030		15.5			1.0		216.8			410			302.66					
7-23-80		0.004		6																										560									
8-26-80	15:52	0.003	15	7	7.1	33.0	<2.0				15.00		<0.01	0.005	<0.01	0.58				0.030		18.0			15.0		320			490	0.58		358.68	294		240	1.1	2.5
9-11-80	09:24	0.003	12	6	7.3										<0.01															490									
10-7-80	13:40	0.002	21	9	8.10									0.003	<0.01					0.050		12.0			38.0		350			540			422.12					
11-19-80	11:07	0.002	-2	5	7.4																									460									
12-24-80	In-Accessible			Snow																																			
2-25-81	In-Accessible			Snow																																			
4-8-81	In-Accessible			Snow																																			
6-24-81	15:04	0.003	23	10	7.7									<0.001	0.10					1.50		48.0					360			205			336.72	276		11.40		
8-26-81	15:45	0.001	15	11	8.1								4.80	<0.001	<0.01	<0.01				0.180	<0.001	26.0					335			375			363.54	302		<0.01		
10-29-81	10:15	0.001	6	5	6.5									<0.001	0.10					0.200		13.0					315			344			372.30					
12-7-81			In-Accessible																																				
2-24-82			In-Accessible																																				
4-4-82			In-Accessible																																				
6-9-82			In-Accessible																																				
8-11-82	15:00	0.002	16	8	7.7									<0.001	0.12					0.140		3.0					322			530			358.90	303.20				
10-5-82	12:08		In-Accessible																																				
12-14-82			In-Accessible																																				
2-21-83			In-Accessible																																				

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CALCIUM DISS. (mg/L)	CHROMIUM (mg/L as Cr)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE DISS. (mg/L)	MANGANESE TOTAL (mg/L)	IRON DISS. (mg/L)	IRON TOTAL (mg/L)	LEAD TOTAL (mg/L)	MAGNESIUM TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	POTASSIUM TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	VANADIUM TOTAL (mg/L)				COMMENTS
6-26-80								71.20	6.10								0.020		21.12	<0.010			1.16				2.40						
7-23-80																																	
8-26-80			<0.001	0.050		0.005	<0.001	75.20	4.0	<0.001		<0.001	0.002	0.016			0.260	<0.001	27.36	0.004	<0.002		12.50	0.061		<0.001	2.60	0.010					
9-11-80																																	
10-7-80								74.40	0.40								0.53		32.16	0.030			1.72				16.00						
11-19-80																																	
12-24-80																																	
2-25-81																																	
4-8-81																																	
6-24-81								56.80	2.47								0.120		40.32	0.010			1.05				8.00						
8-26-81			<0.001	0.060		0.040	<0.001	83.20	3.00	<0.001		0.011		0.18		0.010	0.120	<0.001	28.32	0.010	<0.002		1.89	0.002		0.002	2.70	0.015					
10-29-81								72.80	3.30								0.15		33.12	0.014			1.90				2.20						Snow
12-7-81																																	Snow
2-24-82																																	Snow
4-4-82																																	Snow
6-9-82																																	
8-11-82								80.00	18.70								0.014		29.76	0.045			1.20				2.6						Road Closed - Snow
10-5-82																																	Snow
12-14-82																																	Snow
2-21-83																																	

R 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S24-12
Location

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL mg/L	NITROGEN ORGANIC mg/L	PHOSPHORUS TOTAL as PO_4-P mg/L	PHOSPHORUS ORTHO as PO_4-P mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SULFATE as SO_4 mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL SETTLEABLE SOLIDS mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL SOLIDS mg/L	SOLIDS TOTAL VOLATILE SOLIDS mg/L	SPECIFIC COND. µmhos	TURBIDITY FTU	CARBONATE ALK. as CO_3 mg/L	BICARB. ALK. as HCO_3 mg/L	TOTAL ALK. as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
9-21-83			Inaccessible																																			
6-21-83	14:25		Inaccessible																																			
8-25-83	15:45	0.01	23	11	7.8								<0.1	<0.001	<0.01	<0.01				0.24		7					310			585			396.7	276		<0.01		
10-19-83	14:28	0.002	12	10	7.4									<0.001	0.40					0.20		45					388			566			355.84					
12-[illegible]-83	Inaccessible																																					
6-26-84	11:30	0.005	16	7	7.9										<0.1						<0.01	45.0					350			516			163	267				
8-26-84	15:20	0.002	14	8	7.1										<0.1	0.101	0.006				<0.01	41.5					406			426			370		220			
4-27-85			Inaccessible																																			
5-30-85	15:35	0.014	15	8	7.0																	42.2					337			410			116					
6-17-85	16:45	0.003	17	8	7.4										<0.1	0.076	0.035				<0.01	38.2					340			529			300		258			
7-17-85	13:50	0.003	19	9	7.8																	5.63					506			550			440					
10-1-85	16:35	0.004	13	6	7.4										<0.1	0.092	0.007				<0.01	16.6					397			59			210		396			
6-27-86	11:36	0.002	20	8	8.0										<0.1	0.457	0.006				<0.01	86.7					330			605			278	228	345			
7-29-86	10:25	0.003	16	6	7.1																	81.9					410			692			285					
10-15-86	09:00	0.004	-4	2	7.4										0.12	0.151	0.0068				0.133	117					418			629			461	378	347			
4-23-87	12:00		Inaccessible																																			
6-15-87	15:25	0.002	18	14	6.9										1.12	0.28	0.011				0.060	7.2					136			630			149		124			
7-1-87	09:00	0.002	10	6	7.7																	51.9					400			642			310					
9-7-87	10:15	0.001	14	7	8.3										0.19	0.077	0.0074				<0.01	44					390			636			341	279	373			
4-22-88			Inaccessible																																			

DATE	ALUMINUM TOTAL µg/L	ANTIMONY TOTAL µg/L	ARSENIC TOTAL µg/L	BARIUM TOTAL µg/L	BERYLLIUM TOTAL µg/L	BORON TOTAL µg/L	CADMIUM TOTAL µg/L	CALCIUM TOTAL µg/L	CHLORIDE DISS µg/L	CHROMIUM HEXAVALENT CR µg/L	COBALT TOTAL µg/L	COPPER TOTAL µg/L	CYANIDE as CN µg/L	FLUORIDE DISS µg/L	MANGANESE TOTAL µg/L	IRON DISS µg/L	IRON TOTAL µg/L	LEAD TOTAL µg/L	MAGNESIUM TOTAL µg/L	MERCURY TOTAL µg/L	MOLYBDENUM TOTAL µg/L	NICKEL TOTAL µg/L	POTASSIUM TOTAL µg/L	SELENIUM TOTAL µg/L	SILICA as SiO_2 µg/L	SILVER TOTAL µg/L	SODIUM TOTAL µg/L	ZINC TOTAL µg/L	TITANIUM TOTAL µg/L	SULFIDE as S µg/L	MAJOR CATIONS meq/l	MAJOR ANIONS meq/l	C-A / C+A X 100	COMMENTS
4-21-83																																			Road covered with snow
6-21-83																																			Road covered with Snow
8-25-83			<0.001	0.060		0.058	<0.001	15.10	10.50	<0.001		0.004		0.14		0.150	0.185	<0.001	3.70	0.045	<0.002			2.1	<0.001		<0.001	110	0.025							
10-19-83								15.60	4.00								0.270		3.24	0.260				2.5				2.80								
12-[illegible]-83																																			Snow
6-26-84								77.3	3.9								0.36		30.8	0.01				1.87				2.58				6.55	3.72		
8-26-84	<0.1						<0.01	94.4	4.6			<0.01				<0.01		<0.01	33.3	0.021		<0.1	<0.01	2.07				2.97	0.050			7.63	7.54		
4-27-85																																			Road covered with Snow
5-30-85								72.2	3.25										5.8					0.30				2.60				2.71	2.87		
6-17-85	<0.1						0.070	58.8	3.1			<0.01				0.040		<0.01	35.8	<0.01		<0.01	<0.01	1.57	<0.002			2.09	<0.01		<0.1	6.01	5.80		
7-17-85								123	4.2										35.6					2.3				2.90				9.28	8.50		
10-1-85	0.18						<0.01	74.1	5.7			<0.01				0.06		0.08	34.8	<0.01		<0.01	<0.01	3.18	<0.002			2.66	0.010		<0.1	6.77	7.05		
6-27-86	<0.1						<0.01	70.8	5.9			<0.01				0.050		<0.01	32.9	<0.01		<0.01	<0.01	1.5	<0.002			2.39	<0.01		<0.1	6.395	6.536	-2.366	
7-29-86								61.9	3.56										36.9					1.62				1.58				6.236	6.449	-6.347	
10-15-86	<0.1						<0.01	93.8	2.61		-	<0.01				<0.01		0.100	58.0	0.0010		<0.01	<0.01	1.8	<0.002			2.48	0.010		<0.01	9.6976	10.0703	-4.629	
4-23-87																																			Road covered with Snow
6-15-87	<0.1						<0.01	38.4	3.9			<0.01				<0.01		0.08	8.5	<0.01		<0.01	<0.01	0.4	<0.002			0.9	0.025		<0.1	2.67	2.70	-0.63	
7-1-87								67.2	4.6										38.4					1.8				2.1				6.66	6.29	2.82	
9-7-87	<0.1		<0.01				<0.01	98	6.2			<0.01		0.34		0.22	0.33	<0.01	28.9	<0.01		<0.01	<0.01	2.5	<0.002			0.4	0.025		<0.1	6.71	6.66	0.22	
4-22-88																																			Road Covered with Snow

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CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station S24-12
Location

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL mg/L	NITROGEN ORGANIC mg/L	PHOSPHATE TOTAL as PO_4-P mg/L	PHOSPHATE ORTHO as PO_4-P mg/L	SULFATE as SO_4 mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL DISSOLVED mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL SUSPENDED mg/L	SOLIDS TOTAL VOLATILE mg/L	SPECIFIC COND. µmhos/cm	TURBIDITY FTU	ALKALINITY ALK. as CO_3 mg/L	ALKALINITY ALK. as HCO_3 mg/L	TOTAL ALK as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pc/L	BETA RADIO-ACTIVITY pc/L
5-31-88			inaccessible																																				
6-29-87	13:00	0.002	20	11	7.8										0.18	0.17	<0.005				0.026	83.9					857			748			318		936				
7-28-87	09:16	0.002	17	11	7.6																	126					394			650			194						
8-28-87	01:45	0.008	0	4	7.7																	103					436			632		0	281	231	366				

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE DISS. mg/L	CHROMIUM HEXAVALENT CR mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE DISS. mg/L	STRONTIUM TOTAL mg/L	IRON DISS. mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MAGNESIUM TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/L	MAJOR ANIONS meq/L	$\frac{C-A}{C+A}$ 100	COMMENTS
5-31-88																																				Road impassible
6-29-87	<0.1						<0.01	59.2	2.25			<0.01				<0.01		<0.01	47.3	0.075		<0.01	<0.01	2.3	<0.002			2.6	<0.01		<0.1	7.02	7.10	0.56	
7-28-87								83.6	5.10										16.3					2.3				2.4				5.69	5.94	2.16	
8-28-87								88.2	3.3							<0.01	0.050		29.1	<0.01				2.2				5.0				7.07	6.84	1.63	

R-9-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S31-13
Location

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOL (MG/L)	NITROGEN AMMONIA as NH_3-N (MG/L)	NITROGEN NITRATE as NO_3-N (MG/L)	NITROGEN NITRITE as NO_2-N (MG/L)	NITROGEN TOTAL ORGANIC (MG/L)	NITROGEN TOTAL (MG/L)	PHOSPHORUS TOTAL as PO_4-P (MG/L)	PHOSPHORUS ORTHO as PO_4-P (MG/L)	SULFATE as SO_4 (MG/L)	CHLORIDE as Cl (MG/L)	FLUORIDE as F (MG/L)	SOLIDS TDS (MG/L)	SOLIDS TOTAL DISSOLVED SOLIDS (MG/L)	SOLIDS T.S.S. (MG/L)	SOLIDS TOTAL SOLIDS (MG/L)	SOLIDS TOTAL VOLATILE SOLIDS (MG/L)	SPECIFIC COND. (μmhos)	TURBIDITY (FTU)	CARBONATE ALK. as CO_3 (MG/L)	BI-CARBONATE ALK. as HCO_3 (MG/L)	TOTAL ALK. as $CaCO_3$ (MG/L)	TOTAL HARDNESS as $CaCO_3$ (MG/L)	ACIDITY as $CaCO_3$ (MG/L)	ALPHA RADIO-ACTIVITY (pCi/L)	BETA RADIO-ACTIVITY (pCi/L)
9-26-84	13:15	0.004	18	6	7.2										<0.1	0.536	0.006				0.011	34.7					270			314			268		223			
4-27-85			Inaccessible																																			
5-30-85	11:35		Inaccessible																																			
6-18-85	11:00	0.022	15	5	6.9										<0.1	0.227	0.032				<0.01	1.08					245			307			180		167			
7-17-85	11:52	0.007	20	6	7.3																	2.76					236			385			180					
10-1-85	11:15	0.006	15	6	7.1										<0.01	0.248	<0.005				<0.01	10.0					256			238			260		258			
6-27-86	15:45	0.03	23	6	7.8										<0.1	1.25	0.005				<0.01	28.4					204			379			176	144	199			
7-29-86	15:11	0.008	18	7	7.3																	16.8					271			444			233					
10-15-86	14:00	0.005	8	6	6.9										<0.1	0.776	0.0047				<0.01	28.4					306			498			364	298	257			
4-23-87	14:00		Inaccessible																																			
6-17-87	10:40	0.008	18	5	7.7										0.29	0.84	<0.005				0.016	17.3					222			384			239		214			
9-1-87	15:25	0.009	16	6	7.5																	24.8					243			411			250					
9-7-87	15:55	0.002	21	8	8.0										<0.1	0.71	0.0079				<0.01	2.0					288			446			275	226	256			
4-27-88			Inaccessible																																			
5-31-88			Inaccessible																																			
6-28-88	09:30	0.007	17	7	7.4										<0.1	0.65	<0.005				0.011	20.1					222			422			245		229			
7-27-88	12:30	0.004	22	12	7.7																	88.0					269			457			201					
9-27-88	13:30	0.0017	7	6	6.8																	21.8					395			506		0	292	239	278			

DATE	ALUMINUM TOTAL (MG/L)	ANTIMONY TOTAL (MG/L)	ARSENIC TOTAL (MG/L)	BARIUM TOTAL (MG/L)	BERYLLIUM TOTAL (MG/L)	BORON TOTAL (MG/L)	CADMIUM TOTAL (MG/L)	CALCIUM TOTAL (MG/L)	CHLORIDE DISS. (MG/L)	CHROMIUM HEXAVALENT CR (MG/L)	COBALT TOTAL (MG/L)	COPPER TOTAL (MG/L)	CYANIDE as CN (MG/L)	FLUORIDE DISS. (MG/L)	HEXAVALENT CR TOTAL (MG/L)	IRON DISS. (MG/L)	IRON TOTAL (MG/L)	LEAD TOTAL (MG/L)	MAGNESIUM TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MOLYBDENUM TOTAL (MG/L)	NICKEL TOTAL (MG/L)	POTASSIUM TOTAL (MG/L)	SELENIUM TOTAL (MG/L)	SILICA as SiO_2 (MG/L)	SILVER TOTAL (MG/L)	SODIUM TOTAL (MG/L)	ZINC TOTAL (MG/L)	VANADIUM TOTAL (MG/L)	SULFIDE as S (MG/L)	MAJOR CATIONS (meq/l)	MAJOR ANIONS (meq/l)	C-A / C+A X 100	COMMENTS
9-26-84	<0.1						<0.01	76.2	3.5			<0.01				<0.01		<0.01	16.4	0.014		<0.1	<0.01	1.00				1.82	0.095			5.27	5.21		
4-27-85																																				Road covered with Snow
5-30-85																																				Road Covered with Snow
6-18-85	<0.1						<0.01	43.4	2.0			<0.01				0.012		<0.01	12.6	<0.01		<0.01	<0.01	0.74	0.003			1.02	0.015		<0.1	3.26	3.03		
7-17-85								38.3	1.8										15.8					0.9				1.78							
10-1-85	<0.1						<0.01	66.2	4.2			<0.01				<0.01		0.17	17.9	<0.01		<0.01	<0.01	1.51	0.002			1.42	0.023		<0.1	4.89	4.59		
6-27-86	<0.1						<0.01	53.2	4.7			<0.01				0.070		<0.01	13.1	<0.01		<0.01	<0.01	0.7	<0.002			1.63	<0.01		<0.1	3.825	3.629	5.128	
7-29-86								56.7	3.34										15.5					0.70				0.48				4.144	4.263	-2.841	
10-15-86	<0.1						<0.01	68.8	8.29			<0.01				<0.01		0.035	37.2	<0.01		<0.01	<0.01	0.6	<0.002			1.27	0.040		<0.01	6.346	6.0098	-2.559	
4-23-87																																				Road covered with Snow
6-17-87	<0.1						<0.01	67.5	2.6			<0.01				<0.01		0.038	16.4	<0.01		<0.01	<0.01	0.8	<0.002			1.4	0.018		<0.1	4.81	4.35	4.96	
7-1-87								51.2	4.3										27.8					0.8				1.0				4.91	4.74	1.79	
9-7-87	<0.1		<0.01				<0.01	69	6.1			<0.01		0.24		0.14	0.24	<0.01	26.8	<0.01		<0.01	<0.01	1.0	<0.002			0.2	0.050		<0.1	5.69	5.10	5.48	
4-27-88																																				Road closed with Snow
5-31-88																																				Road impassible
6-28-88	<0.1						<0.01	46.4	0.81			<0.01				0.050		<0.01	25.9	<0.01		<0.01	<0.01	0.9	<0.002			1.0	<0.01		<0.1	4.51	4.46	0.64	
7-27-88								73.8	3.63										20.8					0.9				1.9				5.51	5.23	2.60	
9-27-88								71.2	1.6							<0.01	0.033		23.4	<0.01				1.1				1.8				5.58	5.28	2.76	

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CONSULTANTS / ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station S31-13
Location

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOLS (MG/L)	NITROGEN AMMONIA as NH_3-N (MG/L)	NITROGEN NITRATE as NO_3-N (MG/L)	NITROGEN NITRITE as NO_2-N (MG/L)	NITROGEN TOTAL KJELDAHL (MG/L)	NITROGEN ORGANIC (MG/L)	PHOSPHATE TOTAL as PO_4-P (MG/L)	PHOSPHATE ORTHO as PO_4-P (MG/L)	SULFATE as SO_4 (MG/L)	CHLORIDE as Cl (MG/L)	FLUORIDE as F (MG/L)	SOLIDS TSS (MG/L)	SOLIDS TOTAL DISSOLVED (MG/L)	SOLIDS TSS (MG/L)	SOLIDS TOTAL DISSOLVED (MG/L)	SOLIDS TOTAL VOLATILE (MG/L)	SPECIFIC COND. (µmhos/cm)	TURBIDITY (FTU)	ALK. as CO_3 (MG/L)	ALK. as HCO_3 (MG/L)	TOTAL ALK. as $CaCO_3$ (MG/L)	TOTAL HARDNESS as $CaCO_3$ (MG/L)	ACIDITY as $CaCO_3$ (MG/L)	ALPHA RADIO ACTIVITY (pCi/L)	BETA RADIO ACTIVITY (pCi/L)
4-25-89	11:00		Inaccessible																																				
5-23-89	11:50		Inaccessible																																				
6-21-89	11:57	0.007	10	6	7.5																	66.8					256				367		0	296		202	<10		
7-19-89	11:05	0.004	25	8	7.5																	27.7					251				463		0	279					
9-25-89	16:30	0.001		5	7.7																	29.2					308				405		0	294		274			
4-16-90	09:30		Inaccessible																																				

DATE	ALUMINUM TOTAL (MG/L)	ANTIMONY TOTAL (MG/L)	ARSENIC TOTAL (MG/L)	BARIUM TOTAL (MG/L)	BERYLLIUM TOTAL (MG/L)	BORON TOTAL (MG/L)	CADMIUM TOTAL (MG/L)	CALCIUM TOTAL (MG/L)	CHLORIDE DISS. (MG/L)	CHROMIUM HEXAVALENT (MG/L)	COBALT TOTAL (MG/L)	COPPER TOTAL (MG/L)	CYANIDE as CN (MG/L)	FLUORIDE DISS. (MG/L)	IRON TOTAL (MG/L)	IRON DISS. (MG/L)	IRON TOTAL (MG/L)	LEAD TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MOLYBDENUM TOTAL (MG/L)	NICKEL TOTAL (MG/L)	POTASSIUM TOTAL (MG/L)	SELENIUM TOTAL (MG/L)	SILICA as SiO_2 (MG/L)	SILVER TOTAL (MG/L)	SODIUM TOTAL (MG/L)	ZINC TOTAL (MG/L)	VANADIUM TOTAL (MG/L)	SULFIDE as S (MG/L)	MAJOR CATIONS (MEQ/L)	MAJOR ANIONS (MEQ/L)	$\frac{C-A}{C+A} \times 100$	COMMENTS
4-25-89																																				Road Impossible - Snow
5-23-89																																				Road Impossible - Snow
6-21-89								52.8	7.2							<0.01		<0.01	34.2					0.7				1.3				5.52	5.52	0.02	
7-19-89								55.7	5.3										28.4					2.8				2.4				5.29	5.30	1.16	
9-25-89								59.4	4.7							<0.01	<0.01		28.1	<0.01				0.9				2.4				5.40	5.56	1.42	
4-16-90																																				Road Impossible - Snow

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S36-17
Location

Date	Time	Flow (cfs)	Temperature Air (°C)	Temperature Water (°C)	pH	Coliform Total (MPN)	Coliform Fecal (MPN)	Fecal Strep. (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	Dissolved Oxygen (mg/L)	Oil & Grease (mg/L)	Phenol (mg/L)	Ammonia as NH_3-N (mg/L)	Nitrite as NO_2-N (mg/L)	Nitrate as NO_3-N (mg/L)	Nitrogen Total Organic (mg/L)	Nitrogen Organic (mg/L)	Phosphate Total as PO_4 (mg/L)	Phosphate Ortho as PO_4 (mg/L)	Chloride as Cl (mg/L)	Fluoride as F (mg/L)	Sulfate as SO_4 (mg/L)	Solids TDS (mg/L)	Solids Total Suspended (mg/L)	Solids T.D.S. (mg/L)	Solids Total Settleable (mg/L)	Solids Total Volatile (mg/L)	Color (Units)	Turbidity (FTU)	Alkalinity Alk. as CO_3 (mg/L)	Alkalinity Alk. as HCO_3 (mg/L)	Total Alk. as $CaCO_3$ (mg/L)	Total Hardness as $CaCO_3$ (mg/L)	Acidity as $CaCO_3$ (mg/L)	Alpha Radioactivity (pc/L)	Beta Radioactivity (pc/L)
6-26-80			In-Accessible																																			
8-27-80	09:53	0.01	14	6	8.6								<0.01	0.196	<0.01	2.20				0.050	0.005	10.0			3.0		238			360			256.20	210		12.10		
10-8-80	08:55	0.004	11	8	7.7									<0.001	<0.01					0.060		6.0			5.0		231			350			252.72					
12-29-80	In-Accessible			Snow																																		
2-25-81	In-Accessible			Snow																																		
4-8-81	In-Accessible			Snow																																		
6-24-81	10:55	0.01	27	11	8.0									<0.001	<0.01					0.230		36.0					298			285			245.94	218		9.50		
8-26-81	10:18	0.002	22	13	8.3								<0.01	<0.001	<0.01	1.24				0.180	0.080	20.5					241			290			251.38	210		<0.01		
10-28-81	13:48	0.02	7	6	7.8									<0.001	0.10					0.100		3.0					245			232			242.20					
12-29-81			In-Accessible																																			
2-24-82			In-Accessible																																			
4-14-82			In-Accessible																																			
6-9-82	12:05	0.07	15	9	7.9									<0.001	0.40					0.080		3.0					228			363			248.90	226.18				
8-11-82	10:30	0.01	19	9	8.0									0.042	0.13					0.170		<0.1					259			373			252.72	226.60				
10-13-82	11:15	0.04	9	6	7.6								<0.1	<0.001	<0.01	0.98				0.100	0.050	6.0					267			479			311.20	255.16		6.00		
12-29-82			In-Accessible																																			
2-21-83			In-Accessible																																			
4-21-83			In-Accessible																																			
6-21-83	12:30	0.09	19	10	7.4									0.013	<0.01					0.080		4.0					192			259			204.90					
8-25-83	08:20	0.09	10	7	7.2								<0.1	0.010	<0.01	<0.01				0.09		4					255						300.10	246		<0.01		

Date	Platinum Total (mg/L)	Antimony Total (mg/L)	Arsenic Total (mg/L)	Barium Total (mg/L)	Beryllium Total (mg/L)	Boron Total (mg/L)	Cadmium Total (mg/L)	Calcium Total (mg/L)	Calcium Dissolved (mg/L)	Chromium Total (mg/L)	Cobalt Total (mg/L)	Copper Total (mg/L)	Cyanide as CN (mg/L)	Fluoride Dissolved (mg/L)	Manganese Total (mg/L)	Iron Dissolved (mg/L)	Iron Total (mg/L)	Lead Total (mg/L)	Magnesium Total (mg/L)	Mercury Total (mg/L)	Molybdenum Total (mg/L)	Nickel Total (mg/L)	Potassium Total (mg/L)	Selenium Total (mg/L)	Silica as SiO_2 (mg/L)	Silver Total (mg/L)	Sodium Total (mg/L)	Zinc Total (mg/L)	Tungsten Total (mg/L)				Comments
6-26-80																																	Covered by Snow
8-27-80			<0.001	0.010		0.010	<0.001	72.00	6.10	<0.001		<0.001		0.11		0.010	0.250	<0.002	12.00	<0.001	<0.0002		0.57	<0.001		<0.001	1.70	0.007				
10-8-80								64.00	<0.1								0.100		12.96	0.010			0.65				7.20						
12-29-80																																	
2-25-81																																	
4-8-81																																	
6-24-81								51.00	1.65								0.390		23.52	0.010			0.47				14.00						
8-26-81			0.002	0.020		0.020	<0.001	68.00	1.87	<0.001		0.009		0.15		<0.001	0.050	<0.001	14.40	<0.001	<0.0002		0.70	0.003		<0.001	2.00	0.007				
10-28-81								64.00	3.20								0.065		19.72	0.003			0.80				4.00						
12-29-81																																	Snow
2-24-82																																	Snow
4-14-82																																	Snow
6-9-82								68.00	1.40								0.050		11.80	0.003			0.46				1.9						
8-11-82								65.60	13.40								0.065		14.88	0.010			0.65				13.0						
10-13-82			<0.001	0.015		0.040	<0.001	72.00	8.10	<0.001		0.011		0.12		0.085	0.100	<0.001	11.52	0.010	<0.0002		0.78	0.003		<0.001	16.0	0.007				
12-29-82																																	Snow
2-21-83																																	Snow
4-21-83																																	Road Closed - Snow
6-21-83								53.60	<0.01								0.110		8.16	0.008			0.41				1.5						
8-25-83			<0.001	0.035		0.160	<0.001	55.10	<0.01	<0.001		<0.001		0.12		0.146	0.150	<0.001	9.50	0.003	<0.0002		1.8	<0.001		<0.001	34.0	0.039				

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S 36-17
Location

DATE	TIME	FLOW cfs	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH3-N mg/L	NITROGEN NITRATE as NO3-N mg/L	NITROGEN NITRITE as NO2-N mg/L	NITROGEN TOTAL KJELDAHL mg/L	NITROGEN ORGANIC mg/L	PHOSPHATE TOTAL as PO4-P mg/L	PHOSPHATE ORTHO as PO4-P mg/L	SULFATE as SO4 mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL DISSOLVED SOLIDS mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL SUSPENDED SOLIDS mg/L	SOLIDS TOTAL VOLATILE SOLIDS mg/L	SPECIFIC COND. µmhos/cm	TURBIDITY FTU	BICARBONATE ALK. as CaCO3 mg/L	BI-CARBONATE ALK. as HCO3 mg/L	TOTAL ALK. as CaCO3 mg/L	TOTAL HARDNESS as CaCO3 mg/L	ACIDITY as CaCO3 mg/L	ALPHA RADIO-ACTIVITY pc/L	BETA RADIO-ACTIVITY pc/L
10-1-83	11:55	0.007	10	8	7.3									<0.001	<0.20					0.07		8					240			386			237.4					
12-[illegible]-83	Inaccessible																																						
4-26-84	15:20	0.01	15	5	7.4										0.19						<0.01	6.2					226			391			121	199				
9-26-84	11:25	0.004	14	8	7.3										<0.1	0.307	0.008				0.015	7.6					228			272			260		177			
4-27-85			Inaccessible																																				
5-30-85	11:05	0.022	15	4	7.5																	7.4					239			242			257					
6-17-85	12:45	0.011	25	11	7.4										<0.1	0.328	0.024				<0.01	0.98					250			309			190		160			
7-17-85	10:00	0.007	18	5	6.7																	1.26					220			358			245					
10-1-85	09:35	0.04	8	5	7.5										<0.1	0.189	<0.006				<0.01	8.5					242			225			222		226			
6-27-86	16:45	0.01	29	9	8.1										<0.1	0.668	<0.005				<0.01	6.52					210			388			214	208	208			
7-29-86	14:03	0.009	20	13	7.2																	<0.5					243			412			210					
10-[illegible]-86	11:25	0.007	11	9	7.0										<0.1	0.676	0.0076				<0.01	<0.5					256			417			344	293	211			
4-13-87	14:00		Inaccessible																																				
6-17-87	12:50	0.006	15	10	7.5										0.16	0.45	0.006				0.016	3.9					223			415			268		197			
7-1-87	13:40	0.004	15	8	7.6																	<0.5					233						234					
9-7-87	15:10	0.001	16	12	8.2										<0.1	0.24	<0.005				<0.01	7.8					221			250			260	213	212			
4-27-88			Inaccessible																																				
5-31-88			Inaccessible																																				
6-[illegible]-88	16:34	0.004	10	7	7.4										<0.1	0.24	0.008				0.015	2.8					239			444			279		240			
7-[illegible]-88	10:50		22	15	7.7																	54.3					240			397			174					

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE DISS mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE DISS. mg/L	GERMANIUM TOTAL mg/L	IRON DISS mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MANGANESE TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	PHOSPHORUS TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/l	MAJOR ANIONS meq/l	C-A / C+A X 100	COMMENTS
10-1-83								69.60	4.00								0.210		12.00	0.010				0.7				1.60								
12-[illegible]-83																																				Snow
6-26-84								68.6	2.0								0.33		11.2	0.02				0.70				1.62				4.44	2.17		
9-26-84	<0.1						<0.01	68.6	2.5			<0.01				<0.01		<0.01	11.6	0.027		0.1	<0.01	0.60				1.96	0.050			4.45	4.49		
4-27-85																																				Road covered with Snow
5-30-85								74.9	2.08										8.9					0.65				1.44				4.55	4.45		
6-17-85	<0.1						<0.01	50.5	2.6			<0.01				0.16		<0.01	10.2	<0.01		<0.01	<0.01	0.44	<0.002			1.13	0.035		<0.1	3.43	3.20		
7-17-85								65.2	1.8										12.5					0.7				1.65				4.37	4.10		
10-1-85	<0.1						<0.01	59.0	2.7			<0.01				<0.01		0.07	14.4	<0.01		<0.01	<0.01	1.01	<0.002			1.09	0.020		<0.1	4.21	3.89		
6-27-86	<0.1						<0.01	62.4	4.8			<0.01				0.16		<0.01	9.6	0.015		<0.01	<0.01	0.3	<0.002			1.69	0.010		<0.1	3.994	4.232	-5.93	
7-29-86								55.1	2.05										10.6					0.18				0.78				3.660	3.500	4.485	
10-[illegible]-86	<0.1						<0.01	66.4	2.92			<0.01				<0.01		0.020	30.1	<0.01		<0.01	<0.01	0.4	<0.002			1.42	0.026		<0.01	6.837	6.932	2.245	
4-13-87																																				Road covered with Snow
6-17-87	<0.1						<0.01	57.2	2.8			<0.01				<0.01		0.012	12.2	<0.01		<0.01	<0.01	0.3	<0.002			1.8	0.212		<0.1	3.95	4.55	-7.13	
7-1-87								52.3	3.4										16.8					0.3				1.2			<0.1	4.05	3.94	1.37	
9-7-87	<0.1		<0.01				<0.01	65	5.2			<0.01		<0.1		0.24	0.32	<0.01	19.8	<0.01		<0.01	<0.01	0.6	<0.002			0.1	0.135		<0.1	4.90	4.57	3.43	
4-27-88																																				Road covered with Snow
5-31-88																																				Road inaccessible
6-[illegible]-88	<0.1						<0.01	64.2	0.44			<0.01				0.085		<0.01	17.4	<0.01		<0.01	<0.01	0.4	<0.002			1.4	<0.01		<0.1	4.71	4.64	0.70	Rain
7-[illegible]-88								54.1	2.52										16.6					0.5				2.0				4.09	4.09	0.09	

R 1-78

CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station S36-17
Location

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as FLUORIDE	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µmhos	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
9-27-88	12:10	0.0004	15	9	6.9																	38.8					287			392		0	231	190	221			

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	$\frac{C-A}{C+A} \times 100$	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MEQ/L	MEQ/L		
9-27-88								65.9	1.6							<0.01	0.105		15.5	<0.01				0.8				2.4				469	464	0.53	

R-7-87

CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station S 36-17
Location

DATE	TIME	FLOW (gpm)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (#/100)	COLIFORM FECAL (#/100)	FECAL STREP. (#/100)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	DISSOLVED OXYGEN (mg/L)	OIL & GREASE (mg/L)	PHENOLS (mg/L)	NITROGEN AMMONIA as NH_4^+N (mg/L)	NITROGEN NITRATE as NO_3^-N (mg/L)	NITROGEN NITRITE as NO_2^-N (mg/L)	NITROGEN TOTAL KJELDAHL (mg/L)	NITROGEN ORGANIC (mg/L)	PHOSPHATE TOTAL as PO_4^{-3} (mg/L)	PHOSPHATE ORTHO as PO_4^{-3} (mg/L)	SULFATE as SO_4 (mg/L)	CHLORIDE as Cl (mg/L)	FLUORIDE as F (mg/L)	SOLIDS TSS (mg/L)	SOLIDS TOTAL DISSOLVED (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL SUSPENDED (mg/L)	SOLIDS TOTAL VOLATILE (mg/L)	SPECIFIC COND. (micromhos)	TURBIDITY (FTU)	HARDNESS ALK. as CO_3 (mg/L)	HARDNESS ALK. as HCO_3 (mg/L)	TOTAL ALK as $CaCO_3$ (mg/L)	TOTAL HARDNESS as $CaCO_3$ (mg/L)	ACIDITY as $CaCO_3$ (mg/L)	ALPHA RADIO-ACTIVITY (pc/L)	BETA RADIO-ACTIVITY (pc/L)
4-25-89	11:00		Inaccessible																																				
5-23-89	10:53	0.015	17	11	7.5										<0.2	0.305	<0.005				0.158	51.1					226			367		0	267		204			
6-21-89	11:10	0.012	10	7	7.6																	52.8					205			398		0	248			14.2		
7-19-89	09:00	0.010	19	9	7.5																	5.0					259			432		4.0	288					
9-25-89	13:10	0.004	20	7	7.6																	8.0					299			496		0	280		236			
4-4-90	09:30		Inaccessible																																				

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CHLORIDE (mg/L)	CHROMIUM HEXAVALENT (mg/L)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE (mg/L)	IRON TOTAL (mg/L)	IRON (mg/L)	IRON TOTAL (mg/L)	LEAD TOTAL (mg/L)	MANGANESE TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	POTASSIUM TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO_2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	MAGNESIUM TOTAL (mg/L)	SULFIDE as S (mg/L)	MAJOR CATIONS (meq/L)	MAJOR ANIONS (meq/L)	C-A / C+A x 100	COMMENTS
4-25-89																																			Road Impassible - Snow
5-23-89	<0.1						<0.01	60.2	3.5			0.012				<0.01		<0.01	29.2	<0.01		<0.01	<0.01	0.5	0.0034		2.8	0.080		<0.1	5.54	5.54	0.02	
6-21-89								70.2	10.0										21.4					0.2			1.4				5.33	5.45	1.08	
7-19-89								45.6	4.2										23.1					2.8			2.5				4.35	5.07	7.63	
9-25-89								65.4	5.3							<0.01	0.120		19.2	<0.01				1.2			3.2				5.01	4.91	1.09	
4-4-90																																			Road Impassible - Snow

B-7-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station 536-19
Location

Date	Time	Flow	Temperature Air °C	Temperature Water °C	pH	Coliform Total	Coliform Fecal	Fecal Strep.	B.O.D.	D.O.D.	T.D.S.	Dissolved Oxygen	Oil & Grease	Phenol	Ammonia as NH_3	Nitrate as NO_3	Nitrite as NO_2	Nitrogen Total Kjeldahl	Nitrogen Organic	Phosphate Total as PO_4	Phosphate Ortho as PO_4	Sulfate as SO_4	Fluoride as F	Surfactant (MBAS)	Calcium	Total Hardness	Total Alkalinity	Total Volatile	T.D.S.	Total Solids	Total Volatile	Chloride	Turbidity	Bicarbonate Alk. as HCO_3	Carbonate Alk. as $CaCO_3$	Total Alk. as $CaCO_3$	Total Hardness as $CaCO_3$	Acidity as $CaCO_3$	Alpha Radioactivity	Beta Radioactivity
															mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L															
6-25-80	11:30	0.01	17	5	7.80									<0.002	<0.01					0.070		8.5			1.0		95.0				150			92.72				
8-27-80	09:45	0.003	11	6	7.5								0.80	0.009	<0.01	0.54				0.060	0.040	7.5			5.0		135				200			119.83	122		18.0		
12-24-80	In-Accessible			Snow																																			
2-25-81	In-Accessible			Snow																																			
4-8-81	In-Accessible			Snow																																			
6-24-81	12:04	0.01	20	4	7.2									0.096	<0.01					0.250		25.5					130				89			112.24	92.00		22.30		
8-26-81	10:40	0.001	24	18	8.0								2.40	<0.001	<0.01	0.56				0.340	0.340	7.5					191				285			233.77	172		18.00		
10-28-81	11:35	-0-																																					
12-29-81			In-Accessible																																				
2-25-82			In-Accessible																																				
4-8-82			In-Accessible																																				
6-9-82			In-Accessible																																				
8-3-82	12:00	0.004	15	5	7.5									<0.001	0.06					0.080		<0.1					132				216			192.10	116.50				
10-5-82	12:03		In-Accessible																																				
10-24-82			In-Accessible																																				
12-21-82			In-Accessible																																				
4-21-83			In-Accessible																																				
6-21-83			In-Accessible																																				
8-25-83	10:55	0.004	16	9	7.2								<0.1	<0.001	<0.01	<0.01				0.06		22					145				236			192.60	128		<0.01		

Date	Aluminum Total	Antimony Total	Arsenic Total	Barium Total	Beryllium Total	Boron Total	Cadmium Total	Calcium Total	Chloride Dissolved	Chromium Hexavalent	Cobalt Total	Copper Total	Cyanide as CN	Fluoride Dissolved	Magnesium Total	Mercury Dissolved	Iron Total	Lead Total	Manganese Total	Molybdenum Total	Nickel Total	Selenium Total	Silver Total	Sodium Total	Potassium Total	Sulfate as SO_4	Zinc Total	Chromium Total				Comments
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
6-25-80								22.40	<0.1								0.070		0.48	<0.010				0.32				12.00				
8-27-80			<0.001	0.010		<0.001	<0.001	44.00	<0.1	<0.001		<0.001		0.08		0.010	4.50	<0.002	4.32	<0.001				0.43	<0.001		<0.001	1.20	0.002			
12-24-80																																
2-25-81																																
4-8-81																																
6-24-81								34.40	1.08								0.160		5.76	0.010				0.33				3.40				
8-26-81			0.003	0.017		0.010	<0.001	62.40	2.08	<0.010		0.011		0.15		<0.001	0.270	<0.001	6.24	0.020	<0.002			0.40	0.004		<0.001	1.90	0.010			
10-28-81																																
12-29-81																																Snow
2-25-82																																Snow
4-8-82																																Snow
6-9-82																																Snow
8-11-82								38.40	17.90								0.849		3.36	0.005				0.88				10.0				
10-7-82																																Red Cloud - Snow
12-21-82																																Snow
2-21-83																																Snow
4-21-83																																Red Cloud - Snow
6-21-83																																Red Cloud - Mudslide & Snow
8-25-83			<0.001	0.065		0.177	<0.001	49.50	4.10	<0.001		<0.001		0.08		0.190	0.198	<0.001	4.50	0.020	<0.002			0.4	<0.001		<0.001	3.8	0.024			

B 1-70

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station 536-19
Location

DATE	TIME	FLOW cfs	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL ALBUMIN mg/L	NITROGEN ORGANIC mg/L	PHOSPHORUS TOTAL as PO_4-P mg/L	PHOSPHORUS ORTHO as PO_4-P mg/L	SULFATE as SO_4 mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL SETTLEABLE SOLIDS mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL SOLIDS mg/L	SOLIDS TOTAL VOLATILE SOLIDS mg/L	SPECIFIC CONDUCTANCE µmhos	TURBIDITY FTU	ALKALINITY ALK. as CO_3 mg/L	ALKALINITY ALK. as HCO_3 mg/L	TOTAL ALK. as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIOACTIVITY pCi/L	BETA RADIOACTIVITY pCi/L
8-26-84	14:06	0.002	12	6	6.9										<0.1	0.730	0.005				0.021	5.2					156			186			162		191			
4-23-85		-	Inaccessible																																					
5-30-85	11:35		Inaccessible																																					
6-18-85	10:15	0.022	20	5	7.3										<0.1	0.301	0.025				0.018	2.21					170			153			80		85			
7-17-85	12:27	0.001	16	9	7.7																	1.68					124						80						
10-1-85	10:35	0.001	10	6	7.0										<0.1	0.319	0.009				0.018	6.2					163			198			150		144			
6-27-86	14:25	0.009	26	20	8.7										<0.1	<0.01	0.011				0.057	6.6					58						28	2.1	1.4			
7-29-86	14:43	0.002	20	5	7.3																	<0.5					180			217			122					
8-26-86	13:30		Inaccessible																																					
4-23-87	14:00		Inaccessible																																					
6-17-87	11:40	0.007	15	8	7.3										0.19	0.51	0.013				0.049	0.9					110			199			117		100			
7-1-87	16:05	0.001	15	7	7.3																	<0.5					130			221			135					
9-7-87	14:30	0.001	15	8	8.1										<0.1	0.51	0.0016				0.021	<0.5					194			255			167	137	141			
4-22-88			Inaccessible																																					
5-31-88			Inaccessible																																					
6-29-88	08:20	0.004	13	5	7.7										<0.1	0.31	0.0005				0.028	0.53					99			186			110		95.0			
7-28-88	11:25	0.002	18	11	7.7																	8.3					133			222			122					
8-25-88	13:00	0.0006	4	6	6.8																	25.9					262			257		0	168	198	165			

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORINE RES. mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE TOTAL mg/L	GERMANIUM TOTAL mg/L	IRON RES. mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/l	MAJOR ANIONS meq/l	O-A/O+A X 100	COMMENTS
8-26-84	<0.1						<0.01	48.8	2.5			<0.01				<0.01		<0.01	4.4	0.049		<0.1	<0.01	0.69				1.61	0.052			2.79	2.83		
4-23-85																																			Covered with Snow
5-30-85																																			Covered with Snow
6-18-85	<0.1						<0.01	23.5	2.3			<0.01				0.15		<0.01	2.35	<0.01		<0.01	<0.01	0.32	<0.002			0.68	0.020		<0.1	1.41	1.42		
7-17-85								20.5	1.6										3.22					0.3				1.25				1.35	1.39		
10-1-85	<0.1						<0.01	42.8	1.9			<0.01				0.02		0.13	5.9	<0.01		<0.01	<0.01	0.92	<0.002			0.78	0.015		<0.1	2.79	2.64		
6-27-86	0.30						<0.01	9.8	2.9			<0.01				0.16		<0.01	0.8	0.020		<0.01	<0.01	0.2	<0.002			0.16	0.012		<0.1	0.277	0.282	-1.924	
7-29-86								37.2	2.8										2.21					0.19				0.29				2.138	2.079	2.814	
8-26-86																																			Covered by mudslide
4-23-87																																			Road covered with Snow
6-17-87	<0.1						<0.01	35.8	2.0			<0.01				<0.01		0.018	2.9	<0.01		<0.01	<0.01	0.3	<0.002			3.2	0.033		<0.1	2.26	1.99	6.24	
7-1-87								26.8	3.4										10.2					0.2				0.9				2.72	2.32	7.15	
9-7-87	<0.1		<0.01				<0.01	47	4.2			<0.01		<0.1		0.031	0.034	<0.01	8.7	<0.01		<0.01	<0.01	0.4	<0.002			0.1	0.020		<0.1	3.08	2.87	3.59	
4-22-88																																			Road Covered with Snow
5-31-88																																			Road impassible
6-29-88	<0.1						<0.01	31.4	0.30			<0.01				0.020		<0.01	4.0	<0.01		<0.01	<0.01	0.1	<0.002			0.9	<0.01		<0.1	1.94	1.82	3.12	
7-28-88								29.8	2.16										5.1					1.2				1.3				2.00	2.23	5.46	
8-25-88								54.0	1.6							<0.01	0.525		6.5	<0.01				1.3				1.8				3.34	3.34	0.05	

R 1-78

HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station S36-19
Location

Date	Time	Flow (cfs)	Temperature Air (°C)	Temperature Water (°C)	pH	Coliform Total (MPN)	Coliform Fecal (MPN)	Fecal Strep (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.D.S. (mg/L)	Dissolved Oxygen (mg/L)	Oil & Grease (mg/L)	Phenol (mg/L)	Nitrogen Ammonia (mg/L)	Nitrogen Nitrate (mg/L)	Nitrogen Nitrite (mg/L)	Nitrogen Total Kjeldahl (mg/L)	Nitrogen Organic (mg/L)	Phosphate Total (mg/L)	Phosphate Ortho (mg/L)	Sulfate (mg/L)	Magnesium (mg/L)	Calcium (mg/L)	Solids TSS (mg/L)	Solids Total Suspended (mg/L)	Solids T.D.S. (mg/L)	Solids Total Dissolved (mg/L)	Solids Total Volatile (mg/L)	Specific Cond. (µmhos)	Turbidity (FTU)	Alk. as CO_3 (mg/L)	Alk. as HCO_3 (mg/L)	Total Alk. as $CaCO_3$ (mg/L)	Total Hardness as $CaCO_3$ (mg/L)	Acidity as $CaCO_3$ (mg/L)	Alpha Radio-Activity (pc/L)	Beta Radio-Activity (pc/L)
4-26-89	11:00		Inaccessible																																			
5-23-89	11:50	0.035	17	4	7.2										<0.2	0.170	<0.005				0.040	48.8					81			117		0	67.2		94.1			
6-26-89	11:45	0.004	10	7	7.5																	24.8					138			185		0	125			210		
7-19-89	11:45	0.003	23	8	7.5																	10.8					145			262		0	174					
9-25-89	11:25	0.0005	18	6	7.5																	5.6					655			315		0	176		150			
11-6-89	11:30		Inaccessible																																			

Date	Aluminum Total (mg/L)	Antimony Total (mg/L)	Arsenic Total (mg/L)	Barium Total (mg/L)	Beryllium Total (mg/L)	Boron Total (mg/L)	Cadmium Total (mg/L)	Calcium Total (mg/L)	Chloride (mg/L)	Chromium Hexavalent (mg/L)	Cobalt Total (mg/L)	Copper Total (mg/L)	Cyanide as CN (mg/L)	Fluoride (mg/L)	Manganese Total (mg/L)	Iron (mg/L)	Iron Total (mg/L)	Lead Total (mg/L)	Magnesium Total (mg/L)	Molybdenum Total (mg/L)	Mercury Total (mg/L)	Nickel Total (mg/L)	Potassium Total (mg/L)	Selenium Total (mg/L)	Silver Total (mg/L)	Sodium Total (mg/L)	Strontium Total (mg/L)	Thallium Total (mg/L)	Vanadium Total (mg/L)	Sulfide as S (mg/L)	Major Cations (mg/L)	Major Anions (mg/L)	C-A/C+A × 100	Comments
4-26-89																																		Road Impassible-Snow
5-23-89	40.1						<0.01	20.8	3.1			0.015				<0.01		<0.01	11.8	<0.01		<0.01	<0.01	4.3	<0.005			1.6	0.030		4.1	2.09	2.20	2.77	
6-26-89								33.8	6.4										13.3					0.3				1.7				2.84	2.75	2.09	
7-19-89								38.7	8.6										14.5					2.6				3.1				3.32	3.31	0.28	
9-25-89								58.8	8.5							<0.01	0.185		6.8	<0.01				1.2				2.6				3.54	3.24	4.38	
11-6-89																																		Road Impassible-Snow

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S36-23
Location

Date	Time	Flow	Temperature Air °C	Temperature Water °C	pH	Coliform Total	Coliform Fecal	Fecal Streptococci	C.O.D.	B.O.D.	T.O.C.	Dissolved Oxygen	Oil & Grease	Phenol	Nitrogen Ammonia as NH_3-N	Nitrogen Nitrate as NO_3-N	Nitrogen Nitrite as NO_2-N	Nitrogen Total Kjeldahl	Nitrogen Organic	Phosphate Total as PO_4-P	Phosphate Ortho as PO_4-P	Sulfate as SO_4	Sulfide as S	Chloride as Cl	Solids TDS	Solids Total Settleable	Solids T.S.S.	Solids Total Volatile	Solids Total Volatile Solids	Odor	Turbidity	Alkalinity P.A.L. as CO_3	Alkalinity M.A.L. as HCO_3	Total Hardness as $CaCO_3$	Total Hardness as $CaCO_3$	Acidity as $CaCO_3$	Alpha Radioactivity	Beta Radioactivity
			°C	°C		MPN	MPN	MPN	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Units	FTU	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L
6-25-80	11:54	0.01	15	3	7.70									0.061	<0.01					0.040		20.0			1.0		178			280			195.68					
7-22-80	12:15	0.17		4																										300								
8-26-80	17:40	0.008	12	5	6.9	<2.0	<2.0				<0.01		<0.01	0.105	<0.01	0.39				0.010		8.5			1.0		318			490	0.58		246.14	202		18.0	1.5	2.3
9-16-80	15:30	0.009	19	4	7.0																									350								
10-2-80	12:24	0.008	18	6	7.8									<0.001	<0.01					0.050		4.5			1.0		229			350								
11-19-80	15:06	0.007	4	2	6.8																									470								
12-24-80	Inaccessible			Snow																																		
2-25-81	Inaccessible			Snow																																		
4-2-81	Inaccessible			Snow																																		
6-24-81	13:33	0.01	17	3	7.2									<0.001	0.010					0.240		39.0					249			339			239.12	196		24.70		
6-26-81	13:18	0.007	15	5	7.6								0.40	<0.001	<0.01	0.42				0.240	0.050	9.0					244			255			243.52	216		16.00		
10-29-81	11:09	0.01	6	5	7.7									<0.001	0.30					0.200		3.0					250			235			298.36					
12-23-81			Inaccessible																																			
2-18-82			Inaccessible																																			
4-8-82			Inaccessible																																			
6-9-82			Inaccessible																																			
8-11-82	14:13	0.04	12	4	7.5									<0.001	0.13					0.150		40.1					251			344			282.4	232.20				
10-13-82	12:23	0.008	9	7	7.7								0.4	<0.001	0.04	0.29				0.110	0.060	9.0					240			272			272.10	223		8.00		
12-14-82			Inaccessible																																			
2-21-83			Inaccessible																																			

Date	Aluminum Total	Antimony Total	Arsenic Total	Barium Total	Beryllium Total	Boron Total	Cadmium Total	Calcium Total	Chloride Ion	Chromium Hexavalent	Cobalt Total	Copper Total	Cyanide as CN	Fluoride Ion	Iron Total	Iron Ion	Lead Total	Magnesium Total	Manganese Total	Mercury Total	Molybdenum Total	Nickel Total	Potassium Total	Selenium Total	Silica as SiO_2	Silver Total	Sodium Total	Zinc Total	Vanadium Total				Comments
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
6-25-80								62.40	<0.1									0.100		1.92	<0.010				0.46			1.80					Some Snow melt
7-22-80																																	
8-26-80			<0.001	0.035		0.003	<0.001	76.80	2.0	<0.001		0.002	0.002	0.11		0.100	0.150	0.005	2.40	0.003	<0.002			0.41	0.001		<0.001	4.90	0.030				
9-16-80																																	
10-2-80								71.26	<0.1								0.050		2.40	0.010				0.42				18.00					
11-19-80																																	
12-24-80																																	
2-25-81																																	
4-2-81																																	
6-24-81								67.20	1.60								0.110		9.60	<0.001				0.46				13.00					
8-26-81			<0.001	0.015		0.010	<0.001	76.00	1.67	<0.001		0.020		0.13		<0.001	0.100	<0.001	7.68	0.020	<0.002			0.38	0.004		<0.001	2.00	0.015				
10-29-81								75.20	4.00								0.114		10.08	0.022				0.40				6.00					
12-23-81																																	Snow
2-18-82																																	Snow
4-8-82																																	Snow
6-9-82																																	Snow
8-11-82								67.10	18.70								0.099		9.60	0.002				0.76				22.0					
10-13-82			<0.001	0.010		0.100	<0.001	78.40	0.90	<0.001		0.010		0.09		0.020	0.020	<0.001	7.68	0.005	<0.002			0.59	0.005		<0.001	10.4	0.007				
12-14-82																																	Snow
2-21-83																																	Snow

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S36-23
Location

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP. (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOL (MG/L)	NITROGEN AMMONIA as NH3-N (MG/L)	NITROGEN NITRITE as NO2-N (MG/L)	NITROGEN NITRATE as NO3-N (MG/L)	NITROGEN TOTAL (MG/L)	NITROGEN ORGANIC (MG/L)	PHOSPHATE TOTAL as PO4-P (MG/L)	PHOSPHATE ORTHO as PO4-P (MG/L)	SALINITY as NaCl (MG/L)	CHLORIDE as Cl (MG/L)	SULFATE as SO4 (MG/L)	SOLIDS TDS (MG/L)	SOLIDS TOTAL DISSOLVED (MG/L)	SOLIDS T.S.S. (MG/L)	SOLIDS TOTAL (MG/L)	SOLIDS TOTAL VOLATILE (MG/L)	SPECIFIC COND. (µmhos)	TURBIDITY (FTU)	ALK. as CaCO3 (MG/L)	BI-CARBONATE ALK. as HCO3 (MG/L)	TOTAL ALK. as CaCO3 (MG/L)	TOTAL HARDNESS as CaCO3 (MG/L)	ACIDITY as CaCO3 (MG/L)	ALPHA RADIO-ACTIVITY (DPM/L)	BETA RADIO-ACTIVITY (DPM/L)
9-21-83			Inaccessible																																				
6-21-83			Inaccessible																																				
9-25-83	11:20	0.01	19	6	7.0								<0.1	<0.001	<0.01	<0.01				0.10		12					294			374			261	214		<0.01		
10-19-83	13:06	0.008	7	5	7.5									<0.001	<0.20					0.12		15					235			369			238					
11-[illegible]	Inaccessible																																						
6-8-84	15:43	0.01	14	3	7.4										0.11						0.020	4.5					187			310			87	189				
9-24-84	14:30	0.01	10	6	7.0										<0.1	0.092	0.006				0.021	8.5					280			270			266		200			
4-2-85			Inaccessible																																				
6-20-85	11:45	0.018	8	4	7.2																	4.5					176			189			160					
8-8-85	09:35	0.016	16	5	7.8										<0.1	0.748	0.031				<0.01	7.92					192			205			148		187			
9-17-85	13:00	0.008	17	4	7.1																	5.63					281			326			188					
10-1-85	10:10	0.018	11	4	7.2										<0.1	0.182	0.006				0.013	7.7					241			246			242		225			
6-27-86	13:45	0.015	31	6	8.1										<0.1	0.726	0.010				0.012	5.5					190			217			207	170	212			
7-29-86	16:23	0.01	21	5	7.3																	<0.5					253			260			224					
10-15-86	12:26	0.007	8	4	6.9										0.12	0.080	0.070				<0.01	<0.5					290			390			233	273	208			
4-2-87	14:00		Inaccessible																																				
6-17-87	12:10	0.011	16	3	7.3										0.16	0.55	0.005				0.030	3.9					220			344			234		198			
7-1-87	16:30	0.008	16	5	7.3																	8.8					287			327			257					
9-7-87	15:38	0.007	16	5	7.4										0.13	0.54	0.012				<0.01	<0.5					267			381			256	210	217			
4-22-88			Inaccessible																																				

DATE	ALUMINUM TOTAL (MG/L)	ANTIMONY TOTAL (MG/L)	ARSENIC TOTAL (MG/L)	BARIUM TOTAL (MG/L)	BERYLLIUM TOTAL (MG/L)	BORON TOTAL (MG/L)	CADMIUM TOTAL (MG/L)	CALCIUM TOTAL (MG/L)	CHLORIDE DISS. (MG/L)	CHROMIUM HEXAVALENT (MG/L)	COBALT TOTAL (MG/L)	COPPER TOTAL (MG/L)	CYANIDE as CN (MG/L)	FLUORIDE DISS. (MG/L)	IRON TOTAL (MG/L)	IRON DISS. (MG/L)	IRON TOTAL (MG/L)	LEAD TOTAL (MG/L)	MAGNESIUM TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MOLYBDENUM TOTAL (MG/L)	NICKEL TOTAL (MG/L)	POTASSIUM TOTAL (MG/L)	SELENIUM TOTAL (MG/L)	SILICA as SiO2 (MG/L)	SILVER TOTAL (MG/L)	SODIUM TOTAL (MG/L)	ZINC TOTAL (MG/L)	STRONTIUM TOTAL (MG/L)	SULFIDE as S (MG/L)	MAJOR CATIONS (meq)	MAJOR ANIONS (meq)	C-A/C+A X 100	COMMENTS
9-21-83																																				Road closed with Snow
6-21-83																																				Road closed road side
9-25-83			<0.001	0.048		0.098	<0.001	60.40	3.60	<0.001		<0.001		0.10		0.210	0.274	<0.001	3.40	0.013	<0.002			0.5	<0.001		<0.001	40.5	0.015							
10-19-83								70.40	4.00								0.080		8.44	0.010				0.5				1.70								
11-[illegible]																																				Snow
6-26-84								54.8	2.0								0.50		7.6	0.08				0.66				1.93				3.46	1.66		
9-24-84	<0.1						<0.01	75.6	1.6			<0.01				<0.01		<0.01	8.1	0.014		<0.1	<0.01	0.47				1.96	0.050			4.54	4.68		
4-2-85																																				Road closed with Snow
5-30-85								40.1	1.83										8.5					0.81				1.84				2.89	2.77		
6-20-85	<0.1						<0.01	43.0	4.5			<0.01				0.26		<0.01	6.88	<0.01		<0.01	<0.01	0.39	<0.002			1.35	0.026		<0.1	2.82	2.62		
7-17-85								56.8	3.8										7.65					0.9				1.88				3.56	3.31		
10-1-85							<0.01	62.8	2.4			<0.01				<0.01		0.03	9.8	<0.01		<0.01	<0.01	0.90	<0.002			1.27	0.010		<0.1	4.03	4.19		
6-27-86	<0.1						<0.01	53.8	4.1			<0.01				0.11		<0.01	7.6	<0.01		<0.01	<0.01	0.4	<0.002			2.20	<0.1		<0.1	3.422	3.635	-6.225	
7-29-86								57.2	1.51										7.78					0.24				0.68				3.930	3.74	-6.078	
10-15-86	<0.1						<0.01	65.4	2.87			<0.01				<0.01		0.030	28.2	<0.01		<0.01	<0.01	0.4	<0.002			1.28	0.098		<0.01	5.4403	6.5985	1.977	
4-2-87																																				Road covered with Snow
6-17-87	<0.1						<0.01	63.8	2.7			<0.01				<0.01		0.020	8.8	<0.01		<0.01	<0.01	0.4	<0.002			1.8	0.012		<0.1	4.00	3.99	0.11	
7-1-87								63.8	4.44										15.1					0.4				1.4				4.50	4.42	0.94	
9-7-87	<0.1		<0.01				<0.01	69	5.2			<0.01		<0.1		0.10	0.22	<0.01	14.6	<0.01		<0.01	<0.01	0.4	<0.002			0.1	0.070		<0.1	4.66	4.35	3.44	
4-22-88																																				Road covered with Snow

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CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station S36-23
Location

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL KJELDAHL mg/L	NITROGEN ORGANIC mg/L	PHOSPHORUS TOTAL as PO_4 mg/L	PHOSPHORUS ORTHO as PO_4 mg/L	SULFATE as SO_4 mg/L	MAGNESIUM as Mg mg/L	CALCIUM as Ca mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL DISSOLVED SOLIDS mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL SOLIDS mg/L	SOLIDS TOTAL VOLATILE SOLIDS mg/L	SPECIFIC COND. µmhos/cm	TURBIDITY J.T.U.	ALKALINITY ALK. as CO_3 mg/L	ALKALINITY ALK. as HCO_3 mg/L	TOTAL ALK. as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pc/L	BETA RADIO-ACTIVITY pc/L
5-7-88			Inaccessible																																				
6-28-88	15:40	0.011	11	4	7.6										<0.1	0.52	<0.005				0.026	15.3					200			374			213		207				
7-27-88	13:45	0.008	18	7	7.3																	27.4					290			312			186						
8-29-88	14:55	0.006	4	5	6.8																	5.8					330			408		0	267	219	225				

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE mg/L	IRON TOTAL mg/L	LEAD mg/L	MANGANESE TOTAL mg/L	LEAD TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	TIN TOTAL mg/L	VANADIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/L	MAJOR ANIONS meq/L	C-A / C+A = 100	COMMENTS
5-31-88																																			Road impassible
6-28-88	<0.1						<0.01	65.4	1.62			<0.01				0.050		<0.01	10.8	<0.01		<0.01	<0.01	0.8	<0.002			1.9	<0.01		<0.1	4.22	3.83	4.89	Rain
7-27-88								54.3	3.10										11.2					0.3				1.8				3.72	3.71	0.20	
8-29-88								74.2	1.4							<0.01	0.065		10.2	<0.01				0.5				2.6				4.67	4.54	1.43	

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CONSULTANTS / ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station S36-23
Location

DATE	TIME	FLOW (cfs)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	DISSOLVED OXYGEN (mg/L)	OIL & GREASE (mg/L)	PHENOL (mg/L)	NITROGEN AMMONIA as NH_3-N (mg/L)	NITROGEN NITRATE as NO_3-N (mg/L)	NITROGEN NITRITE as NO_2-N (mg/L)	NITROGEN TOTAL (mg/L)	NITROGEN ORGANIC (mg/L)	PHOSPHATE TOTAL as PO_4-P (mg/L)	PHOSPHATE ORTHO as PO_4-P (mg/L)	SULFATE as SO_4 (mg/L)	CHLORIDE as Cl (mg/L)	FLUORIDE as F (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL DISSOLVED (mg/L)	SOLIDS TSS (mg/L)	SOLIDS TOTAL (mg/L)	SOLIDS TOTAL VOLATILE (mg/L)	SPECIFIC COND. (µmhos)	TURBIDITY (FTU)	HARDNESS as $CaCO_3$ (mg/L)	Ca HARDNESS as $CaCO_3$ (mg/L)	TOTAL ALK as $CaCO_3$ (mg/L)	TOTAL HARDNESS as $CaCO_3$ (mg/L)	ACIDITY as $CaCO_3$ (mg/L)	ALPHA RADIOACTIVITY (pCi/L)	BETA RADIOACTIVITY (pCi/L)
4-25-89	11:00		Inaccessible																																				
5-23-89	12:30	0.011	13	3	7.5										<0.2	0.485	0.0056				0.076	57.1					184			298		0	200		192				
6-21-89	11:10	0.008	10	3	7.3																	54.9					241			366		0	249			210			
7-19-89	12:10	0.007	15	4	7.4																	71.0					336			398		0	264						
9-25-89	15:55	0.0012	21	16	7.6																	7.6					261			415		0	268		220				
4-16-90	09:30		Inaccessible																																				

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CHROMIUM DISS. (mg/L)	CHROMIUM HEXAVALENT (mg/L)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE DISS. (mg/L)	IRON TOTAL (mg/L)	IRON DISS. (mg/L)	MANGANESE TOTAL (mg/L)	LEAD TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	PHOSPHORUS TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO_2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	STRONTIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	TITANIUM TOTAL (mg/L)	SULFIDE as S (mg/L)	MAJOR CATIONS (meq/L)	MAJOR ANIONS (meq/L)	$\frac{C-A}{C+A} \times 100$	COMMENTS
4-25-89																																			Road Impassible - Snow
5-23-89	<0.1						<0.01	45.5	3.6			0.012				<0.01		<0.01		20.6	<0.01		<0.01	<0.01	0.5	<0.002			2.4	0.068		<0.1	4.08	4.51	5.61	
6-21-89								56.8	5.3											22.8					0.3				2.6				5.84	5.87	1.29	
7-19-89								60.2	5.2											19.7					2.3				4.1				5.95	5.95	5.94	
9-25-89								71.1	7.7							<0.01	0.155			12.1	<0.01				0.9				2.8				4.77	4.77	0.03	
4-16-90																																			Road Impassible - Snow

3-7-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-1
Location Mud Creek below mine

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L
8-26-75					7.85									
12-26-75					7.75									
1-26-76	16:45	14.0	-4.0	0	8.0				16.0		12.0	10.0	<1.0	
3-9-76	10:20	8.1	2.0	1.0	8.3				2.9		14.0	9.4		
4-28-76	12:05	8	10	6	7.9				8.0		12.0	6.8	<1.0	
6-14-76	11:00	15	4	2	8.1				7.5		10.0	7.1	<1.0	
8-2-76	12:45	6	15	15	8.2				7.0		11.0	8.0	<1.0	
9-30-76	12:10	9	19	9	7.2				6.0		12.0	9.2	4.0	
10-27-76	10:45	4.5	0	1.5	7.4				5.5		3.0	10.4	2.6	
11-29-76	14:20	5.3	-4	1.0	7.0				5.1		2.6	9.9	2.4	
12-26-76	10:48	8	-5	0	7.8				5.2		3.0	9.8	<1.0	

DATE	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4-P MG/L	PHOSPHATE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	CHLORIDE as Cl MG/L	FLUORIDE as F MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL DISSOLVED SOLIDS MG/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L
8-26-75		0.08				0.05		69.70					417		
12-26-75		0.04				0.02		45.0					480		
1-26-76		0.178				0.107	0.06	65.0	<0.01				435		
3-9-76		0.145				0.155	0.130	46.0	<0.01				508		
4-28-76		0.140				0.150	0.120	56.0	<0.01				458		
6-14-76		0.17				0.160	0.090	55.0	<0.01				420		
8-2-76		0.18				0.165	0.110	37.6	<0.01				470		
9-30-76		0.12				0.200	0.095	33.0	<0.01		18.0		350		
10-27-76		0.10				0.160	0.140	33.8	<0.01		21.0		500		
11-29-76		0.08				0.150	0.100	16.0	<0.01		11.0		550		
12-26-76		0.06				0.150	0.080	39.0	<0.01		7.0		510		

DATE	COND. µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BICARBONATE ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
8-26-75	641	1.70	<0.01	264.20	218	276.0		
12-26-75	730	1.4	<0.01	314.76	258	304.0		
1-26-76	670	0.16	<0.01	263	216	266		
3-9-76	780	2.60	<0.01	339.1	278	330		
4-28-76	700	0.60	<0.01	287.9	236	266		
6-14-76	640	1.30	<0.01	265.9	218	242		
8-2-76	720	6.50	<0.01	317.2	260	275	<1	<3
9-30-76	520	5.10	<0.01	124.4	102	253.1		
10-27-76	760	2.40	<0.01	358.7	294	305		
11-29-76	840	0.48	<0.01	373.3	306	370		
12-26-76	780	2.0	<0.01	353.8	290	304	<1	<2

DATE	ALUMINUM DISS. MG/L	ANTIMONY DISS. MG/L	ARSENIC DISS. MG/L	BARIUM DISS. MG/L	BERYLLIUM DISS. MG/L	BORON DISS. MG/L	CADMIUM Total MG/L	CALCIUM Total MG/L	CHLORIDE Total MG/L	CHROMIUM HEXAVALENT MG/L	COBALT Total MG/L	COPPER DISS. MG/L	CYANIDE as Cn MG/L	FLUORIDE DISS. MG/L
8-26-75	<0.01		<0.01	<0.01		<0.01	<0.001	68.0	6.0	<0.01		<0.01	<0.01	0.18
12-26-75	<0.01		<0.001	0.03		<0.01	<0.001	77.6	8.0	<0.01		<0.01	<0.01	0.23
1-26-76	0.392	0.004	0.007	0.084	<0.001	<0.001	<0.001	59.2	9.0	<0.001	<0.001	<0.001		0.23
3-9-76	0.376	<0.001	0.003	0.065	<0.001	<0.001	<0.001	78.4	8.0	<0.001	<0.001	<0.001		0.36
4-28-76	0.138	<0.001	0.002	0.044	<0.001	<0.005	<0.001	72.8	6.0	<0.001	<0.001	<0.001		0.25
6-14-76	0.110	<0.001	<0.001	0.023	<0.001	<0.001	<0.001	63.2	6.0	<0.001	<0.001	<0.001		0.28
8-2-76	0.100		<0.001	0.025		<0.001		68.0	12.0			0.005		0.39
9-30-76	0.066		<0.001	0.012		<0.001		69.1	98.0			0.009		0.27
10-27-76	0.026		<0.001	0.009		<0.001		52.0	4.0			0.010		0.12
11-29-76	0.014		<0.001	0.004		<0.001		40.0	6.0			0.015		0.20
12-26-76	0.010		<0.001	0.007		<0.001		68.8	6.0			0.003		0.19

DATE	MANGANESE DISS. MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD DISS. MG/L	MAGNESIUM DISS. MG/L	MERCURY DISS. MG/L	MOLYBDENUM DISS. MG/L	NICKEL DISS. MG/L	POTASSIUM DISS. MG/L	SELENIUM DISS. MG/L	SILICA as SiO_2 MG/L	SILVER DISS. MG/L	SODIUM DISS. MG/L	ZINC DISS. MG/L	VANADIUM DISS. MG/L
8-26-75		0.05	0.09	<0.01	25.44	<0.01	<0.001		2.01	<0.01	2.68	<0.001	3.72	0.05	
12-26-75		0.095	0.210	<0.001	26.4	0.01	<0.001		2.28	<0.01	2.25	<0.001	5.0	0.009	
1-26-76	0.042		0.217	0.018	28.3	0.042	<0.001	0.015	<0.001	2.87	0.055	4.50	<0.001	12.1	0.430	<0.001
3-9-76	0.040		0.250	0.004	32.16	0.040	<0.001	<0.001	<0.001	2.78	0.012		<0.001	3.50	0.032	<0.001
4-28-76	0.051		0.258	<0.001	20.16	0.051	<0.0001	<0.001	<0.001	2.88	0.015	5.80	<0.001	15.0	0.029	<0.001
6-14-76	0.056		0.279	<0.001	20.16	0.056	<0.0002	<0.001	<0.001	1.63	0.019		<0.001	19.4	0.021	<0.001
8-2-76	0.049		0.310	<0.001	25.0	0.049	<0.0002	<0.001	<0.001	2.51	0.016	15.4		17.0	0.019	
9-30-76	0.015		0.220	<0.001	19.60	0.015	<0.0002	<0.001	<0.001	2.54	0.004			8.10	0.015	
10-27-76	0.016		0.223	<0.001	42.0	0.016	<0.0002	<0.001	<0.001	2.51	<0.001	12.5		12.0	0.025	
11-29-76	0.010		0.275	<0.001	44.8	0.010	<0.0002	<0.001	<0.001	3.23	<0.001	7.60		4.7	0.034	
12-26-76	0.012		0.228	<0.001	31.68	0.012	<0.0002	<0.001	<0.001	2.46	<0.001			12.0	0.027	

COMMENTS

1-76

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-1
Location Mud creek below mine #2

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP. (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOL (MG/L)	NITROGEN AMMONIA as NH_3-N (MG/L)	NITROGEN NITRATE as NO_3-N (MG/L)	NITROGEN NITRITE as NO_2-N (MG/L)	NITROGEN TOTAL ORGANIC (MG/L)	NITROGEN ORGANIC (MG/L)	PHOSPHORUS TOTAL as PO_4-P (MG/L)	PHOSPHORUS ORTHO as PO_4-P (MG/L)	SULFATE as SO_4 (MG/L)	CHLORIDE as Cl (MG/L)	FLUORIDE as F (MG/L)	SOLIDS TSS (MG/L)	SOLIDS TOTAL SETTLEABLE SOLIDS (ML/L)	SOLIDS T.D.S. (MG/L)	SOLIDS TOTAL DISSOLVED SOLIDS (MG/L)	SOLIDS TOTAL VOLATILE SOLIDS (MG/L)	COND. (µMHOS)	TURBIDITY (FTU)	BICARBONATE ALK. as CO_3 (MG/L)	BI-CARBONATE ALK. as HCO_3 (MG/L)	TOTAL ALK. as $CaCO_3$ (MG/L)	TOTAL HARDNESS as $CaCO_3$ (MG/L)	ACIDITY as $CaCO_3$ (MG/L)	ALPHA RADIO-ACTIVITY (PCI/L)	BETA RADIO-ACTIVITY (PCI/L)
3-17-77	13:15	6	3	5	7.5				4.8		3.0	10.15	<1.0		0.15	0.02	<0.01	0.25		0.042	0.015	43.0	<0.01		13.0	<0.1	440			670	1.50	<0.01	297.6	244	282			
6-16-77	10:20	2.4	21	12	7.6				10.0		8.0	8.8	<1.0	0.009	0.25	0.01		0.90		0.035	0.010	22.0	<0.01		22.0	0.4	320			450	7.50	<0.01	319.6	262	288		2	6
6-26-78	16:10	19	20	16	7.1	110	<20				13.0		<1.0	0.009		0.20	<0.01	0.10				28.0			12.8		210			325			195.2					
8-23-78	12:40	3	27	15	8.3							8.5	1.3	0.008								31.5			2.0		255			990			253.7					
10-25-78	10:50	4.7	5	3	7.5							11.0	1.6	0.028								38.0			4.0		295			540			295.2					
12-27-78	09:45	2.9	-17	0	7.86							10.4	1.1	0.006								46.0			16.0		346						336.7					
2-28-79	11:00	5.7	-7	0.2	7.8							10.0	1.2	<0.001		0.10					0.155	45.0			54.0		290			440			281.92	236				
4-18-79	10:35	12.6	13	6.5	7.72							10.0	1.4	0.008		0.11					0.19	38.0			111		315			480			292.8	238				
6-20-79	08:55	12.3	10	4	7.95							10.0	3.2	<0.001		0.24					0.015	18.0			19.0		219			375			231.8	190		10.0		
8-28-79	08:55	4.8	11	8.0	8.0							9.0	<1.0	0.108		0.04					0.120	52.0			27.0		300			510			278.16	228		6.0		
10-31-79	14:23	2.7	-1	1	7.9							9.0	<1.0	<0.001		<0.01					0.080	54.0			27.0		310			550			276.40	220		14.0		
2-27-80	13:30	16.6	3	0.5	8.7							10.0	13.80	0.024		0.15				0.320	0.080	370			102		730			560			305	250		8.0		
4-29-80	10:15	25.6	10	3	8.9							9.2		0.070	<0.01					0.400		31.0			500		238			425			224.48					
6-25-80	09:25	20.9	11	5	8.8							9.6		<0.002	<0.01					0.130		45.0			79.0		204			320			163.48					
8-25-80	13:45	9.7	15	13	8.7							8.4	<0.01	<0.001	<0.01	<0.01				0.080	<0.010	30.0			29.0		319			480			319.20	260		20.0		
10-7-80	08:23	4.7	5	4	8.11									<0.001	0.25					0.060		30.0			4.0		305			470			317.20					
12-9-80	15:40	9.1	-3	1	7.6									0.007	<0.01					0.040		33.0			20.0		320			490			334.28					
2-25-81	13:30	4.2	8	4	8.1								1.20	0.012	<0.01	0.07				0.020		9.0			17.0		250			300			295.24	242		<0.1		
4-8-81	11:27	6.4	5	5	8.1									<0.001	0.12					0.028		32.0			57.0		300			332			300.12					
6-24-81	09:06	6.4	17	11	8.4									<0.001	<0.01					0.200		55.5			13.0		291			350			265.96	226		<0.01		

DATE	ALUMINUM TOTAL (MG/L)	ANTIMONY TOTAL (MG/L)	ARSENIC TOTAL (MG/L)	BARIUM TOTAL (MG/L)	BERYLLIUM TOTAL (MG/L)	BORON TOTAL (MG/L)	CADMIUM TOTAL (MG/L)	CALCIUM TOTAL (MG/L)	CHLORIDE DISS. (MG/L)	CHROMIUM HEXavalent CR (MG/L)	COBALT TOTAL (MG/L)	COPPER TOTAL (MG/L)	CYANIDE as CN (MG/L)	FLUORIDE DISS. (MG/L)	GERMANIUM TOTAL (MG/L)	IRON DISS. (MG/L)	IRON TOTAL (MG/L)	LEAD TOTAL (MG/L)	MAGNESIUM TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MOLYBDENUM TOTAL (MG/L)	NICKEL TOTAL (MG/L)	POTASSIUM TOTAL (MG/L)	SELENIUM TOTAL (MG/L)	SILICA as SiO_2 (MG/L)	SILVER TOTAL (MG/L)	SODIUM TOTAL (MG/L)	ZINC TOTAL (MG/L)	VANADIUM TOTAL (MG/L)				COMMENTS
3-17-77	0.021		<0.001	0.006		<0.001	<0.001	65.6	4.0	<0.001		0.013		0.17			0.201	<0.001	29.32	0.014	<0.0002		0.002	2.53	<0.001	6.0	<0.001	5.33	0.013					
6-16-77	0.009	<0.001	<0.001	0.056	<0.001	0.017	<0.001	68.0	10.0	<0.001	<0.001	0.015	<0.01	0.27	<0.001		0.146	<0.001	25.32	0.047	<0.0002	<0.001	<0.001	2.30	<0.001	5.6	<0.001	5.66	0.013	<0.001				
6-26-78			<0.001				<0.001	48.8	10.0	<0.001		0.005		0.14			0.099	<0.001	11.52	0.049	<0.0002			1.155	<0.001	3.6	<0.001	18.0	0.007					
8-23-78			0.004				<0.001	57.6	10.0	<0.001		0.004		0.15			0.237	<0.001	24.5	0.025	<0.0002			2.09	<0.001		<0.001	4.14	0.010					
10-25-78			<0.001				<0.001	74.4	8.0	<0.001		0.015		0.16			0.170	<0.001	24.0	0.030	<0.0002			2.450	<0.001			4.00	0.007					
12-27-78			<0.001				<0.001	84.0	12.0	<0.001		0.010		0.16			0.139	<0.001	26.4	0.053	<0.0002			2.215	<0.001			8.5	0.004					
2-28-79			<0.001				<0.001	61.6	<0.1	<0.001		0.003		0.18			0.406	<0.001	24.48	0.088	<0.0002			2.001	<0.001		<0.001	10.2	0.008					
4-18-79			<0.001				<0.001	77.6	14.0	<0.001		0.004		0.16			3.428	0.005	20.16	0.142	<0.0002			2.318	<0.001		<0.001	8.83	0.012					
6-20-79			<0.001				<0.001	56.0	4.0	<0.001		0.002		0.24			1.080	0.004	14.4	0.051	0.0003			1.105	<0.001		<0.001	4.10	0.004					
8-23-79			<0.001				<0.001	96.0	1.0			0.007		0.25			0.890	<0.001	4.32	0.051	<0.0002			2.203	<0.001		<0.001	9.30	0.005					
10-31-79			<0.001	0.210		0.050	<0.001	63.20	8.0	<0.001		0.010		0.17			0.320	<0.001	26.88	0.049	<0.0002			2.250	<0.001		<0.001	9.60	0.006					
2-27-80			<0.001	0.090		0.115	<0.001	60.80	20.0	<0.001		0.010		0.16			3.590	0.002	120	0.190	<0.0002			2.26	<0.001		<0.001	9.20	0.010					
4-29-80								60.00	8.0								3.216		14.40	0.150				2.50				8.30						Raining
6-25-80								47.20	2.0								0.546		14.88	0.040				0.97				2.70						
8-25-80			<0.001	<0.001		<0.001	<0.001	64.80	12.0	<0.001		<0.001		0.16		<0.001	1.210	<0.002	19.68	<0.001	<0.0002			1.90	<0.001		<0.001	27.00	0.010					
10-7-80								62.40	3.9								0.613		21.60	0.012				2.31				20.00						
12-10-80								92.00	5.85								0.250		18.24	0.060				2.27				5.65						
2-25-81			0.001	0.050		0.030	0.002	44.40	12.0	<0.001		<0.001		0.19			0.440	0.060	36.80	0.070	<0.0002			2.37	0.001		<0.001	1.30	0.015					
4-8-81								96.00	17.00								0.510		23.52	0.075				2.50				7.80						
6-24-81								15.60	9.10								0.340		25.44	0.050				2.04				6.90						

R 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station YC-1
Location Mud Creek below Utah mine #2

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
8-26-81	08:41	5	16	11	7.6								4.00	<0.001
10-14-81	09:43	5.2	3	1	6.7									<0.001
12-23-81	11:32		-10	1	7.2									<0.001
2-24-82	12:05		-2	0	8.0									0.361
4-14-82	13:04		12	9	7.6									0.026
6-9-82	10:18	6.8	10	7	7.9									<0.001
9-11-82	13:35	23	15	14	8.5									<0.001
10-13-82	16:25	6.2	10	8	8.0								0.8	<0.001
12-21-82	11:45		5	1	8.2									<0.001
2-21-83	15:30	8.2		2										0.013
4-21-83	17:51	8.5	7	6	8.2									<0.001
6-21-83	16:45		23	14	7.9									<0.001
8-24-83	17:20	20.4	12	12	7.4								<0.1	<0.001
10-19-83	17:55	24	3	5	7.6									<0.001
12-[illegible]-83					8.00									<0.001
3-27-84	12:55	7.76	-1	6	7.2									
6-26-84	17:20	42.73	16	14	7.6									
9-26-84	13:00	9.29	12	9	7.3									
4-27-85	11:45	22.3	10	8	7.5									
5-30-85	13:17	55.9	14	9	6.8									

DATE	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN NITRATE as NO_3-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TSS	SOLIDS TOTAL VOLATILE SOLIDS	SOLIDS T.S.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	BICARBONATE ALK. as CO_3	BICARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µmhos	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
8-26-81	<0.01	<0.01				0.250	0.100	33.0			6.0		292			498			280.6	230		6.0		
10-14-81	0.25					0.220		36.0			35.0		328			500			333.09					
12-23-81	2.35					0.520		69.0			23.0		415			345			366.54	300.37				
2-24-82	1.15					0.600		80.0			309		422			650			317.40	260.20				
4-14-82	0.06					0.470		50.0			204		358			604			312.20	255.90				
6-9-82	0.41					0.060		7.5			90		192			283			214.43	177.40				
9-11-82	0.10					1.230		4.2			640		275			381			226.90	181.90				
10-13-82	0.04	0.07				0.130	0.090	24.0			78.0		305			553			322.90	264.30		<0.01		
12-21-82	0.27					0.110		39.0			216		358			482			347.10					
2-21-83	0.03					0.120		47.0			265		395			485			314.70					
4-21-83	0.28					0.15		45.0			114		365			512			300.10					
6-21-83	<0.01					0.240		36.0			217		256			262			183					
8-24-83	<0.01	<0.01				0.25		35			150		234			480			253.70	208		<0.01		
10-19-83	<0.20					0.02		46			12.0		280			496			256.20					
12-[illegible]-83	<0.10					0.05		44			42.0		310			490			277.46					
3-27-84	<0.1					0.084		52			11		356			589			157					
6-26-84	<0.1					0.55		77.2			3680		229			334			221	362				
9-26-84	<0.1	0.018	0.010			0.037		51.4			7		321			377			287		219			
4-27-85								52.9			128		318			243			261					
5-30-85								22.5			94		232			211			180					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
8-26-81			0.002	0.050		0.040	<0.001	64.80	13.60	<0.001		0.020		0.19
10-14-81								75.20	8.10					
12-23-81								93.50	12.80					
2-24-82								97.00	8.70					
4-14-82								95.00	25.30					
6-9-82								53.00	7.50					
9-11-82								58.40	55.00					
10-13-82			<0.001	0.055		0.100	<0.001	48.30	11.70	<0.001		0.020		0.16
12-21-82								32.40	11.50					
2-21-83								76.00	15.80					
4-21-83								77.60	35.20					
6-21-83								48.00	8.00					
8-24-83			<0.001	0.350		0.050	<0.001	46.00	7.2	<0.001		0.003		0.14
10-19-83								62.40	14.00					
12-[illegible]-83								72.80	16.00					
3-27-84								19.2	28.0					
6-26-84								58.2	5.2					
9-26-84	<0.1						0.020	74.5	11.4			<0.01		
4-27-85								77.5	25.5					
5-30-85								41.9	6.40					

DATE	MANGANESE TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	meq/l	meq/l	
8-26-81		0.020	0.380	<0.001	21.60	0.050	<0.0002			2.65	0.005		<0.001	12.50	0.020					
10-14-81			0.395		23.53	0.044				2.50				13.00						
12-23-81			6.382		31.50	0.036				2.30				12.60						
2-24-82			7.660		27.50	0.330				2.53				18.30						
4-14-82			3.900		25.50	0.230				2.43				12.5						
6-9-82		0.450	7.510		12.60	0.150				0.99				3.2						
9-11-82			7.250		18.72	2.000				0.90				22.0						Storm Runoff
10-13-82		0.235	1.750	<0.001	44.16	0.100	<0.0002			2.15	0.007		0.001	6.4	0.025					
12-21-82			0.460		20.16	0.090				2.14				22.0						
2-21-83			3.300		39.96	0.195				2.74				13.0						
4-21-83			1.300		23.04	0.160				2.48				20.0						
6-21-83			3.400		18.56	0.127				1.21				14.3						
8-24-83		0.350	2.990	<0.001	9.98	0.130	<0.0002			1.3	<0.001		<0.001	41.9	0.019					
10-19-83			0.200		26.88	0.060				2.2				6.30						
12-[illegible]-83			0.490		22.56	0.100				2.3				9.50						
3-27-84			0.67		42.7	0.103				2.22				10.8				4.69	4.44	
6-26-84		0.06	4.02		14.4	2.11				5.25				5.35				4.43	4.33	
9-26-84		<0.01	0.070	<0.01	26.8	0.048		<0.1	<0.01	2.42				6.64	0.018		<0.1	6.23	6.10	
4-27-85					20.6					1.51				12.8				6.16	6.10	
5-30-85					13.3					1.22				5.82				3.47	3.60	

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-1
Location Mud Creek below Utah #2 mine

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L
6-17-85	14:30	22.74	22	16	7.6									
7-17-85	16:25	9.45	26	18	8.2									
10-1-85	15:20	8.04	15	9	7.3									
6-27-86	18:55	27.50	21	16	8.7									
7-29-86	09:20	5.17	17	10	7.2									
10-15-86	17:51	9.38	6	6	7.7									
4-23-87	10:30	13.50	12	9	7.1									
6-15-87	10:50	8.53	25	16	7.0									
7-1-87	12:10	7.89	23	16	7.5									
9-9-87	09:20	6.11	13	7	8.2									
4-22-88	10:10	9.28	2	4	7.2									
5-31-88	09:30	12.17	11	6	7.2									
6-29-88	15:50	7.12	24	21	7.6									
7-28-88	16:30	5.69	22	19	7.7									
7-10-89	11:30	6.36	28									8.4	<0.5	<0.001
9-28-88	16:30	5.03	11	10	7.8							10.7	<0.5	

DATE	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL SUSPENDED MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4-P MG/L	PHOSPHATE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	HYDRIDE as OH MG/L	SURFACTANT as MBAS MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL SETTLEABLE SOLIDS ML/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	SPECIFIC COND. µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK. as HCO_3 MG/L	TOTAL ALK as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
6-17-85	<0.1	0.020	0.009			0.054		241			38		273		68	374			194		206				
7-17-85								232			28		286			307			310						
10-1-85	<0.1	0.022	<0.005			0.024		124			<1		342		78	416			200		306				
6-27-86	0.32	0.095	0.014			0.022		44.8			44		156		22	583			170	139	226				
7-29-86								55.3			17		531			531			228						
10-15-86	<0.1	0.061	0.022			0.021		76.6			28		346		38	544			359	302	285				
4-23-87	0.11	0.34	<0.005			0.010		31.2			56		348		45	448			338		261				
6-15-87								49.1			35		340			493			264						
7-1-87								91.0			32		379			558			274						
9-9-87	0.22	0.16	0.021			0.036		96			92		365		69	551			293	240	314				
4-22-88	0.58	0.38	0.018			0.022		88.0			23		368			727			272	223	186				
5-31-88								72.0			27		282			454			199						
6-29-88								82.9			59		330			545			230						
7-28-88								100			9.2	<0.1	337			555			184						
7-10-89																						85			
9-28-88								85			5.2	<0.1	482			628		0	280	188	294	72			

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEXAVALENT MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L
6-17-85	<0.1						<0.01	44.3	8.5			<0.1		
7-17-85								76.2	7.8					
10-1-85	<0.1						<0.01	65.8	15.4			<0.01		
6-27-86	0.25						<0.01	48.8	10.3			<0.01		
7-29-86								50.2	10.8					
10-15-86	0.18						<0.01	72.8	11.4			<0.01		
4-23-87	0.74						<0.01	47.2	20.0			<0.01		
6-15-87								51.3	13.7					
7-1-87								71.8	15.0					
9-9-87	<0.1		<0.01				<0.01	80	17.6			<0.01		0.24
4-22-88							<0.01	92.8	66.8			<0.01		
5-31-88								54.8	11.8					
6-29-88								50.9	13.9					
7-28-88								56.7	18.5					
7-10-89														
9-28-88								58.1	13.1					

DATE	MERMANIUM TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MAGNESIUM TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	THALLIUM TOTAL MG/L	SULFIDE as S MG/L	MAJOR CATIONS MEQ/L	MAJOR ANIONS MEQ/L	$\frac{C-A}{C+A} \times 100$	COMMENTS
6-17-85			0.39	<0.01	12.4	0.030		<0.01	<0.01	1.58	0.002			4.49	<0.01		<0.1	3.89	3.92		
7-17-85					24.7					2.4				6.12				6.18	5.70		
10-1-85			0.09	<0.01	30.9	<0.01		<0.01	<0.01	3.80	0.002			9.82	<0.01		<0.1	6.37	6.29		
6-27-86			0.69	<0.01	17.1	0.043		<0.01	<0.01	1.4	0.002			4.28	<0.01		<0.01	4.064	4.012	1.29	
7-29-86					26.9					1.72				4.82				4.972	5.194	-4.353	
10-15-86			0.060	0.045	42.8	<0.01		<0.01	<0.01	2.3	<0.002			8.84	0.020		<0.01	7.577	7.803	-2.985	
4-23-87			1.86	0.028	50.9	0.12		<0.01	<0.01	1.8	<0.002			9.8	<0.01		<0.1	7.01	6.75	-1.24	
6-15-87					28.9					2.6				10.8				5.48	5.73	-2.23	
7-1-87					32.1					2.5				8.8				6.68	6.81	-0.96	
9-9-87			3.02	0.042	43.6	0.088		<0.01	<0.01	4.3	0.0024			0.9	0.294		<0.1	7.75	7.29	3.01	
4-22-88			0.79	<0.01	32.2	0.095		<0.01	<0.01	3.1	0.0028			29.9	0.040		<0.1	8.68	8.17	3.01	3" New Snow - Overcast
5-31-88					22.1					2.8				11.2				5.13	5.09	0.34	
6-29-88					29.9					3.2				13.8				5.70	5.89	1.64	Rain during night
7-28-88					27.1					2.9				13.6				5.74	5.62	1.07	
7-10-89																					
9-28-88			0.255		32.3	0.015				2.7				16.5				6.34	5.91	3.55	

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CONSULTANTS ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-1
Location Mud Creek below Utah #2 Mine

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	TOC	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL ALBUMIN	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HARDNESS as CaCO	SULFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND	TURBIDITY	CARBONATE ALK as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	CHLORITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µmhos/cm	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pc/L	pc/L
4-25-89	14:25	10.77	6	6	7.6							10.2			<0.2	0.120	<0.01			0.046		614			30		311		44	515			220		245			
5-23-89	17:10	12.05	17	10	7.5							8.0										77.0			30		285			480		0	223					
6-21-89	17:30	6.21	13	16	7.6							8.8	<0.5									66			14	<0.1	381			562		0	294			<10		
7-19-89	15:55	4.35	25	20	7.4																	107					437			660		0	285					
9-25-89	14:30	5.54	21	13	7.5							10.7	<0.5									147			12	<0.1	425			704		0	271		316	12		
4-16-90	12:50	10.41	17	11	7.4																	90			22		431			748		0	252					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	$\frac{C-A}{C+A} \times 100$	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L		MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MEQ/L	MEQ/L		
4-25-89	<0.1						<0.01	71.2	28.0			<0.01					0.56	<0.01	21.2	0.030		<0.01	<0.01	1.9	<0.002			15.1	0.188		<0.1	6.00	5.67	2.82	
5-23-89								38.4	16.1										30.8					1.9				13.1				5.07	5.71	5.97	
6-21-89								44.2	19.1										32.8					3.1				17.2				5.73	5.75	0.14	
7-19-89								49.8	18.3										42.9					4.0				18.2				6.91	7.41	3.53	
9-25-89								68.0	21.4								0.205		48.8	0.028				4.9				23.1				8.54	8.11	2.60	
4-16-90								54.2	54										57.4					3.4				26.6				7.03	7.53	3.44	

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-2
Location Mud Creek above Mine

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	COD MG/L	B.O.D. MG/L	T.O.C MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L
8-26-75					7.80									
12-26-75					7.63									
1-26-76	16:30	14.0	-5.0	0	7.9				4.0			9.9	<1.0	
3-9-76	09:50	8.4	-5.0	0	8.3				1.4		8.0	11.2		
4-27-76	12:45	8	9	7	8.2				15.0		17.0	6.5	<1.0	
5-14-76	11:50	15	7	6	8.5				12.0		18.0	8.0	<1.0	
8-2-76	12:15	5.6	19	15	8.2				8.0		15.0	8.8	<1.0	
9-30-76	13:10	4	20	10	7.3				6.0		11.0	7.3	<1.0	
10-27-76	11:20	5	2	1	7.5				6.5		9.0	10.5	<1.0	
11-29-76	15:00	4.3	-2	1	7.1				5.8		6.0	10.2	<1.0	
12-28-76	11:30	2	0	1	7.8				8.0		6.0	9.3	<1.0	

DATE	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHORE TOTAL as PO_4-P MG/L	PHOSPHORE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	HARDNESS as CaCO MG/L	SURFACTANT as MBAS MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL RETAINABLE SOLIDS MG/L	SOLIDS TDS MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	COND µmhos/cm	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
8-26-75		0.10				0.07		41.85					374			575	1.50	<0.01	239.52	198.0	240.0		
12-26-75		0.04				0.05		55.0					469			720	0.84	<0.01	295.20	242.0	290.0		
1-26-76		0.069				0.12	0.10	80.0	<0.01				420			640	0.24	<0.01	289.1	196	244		
3-9-76		0.130				0.120	0.100	56.0	<0.01				467			710	2.30	<0.01	302.5	248	302		
4-27-76		0.155				0.165	0.118	50.0	<0.01				416			640	0.50	<0.01	263.5	216	240		
5-14-76		0.16				0.125	0.120	46.0	<0.01				380			580	1.40	<0.01	253.9	208	242		
8-2-76		0.10				0.140	0.110	40.0	<0.01				430			660	9.90	<0.01	285.4	234	260.9		
9-30-76		0.06				0.165	0.085	39.0	<0.01		8.0		480			740	3.40	<0.01	319.6	262	268.2		
10-27-76		0.05				0.095	0.025	41.0	<0.01		7.0		498			760	2.00	<0.01	334	282	292		
11-29-76		0.06				0.085	0.035	41.0	<0.01		6.0		510			780	0.54	<0.01	373.3	300	370		
12-28-76		0.05				0.110	0.100	35.0	<0.01		4.0		489			750	1.9	<0.01	339.2	278	298		
		0.058					0.088																

DATE	ALUMINUM DISS. MG/L	ANTIMONY DISS. MG/L	ARSENIC DISS. MG/L	BARIUM DISS. MG/L	BERYLLIUM DISS. MG/L	BORON DISS. MG/L	CADMIUM DISS. MG/L	CALCIUM DISS. MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEXAVALENT MG/L	COBALT DISS. MG/L	COPPER DISS. MG/L	CYANIDE as Cn MG/L	FLUORIDE DISS. MG/L	GERMANIUM DISS. MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD DISS. MG/L	MANGANESE DISS. MG/L	MAGNESIUM DISS. MG/L	MERCURY DISS. MG/L	MOLYBDENUM DISS. MG/L	NICKEL DISS. MG/L	POTASSIUM DISS. MG/L	SELENIUM DISS. MG/L	SILICA as SiO_2 MG/L	SILVER DISS. MG/L	SODIUM DISS. MG/L	ZINC DISS. MG/L	VANADIUM DISS. MG/L	COMMENTS
8-26-75	<0.01		<0.01	<0.01		<0.01	<0.001	67.40	6.00	<0.01		0.02	<0.01	0.14		0.01	0.13	<0.01	28.16	<0.01	<0.001			1.85	<0.01	8.86	<0.001	3.52	0.02		
12-26-75	<0.01		<0.001	0.06		<0.01	<0.001	70.4	8.0	<0.01		<0.01	<0.01	0.25		0.080	0.160	<0.001	27.36	<0.01	<0.001			2.52	<0.01	2.10	<0.001	12.0	0.015		
1-26-76	0.006	<0.001	<0.001	0.058	<0.001	<0.001	<0.001	51.2	6.0	<0.001	<0.001	<0.001		0.25	<0.001		0.130	0.002	27.8	0.035	<0.001	<0.001	<0.001	2.10	<0.001		<0.001	19.0	0.013	<0.001	
3-9-76	0.013	<0.001	<0.001	0.006	<0.001	<0.001	<0.001	71.2	4.0	<0.001	<0.001	<0.001		0.34	<0.001		0.210	0.001	29.76	0.024	<0.001	<0.001	<0.001	1.91	<0.001		<0.001	4.87	0.015	<0.001	
4-27-76	0.031	<0.001	<0.001	0.009	<0.001	<0.001	<0.001	56.0	6.0	<0.001	<0.001	<0.001		0.30	<0.001		0.244	<0.001	24.0	0.050	<0.001	<0.001	<0.001	1.94	0.009	5.60	<0.001	16.0	0.015	<0.001	
5-14-76	0.026	<0.001	<0.001	0.012	<0.001	<0.001	<0.001	58.4	2.0	<0.001	<0.001	<0.001		0.27	<0.001		0.250	<0.001	22.00	0.038	<0.0002	<0.001	<0.001	1.42	0.008		<0.001	6.5	0.005	<0.001	
8-2-76	0.033		<0.001	0.010		<0.001		65.0	8.0			0.006		0.35	<0.001		0.280	<0.001	24.0	0.048	<0.0002	<0.001	<0.001	2.14	0.006	21.5		10.0	0.006		
9-30-76	0.011		<0.001	0.004		<0.001		76.8	8.0			0.012		0.25	<0.001		0.300	<0.001	18.60	0.017	<0.0002	<0.001	<0.001	2.27	0.004			18.00	0.011		
10-27-76	0.010		<0.001	0.002		<0.001		52.0	4.0			0.008		0.20	<0.001		0.310	<0.001	42.0	0.018	<0.0002	<0.001	<0.001	2.21	<0.001			11.0	0.002		
11-29-76	0.008		<0.001	0.004		<0.001		40.0	6.0			0.002		0.20	<0.001		0.260	<0.001	64.8	0.017	<0.0002	<0.001	<0.001	3.23	<0.001			4.70	0.005		
12-28-76	0.006		<0.001	0.004		<0.001		77.6	4.0			0.003		0.18	<0.001		0.270	<0.001	24.9	0.012	<0.0002	<0.001	<0.001	2.09	<0.001	5.80		10.0	0.018		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-2
Location Mud Creek above Utah mine #2

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TDS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.S.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BICARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		cfs	°C	°C		MPN	MPN	MPN	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	umhos	FTU	mg/L	mg/L	mg/L	mg/L	mg/L	pc/L	pc/L
3-17-77	14:00	3.5	-1	2	7.6				9.5		4.0	9.75	<1.0		0.13	0.03	<0.01	0.20		0.062	0.050	52.0	<0.01		8.0	<0.1	450			690	1.50	<0.01	297.7	244	280			
6-16-77	11:30	2.3	21	13	7.6				4.0		3.5	7.1	<1.0	<0.001	0.13	0.01		0.40		0.025	0.011	28.3	<0.01		3.0	0.2	280			425	3.50	<0.01	292.8	240	276		0	0
6-28-78	15:55	16	24	16	7.2	220	<20			<1.0	19.0		<1.0	0.008		0.20	<0.01	0.10				260			2.2		216			335			207.4					
8-23-78	12:50	1.5	26	12	8.0							8.6	1.5	0.002								31.0			6.0		260			395			270.8					
10-25-78	11:00	3.2	3	3	7.2							10.0	2.0	0.004								39.0			5.0		298						297.6					
12-27-78	10:10	5.7	-11	0	7.92							11.1	1.2	0.003								49.0			22.0		328			500			329.4					
2-28-79	11:30	5.1	-6	0.2	7.7							9.6	<1.0	<0.001		0.12					0.060	40.0			55.0		316			490			324.57	266				
4-18-79	11:20	12	9	6.5	7.73							9.1	<1.0	0.010		0.20					0.08	41.0			54.0		318			490			292.8	238				
6-20-79	09:25	12.6	14	4.7	7.9							9.5	5.2	<0.001		0.28					0.010	14.8			14.0		209			358			224.48	184		10.0		
8-23-79	09:21	8.4	12	6	8.1							8.3	<1.0	0.008		<0.01					0.140	44.1			84.0		310			510			297.88	244		10.0		
10-31-79	14:08	5.0	2	1	7.8							10.0	<1.0	<0.001		<0.01					0.040	60.0			40.0		312			550			278.16	228		16.0		
2-29-80	14:05	10.7	6	0.5	9.2							10.1	12.8	0.006		0.14				0.310	0.120	380			139		728			515			280.60	230		12.0		
4-29-80	10:55	25.5	9.0	3.0	8.85							9.0		0.018	<0.01					0.300		13.5			500		229			410			229.36					
6-25-80	01:38	31	11	5	8.6							9.3		0.018	<0.01					0.110		<3.0			76.0		172			270			214.72					
8-25-80	13:30	6.8	15	12	8.7							8.6	5.00	0.150	<0.01	<0.01				0.580	<0.010	27.0			28.0		290			450			308.88	254		10.0		
10-7-80	10:42	4.7	16	5	8.7									<0.001	<0.01					0.090		30.0			1.0		310			480			331.84					
12-10-80	15:25	11	0	1	7.16									0.019	<0.01					0.040		34.5			18.0		332			500			348.92					
2-25-81	14:10	4.4	11	4	8.0								1.60	<0.002	<0.01	0.04				0.021		48.0			12.0		280			430			258.64	212		<0.1		
4-8-81	11:40	6.4	6	4	8.1									<0.001	0.15					0.020		50.0			27.0		350			319			336.72					
6-24-81	09:28	6.4	18	12	8.4									<0.001	0.10					0.200		48.5			11.0		298			355			265.96	222		<0.01		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	MANGANESE TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
3-17-77	0.008		<0.001	0.005		<0.001	<0.001	68.0	4.0	<0.001		0.002		0.16			0.223	<0.001	26.40	0.017	<0.0002		<0.001	2.18	<0.001	5.4	<0.001	8.63	0.017					Snowing
6-16-77	0.008	<0.001	<0.001	0.018	<0.001	0.005	<0.001	67.2	12.0	<0.001	<0.001	0.007	<0.01	0.20	<0.001		0.137	<0.001	25.92	0.003	<0.0002	<0.001	<0.001	2.28	<0.001	5.0	<0.001	4.78	0.011	<0.001				
6-28-78			<0.001				<0.001	51.2	10.0	<0.001		0.005		0.14			0.103	<0.001	11.50	0.058	<0.0002			1.289	<0.001	2.9	<0.001	4.0	0.005					
8-23-78			<0.001				<0.001	57.6	4.0	<0.001		0.006		0.14			0.164	<0.001	26.9	0.026	<0.0002			1.82	<0.001		<0.001	3.96	0.012					
10-25-78			<0.001				<0.001	72.0	9.0	<0.001		0.009		0.16			0.188	<0.001	25.9	0.030	<0.0002			1.80	<0.001			3.90	0.009					
12-27-78			<0.001				<0.001	80.8	6.0	<0.001		0.001		0.17			0.200	<0.001	26.4	0.047	<0.0002			2.176	<0.001			4.46	0.006					
2-28-79			<0.001				<0.001	72.0	<0.1	<0.001		0.006		0.17			0.519	<0.001	24.96	0.079	<0.0002			2.243	<0.001		<0.001	14.0	0.005					Overcast
4-18-79			<0.001				<0.001	80.8	14.0	<0.001		0.002		0.17			2.286	0.002	19.20	0.118	<0.0002			2.294	<0.001		<0.001	3.85	0.009					
6-20-79			<0.001				<0.001	57.6	4.0	<0.001		0.003		0.16			1.150	<0.001	12.96	0.058	<0.0002			1.048	<0.001		<0.001	2.63	0.006					
8-23-79			<0.001				<0.001	96.0	2.0			0.011		0.24			1.210	<0.001	9.60	0.066	<0.0002			2.134	<0.001		<0.001	4.92	0.004					
10-31-79			<0.001	0.217		0.060	<0.001	65.60	8.0	<0.001		1.012		0.18			0.860	<0.001	29.76	0.052	<0.0002			2.240	<0.001		<0.001	5.85	0.007					
2-29-80			<0.001	0.090		0.115	<0.001	60.80	20.0	<0.001		<0.001		0.15			4.310	0.002	120	0.150	<0.0002			2.15	<0.001		<0.001	8.10	0.010					
4-29-80								58.40	10.0								2.450		13.44	0.128				2.10				8.00						Light Rain
6-25-80								44.00	<0.1								1.230		12.96	0.050				0.91				4.00						Scattered Showers
8-25-80			<0.001	<0.001		0.030	<0.001	62.40	6.0	<0.001		<0.001		0.15		<0.001	0.350	<0.002	23.52	<0.001	<0.0002			1.87	<0.001		<0.001	15.00	<0.001					
10-7-80								57.60	3.5								0.815		25.92	0.010				2.22				23.00						
12-10-80								86.40	5.75								0.260		23.04	0.060				2.25				5.25						
2-25-81			0.001	0.050		0.030	<0.001	67.10	11.00	<0.001		<0.001		0.19			0.360	0.020	25.20	0.070	<0.0002			2.33	0.001		<0.001	3.20	0.010					
4-8-81								74.40	13.00								0.310		23.52	0.066				2.16				26.00						
6-24-81								64.00	8.5								0.340		26.88	0.060				1.87				9.50						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station YC-2
Location Mud Creek above Utah # 2 mine

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	TOC	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
8-26-81	08:59		15	12	8.3								0.40	<0.001
10-14-81	11:23	5.2	2	2	7.8									<0.001
12-23-81	11:45		-10	1	7.4									<0.001
2-24-82	12:42		-1	2	8.1									0.019
4-14-82	13:15		12	7	7.9									0.015
6-9-82	10:30	6.8	12	5	7.9									<0.001
8-4-82	17:00		18	14	8.6									0.004
10-13-82	16:10	6.2	13	7	8.0								0.6	<0.001
12-21-82	14:30		5	2	8.3									<0.001
2-21-83	15:15			2	8.0									0.175
4-21-83	12:33	15.7	5	6	8.0									<0.001
6-21-83	16:35		26	8	7.9									<0.001
8-29-83	17:00		13	14	7.4								<0.1	<0.001
10-19-83	17:35	11.6	5	5	7.9									<0.001
12-[illegible]-83					7.8									<0.001
3-27-84	12:40	5.94	0	3	7.5									
6-26-84	16:55	45.01	19	12	7.6									
9-26-84	17:20	8.61	13	10	7.9									
4-27-85	11:30	20.6	10	7	7.0									
5-30-85	12:50	39.1	22	8	7.0									

DATE	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL ORGANIC	NITROGEN NITROGEN	PHOSPHATE TOTAL as PO_4^{-3}	PHOSPHATE ORTHO as PO_4^{-3}	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TSS	SOLIDS TOTAL DISSOLVED	SOLIDS TDS	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	ALKALINITY ALK as $CaCO_3$	BICARBONATE ALK as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	micromhos	FTU	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L
8-26-81	<0.01	<0.01				0.220	<0.001	40.0			12.0		304			395			280.6	230		14.00		
10-14-81	0.20					0.230		36.0			21.0		340			530			347.7					
12-23-81	2.61					0.500		135			15.0		499			320			342.8	297.37				
2-24-82	1.13					0.910		63.0			470		398			620			334.30	274.70				
4-14-82	0.06					0.870		59.0			346		370			594			316.6	259.50				
6-9-82	0.38					0.110		6.8			105		195			200			228.70	187.80				
8-4-82	0.12					3.300		15.0			14025		266			407			185.90	152.40				
10-13-82	0.05	<0.01				0.140	0.120	27.0			53.0		301			572			306.2	251		<0.01		
12-21-82	0.25					0.110		39.0			11.0		350			423			345.70					
2-21-83	0.03					4.200		38.0			104		338			493			303.30					
4-21-83	0.02					0.18		50.0			262		368			512			295.20					
6-21-83	<0.01					0.700		28.0			319		230			286			165.90					
8-29-83	<0.01	0.05				0.65		25			244		240			449			280.60	230		<0.01		
10-19-83	0.20					0.05		50			16.0		295			510			255.70					
12-[illegible]-83	<0.10					0.05		60			22.0		340			520			297.60					
3-27-84	<0.1					0.025		55			8		342			564			152					
6-26-84	<0.1					2.18		24.1			2820		202			324			166	273				
9-26-84	<0.1	<0.01	0.006			0.094		51.3			12		327			374			283		266			
4-27-85								47.8			161		324			262			227					
5-30-85								25.2			174		226			271			182					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
8-26-81			0.002	0.055		0.040	<0.001	72.00	12.70	<0.001		0.010		0.18
10-14-81								72.00	6.80					
12-23-81								90.50	10.35					
2-24-82								93.00	22.00					
4-14-82								90.00	24.10					
6-9-82								53.50	6.20					
8-4-82								58.40	54.20					
10-13-82			<0.001	0.050		0.070	<0.001	73.60	8.00	<0.001		0.020		0.15
12-21-82								73.60	10.90					
2-21-83								72.00	20.30					
4-21-83								77.60	33.20					
6-21-83								42.00	6.00					
8-29-83			<0.001	0.350		0.100	<0.001	46.80	7.1	<0.001		<0.001		0.50
10-19-83								62.40	12.00					
12-[illegible]-83								76.80	14.00					
3-27-84								16.4	24.4					
6-26-84								54.3	7.8					
9-26-84	<0.1						<0.01	71.7	10.1			<0.01		
4-27-85								77.8	29.8					
5-30-85								42.0	6.82					

DATE	IRON TOTAL	IRON DISS.	LEAD TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	COMMENTS
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	
8-26-81	<0.001		0.10	<0.001	24.00	0.070	<0.0002		2.37	0.005		<0.001	5.60	0.015				
10-14-81			1.750		24.48	0.060			2.20				20.00					
12-23-81			0.790		29.50	0.050			2.66				18.50					
2-24-82			1.930		25.50	0.150			2.30				26.00					
4-14-82			2.700		25.00	0.300			2.43				12.00					
6-9-82	0.360		1.960		10.30	0.065			0.96				7.5					
8-4-82			2.950		10.56	6.500			0.86				23.5					Storm Runoff
10-13-82	0.665	<0.001	1.370		21.60	0.100	<0.0002		1.32	0.006		<0.001	6.3	0.020				
12-21-82			0.410		24.96	0.085			2.10				22.0					
2-21-83			1.150		23.04	0.105			2.09				17.0					
4-21-83			6.500		23.52	0.250			2.58				21.0					
6-21-83			8.000		9.60	0.180			1.15				4.6					
8-29-83	1.260		3.470	<0.001	8.47	0.135	<0.0002		1.2	<0.001		<0.001	42.5	0.005				Rain Showers
10-19-83			0.260		26.88	0.070			2.2				6.00					
12-[illegible]-83			0.330		27.84	0.090			2.0				7.20					
3-27-84			0.86		37.8	0.093			2.31				10.8			4.45	4.32	
6-26-84	0.22		72.8		12.8	1.36			3.16				5.74			4.09	3.44	
9-26-84			0.190	<0.01	26.7	0.062		<0.1	<0.01	2.43			5.42	0.041		4.09	5.93	
4-27-85					20.4					1.73			11.8			6.12	5.55	
5-30-85					12.8					1.18			5.68			3.43	3.70	

R 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station YC-2
Location Mud Creek above Utah #2 mine

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	COD MG/L	B.O.D. MG/L	TOC MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL ORGANIC MG/L	NITROGEN NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4-P MG/L	PHOSPHATE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	CHLORIDE as Cl MG/L	FLUORIDE as F MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL SETTLEABLE SOLIDS ML/L	SOLIDS TDS MG/L	SOLIDS TOTAL DISSOLVED SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	SPECIFIC COND µmhos/cm	TURBIDITY FTU	ALKALINITY ALK as CO_3 MG/L	ALKALINITY ALK as HCO_3 MG/L	TOTAL ALK as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIOACTIVITY pCi/L	BETA RADIOACTIVITY pCi/L
6-17-85	13:50	21.36	21	16	7.7										<0.1	0.072	0.044			0.028		24.8			35		212		58	288			210		210			
7-17-85	15:45	10.36	29	18	8.0																	27.3			34		305			314			288					
10-1-85	14:50	8.39	22	8	7.2										<0.1	0.056	<0.005			0.038		125			5.2		338		98	416			199		316			
6-27-86	17:40	25.78	21	14	8.1										0.14	0.086	0.007			0.094		42.4			47		160		37	384			180	147	224			
7-29-86	09:45	4.65	14	7	7.7																	56.4			16		411			589			230					
10-15-86	18:40	8.79	3	5	7.7										<0.1	0.020	0.007			0.015		74.7			9.6		379		45	512			377	317	290			
4-23-87	09:45	11.79	12	7	7.5										<0.1	0.40	0.033			0.092		97.1			46		389		42	405			366		273			
6-15-87	10:10	9.10	22	14	7.1																	43.9			18		345			455			247					
7-1-87	11:45	7.25	23	15	7.3																	86			33		368			558			259					
9-9-87	08:40	5.99	15	7	8.2										0.14	0.18	0.0074			0.038		94			144		360		89	558			288	236	308			
4-22-88	10:35	8.83	3	3	7.5										0.42	0.46	0.019			0.028		87			33		447			719			263	216	178			
5-31-88	10:825	15.06	5	4	7.6																	61.3			30		261			465			198					
6-27-88	15:00	6.82	26	19	7.4																	83.1			38		307			555			231					
7-27-88	15:10	6.11	21	19	7.6																	104			15		375			427			182					
7-31-88	10:39	6.83	28									8.4	<0.5	<0.001												<0.1										93		
8-25-88	15:30	5.94	10	10	7.8							10.0	<0.5									95			6.8	<0.1	470			642		0	465	373	309	85		

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS MG/L	CHROMIUM HEX. as CR MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L	MANGANESE TOTAL MG/L	IRON DISS MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MANGANESE TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L	SULFIDE as S MG/L	MAJOR CATIONS MEQ/L	MAJOR ANIONS MEQ/L	CA/CA ± 100	COMMENTS
6-17-85	<0.1						<0.01	47.2	8.8			<0.01					0.25	<0.01	12.7	0.030		<0.01	<0.01	1.53	<0.002			4.44	<0.01		<0.1	3.99	4.21		
7-17-85								65.8	9.2										26.3					2.2				5.98				5.78	5.55		
10-1-85	0.12						<0.01	63.4	12.9			<0.01					0.18	<0.01	29.7	<0.01		<0.01	<0.01	3.67	<0.002			8.62	<0.01		<0.1	6.09	6.22		
6-27-86	0.43						<0.01	52.1	10.4			<0.01					0.71	<0.01	17.0	0.045		<0.01	<0.01	1.4	<0.002			4.06	0.047		<0.1	4.213	4.128	2.00	
7-29-86								51.0	10.1										26.9					1.61				4.54				4.997	5.229	-4.643	
10-15-86	0.22						<0.01	72.9	12.8			<0.01					0.220	0.020	49.3	0.035		<0.01	<0.01	2.2	<0.002			6.82	0.023		<0.01	8.049	8.097	-0.887	
4-23-87	0.64						<0.01	58.9	20.1			<0.01					1.66	0.020	51.1	0.12		<0.01	<0.01	1.5	<0.002			10.1	<0.01		<0.1	7.63	7.34	-1.32	
6-15-87								50.8	12.4										29.2					2.5				9.4				5.42	5.68	-2.34	
7-1-87								71.8	14.3										32.4					2.5				9.4				6.73	6.41	2.25	
9-9-87	0.18		<0.01				<0.01	76	14.4			<0.01		0.82			9.37	<0.01	43.1	0.095		<0.01	<0.01	3.4	<0.002			0.7	0.062		<0.1	7.47	7.08	2.67	
4-22-88	0.10						<0.01	87.6	65.3			<0.01					0.84	<0.01	31.1	0.098		<0.01	<0.01	3.1	<0.002			32.3	0.020		<0.1	8.43	7.96	2.87	5" New Snow - Overcast
5-31-88								54.2	11.8										22.4					2.8				11.2				5.12	4.85	2.69	
6-27-88								51.8	13.0										30.3					3.1				14.2				6.15	5.61	4.58	Rain last night
7-27-88								59.9	16.4										27.8					4.1				17.1				6.13	5.61	4.38	
7-30-88																																				
8-25-88								68.4	10.4								0.295		66.8	0.020				5.8				20.9				9.56	9.73	0.89	

8-1-78

CONSULTANTS · ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station: VC-2
Location: Mud Creek above Utah #2 mine

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOL (MG/L)	NITROGEN AMMONIA as NH_3-N (MG/L)	NITROGEN NITRATE as NO_3-N (MG/L)	NITROGEN NITRITE as NO_2-N (MG/L)	NITROGEN TOTAL KJELDAHL (MG/L)	NITROGEN ORGANIC (MG/L)	PHOSPHATE TOTAL as PO_4-P (MG/L)	PHOSPHATE ORTHO as PO_4-P (MG/L)	SULFATE as SO_4 (MG/L)	CHLORIDE as Cl (MG/L)	FLUORIDE as F (MG/L)	SOLIDS TSS (MG/L)	SOLIDS TOTAL DISSOLVED SOLIDS (MG/L)	SOLIDS T.D.S. (MG/L)	SOLIDS TOTAL SOLIDS (MG/L)	SOLIDS TOTAL VOLATILE SOLIDS (MG/L)	SPECIFIC COND (µmhos/cm)	TURBIDITY (FTU)	CARBONATE ALK as CO_3 (MG/L)	BI-CARBONATE ALK as HCO_3 (MG/L)	TOTAL ALK as $CaCO_3$ (MG/L)	TOTAL HARDNESS as $CaCO_3$ (MG/L)	ACIDITY as $CaCO_3$ (MG/L)	ALPHA RADIO-ACTIVITY (pCi/L)	BETA RADIO-ACTIVITY (pCi/L)
4-25-89	13:35	10.23	6	6	7.6							10.2			<0.2	0.098	<0.01			0.047		49.8			32		292		64	483			214		226			
5-23-89	16:35	10.58	15	10	7.6							8.3										110			29		283			454		0	220					
6-21-89	17:00	5.74	15	15	7.6							9.0	<0.5									97.9			27	<0.1	373			578		0	234			<10		
7-19-89	15:10	5.18	27	21	7.4																	105					401			600		0	273					
9-25-89	13:55	5.23	22	13	7.5							11.9	0.94									158			20	<0.1	441			730		0	288		334	<10		
4-16-90	12:33	9.30	19	11	7.5																	91			26		411			626		0	241					

DATE	ALUMINUM TOTAL (MG/L)	ANTIMONY TOTAL (MG/L)	ARSENIC TOTAL (MG/L)	BARIUM TOTAL (MG/L)	BERYLLIUM TOTAL (MG/L)	BORON TOTAL (MG/L)	CADMIUM TOTAL (MG/L)	CALCIUM TOTAL (MG/L)	CHLORIDE DISS (MG/L)	CHROMIUM HEXAVALENT (MG/L)	COBALT TOTAL (MG/L)	COPPER TOTAL (MG/L)	CYANIDE as CN (MG/L)	FLUORIDE DISS. (MG/L)	IRON TOTAL (MG/L)	IRON DISS (MG/L)	IRON TOTAL (MG/L)	LEAD TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MOLYBDENUM TOTAL (MG/L)	NICKEL TOTAL (MG/L)	POTASSIUM TOTAL (MG/L)	SELENIUM TOTAL (MG/L)	SILICA as SiO_2 (MG/L)	SILVER TOTAL (MG/L)	SODIUM TOTAL (MG/L)	ZINC TOTAL (MG/L)	VANADIUM TOTAL (MG/L)	SULFIDE as S (MG/L)	MAJOR CATIONS (MEQ/L)	MAJOR ANIONS (MEQ/L)	$\frac{C-A}{C+A} \times 100$	COMMENTS
4-25-89	<0.1						<0.01	66.4	25.9			<0.01					6.82	<0.01	29.4	0.022		<0.01	<0.01	1.4	0.007			12.1	0.252		<0.1	6.29	5.27	8.82	
5-23-89								42.9	13.7										44.9					1.8				12.4				6.42	6.28	1.09	
6-21-89								38.6	18.3										45.1					3.1				15.6				6.40	6.39	0.04	
7-19-89								50.1	20.8										34.8					3.9				36.2				7.04	7.24	1.46	
9-25-89								69.9	24.2								0.503		50.2	0.040				5.2				24.1				8.80	8.69	0.62	
4-16-90								40.2	44										38.8					3.4				26.8				6.45	7.09	4.69	

R-7-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-4
Location Above Belina mine

DATE	TIME	FLOW (cfs)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP. (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	DISSOLVED OXYGEN (mg/L)	OIL & GREASE (mg/L)	PHENOL (mg/L)	NITROGEN AMMONIA as NH3-N (mg/L)	NITROGEN NITRATE as NO3-N (mg/L)	NITROGEN NITRITE as NO2-N (mg/L)	NITROGEN TOTAL ORGANIC (mg/L)	NITROGEN AMMONIA (mg/L)	PHOSPHATE TOTAL as PO4-P (mg/L)	PHOSPHATE ORTHO as PO4-P (mg/L)	SULFATE as SO4 (mg/L)	CHLORIDE as Cl (mg/L)	FLUORIDE as F (mg/L)	SOLIDS TSS (mg/L)	SOLIDS TOTAL DISSOLVED (mg/L)	SOLIDS T.D.S. (mg/L)	SOLIDS TOTAL (mg/L)	SOLIDS TOTAL VOLATILE (mg/L)	COND (µmhos)	TURBIDITY (FTU)	TOTAL ALK. as CaCO3 (mg/L)	BI-CARBONATE ALK. as HCO3 (mg/L)	TOTAL ALK. as CaCO3 (mg/L)	TOTAL HARDNESS as CaCO3 (mg/L)	ACIDITY as CaCO3 (mg/L)	ALPHA RADIO-ACTIVITY (pCi/L)	BETA RADIO-ACTIVITY (pCi/L)
3-17-77	14:30	-0-																																					
6-14-77	13:00	-0-																																					
5-10-78	14:35	-0-																																					
6-14-78	15:55	1	20	4	7.0						10.0	9.4	<1.0	<0.001	0.10	0.10	<0.01	0.18			0.025	8.0			85.0		84.0			120			78.2						
7-12-78	15:05	0.07	21	14	7.7							7.3	<1.0									24.0			10.0		110			130			92.72						
8-23-78	14:35	-0-																																					
10-25-78	14:00	-0-																																					
12-27-78	15:10	-0-																																					
2-28-79	12:30	-0-																																					
4-18-79	12:05	-0-																																					
6-20-79	17:30	0.1	16	7	8.0							8.1	1.4	<0.001		0.12					0.012	28.6			64.0		98.0			112			73.20	60.0		6.0			
8-23-79	10:18	0.01	17	7.5	8.3							7.4	<1.0	0.004		<0.01					0.020	10.0			95.0		222			360			236.44	202		10.0			
10-31-79	13:34	-0-																																					
2-27-80	14:20	-0-																																					
4-29-80			In-Accessible																																				
6-25-80	15:05	0.8	27	10	8.7							8.0		<0.002	<0.01					0.070		50.0			37.0		112			170			48.80						
8-25-80	15:40	0.01	13	14	8.4							7.0	7.80	0.002	<0.01	<0.01				0.100	<0.010	7.5			17.0		220			340			231.80	190		28.0			
10-7-80	09:20	0.002	12	6	8.7									<0.001	<0.01					0.100		304			26.0		600			920			228.28						
12-10-80	14:30	-0-																																					
2-25-81	13:30	-0-																																					

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CHLORIDE (mg/L)	CHROMIUM HEXAVALENT (mg/L)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE (mg/L)	MANGANESE TOTAL (mg/L)	IRON (mg/L)	IRON TOTAL (mg/L)	LEAD TOTAL (mg/L)	MAGNESIUM TOTAL (mg/L)	MANGANESE TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	POTASSIUM TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	VANADIUM TOTAL (mg/L)				COMMENTS
3-17-77																																			
6-14-77																																			
5-10-78																																			
6-14-78			<0.001				<0.001	22.2	8.0	<0.001		0.007		0.08			0.128	<0.001	1.92	0.013	<0.0002			0.489	<0.001	2.50	<0.001	5.5	0.006						
7-12-78			<0.001					11.2	<1.0								0.215	<0.001	1.92	0.011	<0.0002			0.618	<0.001		<0.001	28.0	0.018						
8-23-78																																			
10-25-78																																			
12-27-78																																			
2-28-79																																			
4-18-79																																			
6-20-79			<0.001				<0.001	21.60	4.0	<0.001		0.007		0.10			0.880	<0.001	3.16	<0.001	<0.0002			0.575	<0.001		<0.001	6.65	0.008						
8-23-79			<0.001				<0.001	7.0	<0.1			0.011		0.20			1.150	<0.001	4.80	0.168	<0.0002			0.733	<0.001		<0.001	3.50	0.055						
10-31-79																																			
2-27-80																																			
4-29-80																																			
6-25-80								17.80	<0.1								0.860		6.72	0.030				0.38				16.00							
8-25-80			<0.001	<0.001		0.070	<0.001	50.60	14.0	<0.001		<0.001		0.12		<0.001	0.480	<0.002	11.52	<0.001	<0.0002			0.83	<0.001		<0.001	10.00	<0.001						
10-7-80								61.60	0.2								0.510		96.00	<0.001				0.89				1.70							
12-10-80																																			
2-25-81																																			

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-4
Location Whiskey Canyon Creek above Belina Mine

DATE	TIME	FLOW (cfs)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	DISSOLVED OXYGEN (mg/L)	OIL & GREASE (mg/L)	PHENOL (mg/L)	NITROGEN AMMONIA as NH3-N (mg/L)	NITROGEN NITRATE as NO3-N (mg/L)	NITROGEN NITRITE as NO2-N (mg/L)	NITROGEN TOTAL (mg/L)	NITROGEN ORGANIC (mg/L)	PHOSPHATE TOTAL as PO4-P (mg/L)	PHOSPHATE ORTHO as PO4-P (mg/L)	SULFATE as SO4 (mg/L)	MAGNESIUM as Mg (mg/L)	HARDNESS as CaCO3 (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL SETTLEABLE (mg/L)	SOLIDS T.S.S. (mg/L)	SOLIDS TOTAL (mg/L)	SOLIDS TOTAL VOLATILE (mg/L)	COND (umhos)	TURBIDITY (FTU)	BICARBONATE ALK. as CaCO3 (mg/L)	BI-CARBONATE ALK. as HCO3 (mg/L)	TOTAL ALK. as CaCO3 (mg/L)	TOTAL HARDNESS as CaCO3 (mg/L)	ACIDITY as CaCO3 (mg/L)	ALPHA RADIO-ACTIVITY (pCi/L)	BETA RADIO-ACTIVITY (pCi/L)
4-8-81	15:10	-0-																																					
6-24-81	16:18	0.004	15	12	8.4									<0.001	<0.05					0.160		13.2			20.0		166			235			175.40	148		<0.01		
8-26-81	14:46	-0-																																					
9-14-81	14:13	0.004	-1	2	8.4									<0.001	0.19					0.200		27.0			64.0		221			340			278.40					
11-19-81	13:40	-0-																																					
3-29-82	13:20	-0-																																					
4-14-82	14:00	-0-																																					
6-9-82	13:50	0.07	12	8	7.7									0.008	0.31					0.060		<0.1			26.0		60.0			121			75.90	62.20				
9-11-82	16:08	0.02	14	8	8.2									0.008	0.10					7.000		3.0			1594.0		235			270			184.20	151				
10-13-82	14:05	0.05	9	6	8.5								0.4	<0.001	0.30	<0.01				1.950	3.00	31.0			498		145			178			5.30	2.70		8.00		
12-7-82	Inaccessible																																						
2-21-83	Inaccessible																																						
3-21-83	Inaccessible																																						
4-21-83	15:17	0.7	20	12	7.7									<0.001	<0.01					0.240		10.0			89.0		95.0			92			68.30					
5-25-83	13:38	0.004	23	18	7.9								<0.1	<0.001	<0.01	0.02				0.33		12			68.0		180			271			204.90	168		<0.01		
8-9-83	16:25	0.002	5	3	7.8									<0.001	0.70					<0.02		27			84.0		295			318			242.50					
12-[illegible]-83	Inaccessible																																						
3-27-84	10:50		Inaccessible																																				
6-28-84	13:50	0.22	16	7	7.3										<0.1					0.137		7.1			42		77			92			29.6	48.6				
8-26-84	16:50	0.004	10	8	7.2										<0.1	0.151	0.010			0.069		11.5			12		196			256			227		183			

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CHLORIDE DISS. (mg/L)	CHROMIUM HEXAVALENT (mg/L)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE DISS. (mg/L)	MANGANESE TOTAL (mg/L)	IRON DISS. (mg/L)	IRON TOTAL (mg/L)	LEAD TOTAL (mg/L)	MAGNESIUM TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	POTASSIUM TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	VANADIUM TOTAL (mg/L)	SULFIDE as S (mg/L)	MAJOR CATIONS (meq/l)	MAJOR ANIONS (meq/l)	COMMENTS
4-8-81																																	
6-24-81								48.00	7.50								0.830		9.60	0.090			0.186				120						
8-26-81																																	
9-14-81								52.00	3.20								0.335		11.52	0.018			2.60				14.00						
11-19-81																																	Frozen
3-29-82																																	Frozen
4-14-82																																	Frozen
6-9-82								19.50	1.54							0.090	0.350		3.60	0.020			0.40				0.4						
9-11-82								44.80	50.10								8.420		6.24	6.550			8.5				36.0						Storm Runoff
10-13-82			0.010	0.095		0.100	<0.001	29.00	12.30	0.026		0.090		0.09		2.650	22.500	0.021	6.72	0.560	<0.002		1.59	0.006		0.001	1.0	0.125					
12-7-82																																	Snow
2-21-83																																	Snow
3-21-83																																	Snow
4-21-83								17.60	2.00								1.100		3.36	0.037			0.41				4.5						
5-25-83			<0.001	0.470		0.250	<0.001	16.70	1.5	<0.001		0.002		0.12		0.760	1.150	<0.001	3.65	0.090	<0.002		0.5	<0.01		<0.001	56.0	0.017					
8-9-83								53.60	4.00								0.200		15.36	0.040			1.2				1.60						
12-[illegible]-83																																	Covered with Snow
3-27-84																																	Covered with Snow
6-28-84								16.3	8.2								4.24		3.0	0.04			0.74				0.60						
8-26-84	<0.1						<0.01	61.9	2.9			<0.01					0.045	<0.01	12.1	0.021		<0.1	1.28				1.63	0.036		<0.1			

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-4
Location Whiskey Canyon Creek above Belina Mine

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP. (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOL (MG/L)	NITROGEN AMMONIA as NH_3-N (MG/L)	NITROGEN NITRATE as NO_3-N (MG/L)	NITROGEN NITRITE as NO_2-N (MG/L)	NITROGEN TOTAL KJELDAHL (MG/L)	NITROGEN ORGANIC (MG/L)	PHOSPHOR TOTAL as PO_4-P (MG/L)	PHOSPHOR ORTHO as PO_4-P (MG/L)	SULFATE as SO_4 (MG/L)	FLUORIDE as F (MG/L)	SURFACTANT as MBAS (MG/L)	SOLIDS TDS (MG/L)	SOLIDS TOTAL SETTLEABLE SOLIDS (ML/L)	SOLIDS T.S.S. (MG/L)	SOLIDS TOTAL SUSPD SOLIDS (MG/L)	SOLIDS TOTAL VOLATILE SOLIDS (MG/L)	SPECIFIC COND. (MMHOS)	TURBIDITY (FTU)	CARBONATE ALK. as CO_3 (MG/L)	BI-CARBONATE ALK. as HCO_3 (MG/L)	TOTAL ALK. as $CaCO_3$ (MG/L)	TOTAL HARDNESS as $CaCO_3$ (MG/L)	ACIDITY as $CaCO_3$ (MG/L)	ALPHA RADIO-ACTIVITY (pCi/L)	BETA RADIO-ACTIVITY (pCi/L)
4-27-85	13:15		Inaccessible																																				
5-30-85	14:05	0.34	13	8	6.9																	6.8			56		128			103			47.2						
6-17-85	15:30	0.067	22	13	7.4										<0.1	0.108	0.046			0.117		7.0			53		60		52	88			48		55				
7-17-85	15:05	0.028	17	17	8.2																	18.8			28		176			260			240						
10-1-85	15:57	0.001	11	5	7.5										<0.1	0.084	0.006			0.060		13.2			88		226		186	282			208		196				
6-27-86	08:40	0.09	21	9	7.2										0.12	0.353	0.024			0.039		6.5			24		40		12	150			70.2	57.6	75				
7-29-86	11:16	0.006	17	14	7.1																	<0.5			99		344			309			189						
10-15-86	10:15	0.004	6	2	7.2										<0.1	0.068	0.007			0.081		7.2			18		223		22	323			208	236	192				
4-23-87	15:00		Inaccessible																																				
6-15-87	12:46	0.005	21	16	6.9										0.42	0.15	0.013			0.171		6.5			16		156		26	228			163		141				
7-1-87	10:25	0.002	16	15	7.5																	1.5			15		180			308			180						
9-8-87	11:10	Seep	15	10	8.0										0.20	0.072	<0.005			0.041		16			23		227		29	346			225	184	198				
4-22-88	12:20		Inaccessible																																				
5-24-88	12:00		Inaccessible																																				
6-29-88	11:45	0.01	20	16	7.8										0.26	0.39	<0.005			0.058		0.98			23		131		36	228			152		182				
7-28-88	10:25	0.002	20	13	7.0																	60.7			8.4	<0.1	203			177			180						
9-28-88	10:20	-0-																																					

DATE	ALUMINUM TOTAL (MG/L)	ANTIMONY TOTAL (MG/L)	ARSENIC TOTAL (MG/L)	BARIUM TOTAL (MG/L)	BERYLLIUM TOTAL (MG/L)	BORON TOTAL (MG/L)	CADMIUM TOTAL (MG/L)	CALCIUM TOTAL (MG/L)	CHLORIDE DISS. (MG/L)	CHROMIUM HEXAVALENT (MG/L)	COBALT TOTAL (MG/L)	COPPER TOTAL (MG/L)	CYANIDE as CN (MG/L)	FLUORIDE DISS. (MG/L)	MANGANESE TOTAL (MG/L)	IRON DISS. (MG/L)	IRON TOTAL (MG/L)	LEAD TOTAL (MG/L)	MAGNESIUM TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MOLYBDENUM TOTAL (MG/L)	NICKEL TOTAL (MG/L)	POTASSIUM TOTAL (MG/L)	SELENIUM TOTAL (MG/L)	SILICA as SiO_2 (MG/L)	SILVER TOTAL (MG/L)	SODIUM TOTAL (MG/L)	ZINC TOTAL (MG/L)	VANADIUM TOTAL (MG/L)	MAJOR CATIONS (meq/L)	MAJOR ANIONS (meq/L)	SULFIDE as S (MG/L)	$\frac{CA}{CA} \times 100$	COMMENTS
4-27-85																																		Covered with Snow
5-30-85								16.1	6.34										2.8				0.81				0.70			1.09	1.09			
6-17-85	<0.1						<0.01	13.6	1.8			<0.01					0.99	<0.01	3.04	0.026		<0.01	<0.01	0.68	<0.002		0.40	<0.01		0.97	0.99	<0.1		
7-17-85								62.7	2.2										10.3					0.6			1.45			4.06	4.21			
10-1-85	<0.1						<0.01	54.2	4.9			<0.01					0.10	<0.01	13.6	<0.01		<0.01	<0.01	1.91	<0.002		1.09	0.010		3.93	3.82	<0.1		
6-27-86	0.46						<0.01	20.4	3.8			<0.01					0.58	<0.01	4.3	0.018		<0.01	<0.01	0.4	<0.002		0.070	<0.01		1.413	1.399	<0.1	0.927	Snow melt Runoff
7-29-86								48.2	3.56										10.3					0.40			0.71			3.294	3.198		2.950	
10-15-86	0.38						<0.01	50.6	8.60			<0.01					0.285	<0.01	20.8	<0.01		<0.01	<0.01	0.8	<0.002		1.08	0.013		4.3627	5.1159	<0.01	-2.040	
4-23-87																																		Covered with Snow
6-15-87	<0.1						<0.01	38.8	4.2			<0.01					0.44	<0.01	9.4	0.012		<0.01	<0.01	0.5	<0.0028		1.0	0.098		2.77	2.93	<0.1	2.74	
7-1-87								45.6	2.36										10.6					0.5			0.9			3.20	3.05		2.48	
9-8-87	<0.1		<0.01				<0.01	52	3.2			<0.01		0.1			0.23	<0.01	19.5	0.020		<0.01	<0.01	1.0	<0.002		0.2	0.102		4.24	4.11	<0.1	1.52	
4-22-88																																		Covered with Snow
5-24-88																																		
6-29-88	<0.1						<0.01	38.2	0.62			<0.01					0.155	<0.01	9.5	<0.01		<0.01	<0.01	0.4	<0.002		1.0	<0.01		2.74	2.53	<0.1	4.08	
7-28-88								59.3	3.58										17.1					0.7			1.2			4.44	4.31		1.45	
9-27-88																																		

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CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-4
Location Whiskey Canyon Creek above Belina Mine

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	SULFIDE as HS&S	SOLIDS TSS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS TDS	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND	TURBIDITY	CARBONATE ALK as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µmhos	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
4-25-89	12:40	0.052	6	4	7.7							9.6			<0.2	0.125	<0.1			0.085		2.9			13		96		42	114			69.9		8.1			
5-23-89	15:50	0.088	15	6	7.4							8.6										8.5			74		86			98		0	62.9					
6-21-89	15:45	0.016	10	11	7.9							7.9	<0.5									45.6			14	<0.1	197			148		0	243			29.8		
7-19-89	14:20	0.0004	25	17	7.8																	71					215			296		0	217					
9-25-89	12:00	-0-																																					
4-16-90	11:30		Inaccessible																																				

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS	CHROMIUM HEXAVALENT CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	C-A / C+A × 100	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MEQ/L	MEQ/L		
4-25-89	<0.1						<0.01	19.2	3.8			<0.01					0.85	<0.01	3.5	0.020		<0.01	<0.01	0.2	<0.002			3.8	0.215		<0.1	1.42	1.31	3.78	
5-23-89								15.7	1.9										4.9					0.6				1.2				1.25	1.26	0.29	
6-21-89								32.6	7.6										4.4					0.4				0.4				1.52	1.56	1.45	
7-19-89								46.5	5.2										31.7					0.3				0.9				4.97	5.18	2.03	
9-25-89																																			Covered with Snow
4-16-90																																			

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-5
Location below Eccles Canyon mine

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	DETERGENT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COLOR	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		cfs	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	UNITS	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
6-14-76	13:10	0.7	8	5	8.4				32.0		19.0	6.8										46.0	<0.01				320			490	20.00	<0.01	197.6	162	178		
8-2-76	11:30	0.1	24	10	8.4				10.0		8.0	8.6	<1.0	<0.001		0.10				0.120	0.100	11.0	<0.01	<0.01	18.0		320			490	2.50	<0.01	221.8	190	204.7	<1	<3
9-30-76	14:15	-0-																																			
10-27-76	11:45	-0-																																			
11-29-76	15:30	-0-																																			
12-28-76	12:00	-0-																																			

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEXAVALENT CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MANGANESE DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	NITROGEN DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
6-14-76								48.8	2.0					0.14					13.44					1.01				16.0						
8-2-76	0.005	<0.001	<0.001	0.210	<0.001	0.015	<0.001	54.0	6.0	<0.001	<0.001	0.130	<0.01	0.37	<0.001		0.250	<0.001	17.0	0.042	<0.0002	<0.001	<0.001	4.10	<0.001	16.5	<0.001	2.20	0.039	<0.001				
9-30-76																																		
10-27-76																																		
11-29-76																																		
12-28-76																																		

1-76

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-5
Location Below Belina mine

DATE	TIME	FLOW (cfs)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	DISSOLVED OXYGEN (mg/L)	OIL & GREASE (mg/L)	PHENOL (mg/L)	NITROGEN AMMONIA as NH_3-N (mg/L)	NITROGEN NITRATE as NO_3-N (mg/L)	NITROGEN NITRITE as NO_2-N (mg/L)	NITROGEN TOTAL (mg/L)	NITROGEN ORGANIC (mg/L)	PHOSPHATE TOTAL as PO_4-P (mg/L)	PHOSPHATE ORTHO as PO_4-P (mg/L)	SULFATE as SO_4 (mg/L)	CHLORIDE as Cl (mg/L)	FLUORIDE as F (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL SETTLEABLE (ml/L)	SOLIDS T.S.S. (mg/L)	SOLIDS TOTAL VOLATILE (mg/L)	CODA (mg/L)	TURBIDITY (FTU)	ALKALINITY ALK. as CO_3 (mg/L)	ALKALINITY ALK. as HCO_3 (mg/L)	TOTAL ALK. as $CaCO_3$ (mg/L)	TOTAL HARDNESS as $CaCO_3$ (mg/L)	ACIDITY as $CaCO_3$ (mg/L)	ALPHA RADIOACTIVITY (pCi/L)	BETA RADIOACTIVITY (pCi/L)
3-1-77	14:25	-0-																																			
6-16-77	13:10	-0-																																			
5-10-78	13:55	1.4	17	2.5	7.5						9.0	9.9	15.2			1.12	0.02	0.55			0.120	102			2640		200		310			50.0					
6-14-78	16:55	1.6	25	10	7.1						23.0	9.0	11.0	0.005	0.12	0.46	<0.01	0.25			0.028	10.0			869		198		250			124.2					
9-12-78	15:45	0.3	27	20.5	8.3							8.1	16.0									78.0			75.0		283		355			202.52					
10-23-78	13:10	0.01	22	8	8.4						20.1	8.2	12.0	0.250								26.0			8.0		210		320			219.6					
10-25-78	11:32	-0-																																			
12-27-78	10:40	-0-																																			
2-28-79	12:10	-0-																																			
4-18-79	11:47	0.3	10	1	7.48						16.0	10.0	1.8	0.008		1.09					2.00	191			3910		510		770			231.8	190				
6-20-79	17:48	0.6	20	10	8.3							8.0	2.2	<0.001		0.20					0.015	22.5			18.0		210		360			182.76	174		<1.0		
8-29-79	09:55	0.09	16	5.5	8.1							8.8	<1.0	0.086		<0.01					0.100	44.9			1.0		275		450			224.56	198		10.0		
10-31-79	13:44	-0-																																			
2-7-80	14:26	-0-																																			
4-29-80	11:32	2.60	4	2	9.2							9.2		0.015	0.20					3.100		32.0			3402		215		380			185.44					
6-25-80	14:25	2.2	25	12	9.1							7.5		0.030	<0.01					0.070		45.0			46.0		188		290			146.40					
8-25-80	15:08	0.6	14	14	8.7							8.0	<0.01	<0.001	<0.01	<0.01				0.200	<0.010	52.0			149		270		420			221.80	190		14.0		
10-7-80	10:00	0.4	7	4	9.0									<0.001	<0.01					0.070		25.5			340		255		390			220.84					
12-8-80	14:54	-0-																																			
2-25-81		-0-																																			

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CHLORIDE as Cl (mg/L)	CHROMIUM HEXAVALENT (mg/L)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE (mg/L)	MANGANESE TOTAL (mg/L)	IRON (mg/L)	IRON TOTAL (mg/L)	LEAD TOTAL (mg/L)	MAGNESIUM TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	POTASSIUM TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO_2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	VANADIUM TOTAL (mg/L)				COMMENTS
3-1-77																																			
6-16-77																																			
5-10-78			<0.001				<0.001	47.3	10.0	<0.001		0.002		0.19			0.059	<0.001	8.64	0.015	<0.0002			1.364	<0.001	3.90	<0.001	3.79	0.008						
6-14-78			<0.001				<0.001	38.4	5.0	<0.001		0.009		0.14			1.442	<0.001	5.76	0.018	<0.0002			1.082	<0.001	4.50	<0.001	7.5	0.008						
9-12-78			<0.001					32.5	2.0								0.098	<0.001	6.80	0.070	<0.0002			1.496	<0.001		<0.001	62.0	0.014						
10-23-78			<0.001					49.6	<1.0			0.006		0.12			0.011	<0.001	19.2	0.011	<0.0002			1.481	<0.001		<0.001	2.97	0.017						
10-25-78																																			
12-27-78																																			
2-28-79																																			
4-18-79			0.004					77.6	12.0			0.007		0.20			88.5	0.006	11.04	1.532	<0.0002			2.552	<0.001		<0.001	5.58	0.108						
6-20-79			<0.001				<0.001	56.0	4.0	<0.001		<0.001		0.16			0.750	<0.001	17.48	0.043	0.0032			1.521	<0.001		<0.001	2.85	0.015						
8-29-79			<0.001				<0.001	85.6	4.0			0.013		0.22			0.110	<0.001	6.24	0.060	<0.0002			1.800	<0.001		<0.001	4.73	<0.001						
10-31-79																																			
2-7-80																																			
4-29-80								54.40	14.0								0.850		12.96	0.113				6.10				4.30						Rain
6-25-80								49.60	2.0								0.980		10.08	0.030				1.21				2.90						
8-25-80			<0.001	<0.001		0.080	<0.001	60.00	10.0	<0.001		<0.001		0.19		<0.001	2.830	<0.002	24.00	<0.001	<0.002			2.24	<0.001		<0.001	4.50	<0.001					
10-7-80								56.00	9.0								2.650		20.16	0.005				2.53				1.00						
12-8-80																																			
2-25-81																																			

8-1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-5
Location Below Belina Mine
Whiskey Canyon Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL	NITROGEN ORGANIC	PHOSPHORE TOTAL as PO_4^{-3}	PHOSPHORE ORTHO as PO_4^{-3}	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TDS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS TSS	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COLOR	TURBIDITY	HARDNESS ALK. as $CaCO_3$	HARDNESS CALCIUM ALK. as $CaCO_3$	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	COLOR UNITS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	PC/L	PC/L
4-8-81	13:23	-0-																																				
6-24-81	16:45	0.1	20	20	8.6									<0.001	0.10					0.210		110			15.0		288			410			131.76	116		<0.01		
8-26-81	16:33	0.08	20	17	8.7								1.80	<0.001	<0.01	<0.01				0.230	0.050	54.0			3.0		275			370			180.54	156		<0.01		
10-4-81	13:23	0.3	1	0	8.3									0.002	0.23					0.235		51.0			224		400			610			349					
12-23-81	13:08	-0-																																				
2-24-82	12:50	-0-																																				
4-14-82	13:39	-0-																																				
6-9-82	12:55	3.7	18	9	7.9									0.003	0.45					0.160		42.0			215		220			339			198.40	162.60				
8-18-82	16:47	0.3	16	14	8.5									<0.001	0.11					20.100		30.0			1780		377			661			181.40	148.70				
10-13-82	15:50		9	4	8.3								<0.1	<0.001	0.04	0.28				0.560	0.120	39.0			611		342			558			308.50	252.90		<0.01		
12-27-82	14:20	-0-																																				
2-23-83	13:35				7.6									0.004	0.06					0.280		50.0			3860		359						239.30					
4-21-83	12:18		5	2	8.0									<0.001	0.09					0.33		80.0			4050		410			578			217.20					
6-21-83	16:12		21	14	7.7									<0.001	<0.01					0.190		20.0			141		288			369			190.30					
8-25-83	14:30	0.6	22	16	7.6								0.3	<0.001	<0.01	0.02				0.38		78			45.0		316			575			278.60	180		<0.01		
10-4-83	17:10	0.3	4	3	7.7									<0.001	0.20					<0.02		93			17.0		335			523			226.92					
12-[illegible]-83					8.0									<0.001	<0.10					0.02		95			450		395			600			268.40					
2-27-84	11:30		Inaccessible																																			
6-26-84	14:25	1.2	16	12	7.5										<0.1					0.251		186			26		451			693			109	180				
8-28-84	17:05	0.48	14	8	7.2										<0.1	0.104	0.008			0.078		105			30		362			389			242		220			

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MAGNESIUM TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULPHIDE as S	MAJOR CATIONS	MAJOR ANIONS	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	meq/l	meq/l	
4-8-81																																		
6-24-81								49.20	21.50								0.190		27.84	0.020				5.95				6.60						
8-26-81			0.003	0.040		0.080	<0.001	89.80	33.90	<0.001		0.010		0.20		<0.001	0.510	<0.001	27.84	0.020	<0.0002			3.78	0.003		<0.001	6.50	0.015					
10-4-81								40.00	33.90								0.550		32.64	0.020				3.50				6.00						
12-23-81																																		Frozen
2-24-82																																		Frozen
4-14-82																																		Frozen
6-9-82								56.00	5.10							0.390	0.510		15.00	0.150				1.60				5.0						
8-11-82								60.00	125.30								0.250		38.40	7.150				1.50				21.0						Recent Rain
10-13-82			<0.001	0.100		0.060	<0.001	99.00	24.30	<0.001		0.020		0.15		1.450	4.250	<0.001	16.80	0.260	<0.0002			1.33	0.005		0.001	20.0	0.025					
12-27-82																																		
2-23-83								60.00	60.70								88.000		21.60	1.650				4.21				40.5						
4-21-83								80.80	68.50								57.500		19.68	1.710				4.78				29.5						Storm Runoff - H. Snow
6-21-83								64.80	6.00								1.530		16.32	0.087				2.32				7.0						
8-25-83			<0.001	0.280		0.330	<0.001	65.20	5.8	<0.001		0.008		0.18		0.350	1.650	0.003	15.80	0.240	<0.0002			2.5	<0.001		<0.001	16.0	0.026					
10-4-83								64.80	14.00								0.220		9.24	0.030				2.7				5.80						
12-[illegible]-83								80.00	20.00								0.470		24.00	0.130				23.2				10.50						
3-27-84																																		Covered with Snow - Dry?
6-26-84								85.3	6.8								4.62		32.8	0.06				3.62				5.67						
8-28-84	<0.1						<0.01	73.9	9.6			<0.01					0.350	<0.01	29.9	0.034		<0.1	<0.1	4.15				5.20	0.055		<0.1			

8-1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-5
Location Whiskey Canyon Creek below Belina Mine

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4	PHOSPHATE ORTHO as PO_4	SULFATE as SO_4	HARDNESS as CaCO	SODIUM as NaCl	SOLIDS TSS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND.	TURBIDITY	CARBONATE ALK. as CO_3	BICARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µmhos/cm	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
4-27-85	12:50	1.5	12	6	8.0																	81.8			3310		602			571			225					
5-30-85	14:47	3.3	15	10	6.8																	123			58		343			376			952					
6-17-85	16:10	1.36	22	15	7.4										<0.1	0.088	0.017			0.023		146			69		371		108	412			162		309			
7-17-85	15:20	1.19	18	15	7.9																	168			380		485			564			288					
10-1-85	15:30	0.09	12	9	7.2										<0.1	0.056	<0.005			0.029		228			35		508		170	487			123		385			
6-27-86	09:40	0.81	23	8	7.6										0.11	0.360	0.020			0.214		154			1100		4000		480	1668			215	176	368			
7-29-86	12:05	1.20	19	10	7.1																	146			172		518			665			212					
10-5-86	17:16	0.11	6	3	7.8										<0.1	0.186	0.017			0.020		110			17		440		42	623			353	308	342			
4-23-87	11:30	0.84	12	6	7.0										<0.1	0.53	0.049			0.209		133			196		597		48	733			344		350			
6-15-87	11:45	0.44	25	14	6.7																	114			4.4		486			680			248					
7-1-87	11:15	0.08	16	10	7.5																	177			14		523			800			237					
9-7-87	11:10	0.29	14	7	8.3										0.33	0.16	0.0081			0.064		83			75		463		63	753			241	204	392			
4-22-88	12:40	0.90	3	4	6.3																	98			1,050		1960			3310			252	206				
5-31-88	12:20	0.87	6	5	6.9																	121			18		355			620			219					
6-29-88	14:30	0.28	20	17	7.0										0.15	<0.01	0.007			0.025		118			19		407		57	719			214		321			
7-29-88	17:30	0.02	23	20	7.7																	106			192		455			715			128					
7-30-88	13:15		20									7.9	<0.5	<0.001												<0.1										76		
9-27-88	10:57	0.445	4	3	7.0							13.4	<0.5									207			8.8	<0.1	488			664		0	228	187	359	42		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MAGNESIUM TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	MAJOR CATIONS	MAJOR ANIONS	SULFIDE as S	C-A / C+A X 100	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	meq/l	meq/l	MG/L		
4-27-85								65.8	16.8										19.1					7.37				110			9.83	10.12			
5-30-85								95.9	14.69										22.8					8.04				4.22			4.49	4.53			
6-17-85	<0.1						<0.01	54.8	13.0			<0.01					0.36	<0.01	36.8	0.025		<0.01	<0.01	3.80	<0.002			6.98	<0.01		6.18	6.07	<0.1		
7-17-85								84.2	16.8										44.8					4.5				6.86			8.32	8.68			
10-1-85	0.15						<0.01	63.2	14.3			<0.01					0.30	<0.01	39.8	<0.01		<0.01	<0.01	6.98	<0.002			10.92	0.013		7.12	7.16	<0.1		
6-27-86	3.54						<0.01	73.8	13.6			<0.01					6.20	<0.01	36.8	1.80		<0.01	<0.01	2.8	<0.002			4.56	0.030		6.932	7.122	<0.1	-2.737	
7-29-86								62.1	9.0										39.8					3.12				4.52			6.650	6.770		-1.780	
10-5-86	0.28						<0.01	76.8	24.7			<0.01					0.300	<0.01	53.4	0.015		0.01	<0.01	2.9	<0.002			6.12	0.013		8.587	8.778	<0.01	-2.418	
4-23-87	1.68						<0.01	74.8	84.0			<0.01					3.89	0.020	62.8	0.17		0.025	<0.01	3.9	<0.002			38.2	0.025		10.67	10.77	<0.1	-0.37	
6-15-87								55.2	31.5										43.5					5.4				16.0			7.19	7.32		-0.91	
7-1-87								76.3	26.9										35.8					4.2				10.1			7.35	8.32		-6.24	
9-7-87	<0.1		<0.01				<0.01	68	64.1			<0.01		0.39			1.82	<0.01	51.8	0.078		<0.01	<0.01	3.9	<0.002			0.8	0.100		7.80	7.48	<0.1	2.10	
4-22-88								72.2	84										47.2					2.8				14.7			8.21	8.53		1.97	3" Mud Sample - Overcast
5-31-88								53.4	29.9										46.8					2.6				17.4			7.34	6.95		2.77	
6-29-88	<0.1						<0.01	68.9	31.2			<0.01					0.390	<0.01	46.3	0.020		<0.01	<0.01	5.4	<0.002			18.2	<0.01		8.20	6.84	<0.1	9.04	
7-29-88								47.1	91.5										39.6					5.7				55.8			7.34	6.88		3.21	
7-30-88								71.4	7.1								3.22		56.4	0.010				4.2				10.1			8.34	8.25		0.56	
9-27-88																																				

R 1-78

CONSULTANTS · ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY UTAH

WATER QUALITY DATA

Station VC-5
Location Whiskey Canyon Creek
Below Belina Mine

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4	PHOSPHATE ORTHO as PO_4	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TSS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS T.S.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC CONDUCTANCE	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°F	°F		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	PC/L	PC/L
4-25-89	13:15	0.59	6	4	7.7							9.4			<0.2	0.067	<0.01			0.055		97.2			36		457		47	707			218		308			
5-23-89	16:05	0.49	17	8	7.4							8.4										85			7.0		387			622		0	232					
6-21-89	16:35	0.36	16	13	7.6							8.2	<0.5									77			39	<0.1	379			580		0	237			<10		
7-19-89	14:40	0.15	25	19	7.8																	123					425			622		10.5	221					
9-26-89	11:25	0.33	20	4	7.6							10.1	<0.5									129			14	<0.1	423			690		0	268		324	214		
4-16-90	11:50	0.32	16	5	7.5																	70			57		462			857		0	221					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX. or CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	HEXAVALENT TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	$\frac{C-A}{C+A} \times 100$	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MEQ/L	MEQ/L		
4-25-89	<0.1						<0.01	74.8	73.0			<0.01					0.57	<0.01	31.2	0.060		<0.01	<0.01	3.2	0.0048			31.6	0.707		<0.1	7.76	7.16	0.65	
5-23-89								42.4	93.2										42.1					2.8				17.9				6.43	6.51	0.61	
6-21-89								35.3	23.7										44.6					3.9				9.6				5.95	6.16	1.71	
7-19-89								46.4	26.1										42.4					4.7				13.8				6.53	7.27	5.40	
9-25-89								71.4	16.3								0.050		43.9	<0.01				4.2				8.4				7.65	7.54	0.73	
4-16-90								58.1	116										36.9					2.8				52.9				8.29	8.35	0.36	

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-10
Location Left Fork Eccles Creek above Right Fork

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L
6-14-78	16:30	8.5	22	9	7.3						27.0	9.0	<1.0	0.002
7-12-78	14:45	1	21	16	8.3							7.4	<1.0	
8-23-78	14:15	0.2	20	12	8.0						22.0	8.1	2.2	0.004
10-25-78	11:50	0.3	3	0.5	7.4							11.3	<1.0	0.011
11-8-78	10:45	0.3	2	0.2	7.5						11.0	11.4		
12-27-78	11:05	0.2	-2	2	7.65						4.0	10.9	1.0	<0.001
2-28-79	12:13		In-accessible											
4-18-79	11:55		In-access.ble											
5-11-79	15:28	0.9	0	2.5	8.4						8.0	9.3	1.6	0.076
6-20-79	11:30	3.8	16	5.5	8.18	70.0	<2.0				<1.00	8.7	<1.0	<0.001
7-18-79	11:52	1.2	24	9.0	7.72						12.0	8.0	<1.0	0.010
9-26-79	17:20	0.6	16	8.5	7.70						1.0	6.8		<0.001
10-31-79	12:03	0.15	-1	0	7.9							9.4	1.0	<0.001
11-30-79	12:00	0.3	-5	0.3	7.3							10.2		0.010
2-27-80			In-Accessible											
3-27-80			In-Accessible											
4-29-80			In-Accessible											
5-14-80	11:03	7.6	10.0	2	9.2							9.9		0.046
6-25-80	08:58	7.0	12	4.5	9.2							9.9		0.002
7-21-80	12:50	2.2	28	13	8.7									0.021

DATE	NITROGEN AMMONIA as NH_3-N mg/L	NITRATE as NO_3-N mg/L	NITRITE as NO_2-N mg/L	NITROGEN TOTAL mg/L	NITROGEN mg/L	PHOSPHATE TOTAL as PO_4-P mg/L	ORTHO as PO_4-P mg/L	SULFATE as SO_4 mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SOLIDS TDS mg/L	TOTAL SETTLEABLE mg/L	T.S.S. mg/L	TOTAL mg/L	TOTAL VOLATILE mg/L	COND. µmhos/cm	TURBIDITY FTU	HARDNESS ALK. as CO_3 mg/L	HARDNESS ALK. as HCO_3 mg/L	TOTAL ALK as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
6-14-78	0.10	0.18	<0.01	0.14			0.021	4.0			89.0		139			210			251.28					
7-12-78								15.0			6.0		205			346			219.6					
8-23-78								10.0			4.0		200			305			241.5					
10-25-78								19.0			4.0		231			420			246.08					
11-8-78		0.12	<0.01	0.11			0.025	12.0			9.0		245			425			283.04					
12-27-78		0.216	<0.01	0.10			0.020	14.0			18.0		256			395			290.34					
2-28-79																								
4-18-79																								
5-11-79	<0.10	1.32				0.06		5.0			11.0		270			410	5.50		280.06	230		6.0		
6-20-79	<0.01	0.05				0.040	0.010	10.0			7.0		196			340	6.00		222.04	182		2.0	2.5	12.0
7-18-79	<0.01	0.10				0.030		5.0			7.0		225			420	4.20	<0.01	268.40	220		28.0		
9-26-79	<0.01	0.03				0.020		10.0			4.0		227			380	4.40		265.16	218		19.0		
10-31-79		<0.01					0.060	31.0			24.0		275						270.84	222		24.0		
11-30-79	<0.01					0.060		21.0			6.5		259			430			280.60					
2-27-80																								
3-27-80																								
4-29-80																								
5-14-80	<0.01					0.100		50.0			13.0		238			375			234.24					
6-25-80	<0.01					0.040		7.2			4.0		190			290			202.52					
7-21-80	<0.01					0.030		4.5			7.0		212			320			241.52					

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE mg/L
6-14-78			<0.001				<0.001	41.6	8.0	0.001		<0.001		0.13
7-12-78			<0.001					26.4	<1.0					
8-23-78			<0.001					52.8	<0.10			0.002		0.13
10-25-78			<0.001				<0.001	59.2	<1.0	<0.001		0.003		0.14
11-8-78			<0.001	0.030			<0.001	66.4	2.0	<0.001		0.002	<0.01	0.12
12-27-78			<0.001	0.031			<0.001	18.24	6.0	<0.001		0.003		0.15
2-28-79														
4-18-79														
5-11-79			<0.001	0.040		0.080	<0.001	68.0	6.0	0.003		0.003	<0.001	0.11
6-20-79			<0.001	0.045		0.090	<0.001	54.4	<1.0	0.002		0.003	<0.001	0.15
7-18-79			<0.001	0.030		0.090	<0.001	64.80	2.0	0.002		0.006	<0.001	0.15
9-26-79			<0.001	0.050		0.050	<0.001	63.85	2.0	<0.001		0.015	<0.001	0.19
10-31-79			<0.001	0.214		0.030	<0.001	68.80	4.0	<0.001		0.016		0.15
11-30-79								76.00	2.0					
2-27-80														
3-27-80														
4-29-80														
5-14-80								64.00	4.0					
6-25-80								51.20	2.0					
7-21-80								63.20	4.0					

DATE	IRON TOTAL mg/L	IRON DISS. mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MAGNESIUM TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L				COMMENTS
6-14-78			0.519	<0.001	7.68	0.022	<0.0002			0.577	<0.001	3.90	<0.001	2.00	0.003					
7-12-78			0.045	<0.001	5.76	0.005	<0.0002			0.918	<0.001		<0.001	4.70	0.018					
8-23-78			0.052	<0.001	18.2	0.016	<0.0002			0.937	<0.001		<0.001	2.05	0.015					
10-25-78			0.086	<0.001	20.10	0.004	<0.0002			0.890	<0.001			3.2	0.019					
11-8-78			0.119		19.2	0.019				1.027	<0.001	5.05	<0.001	2.24	0.002					
12-27-78			0.079	<0.001	18.24	0.012				0.989	<0.001	5.50	<0.001	4.30	0.003					
2-28-79																				
4-18-79																				
5-11-79		0.023	0.350	0.002	13.92	0.007	<0.0002			1.002	<0.001		<0.001	6.30	0.011					
6-20-79		0.020	0.260	0.002	12.48	0.009	<0.0002			0.691	<0.001		0.002	1.71	0.016					
7-18-79		0.050	0.230	<0.001	13.92	0.022	<0.0002			0.902	<0.001		0.001	2.02	0.017					
9-26-79		0.030	0.540	<0.001	14.10	0.036	<0.0002			0.830	<0.001		<0.001	4.90	0.035					
10-31-79			0.310	<0.001	16.80	0.050	<0.0002			2.800	<0.001		<0.001	8.50	0.022					
11-30-79			0.400		14.88	0.074				1.014				2.16						
2-27-80																				
3-27-80																				
4-29-80																				
5-14-80			0.335		12.48	0.080				2.20				5.50						
6-25-80			0.230		13.92	<0.010				0.62				1.80						
7-21-80			0.230		12.00	0.020				0.78				1.90						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-10
Location South Fork Eccles Creek above Eccles Creek

DATE	TIME	FLOW cfs	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. mg/L	B.O.D. mg/L	T.A.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3 mg/L	NITROGEN NITRATE as NO_3 mg/L	NITROGEN NITRITE as NO_2 mg/L	NITROGEN TOTAL ORGANIC mg/L	NITROGEN mg/L	PHOSPHATE TOTAL as PO_4^{-3} mg/L	PHOSPHATE ORTHO as PO_4^{-3} mg/L	SULFATE as SO_4 mg/L	SULFIDE as S mg/L	SULFITE as SO_3 mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL DISSOLVED mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL mg/L	SOLIDS TOTAL VOLATILE mg/L	COND. µmhos	TURBIDITY FTU	HARDNESS ALK. as CO_3 mg/L	HARDNESS ALK. as HCO_3 mg/L	TOTAL ALK. as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pc/L	BETA RADIO-ACTIVITY pc/L
5-25-80	16:00	0.9	14	13	8.2	1100	2.0				7.00	8.1	0.60	<0.001	<0.01	<0.01				0.120		25.0			16.0		235			360	7.20		25132	210		<0.1	1.0	2.1
9-4-80	09:04	0.5	12	7	8.5									0.048	<0.01					0.080		20.0			17.0		225			350			24456					
10-7-80	12:50	0.157	21	8	8.6									0.023	<0.01					0.060		6.0			6.0		212			320			25864					
11-19-80	10:30		-6	0	7.5									<0.001	<0.01					0.170		12.0			14.0		278			260			33478					
12-24-80	10:00		In Accessible																																			
1-28-81	11:31		In Accessible																																			
2-25-81	In Accessible																																					
3-11-81	13:40		-0-																																			
4-8-81	13:27		-0-																																			
5-24-81		0.6	21	11	8.4									<0.001	<0.05					0.240		20.0			11.0		212			300			22448	190		<0.01		
8-26-81	16:16	0.2	17	14	8.4								2.20	<0.001	<0.01	<0.01				0.280	0.110	15.0			4.0		230			290			24838	204		14.00		
10-4-81	13:36	0.1	3	3	8.3									<0.001	0.18					0.260		27.0			40.0		320						27350					
12-23-81	13:11		-0-																																			
2-24-82	12:55		-0-																																			
4-14-82	13:44		-0-																																			
6-9-82	13:08	6.8	18	8	7.8									0.008	0.41					0.090		<0.1			41.0		166			262			19520	160				
8-11-82	15:20	0.6	16	13	8.4									<0.001	0.08					0.020		24.0			53.0		326			433			27280	227.70				
10-13-82	13:45	0.8	10	3	8.2								<0.1	<0.001	0.02	0.05				0.100	0.050	69.0			25.0		336						33340	248.50		<0.01		
12-21-82	13:35		4	1	8.1									<0.001	0.36					0.160		86.0			3.0		384			521			38130					

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE mg/L	GERMANIUM TOTAL mg/L	IRON mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MAGNESIUM TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L				COMMENTS
5-25-80			<0.001	0.030		0.025	<0.001	57.66	<0.1	<0.01		<0.001	<0.001	0.014		0.100	0.530	<0.001	20.64	0.040	<0.002			0.89	0.002		<0.001	2.10	0.020					
9-4-80								62.40	1.7	<0.001							0.245		15.36	0.026			<0.001	0.60				1.80						
10-7-80								59.20	0.4								0.420		12.96	0.033				1.01				6.00						
11-19-80								72.80	1.30								0.490		16.80	0.085				1.07				15.00						
12-24-80																																			
1-28-81																																			
2-25-81																																			
3-4-81																																			
4-9-81																																			
6-24-81								55.20	2.98								0.120		15.84	0.020				4.87				2.10						
8-26-81			0.003	0.030		0.020	<0.001	56.80	4.69	<0.001		<0.001		0.17		0.030	0.430	<0.001	18.72	0.070	<0.0002			1.28	0.004		<0.001	2.30	0.010					
10-4-81								60.00	4.80								0.480		16.32	0.031				1.20				17.00						
12-23-81																																			Frozen
2-24-82																																			Frozen
4-14-82																																			Frozen
6-9-82								49.00	3.50							0.130	0.360		8.80	0.050				0.58				1.90						
8-11-82								64.80	50.20										24.00	0.035				0.65				27.0						
10-13-82			<0.001	0.035		0.070	<0.001	86.40	4.70	<0.001		0.010		0.12		0.115	0.190	<0.001	22.56	0.030	<0.002			1.76	0.006		<0.001	2.6	0.003					
12-21-82								89.00	4.80								0.360		28.48	0.020				1.65				15.0						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station YC-10
Location South Fork Eccles Creek above Eccles Creek

DATE	TIME	FLOW cfs	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL mg/L	NITROGEN ORGANIC mg/L	PHOSPHATE TOTAL as PO_4-P mg/L	PHOSPHATE ORTHO as PO_4-P mg/L	SULFATE as SO_4 mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SOLIDS TSS mg/L	SOLIDS TOTAL VOLATILE mg/L	SOLIDS T.D.S. mg/L	SOLIDS TOTAL mg/L	SOLIDS TOTAL VOLATILE mg/L	SPECIFIC COND. µmhos	TURBIDITY FTU	ALK. CO_3 mg/L	ALK. as HCO_3 mg/L	TOTAL ALK. as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pc/L	BETA RADIO-ACTIVITY pc/L
2-21-83	12:15		3	3										0.017	0.02					0.120		85.0			39.0		356			512			289.90					
4-21-83	11:20	0.9	6	3	8.1									<0.001	0.16					0.12		70.0			77.0		350			467			290.40					
6-21-83	14:35	10.2	21	11	7.7									0.040	<0.01					0.420		12.0			115		210			245			168.90					
8-25-83	14:45	0.58	22	14	7.9								<0.1	0.030	<0.01	<0.01				0.40		11			88.0		250			469			261	214		<0.01		
10-19-83	15:00	0.34	10	2	7.6									<0.001	0.70					<0.02		56			15.0		290			496			256.69					
12-[illegible]-83					8.00									<0.001	<0.10					0.10		44			28.0		330			500			300.12					
3-27-84	10:40	-0-																																					
6-26-84	12:55	3.64	19	10	7.0										<0.1					0.121		27.1			21		228			356			112	185				
9-26-84	15:55	0.39	16	7	7.1										<0.1	0.096	0.008			0.019		87.2			5		346			367			274		237			
9-[illegible]-84	16:15	0.39	16	7	7.1																	85.6					357			370			271		236			
4-27-85	12:20	1.76	13	7	6.2																	46.8			84		271			327			242					
5-29-85	15:00	6.2	16	8	7.0																	26.8			34		207			243			206					
6-7-85		7.5	20	14	7.5										<0.1	0.082	0.017			0.051		29.2			18		252		55	363			205		200			
7-17-85	14:20	0.60	21	9	8.2																	33.8			16		310			461			350					
10-1-85	17:00	0.41	10	3	7.5										<0.1	0.080	<0.005			0.026		152			8.0		357		92	430			172		334			
6-27-86	10:28	2.30	24	7	8.1										<0.1	0.431	0.010			0.033		428			17		168		62	443			224	203	248			
7-29-86	11:00	4.87	18	7	7.2																	56.1			84		459			524			222					
10-15-86	17:20	0.44	4	1	8.0										<0.1	0.204	0.011			0.020		83.8			2.0		361		18	516			349	303	301			
4-23-87	11:55	1.32	19	6	7.2										0.15	0.52	0.011			0.083		47.8			9.0		393		22	429			366		264			
6-15-87	14:00	0.57	23	15	7.0																	33.3			4.4		260			382			232					

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE DISS. mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE DISS. mg/L	MANGANESE TOTAL mg/L	IRON DISS. mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MAGNESIUM TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/l	MAJOR ANIONS meq/l	C-A / C+A x 100	COMMENTS
2-21-83								81.60	5.10								0.820		24.00	0.035				1.55				11.8								
4-21-83								80.80	7.90								1.070		26.12	0.070				1.40				12.0								Light snow shower
6-21-83								44.80	4.00								1.360		7.68	0.055				0.75				6.0								
8-25-83			<0.001	0.450		0.090	<0.001	13.50	4.2	<0.001		<0.001		0.19		0.775	1.330	0.005	8.15	0.049	0.002			4.9	<0.001		<0.001	71.0	0.033							
10-19-83								72.80	6.00								0.260		22.08	0.050				1.4				2.90								
12-[illegible]-83								72.40	16.00								0.870		28.04	0.120				1.9				10.30								
3-27-84																																				
6-26-84								65.7	3.4								0.83		14.8	0.02				1.10				3.45				4.63	2.50			
9-26-84	<0.1						<0.01	76.0	4.6			<0.01					<0.01	<0.01	28.7	0.021		<0.1	<0.01	2.17				2.86	0.050		<0.1	6.33	6.43			
9-26-84								73.7	4.6										28.9					2.13				3.01				6.24	6.35			
4-27-85								70.2	5.2										15.8					1.48				1.02				4.89	5.09			
5-29-85								41.3	2.62										9.9					0.79				2.22				3.17	4.01			
6-7-85	<0.1						<0.01	48.9	3.4			<0.01					0.22	<0.01	16.7	0.015		<0.01	<0.01	1.22	<0.002			1.72	<0.01		<0.1	3.93	4.07			
7-17-85								81.6	5.6										26.1					2.1				2.75				6.33	6.60			
10-1-85	0.10						<0.01	64.5	5.2			<0.01					0.31	<0.01	30.7	<0.01		<0.01	<0.01	3.32	<0.002			2.52	0.015		<0.1	5.96	6.13			
6-27-86	<0.1						<0.01	59.2	7.7			<0.01					0.116	<0.01	18.8	0.015		<0.01	<0.01	1.4	<0.002			2.70	<0.01		<0.1	4.684	4.885	-4.158		
7-29-86								51.8	3.56										24.5					1.40				1.92				4.720	4.908	-3.891		
10-15-86	<0.1						<0.01	69.9	4.48			<0.01					0.182	0.023	48.2	<0.01		<0.01	<0.01	1.0	<0.002			2.29	0.020		<0.01	5.804	5.842	-0.208		
4-23-87	0.080						<0.01	60.1	5.6			<0.01					0.24	0.030	52.2	0.015		<0.01	<0.01	1.4	<0.002			1.6	<0.01		<0.1	7.40	7.16	-1.10		
6-15-87								51.2	3.4										21.4					1.1				2.1				4.44	4.59	1.68		

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CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-10
Location South Fork Eccles Creek above Eccles Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
7-1-87	09:25	0.43	17	10	7.6									
9-7-87	10:50	0.17	15	7	8.3									
4-22-88	13:00	0.29	8	1	7.1									
5-31-88	12:45	1.55	7	5	6.9									
6-29-88	14:00	0.49	24	15	7.2									
7-28-88	09:40	0.10	23	12	7.2									
7-30-88	13:35		18									7.3	0.82	<0.001
8-23-88	08:30	0.08	3	2	7.6							10.8	<0.5	

DATE	NITROGEN AMMONIA as NH_3-N	NITRATE as NO_3-N	NITRITE as NO_2-N	NITROGEN TOTAL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TSS	TOTAL SETTLEABLE SOLIDS	TDS	TOTAL SOLIDS	TOTAL VOLATILE SOLIDS	SPECIF. COND.	TURBIDITY	ALKALINITY AS $CaCO_3$	BICARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	umhos	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
7-1-87								35.8			42		265			414			255					
9-7-87	0.44	0.072	0.0060			0.021		39			18		308		17	453			254	216	263			
4-22-88	0.22	0.66	0.010			0.015		27			11		267			393			257	211	234			
5-31-88								7.3			66		150			290			156					
6-29-88								15.4			8.0		187			384			215					
7-28-88								25.6			6.4		233			393			194					
7-30-88												<0.1										65		
8-23-88								86.8			5.2	<0.1	304			439		0	236	194	252	86		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	$\frac{C-A}{C+A} \times 100$	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MEQ/L	MEQ/L		
7-1-87								70.2	4.38										25.4					1.2				2.0				5.72	5.05	6.21	
9-7-87	<0.1		<0.01				<0.01	50	6.1			<0.01		0.26			0.21	<0.01	38.2	0.025		<0.01	<0.01	1.9	<0.002			0.3	0.212		<0.1	5.70	5.12	5.14	
4-22-88	<0.1						<0.01	67.1	12.3			<0.01					0.18	<0.01	18.9	0.012		<0.01	<0.01	1.4	<0.002			3.0	<0.01		<0.1	5.08	5.12	0.42	3" New Snow - Overcast
5-31-88								39.4	1.13										12.1					1.3				1.4				3.06	2.74	5.56	
6-29-88								47.6	2.08										22.6					1.0				1.4				4.32	3.90	5.12	
7-28-88								58.8	3.73										13.5					0.9				2.1				4.17	3.82	4.36	
7-30-88																																			
8-23-88								69.5	2.9								0.055		28.4	<0.01				0.8				2.0				5.91	5.76	1.33	

R-7-87

CONSULTANTS - ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-10
Location South Fork Eccles Creek above Eccles Creek

DATE	TIME	FLOW cfs	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL mf/L	COLIFORM FECAL mf/L	FECAL STREP mf/L	COD mg/L	B.O.D. mg/L	TOC mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL KJELDAHL mg/L	NITROGEN ORGANIC mg/L	PHOSPHATE TOTAL as PO_4-P mg/L	PHOSPHATE ORTHO as PO_4-P mg/L	SULFATE as SO_4 mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL SUSPENDED mg/L	SOLIDS T.D.S. mg/L	SOLIDS TOTAL DISSOLVED mg/L	SOLIDS TOTAL VOLATILE mg/L	SPECIFIC COND micromhos	TURBIDITY FTU	ALK as $CaCO_3$ mg/L	BI-CARBONATE ALK as HCO_3 mg/L	TOTAL ALK as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pc/L	BETA RADIO-ACTIVITY pc/L
4-25-89	11:30	0.73	6	4	7.0							9.8			<0.2	0.304	<0.01			0.039		18.8			75		215		34	315			216		170			
5-23-89	14:3[illegible]	1.17	20	7	7.4							8.3										100			65		166			280		0	172					
6-21-89	16:18	0.32	15	14	7.5							7.9	<0.5									102			64	<0.1	323			329		0	228			<10		
7-19-89	13:40	0.13	26	18	7.7																	138					344			359		8.8	232					
8-25-89	10:55	0.03	13	8	7.5							10.6	<0.5									368			22	<0.1	721			1087		0	241		414	<10		
4-16-90	11:06	0.38	16	9	7.6																	22			17		236			341		0	228					

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE mg/L	IRON TOTAL mg/L	IRON mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MANGANESE TOTAL mg/L	MANGANESE mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/L	MAJOR ANIONS meq/L	$\frac{C-A}{C+A}$ 100	COMMENTS
4-25-89	<0.1						<0.01	55.7	6.9			<0.01					0.22	<0.01	12.9	0.055		<0.01	<0.01	1.2	<0.005			4.7	0.595		<0.1	4.05	4.13	0.93	
5-23-89								40.9	4.5										34.1					0.6				0.8				4.90	5.03	1.32	
6-21-89								61.0	8.6										34.9					0.7				1.4				5.99	6.10	0.90	
7-19-89								43.8	4.9										58.6					0.7				1.2				7.08	7.11	0.21	
8-25-89								71.5	15.1								0.255		60.3	0.053				12.1				5.83				11.38	12.04	2.83	
4-16-90								43.7	6.0										20.6					1.2				12.1				4.43	4.36	0.78	

8-9-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-11
Location Boardinghouse Creek

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL mg/L	NITROGEN ORGANIC mg/L	PHOSPHATE TOTAL as PO_4-P mg/L	PHOSPHATE ORTHO as PO_4-P mg/L	SULFATE as SO_4 mg/L	MANGANESE as Mn mg/L	HARDNESS as $CaCO_3$ mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL SETTLEABLE mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL mg/L	SOLIDS TOTAL VOLATILE mg/L	COND. µmhos	TURBIDITY FTU	ALK. as CO_3 mg/L	ALK. as HCO_3 mg/L	TOTAL ALK. as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
2-27-80	In Accessible																																					
4-29-80	In Accessible																																					
6-25-80	10:36	6.5	22	9	8.9							8.5		0.016	<0.01					0.070		27.0			33.0		145			230			131.76					
8-25-80	13:10	1.7	17	10	8.4							8.3	<0.01	<0.001	<0.01	0.04				0.060	0.006	16.5			19.0		268			410			268.40	224		<0.1		
10-7-80	12:28	0.9	21	8	8.5									0.014	<0.01					0.070		3.0			8.0		252			390			308.88					
12-10-80	15:13		In Accessible																																			
2-25-81	In Accessible																																					
3-8-81	12:49		In Accessible																																			
6-24-81	10:28	0.6	25	15										<0.001	0.10					0.080		39.0			11.0		258			310			246.44	210		<0.01		
8-26-81	09:48	0.5	23	14									1.60	<0.001	<0.01	<0.01				0.280	0.060	34.0			4.0		285			360			285.48	234		16.00		
10-14-81	13:06	0.5	3	4	7.8									<0.001	0.22					0.280		21.0			51.0		310			470			328.18					
12-23-81	12:45		-11	2	7.9									<0.001	2.70					0.490		32.0			26.0		285			260			304.18	249.84				
2-24-82		-0-																																				
4-14-82	13:22		In Accessible																																			
6-9-82	11:32	5.0	10	9	7.6									<0.001	0.39					0.160		3.0			30.0		155			255			128.50	148				
8-11-82	10:00	1.2	19	13	8.1									<0.001	0.12					0.020		3.0			75.0		283			382			295.70	242.40				
10-5-82	10:40	0.7	9	4	7.7								0.2	<0.001	0.02	0.15				0.180	0.090	15.0			63.0		265			459			291.66	239		<0.01		
12-21-82	In Accessible																																					
2-2-83	In Accessible																																					
4-21-83	In Accessible																																					

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE DISS. mg/L	CHROMIUM HEXAVALENT CR mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE DISS. mg/L	GERMANIUM TOTAL mg/L	IRON DISS. mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L				COMMENTS
2-27-80																																		
4-29-80																																		
6-25-80								37.60	<0.1								0.660		9.60	0.040			0.87				2.20							
8-25-80			<0.001	0.030		0.010	<0.001	70.40	18.0	<0.001		<0.001		0.14		0.050	0.400	<0.001	15.84	0.020	<0.0002		1.19	<0.001		<0.001	7.00	0.002						
10-7-80								65.60	2.2								0.390		18.24	0.026			1.47				8.00							
12-10-80																																		
2-25-81																																		
4-8-81																																		
6-24-81								56.00	4.42								0.790		27.56	0.040			1.27				7.80							
8-26-81			0.003	0.050		0.020	<0.001	71.20	6.67	<0.001		0.010		0.16		<0.001	0.880	<0.001	23.04	0.050	<0.0002		1.67	0.005		<0.001	3.60	0.010						
10-14-81								43.20	5.90								0.920		16.32	0.04			1.65				5.00							
12-23-81								77.50	4.78								0.025		23.00	0.009			0.86				2.10							
2-24-82																																		Frozen - Inaccessible Snow
4-14-82																																		Snow
6-9-82								44.00	3.50							0.150	0.880		9.40	0.060			0.75				2.3							
8-11-82								36.00	35.30								0.630		33.60	0.065			0.98				29.0							
10-5-82			<0.001	0.035		0.090	<0.001	68.00	2.50	<0.001		0.020		0.12		0.995	1.600	<0.001	19.20	0.050	<0.0002		1.48	0.005		<0.001	2.8	0.020						
12-21-82																																		Snow
2-2-83																																		Snow
4-21-83																																		Snow

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-11
Location Boardinghouse Creek

DATE	TIME	FLOW cfs	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH3-N mg/L	NITROGEN NITRATE as NO3-N mg/L	NITROGEN NITRITE as NO2-N mg/L	NITROGEN TOTAL mg/L	NITROGEN ORGANIC mg/L	PHOSPHATE TOTAL as PO4-P mg/L	PHOSPHATE ORTHO as PO4-P mg/L	SULFATE as SO4 mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL SETTLEABLE SOLIDS mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL SOLIDS mg/L	SOLIDS TOTAL VOLATILE SOLIDS mg/L	SPECIFIC COND. µmhos/cm	TURBIDITY FTU	ALKALINITY ALK. as CaCO3 mg/L	BI-CARBONATE ALK. as HCO3 mg/L	TOTAL ALK. as CaCO3 mg/L	TOTAL HARDNESS as CaCO3 mg/L	ACIDITY as CaCO3 mg/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
6-21-83	13:00	12.8	20	11	7.4									0.320	<0.01					0.520		12.0			201		194			207			180					
8-24-83	16:35	2.55	12	15	7.3								<0.1	0.195	<0.01	<0.01				0.47		13			140		255			397			248.48	220		<0.01		
10-9-83	11:15	0.65	9	4	7.4									<0.001	1.25					0.03		34			123		288			451			285.48					
12-[illegible]-83	Inaccessible																																						
3-27-84	11:40		Inaccessible																																				
4-26-84	14:46	8.42	22	14	7.6										<0.1					0.085		19.1			32		184			300			89	146				
9-26-84	10:55	1.6	14	7	7.5										<0.1	0.173	0.006			0.037		24.8			8		235			263			310		199			
4-27-85	11:12		Inaccessible																																				
5-30-85	10:30	6.9	9	12	7.6																	18.8			56		170			172			142					
6-7-85	12:00	2.96	24	17	7.9										<0.1	0.192	0.025			0.034		24.3			17		200		49	201			175		180			
7-17-85	09:20	1.03	18	13	7.9																	22.2			15		300			347			325					
10-1-85	13:55	0.98	14	6	7.3										<0.1	0.110	<0.005			0.035		38.3			1.6		286		63	359			245		279			
6-24-86	16:30	4.50	23	12	7.4										<0.1	0.083	0.010			0.053		25.9			10		114		31	436			184	151	203			
7-29-86	18:30	1.53	21	16	7.0																	26.7			6.4		459			404			202					
10-15-86	16:40	1.24	6	5	6.9										<0.1	0.292	0.008			<0.01		29.4			3.2		331		18	465			390	323	257			
4-23-87	13:47	3.05	16	9	7.5										0.17	0.44	0.045			0.158		21.3			76		385		32	306			997		178			
6-15-87	09:30	0.49	20	13	7.2																	27.4			8.0		291			369			264					
7-1-87	13:05	0.62	22	10	7.5																	32.4			21		282			458			227					
9-8-87	11:40	0.27	16	9	8.2										0.042	0.11	0.0051			0.040		31			9.9		253		15	440			302	248	255			
4-22-88	11:15	0.66	3	4	7.1										<0.1					0.016		30			9.0		314			426			268	224	153			

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE mg/L	MANGANESE TOTAL mg/L	IRON mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MANGANESE TOTAL mg/L	MANGANESE TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/l	MAJOR ANIONS meq/l	C-A/C+A x 100	COMMENTS
6-21-83								35.20	4.00								2.100		5.76	0.095				0.85				5.8								
8-24-83			<0.001	0.670		0.140	<0.001	33.40	3.7	<0.001	<0.001			0.12		0.155	1.880	<0.001	4.98	0.088	<0.002			0.7	<0.001		<0.001	59.0	0.050							
10-9-83								71.20	4.00								0.170		21.60	0.030				1.6				3.20								
12-[illegible]-83																																				Covered with Snow
3-27-84																																				Covered with Snow
4-26-84								51.5	4.0								0.32		11.6	0.02				1.13				2.76				3.66	1.97		
9-26-84	<0.1						<0.01	75.0	5.8			<0.01					<0.01	<0.01	21.9	0.027		<0.1	<0.01	1.49				3.32	0.050		<0.1	5.73	5.76		
4-27-85																																				Covered with Snow
5-30-85								38.5	3.20										9.4					1.08				2.56				2.83	2.81		
6-7-85	<0.1						<0.01	42.9	4.3			<0.01					0.20	<0.01	13.1	0.010		<0.01	<0.01	0.90	<0.002			1.94	0.01		<0.1	3.33	3.50		
7-17-85								73.9	3.8										20.5					1.3				3.22				5.56	5.90		
10-1-85	<0.1						<0.01	64.3	6.5			<0.01					0.19	<0.01	23.1	<0.01		<0.01	<0.01	2.37	<0.002			2.98	0.013		<0.1	5.31	5.00		
6-24-86	0.11						<0.01	48.9	6.6			<0.1					0.18	<0.01	18.7	0.015		<0.01	<0.01	0.9	<0.002			2.62	0.012		<0.1	3.705	3.743	-1.030	
7-29-86								48.5	5.28										19.6					1.08				1.64				4.132	4.016	2.860	
10-15-86	<0.1						<0.01	66.7	4.69			<0.01					0.095	0.030	41.2	<0.01		<0.01	<0.01	1.2	<0.002			2.49	0.015		<0.01	6.034	7.347	-6.907	
4-23-87	0.98						<0.01	80.8	5.2			<0.01					2.16	0.028	46.1	0.058		<0.01	<0.01	1.2	<0.002			1.60	<0.01		<0.1	7.43	7.10	-1.55	
6-15-87								58.1	3.7										22.0					1.0				2.7				4.86	5.00	1.47	
7-1-87								52.4	7.02										25.3					1.1				2.4				4.83	4.59	1.55	
9-8-87	<0.1		<0.01				<0.01	66	7.4			<0.01		<0.1			0.021	<0.01	35.2	0.020		<0.01	<0.1	1.6	<0.002			0.3	0.030		<0.1	6.25	5.80	3.69	
4-22-88	<0.1						<0.01	65.8	9.2			<0.01					0.34	<0.01	22.3	<0.01		<0.01	<0.01	1.3	<0.002			3.7	0.048		<0.1	5.32	5.28	0.41	3" New Snow-Opened

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CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-11
Location Boardinghouse Creek

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L	NITROGEN AMMONIA as NH_4^+N MG/L	NITROGEN NITRATE as NO_3^-N MG/L	NITROGEN NITRITE as NO_2^-N MG/L	NITROGEN TOTAL ALGAL MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4^{-3} MG/L	PHOSPHATE ORTHO as PO_4^{-3} MG/L	SULFATE as SO_4 MG/L	CHLORIDE as Cl MG/L	FLUORIDE as F MG/L	SOLIDS TDS MG/L	SOLIDS TOTAL SETTLEABLE MG/L	SOLIDS T.S.S. MG/L	SOLIDS TOTAL MG/L	SOLIDS TOTAL VOLATILE MG/L	SPECIFIC COND. µmhos	TURBIDITY FTU	ALKALINITY ALK. as CO_3 MG/L	ALKALINITY ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY PC/L	BETA RADIO-ACTIVITY PC/L
5-24-88	11:15	1.87	8	7	6.9																	10.9			16		148			281			155					
6-28-88	17:50	0.80	11	10	7.9																	14.1			72		242			586			294					
7-28-88	14:05	0.51	19	16	7.6																	13.7			7.2		300			458			188					
7-30-88	12:30		22									6.8	<0.5	<0.001												<0.1									102			
8-22-88	11:20	0.39	7	7	6.9							10.1	<0.5									76.4			5.2	<0.1	301			459		0	252	207	258	92		

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEXavalent MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L	GERMANIUM TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	STRONTIUM TOTAL MG/L	SULFIDE as S MG/L	MAJOR CATIONS MEQ/L	MAJOR ANIONS MEQ/L	$\frac{C-A}{C+A}$ 100	COMMENTS
5-24-88								38.1	2.26										12.9				1.3				1.8				3.08	2.83	4.23	
6-28-88								49.9	3.12										31.2				1.4				2.2				5.19	4.63	5.69	Light Rain
7-28-88								45.5	5.94										22.3				1.6				2.5				4.26	4.16	1.23	
7-30-88																																			
8-22-88								66.3	3.3								0.120		31.8	<0.01			1.7				3.1				6.10	5.81	2.43	

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CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-11
Location Boardinghouse Creek above Spring houses

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHORUS TOTAL as PO_4-P	PHOSPHORUS ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as FDAS	SOLIDS TDS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS TSS	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC CONC	TURBIDITY	CARBONATE ALK as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µmhos/cm	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	PCI/L	PCI/L
4-26-89	10:37	1.24	6	3	7.4							9.4			<0.2	0.243	<0.01			0.059		18.3			15		196		59	320			188		178			
5-23-89	10:26	1.30	17	7	7.3							8.5										130			7.0		164			296		0	177					
6-21-89	10:40	0.63	5	6	7.1							8.9	<0.5									29.0			8.0	<0.1	234			399		0	258			<10		
7-19-89	8:55	0.33	13	9	7.5																	76					300			500		0	307					
9-26-89	12:25	0.226	20	8	7.6							10.5	<0.5									33			2.5	<0.1	276			510		0	317		269	<10		
9-14-90	09:28	0.64	15	9	7.5																	28			11		217			570		0	214					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	FERROMANGANESE TOTAL	IRON DISS	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	PHOSPHORUS TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	C-A / C+A 100	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MEQ/L	MEQ/L		
4-26-89	<0.1						<0.01	46.8	8.1			<0.01					0.76	0.030	12.0	0.085		<0.01	<0.01	1.2	<0.002			5.8	0.255		<0.1	3.61	3.69	1.10	
5-23-89								40.2	5.4										12.2					0.7				1.8				5.57	5.76	1.63	
6-21-89								47.1	11.3										28.5					0.8				2.0				4.80	5.15	3.50	
7-19-89								51.9	7.3										17.9					0.9				3.2				6.69	6.87	0.93	
9-26-89								70.2	8.2								0.310		35.4	<0.01				1.1				4.0				6.62	6.11	3.96	
9-14-90								39.5	4.8										21.6					1.2				10.6				4.24	4.23	0.17	

R-3-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-12
Location Finn Canyon Creek

DATE	TIME	FLOW	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH_3-N mg/L	NITROGEN NITRATE as NO_3-N mg/L	NITROGEN NITRITE as NO_2-N mg/L	NITROGEN TOTAL mg/L	NITROGEN ORGANIC mg/L	PHOSPHATE TOTAL as PO_4-P mg/L	PHOSPHATE ORTHO as PO_4-P mg/L	SULFATE as SO_4 mg/L	CHLORIDE as Cl mg/L	FLUORIDE as mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL DISSOLVED mg/L	SOLIDS TSS mg/L	SOLIDS TOTAL SUSPENDED mg/L	SOLIDS TOTAL VOLATILE mg/L	COND. µmhos/cm	TURBIDITY FTU	TOTAL ALK. as $CaCO_3$ mg/L	BI-CARBONATE ALK. as HCO_3 mg/L	TOTAL ALK. as $CaCO_3$ mg/L	TOTAL HARDNESS as $CaCO_3$ mg/L	ACIDITY as $CaCO_3$ mg/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
2-27-80	In-Accessible																																						
4-29-80	In-Accessible																																						
6-25-80	10:20	41.2	20	6.5	8.7							8.8		<0.002	<0.01					0.080		16.0			30.0		125			210			172.12					
8-25-80	12:53	0.3	13	9	7.9							6.7	<0.01	<0.001	0.11	<0.01				0.550	0.040	13.5			87.0		238			370			251.32	206		6.0		
10-1-80	12:13	0.004	20	10	8.4									<0.001	<0.01					0.060		15.0			1.0		318			490			368.44					
12-10-80	15:08	-0-																																					
2-25-81		-0-																																					
4-8-81	12:46	-0-																																					
6-24-81	10:10	0.4	24	13	8.6									<0.001	<0.05					0.130		14.9			3.0		159			209			175.68	148		<0.01		
8-26-81	09:36	-0-																																					
10-14-81	10:35	-0-																																					
12-23-81	11:50	In-Accessible																																					
2-29-82		-0-	In-Accessible																																				
4-14-82		-0-	In-Accessible																																				
6-9-82	11:18	3.8	18	6	7.6									0.003	0.42					0.080		6.8			36.0		149			158			163	133.6				
8-11-82	09:50	0.04	18	12	8.0									<0.001	0.09					0.030		3.6			21.0		292			335			269	224.50				
10-13-82	10:13	0.06	7	3	7.8								2.4	<0.001	0.06	0.07				0.100	0.050	18.0			7.0		260			390			280.0	228.40		5.00		
12-2-82	In-Accessible																																						
2-10-83	In-Accessible																																						
4-21-83	In-Accessible																																						

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE DISS mg/L	CHROMIUM HEXAVALENT CR mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE DISS. mg/L	HERBICIDES TOTAL mg/L	IRON DISS mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MANGANESE TOTAL mg/L	MAGNESIUM TOTAL mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO_2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	VANADIUM TOTAL mg/L				COMMENTS
2-27-80																																			
4-29-80																																			
6-25-80								30.40	<0.1								0.770		8.16	0.020				0.68				2.10							
8-25-80			<0.001	0.030		0.020	<0.001	62.40	12.0	<0.001		0.010		0.15		0.040	7.700	<0.001	16.80	0.020	<0.0002			1.88	<0.001		<0.001	3.50	0.004						
10-1-80								79.20	4.2								8.200		22.08	0.031				1.86				13.00							
12-10-80																																			
2-25-81																																			
4-8-81																																			
6-24-81								44.80	263								0.020		1.52	0.010				0.58				1.90							
8-26-81																																			
10-14-81																																			
12-23-81																																			Snow
2-29-82																																			Frozen - Snow
4-14-82																																			Snow
6-9-82								0.41	1.60							0.030	0.230		8.70	0.045				0.64				2.2							
8-11-82								49.60	49.30								0.210		23.04	0.075				0.65				33.0							
10-13-82			<0.001	0.030			<0.001	64.80	4.00	<0.001		0.010		0.11		0.045	0.110	<0.001	17.28	0.015	<0.001			1.88	<0.001		<0.001	8.0	0.002						
12-2-82																																			Snow
2-10-83																																			Snow
4-21-83																																			Snow

A 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-12
Location Finn Canyon Creek

DATE	TIME	FLOW cfs	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	C.O.D. mg/L	B.O.D. mg/L	T.O.C. mg/L	DISSOLVED OXYGEN mg/L	OIL & GREASE mg/L	PHENOL mg/L	NITROGEN AMMONIA as NH3-N mg/L	NITROGEN NITRATE as NO3-N mg/L	NITROGEN NITRITE as NO2-N mg/L	NITROGEN TOTAL KJELDAHL mg/L	NITROGEN ORGANIC mg/L	PHOSPHORE TOTAL as PO4-P mg/L	PHOSPHORE ORTHO as PO4-P mg/L	CHLORIDE as Cl mg/L	FLUORIDE as F mg/L	SULFATE as SO4 mg/L	SOLIDS TDS mg/L	SOLIDS TOTAL SETTLABLE SOLIDS mg/L	SOLIDS T.S.S. mg/L	SOLIDS TOTAL SOLIDS mg/L	SOLIDS TOTAL VOLATILE SOLIDS mg/L	SPECIFIC COND. µmhos	TURBIDITY FTU	BICARBONATE ALK. as CO3 mg/L	BI-CARBONATE ALK. as HCO3 mg/L	TOTAL ALK. as CaCO3 mg/L	TOTAL HARDNESS as CaCO3 mg/L	ACIDITY as CaCO3 mg/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
6-21-83	12:30		22	9	8.0									<0.001	<0.01					0.500		21.0			228		212			193			186.60					
8-24-83	16:20	0.38	15	11	7.3								<0.1	<0.001	<0.01	<0.01				0.51		19			174		247			442			283	232		<0.01		
10-19-83	09:25	0.08	5	4	7.4									<0.001	0.60					0.04		38			10.0		300			488			287.44					
12-[illegible]-83	Inaccessible																																						
3-27-84	11:43		Inaccessible																																				
6-26-84	16:10	3.01	15	9	7.4										<0.1					0.095		15.3			24		165			225			83	135				
8-26-84	10:40	0.16	11	7	8.1										<0.1	0.074	0.006			0.037		43.8			6		304			166			318		215			
4-27-85	10:45		Inaccessible																																				
5-30-85	10:02	3.8	7	5	7.5																	16.2			109		186			167			51.4					
6-17-85	11:30	1.26	23	11	7.7										<0.1	0.060	0.019			0.044		13.1			24		160		43	258			148		164			
7-17-85	09:00	0.22	18	12	7.9																	17.8			5.2		276			256			328					
10-1-85	14:15	0.15	14	6.5	7.3										<0.1	0.083	<0.005			0.055		42.8			<1		319		77	363			278		295			
6-27-86	12:25	1.15	26	12	8.3										<0.1	0.273	0.011			0.045		22.4			10		146		22	335			166		175	136		
7-8-86	12:45	0.18	21	10	7.1																	38.1			2.8		330			497			258					
10-15-86	16:56	0.20	6	5	7.5										<0.1	0.100	0.007			0.111		49.7			104		397		29	542			426	357	320			
4-23-87	13:00	0.74	16	7	7.4										<0.1	0.58	0.033			0.114		22.6			11		296		23	397			459		293			
6-15-87	09:00	0.24	20	11	7.7																	18.6			4.4		247			292			221					
7-1-87	12:35	0.10	21	10	7.4																	18.7			19		276			405			234					
9-9-87	11:35	0.04	14	8	8.2										0.22	0.051	0.004			0.078		35			42		371		30	523			341	279	317			
4-22-88	10:50	0.04	4	5	7.2										<0.1	0.47	0.010			0.028		60			9.0		322			510			334	276	200			

DATE	ALUMINUM TOTAL mg/L	ANTIMONY TOTAL mg/L	ARSENIC TOTAL mg/L	BARIUM TOTAL mg/L	BERYLLIUM TOTAL mg/L	BORON TOTAL mg/L	CADMIUM TOTAL mg/L	CALCIUM TOTAL mg/L	CHLORIDE DISS. mg/L	CHROMIUM HEXAVALENT mg/L	COBALT TOTAL mg/L	COPPER TOTAL mg/L	CYANIDE as CN mg/L	FLUORIDE DISS. mg/L	HERMANIUM TOTAL mg/L	IRON DISS. mg/L	IRON TOTAL mg/L	LEAD TOTAL mg/L	MAGNESIUM TOTAL mg/L	MANGANESE mg/L	MERCURY TOTAL mg/L	MOLYBDENUM TOTAL mg/L	NICKEL TOTAL mg/L	POTASSIUM TOTAL mg/L	SELENIUM TOTAL mg/L	SILICA as SiO2 mg/L	SILVER TOTAL mg/L	SODIUM TOTAL mg/L	ZINC TOTAL mg/L	STRONTIUM TOTAL mg/L	SULFIDE as S mg/L	MAJOR CATIONS meq/l	MAJOR ANIONS meq/l	CA/CA+K x 100	COMMENTS
6-21-83								35.20	12.00								2.900		5.96	0.095				0.83				16.8							
8-24-83			<0.001	0.390		0.140	<0.001	36.50	10.8	<0.001	<0.001			0.13		1.9945	3.010	<0.001	6.60	0.090	<0.0002			0.9	<0.001		<0.001	67.0	0.075						Scattered rain Showers
10-19-83								73.60	6.00								0.230		24.96	0.030				1.8				4.60							
12-[illegible]-83																																				Covered with Snow
3-27-84																																				Covered with Snow
6-26-84								46.5	3.1								1.01		10.4	<0.01				0.95				2.89				3.33	1.77		
8-26-84	<0.1						<0.01	80.2	5.0			<0.01					0.025	<0.01	24.2	0.027		<0.1	<0.01	1.65				4.15	0.041		<0.1	6.22	6.26		
4-27-85																																				Covered with Snow
5-30-85								18.9	3.67										2.2					0.78				2.95				1.27	1.28		
6-17-85	<0.1						0.015	37.8	4.2			<0.01					0.33	<0.01	11.4	<0.01		<0.01	<0.01	0.79	<0.002			1.93	<0.01		<0.1	2.92	2.82		
7-17-85								86.1	4.0										21.1					1.2				3.68				6.24	5.78		
10-1-85	<0.1						<0.01	68.6	6.2			<0.01					0.19	<0.01	26.6	<0.01		<0.01	<0.01	2.42	<0.002			3.86	0.018		<0.1	5.85	5.62		
6-27-86	0.011						<0.01	42.7	7.0			<0.01					0.20	<0.01	13.0	<0.01		<0.01	<0.01	0.8	<0.002			2.61	<0.01		<0.1	3.334	3.389	-1.646	
7-8-86								60.2	4.53										22.8					1.17				2.82				5.033	6.150	-2.303	
10-15-86	<0.1						<0.01	76.2	5.47			<0.01					0.105	0.055	50.8	0.015		<0.01	<0.01	1.9	<0.002			3.44	0.020		<0.01	6.73	8.380	-2.105	
4-23-87	0.17						<0.01	83.6	4.8			<0.01					0.36	0.030	46.4	<0.01		<0.01	<0.01	1.1	<0.002			2.8	<0.01		<0.1	8.30	8.11	-0.69	
6-15-87								48.6	4.6										18.5					0.9				2.9				4.10	4.14	-0.47	
7-1-87								50.4	7.02										13.4					1.1				2.6				4.59	4.42	1.81	
9-9-87	<0.1		<0.01				<0.01	72	8.4			<0.01		0.10			0.68	<0.01	41.1	0.038		<0.01	<0.01	1.8	<0.002			0.5	0.038		<0.1	7.04	6.55	3.56	
4-22-88	<0.1						<0.01	79.8	8.5			<0.01					0.44	<0.01	29.8	<0.01		<0.01	<0.01	1.9	<0.002			4.7	0.031		<0.1	6.70	6.96	1.95	3" New Snow - Overcast

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CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE INC
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-12
Location Finn Canyon Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	PHENOLIC as OH	SURFACTANT as MBAS	SOLIDS TDS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.S.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND.	TURBIDITY	HARDNESS ALK. as CO_3	HARDNESS ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MICROMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
5-31-88	10:30	0.81	5	4	7.1																	2.9			11		105			226			131					
6-28-88	18:20	0.171	11	11	7.6																	15.3			39		171			325			205					
7-28-88	14:45	0.008	22	12	7.6																	155			16		405			549			225					
7-30-88	12:40		20									5.2	<0.5	<0.001												<0.1										79		
9-27-88	11:00	0.00003	8	4	7.1							6.9	<0.5									75.6			47	<0.1	387			590		0	327	268	318	90		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS	CHROMIUM HEX. as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	HERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	$\frac{C-A}{C+A} \times 100$	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MEQ/L	MEQ/L		
5-31-88								22	1.69										10.8					1.6				2.0				2.12	2.24	2.76	
6-28-88								43.6	2.37										20.2					1.8				2.0				3.98	3.75	3.02	Raining
7-28-88								77.8	5.84										35.6					2.0				3.2				7.01	7.08	0.47	
7-30-88																																			
9-27-88								75.9	2.9									1.07	36.4	0.048				2.1				4.0				7.01	7.02	0.03	

8-7-87

CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-12
Location Finn Canyon Creek above Clear Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL ALBUM.	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS TDS	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µmhos	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
4-25-89	10:00	0.153	8	5	8.2							8.6			<0.2	0.253	<0.01			0.055		17.8			8.5		205		67	329			216		174			
5-2-89	09:38	0.424	16	8	7.7							9.2										89.8			11		154			242		0	172					
6-21-89	09:40	0.101	5	7	7.3							7.8	<0.5									88			8.4	<0.1	218			283		0	228			<10		
7-19-89	08:30	0.002	18	9	7.3																	48					321			347		0	320					
9-25-89	15:20	0.0004	19	10	7.8							7.9	<0.5									45			61	<0.1	354			544		0	341		314	<10		
4-16-90	10:45	0.0285	15	8	7.4																	36			52		287			486		0	302					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	MANGANESE TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	SULFIDE as S	MAJOR CATIONS	MAJOR ANIONS	$\frac{C-A}{C+A} = 100$	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MEQ/L	MEQ/L		
4-25-89	<0.1						<0.01	51.6	7.9			<0.01					0.44	0.065	14.8	0.045		<0.01	<0.01	0.8	<0.002			4.6	0.315		<0.1	4.01	4.13	1.48	
5-2-89								32.1	3.2										39.1					0.7				1.4				4.90	4.78	1.23	
6-21-89								53.2	10.9										53.2					0.6				2.1				5.49	5.88	3.37	
7-19-89								31.8	6.4										58.9					1.4				1.9				6.55	6.42	0.98	
9-25-89								78.8	7.7								0.770		39.8	0.060				1.4				3.9				7.41	6.74	4.73	
4-16-90								42.9	5.3										32.7					1.9				12.9				5.44	5.85	3.61	

R-7-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station CS-1
Location Upper South Fork Eccles Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL DETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
11-8-78	11:25	0.4	5	1	7.4						4.0	11.5				0.15	<0.01	0.10			0.024	14.0			11.0		252			440			287.92					
12-27-78	14:30																																						
5-11-79	15:40	0.6	1	1	8.4						8.00		<1.0	0.010	<0.10	1.28				0.05		10.0			4.0		270			410	0.85		335.48	334		14.0		
6-20-79	12:02	3.6	16	7	8.4	49.0	2.0			<1.0	3.00	8.7	<1.0	<0.001	<0.01	0.18				0.015	0.010	6.0			13.0		190			325	10.00		217.16	178		12.0	2.9	9.5
7-18-79	10:30	0.4	21	7.5	7.62						10.50	8.4	<1.0	0.024	<0.01	0.08				0.020		10.0			5.0		223			420	3.90	<0.01	256.20	210		24.0		
7-23-79	10:47	0.3	18	5	7.8	700	4.0			2.3	9.00	8.7	<1.0	<0.001	<0.05	0.09				0.120		6.0			6.0		254			420	2.00		309.96	240		16.0	<2.0	4.0
7-26-79	17:45	0.3	15	8.0	7.12						3.00	7.2		<0.001	<0.01	0.06				0.020		11.0			11.0		268			410	2.50		297.68	244		18.0		
6-26-80	09:33	3.4																																					
7-23-80																																							
8-26-80		0.9	7	6	8.3																									375									
9-16-80	09:38	0.28	9	6	7.8																									410									
10-7-80	12:28	0.215	20	9	8.7																									420									
11-19-80	11:18		-2	0	7.6																																		
12-24-80	In-Accessible																																						
1-29-81	In-Accessible																																						
2-25-81	In-Accessible																																						
3-11-81	In-Accessible																																						
4-8-81	In-Accessible																																						

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
11-8-78			<0.001	0.012			<0.001	67.4	<1.0	<0.001		0.005	<0.01	0.13			0.045		15.84	0.003				1.022	<0.001	4.75	<0.001	13.68	0.004					
12-27-78																																		In-accessible
5-11-79			<0.001	0.010		0.110	<0.001	72.0	6.0	0.005		0.003	0.006	0.12		0.022	0.081	0.003	17.28	0.002	<0.0002			0.962	0.001		0.005	2.10	0.009					
6-20-79			<0.001	0.090		0.059	<0.001	55.2	2.0	0.003		0.003	0.005	0.12		0.200	0.330	0.009	11.52	0.005	<0.0002			0.677	<0.001		0.003	1.67	0.017					
7-18-79			<0.001	0.030		0.097	<0.001	61.6	4.0	0.003		0.008	<0.001	0.16		0.030	0.100	0.001	14.64	0.005	<0.0002			0.909	<0.001		0.001	3.11	0.020					
7-23-79			<0.001	0.020		0.015	<0.001	83.2	<0.1	0.005		0.005	<0.001	0.20		0.045	0.149	<0.001	3.84	0.002	<0.0002			1.140	<0.001		<0.001	9.00	0.031					
7-26-79			<0.001	0.025		0.070	<0.001	84.1	<0.1	<0.001		0.009	<0.001	0.21		0.010	0.240	<0.001	3.70	0.005	<0.0002			1.120	<0.001		<0.001	12.50	0.035					
6-26-80																																		
7-23-80																																		
8-26-80																																		
9-16-80																																		
10-7-80																																		
11-19-80																																		
12-24-80																																		
1-29-81																																		
2-25-81																																		
3-11-81																																		
4-8-81																																		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station CS-1
Location Upper South Fork Eccles Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY	
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	μMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L	

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L					
11-8-78																																			
12-22-78																																			
5-11-79			<0.001	0.01		0.105	<0.001			<0.001		0.003				0.022	0.081	<0.001							<0.001		<0.001		0.006						
6-20-79			<0.001	0.050		0.040	<0.001			<0.001		0.003				0.200	0.230	<0.001							<0.001		<0.001		0.010						
7-18-79			<0.001	0.020		0.050	<0.001			<0.001		0.005				0.020	0.100	<0.001							<0.001		<0.001		0.018						
8-23-79			<0.001	0.013		0.010	<0.001			<0.001		0.001				0.045	0.149	<0.001							<0.001		<0.001		<0.001						
9-26-79			<0.001	0.010		0.050	<0.001			<0.001		0.002				0.010	0.240	<0.001							<0.001		<0.001		0.007						
6-26-80																																			
7-23-80																																			
8-26-80																																			
9-16-80																																			
10-7-80																																			
11-19-80																																			
12-24-80																																			
1-27-81																																			
2-25-81																																			
3-11-81																																			
4-8-81																																			

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station 35-7
Location Burnout Creek
above Huntington Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L

DATE	ALUMINUM DISS.	ANTIMONY DISS	ARSENIC DISS.	BARIUM DISS	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Ca	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
11-8-78																																		
2-27-79																																		
5-11-79			<0.001	0.010		0.060	<0.001			<0.001		0.004				0.012	0.201	<0.001							<0.001		<0.001		0.004					
6-22-79			<0.001	0.040		0.015	<0.001			<0.001		0.005				0.020	0.270	<0.001							<0.001		<0.001		0.010					
7-20-79			<0.001	<0.001		0.090	<0.001			<0.001		<0.001				0.030	0.240	<0.001							<0.001		<0.001		0.007					
8-23-79			<0.001	0.002		0.045	<0.001			0.002		<0.001				0.058	0.250	<0.001							<0.001		<0.001		0.008					

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station C.S.-7
Location Burnout Creek above Huntington Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	μMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
11-8-78	13:10	0.5	14	1.5	7.4							11.6				0.98	<0.01	0.12			0.020	9.0			7.0		210			370			239.12					
12-29-78	12:30	-0-																																					
5-11-79	11:33	1.3	1	2	7.8						13.00	9.2	<1.0	<0.001	<0.10	4.00				0.08		8.0			8.0		240			360	0.85		226.92	186		14.0		
6-20-79	16:40	5.5	16	12	8.3	170	<2.0				1.50	7.4	<1.0	<0.001	<0.01	0.62				0.015		14.0			9.0		185			290	5.00		212.40	170		2.0	2.4	12.0
7-20-79	16:35	2.0	21	13	9.15						7.00	7.3	<1.0	0.034	<0.01	0.71				0.020		6.0			4.0		200			345	5.00		231.81	190		16.0		
8-23-79	19:00	0.5		12.5	7.2						7.50	7.4	<1.0	0.008	<0.01	0.97				0.020		15.0			3.0		210			370	5.00		204.92	184		4.0	<2.0	4.0
9-25-79	13:56	0.4	15	9.0	7.25						4.0		1.6	0.003	<0.01	0.73				0.020		18.3			1.0		210				5.30		222.04	182		4.0		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MAGNESIUM TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
11-8-78			<0.001	<0.01			<0.001	59.2	<0.01	<0.001		0.001	<0.01	0.09			0.090		6.24	0.021				0.090	<0.001	4.0	<0.001	15.82	0.002				
12-29-78																																		
5-11-79			<0.001	0.010		0.065	<0.001	65.60	6.0	0.006		0.013	<0.001	0.10		0.012	0.201	0.003	9.12	0.010	<0.0002			0.799	<0.001		0.003	2.07	0.013					
6-20-79			<0.001	0.040		0.046	<0.001	58.40	<1.0	0.001		0.005	<0.001	0.52		0.020	0.270	0.001	8.64	0.007	<0.0002			0.708	<0.001		0.003	1.98	0.013					
7-20-79			<0.001	0.020		0.095	<0.001	60.00	2.0	0.001		0.004	0.001	0.14		0.030	0.240	0.015	10.08	0.012	<0.0002			0.759	<0.001		<0.001	2.20	0.011					
8-23-79			<0.001	0.095		<0.005	<0.001	73.60	<0.1	0.004		0.006	<0.001	0.17		0.058	0.250	<0.001	2.88	0.002	<0.0002			0.790	<0.001		<0.001	2.80	0.015					
9-25-79			<0.001	0.028		0.140	<0.001	75.60	<0.1	0.006		0.010	.005	.13		0.030	0.180	<0.001	2.14	0.003	<0.0002			0.710	<0.001		<0.001	2.54	0.019					

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S-1
Location

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS T.S.S.	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS/CM	NTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
9-12-83	18:26	3	18	10	7.4										0.40	<0.01	<0.01			0.20	<0.02	27					320			538		<0.01	35380	290	295		
10-19-83	15:30	0.01	2	8	7.5									<0.001	<0.20					0.19		32					324			519			326.96				
6-26-84	13:08	0.01	14	8	7.1										<0.1						<0.01	31.3					328			558			164	270			

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEXAVALENT CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.	SULFIDE	NITRATE as NITRITE	HARDNESS TOTAL	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	
9-12-83	0.005		<0.001	0.150		0.100	<0.001	72.80	6.00	<0.001		<0.001		0.17		0.230	0.280	<0.001	27.84	0.120	<0.0002	<0.001	<0.001	3.5	<0.001			10.0	0.015		0.40	<0.01	0.225	
10-19-83								72.80	4.00								1.690		28.32	0.050				2.9				3.20							
6-26-84								73.8	4.2								0.42		30.4	0.05				2.85				3.27							

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S 25-1
Location

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS/CM	NTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
8-25-83					8.00																	64.0					295			450		<4.01	226.92				
12-[illegible]	Inaccessible																																					

DATE	ALUMINUM DISS	ANTIMONY DISS	ARSENIC DISS	BARIUM DISS	BERYLLIUM DISS	BORON DISS	CADMIUM DISS	CALCIUM DISS	CHLORIDE DISS	CHROMIUM HEX as CR	COBALT DISS	COPPER DISS	CYANIDE as Cn	FLUORIDE DISS	GERMANIUM DISS	IRON DISS	IRON TOTAL	LEAD DISS	MAGNESIUM DISS	MANGANESE DISS	MERCURY DISS	MOLYBDENUM DISS	NICKEL DISS	POTASSIUM DISS	SELENIUM DISS	SILICA as SiO_2	SILVER DISS	SODIUM DISS	ZINC DISS	VANADIUM DISS	S.A.R.	NITRATE - NITRITE		COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L		MG/L		
8-25-83								73.60	6.0										2.40					5.8				26.0						
12-[illegible]																																		Snow

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S25-2
Location

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND	TURBIDITY	CARBONATE ALK. as $CaCO_3$	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS/CM	NTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
9-12-83	17:20	0.02	15	8	7.9																									418							
10-19-83	13:45	0.003	4	2	7.4																									389							
12-[illegible]	Inaccessible																																				
6-26-84	11:04	0.07	19	5	8.0																									252							

DATE	ALUMINUM DISS	ANTIMONY DISS	ARSENIC DISS.	BARIUM DISS	BERYLLIUM DISS	BORON DISS.	CADMIUM DISS	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEXAVALENT CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.	S.A.R.	NITRATE + NITRITE		COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L		MG/L		
9-12-83																																		
10-19-83																																		
12-[illegible]																																		Snow
6-26-84																																		

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S25-6
Location

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3^--N	NITROGEN NITRITE as NO_2^--N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY	
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS/CM	NTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L	
9-12-83	1735	0.007	15	4	7.5																									527									
10-19-83	14:00	0.008	7	4	7.4																									452									
12-[illegible]-83	Inaccessible																																						
6-26-84	11:20	0.22	14	16	7.8																									406									

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.	S.A.R.	NITRATE + NITRITE		COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L		MG/L		
9-12-83																																		
10-19-83																																		
12-[illegible]-83																																		Snow
6-26-84																																		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station S32-3
Location

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL RETURNABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
11-19-83	11:15	0.47	1	7	7.1																									343								
12-[illegible]	Inaccessible																																					
6-26-84	14:50		22	9	7.2										<0.1						<0.01	51.0					390			557			173	282			

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
11-1983																																		
12-[illegible]-83																																		Snow
6-26-84								84.8	4.5								0.38		32.4	0.01				1.76				3.37						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station UPL-3
Location HUNTINGTON CREEK BELOW ELECTRIC LAKE

DATA FROM UP&L

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOL (MG/L)	NITROGEN AMMONIA as NH_3-N (MG/L)	NITROGEN NITRATE as NO_3-N (MG/L)	NITROGEN NITRITE as NO_2-N (MG/L)	NITROGEN TOTAL KJELDAHL (MG/L)	NITROGEN ORGANIC (MG/L)	PHOSPHATE TOTAL as PO_4-P (MG/L)	PHOSPHATE ORTHO as PO_4-P (MG/L)	SULFATE as SO_4 (MG/L)	HYDROXIDE as OH (MG/L)	SURFACTANT as MBAS (MG/L)	SOLIDS TSS (MG/L)	SOLIDS TOTAL SETTLEABLE SOLIDS (ML/L)	SOLIDS T.D.S. (MG/L)	SOLIDS TOTAL SOLIDS (MG/L)	SOLIDS TOTAL VOLATILE SOLIDS (MG/L)	COND (µMHOS/CM)	TURBIDITY (FTU)	CARBONATE ALK. as CO_3 (MG/L)	BI-CARBONATE ALK as HCO_3 (MG/L)	TOTAL ALK as $CaCO_3$ (MG/L)	TOTAL HARDNESS as $CaCO_3$ (MG/L)	ALPHA RADIO-ACTIVITY (pCi/L)	BETA RADIO-ACTIVITY (pCi/L)
7/31/74		16	21	6	7.80	<3	<3	<3				7.60				1.10				0.40					5.0						24.0J			122.0	102.0		
9/5/74		15.3	17	5.5	7.55	<3	<3	<3				7.75				0.85				0.27					11.0						8.20J			112.0	110.0		
10/3/74		10	8	6	7.60	4	<3	<3				7.15				0.90				0.25					13.0						3.90J			144.0	120.0		
10/3/74										3.5				0.0000		0.91						8.0		0.0			168.0										
11/3/74					7.65	<3	<3	<3				7.20				0.82				0.21					17.8						41.0J			128.0	124.0		
12/2/74		7.65	12	4	7.45	<3	<3	<3				8.2				0.65				0.155					3.0						3.3J			152.0	148.0		
1/2/75		7.80	<-5	3	7.22	<30	<3	<3				8.45				0.80				0.19					5.0						6.0J			140.0	140.0		
2/4/75		7.0	-4.4	3.5	7.20	<3	<3	<3				7.90				0.68				0.15					1.0						5.40J			142.0	138.0		
2/4/75										3.1				0.0000		0.85						8.1		0.0			165.0										
3/5/75		7.8	-14.5	4.0	7.36	73	<3	<3				7.50				0.40				0.17					4.5						1.60J			168.0	182.0		
4/2/75		7.6	-12.0	3.5	7.64	36	<3	<3				7.2				0.21				0.16					4.0						1.70J			156.0	162.0		
5/1/75		7	2.0	4.0	7.18	<3	<3	<3				7.1				0.30				0.20					5.20						2.5J			144	164.0		
6/3/75			15	4.5	7.54	15	<3	<3				7.4				0.26				0.07					105.0						6.2 J			140	150		
7/22/75			23	3.5		<3	<3			4.0				0.0000		0.64						8.7		0.0			145.0										
10/13/75			12	6.5	7.84	29	<3	<3				7.2				0.39				0.09					<1.0		155.0				4.00F			98.0	114.0		
11/6/75			6	5	7.56	<3	<3	<3				9.24				0.33				0.02					4.6						1.10F			104.0	116.0		

DATE	ALUMINUM DISS. (MG/L)	ANTIMONY DISS. (MG/L)	ARSENIC DISS. (MG/L)	BARIUM DISS. (MG/L)	BERYLLIUM DISS. (MG/L)	BORON DISS. (MG/L)	CADMIUM DISS. (MG/L)	CALCIUM DISS. (MG/L)	CHLORIDE DISS. (MG/L)	CHROMIUM HEX. as CR (MG/L)	COBALT DISS. (MG/L)	COPPER DISS. (MG/L)	CYANIDE as Cn (MG/L)	FLUORIDE DISS. (MG/L)	GERMANIUM DISS. (MG/L)	IRON DISS. (MG/L)	IRON TOTAL (MG/L)	LEAD DISS. (MG/L)	MAGNESIUM DISS. (MG/L)	MANGANESE DISS. (MG/L)	MERCURY DISS. (MG/L)	MOLYBDENUM DISS. (MG/L)	NICKEL DISS. (MG/L)	POTASSIUM DISS. (MG/L)	SELENIUM DISS. (MG/L)	SILICA as SiO_2 (MG/L)	SILVER DISS. (MG/L)	SODIUM DISS. (MG/L)	ZINC DISS. (MG/L)	VANADIUM DISS. (MG/L)				COMMENTS
10/3/74			0.0000	0.0000			0.0015		2.0	<0.010				0.14			0.130	0.0000		0.062	0.0000				0.0000		0.0000		0.001						
2/4/75			0.0000	0.0000			0.0012		1.6	<0.010				0.13			0.159	0.0000		0.074	0.0000				0.0000		0.0000		0.017						
7/22/75			0.0000	0.0000			0.0023		2.0	<0.010				0.21			0.244	0.0000		0.083	0.0000				0.0000		0.0000		0.0063						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station HUL-3
Location HUNTINGTON CREEK BELOW ELECTRIC LAKE

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
2/5/76			0	3	7.16	<3	<3	<3				9.30		
3/3/76		8.6	-4	3	7.20	20	<3	<3				9.30		
3/31/76					7.18									
6/15/76	1750	20	20	7	7.4							6.8		
8/3/76	0840	34	13	9	8.2							5.8		
10-1-76	17:35	37	16	10	7.3							6.7		
10-28-76	16:35	21	7	7	7.6							8.5		

DATE	NITROGEN AMMONIA as NH_4-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
2/5/76		0.240				0.055					36.6						0.53			110.0	130.0		
3/3/76		0.290				0.057					4.0						0.70			112.0	122.0		
3/31/76	0.35	0.200	<0.01	0.75		0.330	0.300	15.0	<0.01				210			320	0.79	<0.01	148.8	122	140		
6/15/76		0.200				0.160	0.140	9.20	<0.01				200			300	0.80	<0.01	148.8	110	122		
8/3/76		0.40				0.130	0.110	21.0	<0.01				210			320	1.20	<0.01	131.7	108	137.1		
10-1-76		0.21				0.145	0.100	11.0	<0.01				270			410	6.10	<0.01	151.3	124	107.5		
10-28-76		0.20				0.140	0.100	25.3	<0.01				230			350	1.10	<0.01	156.1	128	140		

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
3/31/76	0.007	<0.001	<0.001	0.017	<0.001	0.013	<0.001	40.8	0.5	<0.001	<0.001	<0.001		0.14
6/15/76	0.006	<0.001	<0.001	0.016	<0.001	0.002	<0.001	27.2	0.50	<0.001	<0.001	<0.001		0.11
8/3/76	0.004	<0.001	<0.001	0.018	<0.001	0.005	<0.001	45.0	8.0	<0.001	<0.001	<0.001		0.13
10-1-76	0.006		<0.001	0.007		<0.001	<0.001	36.8	10.0			<0.001		0.17
10-28-76	0.005		<0.001	0.002		<0.001	<0.001	41.6	1.8			<0.001		0.09

DATE	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	
3/31/76	<0.001		0.290	<0.001	9.12	0.008	<0.001	<0.001	<0.001	1.23	<0.001	3.50	<0.001	2.48	0.029	<0.001	
6/15/76	<0.001		0.210	<0.001	5.76	0.010	<0.0002	<0.001	<0.001	0.72	<0.001	2.90	<0.001	18.00	0.025	<0.001	
8/3/76	<0.001		0.167	<0.001	6.0	<0.001	<0.0002	<0.001	<0.001	0.89	<0.001	1.90	<0.001	1.10	0.019	<0.001	
10-1-76	<0.001		0.173	<0.001	3.80	<0.001	<0.0002	<0.001	<0.001	1.00	<0.001	2.70		19.0	0.070		
10-28-76	<0.001		0.210	<0.001	8.6	0.003	<0.0002	<0.001	<0.001	0.81	<0.001	2.50		6.00	0.013		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station: HL-3
Location: Huntington Creek below Electric Lake

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL HALOGEN MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4-P MG/L	PHOSPHATE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	HYDROGEN SULFIDE as O.H. MG/L	SULFIDE as H2S MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL SETTLEABLE SOLIDS ML/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	COND. µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
12-15-77	14:10	8.5	3	5	7.6							12.8				0.07				0.036	0.010	12.0					162			252	0.85		173.2	142	156			
1-12-78	14:45	9	2	3	7.7							9.4				0.10				0.030	0.011	8.0					160			248	1.6		183	150	160			
2-7-78	12:45	19	0	2.5	8.1							9.4				0.06				0.030	0.012	18.0					176			272	2.20		180.5	148	164			
3-9-78	14:50	16	5	11	8.0							9.8				0.11				0.032	0.010	22.0					172			268	2.4		178.1	146	160			
4-13-78	12:30	14		3.5	7.7							9.1				0.20				0.035	0.020	22.0					180			275	2.8		185.44	152	166			
5-11-78	14:40	27	11	4	7.3							8.9				0.30				0.030	0.020	12.0					150			230	2.20		151.28	124	136			
6-15-78	15:35	56		7.5	7.5							9.5				0.57				0.026	0.020	16.0					160			240	1.60	<0.01	151.28	124	132			
7-13-78	16:10	67	27	12	7.6							7.7				0.39				0.028	0.020	14.0					150			230	1.60		148.8	122	68.0			
8-10-78	15:00	24	26	7.5	7.3							8.5				0.39				0.030	0.025	25.0					155			235	1.2		143.9	118	140			
9-14-78	10:10	13	12	10	7.6							7.2				0.26				0.024	0.020	15.0					145			220	0.60		143.9	118	138			
10-10-78	14:40	38	21	11	7.05							8.4				0.10				0.030	0.025	23.0					150			230	0.85		146.4	120	142			
11-9-78	14:25	48	14	6.5	7.65							8.2				0.27				0.025	0.022	17.0					165			250	0.46		173.24	142	152			
12-14-78	13:45	41	1	4		8	<2					10.4									0.055	38.0			8.0		185			285	7.50		165.92	136	170			

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEXAVALENT MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L	GERMANIUM TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MANGANESE TOTAL MG/L	MAGNESIUM TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L				COMMENTS
12-15-77	0.012			0.013		0.04		47.2	6.0			0.011		0.16			0.270		9.12	0.085	<0.0002			0.99				2.0	0.046					
1-12-78	0.010			0.140		0.12		48.0	2.0			0.002		0.10			0.418		9.60	0.109	<0.0002			1.36				1.0	0.011					Snowing
2-7-78	0.09			0.030		0.04		49.6	6.0			0.006		0.11			0.329		9.60	0.081	0.0002			1.05				4.0	0.004					
3-9-78	0.040			0.070		0.06		49.0	<0.01			0.006		0.07			0.331		9.60	0.071	<0.0002			2.51				4.0	0.014					
4-13-78	0.010			0.020		0.05		49.6	2.0	<0.001		0.003		0.11			0.067	<0.001	10.08	0.041	<0.0002			1.328	<0.001			4.13	0.017					
5-11-78	0.013			0.022		0.05		45.6	6.0			0.002		0.09			0.029		5.28	0.047	<0.0002			1.000				3.10	0.015					
6-15-78	0.075		<0.001	0.040		0.09		40.8	8.0	<0.001		0.001		0.09			0.123	<0.001	7.2	0.018	<0.0002			0.819	<0.001		<0.001	8.0	0.003					
7-13-78	0.020			0.019		0.04		71.6	2.0			0.011		0.08			0.105		3.36	0.019	<0.0002			0.889				31.0	0.011					
8-10-78	0.015		<0.001	0.120		0.04		44.0	<0.1			0.001		0.06			0.151		7.2	0.031	<0.0002			0.902	<0.001			2.96	0.002					
9-14-78	0.144		<0.001	0.05		0.090		44.0	4.0	<0.001		0.003		0.08			0.093	<0.001	6.7	0.025	<0.0002			0.172			<0.001	1.59	0.012					
10-10-78	0.16		<0.001	0.037		0.550		48.0	<0.01			0.008		0.10			0.089		5.28	0.018	<0.0002			0.914	<0.001			1.65	0.003					
11-9-78	0.020		<0.001	0.140		0.090		47.2	2.0			<0.001		0.07			0.096		8.16	0.019	<0.0002			0.958				4.0	0.004					Oil Following
12-14-78								56.0	<0.01										7.20					0.978				1.99						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station 11PL-3
Location Huntington Creek below Electric Lake

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHORE TOTAL as PO_4-P MG/L	PHOSPHORE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	HYDROXIDE as OH MG/L	SURFACTANT as MBAS MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL SETTLEABLE SOLIDS ML/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	COND. µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
11-9-78	14:25	48	14	6.5	7.65							8.2				0.21				0.025	0.022	17.0					165			250	0.46		173.24	142	152			
12-14-78	13:45	41	1	4		8	<2					10.4								0.055		38.0			8.0		185			285	1.50		165.92	136	170			
1-10-79	15:55	25.5	2	4.5	7.9	8	<2			3.5		8.8		<0.001		0.28				0.040		19.0			1.0		164			250	1.00		168.26	138	138			
2-14-79	12:25	18.5	0	4	7.7	2	<2					9.4				0.17	<0.01			0.055	0.015				6.0		196			290	1.50							
3-15-79	15:35	22	0	5	8.45	23	<2	2				10.0				0.18	<0.01			0.020	<0.001				1.0		190			290	1.50							
4-17-79	08:25	34	9	3	7.51	33.0	<2.0	<2.0				8.1				0.06	<0.01			0.04	0.02				1.0		280			430	3.60							
5-8-79	14:45	53.5	1	5.5	8.1	5.0	<2.0	<2.2				10.4				0.10	<0.01			0.050	0.03				1.0		180			270	0.45							
6-14-79	14:35	88	25	7	7.8	17.0	2.0	14.0				8.0				0.78	<0.01			0.060	0.010				4.0		170			260	6.50							
7-12-79	16:28	48	30	10	7.35	940	<2.0	2.0				8.4				0.45	<0.01			0.020	<0.010				3.0		160			270	6.00							
7-19-79	17:25	28	19	9	7.1						7.00	8.4	<1.0	0.194	<0.01	0.56				<0.001		14.0			6.0		150			260	5.00		151.78	124		12.0		
8-9-79	12:55	154	25	12	7.0	11.0	<2.0	2.0				7.8				0.33	<0.01			0.040	0.020				8.0		120			220	10.0							
9-29-79	05:30	23		7	7.36	79.0	2.0				14.0	7.6	1.2	<0.001	<0.01	0.49				0.010		194			1.0		400			270	4.50		156.16	128		12.0	3.5	12.8
9-20-79	13:30	30	15	7.7	7.6	<2.0	<2.0	<2.0			10.00	8.6	1.6	0.110	<0.01	0.23				0.200	0.150	35.9			3.0		197			280	5.00		173.24	142				

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEX as CR MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L	IRON TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MANGANESE TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L				COMMENTS
11-9-78	0.020		<0.001	0.040		0.090		47.2	2.0			<0.001		0.07			0.096		8.16	0.018	<0.0002			0.958				4.00	0.004					
12-14-78								56.0	<0.01										7.20					0.978				1.79						
1-10-79			<0.001	0.030			<0.001	46.4	2.0	<0.001		<0.001	0.005	0.08			0.164	<0.001	10.56	0.035	<0.0002			0.861	<0.001		<0.001	1.59	0.027					
2-14-79																																			
3-15-79																																			
4-17-79																																			
5-8-79																																			
6-14-79																																			
7-12-79																																			
7-19-79			<0.001	0.045		0.095	<0.001	40.80	<0.1	0.002		0.009	<0.001	0.10		0.040	0.130	0.051	7.68	0.012	<0.0002			1.072	<0.001		<0.001	2.34	0.014					
8-9-79																																			
9-29-79			<0.001	0.045		0.005	0.003	124	<0.1	0.003		0.016	<0.001	0.10		0.050	0.340	<0.001	4.80	0.021	<0.0002			0.886	0.002		<0.001	1.93	0.052					
9-20-79			<0.001	0.080		<0.001	<0.001	48.00	2.0	0.006		0.008	<0.001	0.14		0.030	0.090	0.001	8.90	0.016	<0.0002			1.100	<0.001		<0.001	12.0	0.006					

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station UFL-3
Location Huntington Creek below Electric Lake

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY	
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L	

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
2-19-79			<0.001	0.040		0.090	<0.001			<0.001		0.003				0.040	0.130	<0.001							<0.001		<0.001		0.006					
2-9-79																																		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station UPL-10
Location Huntington Creek above Electric Lake

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
6-15-78	16:20	3.4		13	7.5							9.6				0.17				0.045	0.027	14.0	<0.01				125			193	38.0	<0.01	112.48	84.0	84.0			
7-15-78	17:00	12.8	28	16	8.3							8.7				0.20				0.025	0.020	10.0	<0.01				149			230	15.0	<0.01	163.4	134	128			
8-10-78	16:00	3.0	25	17	7.9							9.0				0.21				0.028	0.020	10.0			6.0		170			260	7.5		170.3	156	164			
9-14-78	10:50	3.5	13	6	7.6							10.1				0.02				0.075	0.020	10.0	0.01				185			285	5.5	<0.01	205	168	180			
10-10-78		3.4	12	10								9.6				0.21				0.022	0.022	17.0			1.0		180			275	2.30		192.32	160	168			
~~11-8-78~~	~~13:20~~	~~1.6~~	~~12~~	~~4~~	~~7.4~~						~~15.0~~	~~10.8~~	~~<1.0~~	~~<0.001~~		~~0.26~~	~~<0.01~~	~~0.10~~			~~0.025~~	~~15.0~~			~~15.0~~		~~165~~			~~320~~			~~199.44~~			~~DW~~		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVAL CR.	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
6-15-78	0.380		<0.001	0.010		0.12		31.2	14.0	<0.001		0.005		0.08			0.197	0.004	1.44	0.017	<0.0002			0.540	<0.001		0.004	14.0	0.002					
7-13-78	0.004		<0.001	0.010		0.05		42.4	<0.10	<0.001		<0.001		0.11			0.245	<0.001	5.20	0.004	<0.0002			0.577	<0.001		<0.001	7.0						
8-10-78	0.070		<0.001	0.070		0.07	<0.001	53.6	<0.10	<0.001		0.003		0.07			0.409	<0.001	7.2	0.040	<0.0002			0.691	<0.001		0.170	3.35	0.030					
9-14-78	0.175		<0.001	<0.01		0.140		56.0	7.0	<0.001		0.002		0.11			0.344	<0.001	9.6	0.023	<0.0002		<0.001	0.140	<0.001		<0.001	1.00	0.003					
10-10-78	0.08		<0.001	<0.001		0.045		53.6	0.01		0.012	<0.001					0.310	<0.001	9.16	0.020	<0.0002		0.006	0.766	<0.001		<0.001	3.0	0.005					
~~11-8-78~~			~~<0.001~~	~~<0.01~~			~~<0.001~~	~~49.6~~	~~<0.01~~	~~<0.001~~		~~0.014~~	~~<0.01~~	~~0.09~~			~~0.280~~		~~12.0~~	~~0.055~~				~~0.240~~	~~<0.001~~	~~2.75~~	~~<0.001~~	~~7.08~~	~~<0.001~~		~~Fe~~	~~<0.01~~		

R 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station 11 FL-10
Location Huntington Creek above Electric Lake

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L
11-8-78	12:20	1.6	12	4	7.4						15.0	10.8	<1.0	<0.001
12-29-78	12:20	4.5	-3	0	7.77						2.0			
1-25-79	13:00	6	-3	0	7.25						14.0		3.4	<0.001
2-24-79	14:00	Inaccessible												
3-8-79	10:00	2.6	2	0	7.7	170	<2							
4-3-79	10:30	2.6	-1	1	7.81									
5-11-79	11:15	16.4	1	3	8.2						6.0	8.5	<1.0	<0.001
6-20-79	12:25	25.5	16	12	8.4	79.0	<2.0				9.0	8.3	<1.0	<0.001
7-25-79	16:24	5.5	21	15	8.9						8.0	6.7	<1.0	0.010
8-23-79	18:45	1.4		15		2200	130				9.0	7.3	<1.0	<0.001
9-25-79	14:11	2.7	15	10	7.7						8.50	8.3	22.0	0.005

DATE	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4^{-3} MG/L	PHOSPHATE ORTHO as PO_4^{-3} MG/L	SULFATE as SO_4 MG/L	HYDROXIDE as OH MG/L	SURFACTANT as MBAS MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL RETREUBLE SOLIDS MG/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	COND µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
11-8-78		0.26	<0.01	0.10			0.025	15.0			15.0		165			320			197.14					
12-29-78	0.10	0.42		0.15		0.04	0.02	10.0			4.0		186			295			127.88	154	176			
1-25-79	0.10	0.36	<0.01	0.12		0.040	0.023	16.0			3.0		185			285			200.08	164	174			
2-24-79																								
3-8-79		0.74				0.025	0.020	6.0					173						187.88	154	152			
4-3-79	<0.01	0.49				2.00	0.05	14.0			1.0		226			350			185.44	152	164			
5-11-79	<0.10	1.70				0.05		7.0			15.0		130			194	4.0		117.12	96.0		6.0		
6-20-79	<0.01	0.15				0.020		19.0			7.0		125			200	5.0		136.64	112		6.0	2.5	10.0
7-25-79	<0.01	0.24				<0.001		6.0			7.0		164			275	5.0		185.44	152		10.0		
8-23-79	<0.05	0.30				0.030		10.9			1.0		225			300	1.50		187.88	154		12.0	<2.0	8.0
9-25-79	<0.01	0.04				0.030		10.0			1.0		182			315	2.00		192.70	158		13.0		

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEX. as CR MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L
11-8-78			<0.001	<0.01			<0.001	49.6	<0.01	<0.001		0.004	<0.01	0.09
12-29-78			<0.001	0.004	<0.001	0.105	<0.001	54.4	6.0	<0.001		0.001		0.11
1-25-79			<0.001	0.010	<0.001	0.180	<0.001	56.8	2.0	<0.001		0.004		0.10
2-24-79														
3-8-79			<0.001		0.002	0.030	<0.001	51.20	8.0	<0.001		0.008		
4-3-79			<0.001		<0.001	0.150	<0.001	52.0	7.0	<0.001		<0.001		
5-11-79			<0.001	0.020		0.085	<0.001	35.2	6.0	0.005		0.016	<0.001	0.06
6-20-79			<0.001	0.060		0.060	<0.001	39.2	<1.0	0.001		0.007	<0.001	0.15
7-25-79			<0.001	0.030		0.088	<0.001	53.6	2.0	0.002		0.007	<0.001	0.10
8-23-79			<0.001	0.026		0.030	<0.001	58.4	<0.1	0.009		0.005	<0.001	0.15
9-25-79			<0.001	0.030		0.030	<0.001	52.6	<0.1	0.010		0.008	<0.001	0.18

DATE	GERMANIUM TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MAGNESIUM TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L	COMMENTS
11-8-78			0.290		12.0	0.025				0.290	<0.001	3.25	<0.001	2.08	<0.001		
12-29-78			0.164	<0.001	8.64	0.017	<0.0002		<0.001	0.757	<0.001	5.60	<0.001	1.95	0.003		
1-25-79			0.432	<0.001	7.68	0.027	<0.0002	<0.001	0.006	0.833	<0.001	5.50	<0.001	2.50	0.004	<0.001	
2-24-79																	Excessive Powder Snow
3-8-79			0.144	<0.001	5.76	0.022	<0.0002		0.053	0.760				6.300	0.012		
4-3-79				<0.001	8.16	0.014	<0.0002		0.015	0.820	<0.001		<0.001	1.76	0.002		
5-11-79		0.072	0.619	<0.001	4.00	0.022	<0.0002			0.629	<0.001		0.001	7.99	0.031		
6-20-79		0.110	0.490	0.004	7.68	0.070	<0.0002			0.571	<0.001		0.004	1.58	0.013		
7-25-79		0.080	0.620	<0.001	5.28	0.024	<0.0002			0.694	<0.001		<0.001	1.93	0.009		
8-23-79		0.114	0.340	<0.001	3.84	0.004	<0.0002			0.950	<0.001		<0.001	1.80	0.012		
9-25-79		0.060	0.420	<0.001	3.90	0.005	<0.0002			0.960	<0.001		<0.001	8.00	0.015		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-001
Location Belim mine discharge

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH3-N	NITROGEN NITRATE as NO3-N	NITROGEN NITRITE as NO2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO4-P	PHOSPHATE ORTHO as PO4-P	SULFATE as SO4	CHLORIDE as Cl	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO3	BICARBONATE ALK. as HCO3	TOTAL ALK. as CaCO3	TOTAL HARDNESS as CaCO3	ACIDITY as CaCO3	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	FTU	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	PC/L	PC/L
9-29-77	10:30	0.007	12	10	8.10	14	<2			2.5		7.2	<1.0												14.0		263							218		30.0		
10-12-77	10:45	0.001	10	6	8.2																				15.0		221							226		10.0		
10-26-77	15:15	0.004	12	6	7.8	34	<2.2			2.0		8.4	<1.0												10.0		254							232		20.0		
11-9-77	16:25	0.003	5	9	7.7							7.5													49.0		272							222		20.0		
11-23-77	15:30	0.0004	6	1	7.5	2	<2			1.2		8.4	2.0												6.0		260							214		30.0		
12-14-77	15:40	Dry																																				
12-28-77	08:30	Dry																																				
1-11-78	14:50	Dry																																				
1-25-78	15:00	Dry																																				
2-8-78	13:20	Dry																																				
2-22-78	16:30	Dry																																				
3-8-78	16:00	Dry																																				
3-22-78	15:15	Dry																																				
4-12-78	16:45	Dry																																				
4-26-78	15:10	0.15	6	3	7.3	12	<2			16.0		7.1	15.6												178		208							112		32.0		
5-10-78	14:40	0.27	15	7	7.5							7.6													162		240							104		18.0		
5-24-78	15:30	0.18	8	11	7.6	110	<2			<1.0		7.2	<1.0												153		246							336		14.0		
6-14-78	15:40	0.30	18	13	7.8							6.8													28.0		300							219		14.0		
6-28-78	15:15	0.23	24	12	7.5	330	<20			<1.0			<1.0												162		250							220		20.0		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	MANGANESE TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
9-29-77																	0.207								<0.001									
10-12-77																	0.221																	
10-26-77																	0.138								<0.001									
11-9-77																	0.141																	
11-23-77																	0.158								<0.001									
12-14-77																																		
12-28-77																																		
1-11-78																																		
1-25-78																																		
2-8-78																																		
2-22-78																																		
3-8-78																																		
3-22-78																																		
4-12-78																																		
4-26-78																	0.045								0.013									
5-10-78																	0.104																	
5-24-78																	0.014								<0.001									
6-14-78																	0.034																	
6-28-78																	0.046								<0.001									

R 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station UPL-10
Location [illegible]

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY	
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L	

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS	CALCIUM DISS	CHLORIDE DISS.	CHROMIUM HEXavCR	COBALT DISS	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
1-9-79																																		
1-25-79																																		
1-25-79																																		
2-25-79																																		
3-8-79																																		
1-13-79																																		
3-11-79			<0.001	0.01		0.080	<0.001			<0.001		0.005				0.072	0.619	<0.001							<0.001		<0.001		0.010					
4-20-79			<0.001	0.040		0.040	<0.001			<0.001		0.001				0.110	0.470	<0.001							<0.001		<0.001		0.006					
7-22-79			<0.001	0.020		0.080	<0.001			<0.001		<0.001				0.080	0.620	<0.001							<0.001		<0.001		0.006					
7-22-79			<0.001	0.013		<0.001	<0.001			<0.001		0.003				0.114	0.310	<0.001							<0.001		<0.001		0.004					

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-001
Location Belina Mine Discharge

DATE	TIME	FLOW (cfs)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	DISSOLVED OXYGEN (mg/L)	OIL & GREASE (mg/L)	PHENOL (mg/L)	NITROGEN AMMONIA as NH_3-N (mg/L)	NITROGEN NITRATE as NO_3-N (mg/L)	NITROGEN NITRITE as NO_2-N (mg/L)	NITROGEN ORGANIC TOTAL (mg/L)	NITROGEN GASEOUS (mg/L)	PHOSPHATE TOTAL as PO_4^{-3} (mg/L)	PHOSPHATE ORTHO as PO_4^{-3} (mg/L)	SULFIDE as S (mg/L)	CHLORINE as Cl (mg/L)	FLUORIDE as F (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL DISSOLVED (mg/L)	SOLIDS TSS (mg/L)	SOLIDS TOTAL DISSOLVED (mg/L)	SOLIDS TOTAL VOLATILE DISSOLVED (mg/L)	COND (micromhos)	TURBIDITY (FTU)	CARBONATE ALK. as CO_3 (mg/L)	BICARBONATE ALK. as HCO_3 (mg/L)	TOTAL ALK. as $CaCO_3$ (mg/L)	TOTAL HARDNESS as $CaCO_3$ (mg/L)	ACIDITY as $CaCO_3$ (mg/L)	ALPHA RADIO ACTIVITY (pCi/L)	BETA RADIO ACTIVITY (pCi/L)
7-12-78	15:25	0.06	21	13	7.6							6.3													41.0		274								218		14.0		
7-26-78	15:20	0.03	28	13	8.0	9	<2			12.0		6.7	<1.0												24.0		336								210		18.0		
8-9-78	14:55	0.04	17	15	7.9							6.8													67.0		951			1460					216		16.0		
8-23-78	14:45	0.01	23	12	7.9	33	<2			<1.0		6.9	<1.0									28.0			7.0		273			438					192		20.0		
9-13-78	14:25	0.02	15	10	7.5							6.9													64.0		270								198		26.0		
9-27-78	14:50	0.003	16	9.5	8.2	23	<2			1.3		8.4	<1.0												11.0		280								200		22.0		
10-11-78	14:20	0.009	15	7.5	7.7							7.1													71.0		274			480					204		22.0		
10-25-78	14:15	0.01	4	5	7.0	110	<2			1.7		8.4	<1.0												27.0		270			440					206		12.0		
11-8-78	15:00	-0-																																					
11-21-78	09:30	-0-																																					
12-13-78	14:40	-0-																																					
12-27-78	15:10	-0-																																					
1-10-79		-0-																																					
1-24-79		-0-																																					
2-14-79		-0-																																					
2-28-79	12:30	-0-																																					
3-14-79		-0-																																					
3-28-79		-0-																																					
4-11-79		-0-																																					
4-25-79		-0-																																					

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CHLORIDE DISS. (mg/L)	CHROMIUM HEXAVALENT (mg/L)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE DISS. (mg/L)	GERMANIUM TOTAL (mg/L)	IRON DISS. (mg/L)	IRON TOTAL (mg/L)	LEAD TOTAL (mg/L)	MANGANESE TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	POTASSIUM TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO_2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	VANADIUM TOTAL (mg/L)				COMMENTS
7-12-78																	0.095																	
7-26-78																	0.178							<0.001										
8-9-78																	0.196																	
8-23-78																	0.012							<0.001										
9-13-78																	0.019																	
9-27-78																	0.015							<0.001										
10-11-78																	0.172																	
10-25-78																	0.024							<0.001										
11-8-78																																		Ponds under Repair
11-21-78																																		
12-13-78																																		
12-27-78																																		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-001
Location Belina mine discharge

DATE	TIME	FLOW (cfs)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP. (MPN)	C.O.D. (mg/L)	B.O.D. (mg/L)	T.O.C. (mg/L)	TURBIDITY (NTU)	OIL & GREASE (mg/L)	PHENOL (mg/L)	NITROGEN AMMONIA as NH3-N (mg/L)	NITROGEN NITRATE as NO3-N (mg/L)	NITROGEN NITRITE as NO2-N (mg/L)	NITROGEN TOTAL ORGANIC (mg/L)	NITROGEN ORGANIC (mg/L)	PHOSPHATE TOTAL as PO4-P (mg/L)	PHOSPHATE ORTHO as PO4-P (mg/L)	SULFATE as SO4 (mg/L)	CHLORIDE as Cl (mg/L)	FLUORIDE as F (mg/L)	SOLIDS TDS (mg/L)	SOLIDS TOTAL DISSOLVED (mg/L)	SOLIDS T.S.S. (mg/L)	SOLIDS TOTAL SOLIDS (mg/L)	SOLIDS TOTAL VOLATILE SOLIDS (mg/L)	COLOR (units)	TURBIDITY (NTU)	ALK. as CO3 (mg/L)	ALK. as HCO3 (mg/L)	TOTAL ALK. as CaCO3 (mg/L)	TOTAL HARDNESS as CaCO3 (mg/L)	ACIDITY as CaCO3 (mg/L)	ALPHA RADIO-ACTIVITY (pCi/L)	BETA RADIO-ACTIVITY (pCi/L)
5-9-79	14:15	0.0005	0	1	7.65	<2.0	<2.0			3.7		9.4	1.0												2.0		200							144		16.0		
5-24-79	16:10	0.008	14	10	8.2																				52.0		314							200		12.0		
6-13-79	16:00	0.27	20	13	8.4	11.0	<2.0			2.8		7.3	<1.0												5.0		320			490				248		20.0		
6-27-79	15:30	0.37	22	12	7.75																				5.0		330			520				220		24.0		
7-11-79	18:25	0.09	20	16	7.7	2.0	<2.0			<1.0			<1.0												2.0		300			4900				210		18.0		
7-25-79	15:00	0.36	23	15	7.3																				7.0		240			400				180		8.0		
8-9-79	16:[illegible]	0.12	23	16.5	7.6	17.0	<2.0			<1.0		6.0	<1.0												3.0		210			430				272		14.0		
8-22-79	15:45	0.03	15	9	7.8																				7.0		200			500				242		13.0		
9-12-79	14:45	0.21			7.6	33.0	5.0			1.5			1.4												64.0		310			480				210		22.0		
9-26-79	16:15	0.18	14	11.5	7.6																				67.0		440			450				214		12.0		
10-9-79	14:30	0.22		6	7.7	490	20.0			<1.0			1.6												4.0		370			450				196		8.0		
10-24-79	16:05	0.18			7.3																				12.0		285			390				204		12.0		
11-14-79	14:52	0.01	1	1	7.58	110	<2.0			<1.0			0.8												<1.0		308			460				210		20.0		
11-27-79	16:00	-0-																																					
12-12-79	09:10	-0-																																					
12-26-79	16:00	-0-																																					
1-9-80	16:00	-0-																																					
1-23-80	15:25	0.002	-6	4	8.7	2.0	<2.0			<1.0			2.4												8.0		310			480				206		18.0		
2-13-80	16:00	-0-																																					
2-27-80	15:00	-0-																																					

DATE	ALUMINUM TOTAL (mg/L)	ANTIMONY TOTAL (mg/L)	ARSENIC TOTAL (mg/L)	BARIUM TOTAL (mg/L)	BERYLLIUM TOTAL (mg/L)	BORON TOTAL (mg/L)	CADMIUM TOTAL (mg/L)	CALCIUM TOTAL (mg/L)	CHLORIDE DISS. (mg/L)	CHROMIUM HEXavalent (mg/L)	COBALT TOTAL (mg/L)	COPPER TOTAL (mg/L)	CYANIDE as CN (mg/L)	FLUORIDE DISS. (mg/L)	MANGANESE TOTAL (mg/L)	IRON DISS. (mg/L)	IRON TOTAL (mg/L)	LEAD TOTAL (mg/L)	MAGNESIUM TOTAL (mg/L)	MERCURY TOTAL (mg/L)	MOLYBDENUM TOTAL (mg/L)	NICKEL TOTAL (mg/L)	POTASSIUM TOTAL (mg/L)	SELENIUM TOTAL (mg/L)	SILICA as SiO2 (mg/L)	SILVER TOTAL (mg/L)	SODIUM TOTAL (mg/L)	ZINC TOTAL (mg/L)	VANADIUM TOTAL (mg/L)				COMMENTS
5-9-79																	0.04			0.012				<0.001									
5-24-79																	1.934																
6-13-79																	0.015			0.004				<0.001									
6-27-79																	0.016																
7-11-79																	0.045			0.010				<0.001									
7-25-79																	0.210																
8-8-79																	0.09			0.002				<0.001									
8-22-79																	0.590																
9-12-79																	0.57			0.004				0.001									
9-26-79																	1.290																
10-9-79																	0.55			0.021				<0.001									
10-24-79																	0.580			0.445													
11-14-79																	0.440			0.008				<0.001									
11-27-79																																	
12-12-79																																	
12-26-79																																	
1-9-80																																	
1-23-80																	0.450			0.010				<0.001									
2-13-80																																	
2-27-80																																	

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-001
Location Belina Mine Discharge

DATE	TIME	FLOW (GPM)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOL (MG/L)	NITROGEN AMMONIA as NH_3-N (MG/L)	NITROGEN NITRATE as NO_3-N (MG/L)	NITROGEN NITRITE as NO_2-N (MG/L)	NITROGEN TOTAL KELDAHL (MG/L)	NITROGEN ORGANIC (MG/L)	PHOSPHORUS TOTAL as PO_4-P (MG/L)	PHOSPHORUS ORTHO as PO_4-P (MG/L)	SULFIDE as SO_4 (MG/L)	CHLORIDE as Cl (MG/L)	FLUORIDE as F (MG/L)	SOLIDS TSS (MG/L)	SOLIDS TOTAL DISSOLVED SOLIDS (MG/L)	SOLIDS TDS (MG/L)	SOLIDS TOTAL VOLATILE SOLIDS (MG/L)	SOLIDS TOTAL SOLIDS (MG/L)	COND. (µmhos)	TURBIDITY (FTU)	ALK. as CO_3 (MG/L)	ALK. as HCO_3 (MG/L)	TOTAL ALK. as $CaCO_3$ (MG/L)	TOTAL HARDNESS as $CaCO_3$ (MG/L)	ACIDITY as $CaCO_3$ (MG/L)	ALPHA RADIOACTIVITY (PCi/L)	BETA RADIOACTIVITY (PCi/L)
3-12-80	15:30	-0-																																				
3-26-80	16:00	-0-																																				
4-9-80		-0-																																				
4-23-80		-0-																																				
5-14-80		-0-																																				
5-28-80		-0-																																				
6-11-80		-0-																																				
6-25-80		-0-																																				
7-11-80	11:00				8.0	49.0	23.0			96.0			6.54												74.0		315			450				180		<0.1		
7-24-80	15:15	0.045	18	15	7.2					8.3			2.00												10.0		308			480				202		4.0		
8-13-80	12:32	0.04	23	12	8.0	7.0	2.0			<1.0			0.20												4.0		380			500				216		10.0		
8-27-80	16:00	0.116	19.5	14	8.2																				41.0		345			525				214		14.0		
9-10-80	13:55	0.13			7.6	1700	49.0			5.0			<0.10												84.0		254			390				186		4.0		
9-24-80	15:30	0.27	13	10	7.4																				32.0		328			490				216		<1.0		
10-8-80	16:05	0.21	19	13	7.6	79.0	2.0			14.5			0.20												6.0		311			445				216		6.0		
10-22-80	15:40	0.29	2	9	7.6																				6.0		310			440				1200		8.0		
11-12-80	15:10	0.33	3	6	7.3	170	<2.0			3.6			5.0												2.0		860			1320				200		6.0		
11-21-80	15:30	0.27	-5	4	7.2																				32.0		390			590				256		20.0		
12-10-80	14:20	0.002	2	3	7.7	5.0	<2.0			4.6			3.0												6.0		380			550				262		22.0		
12-24-80	12:40	0.6	3	3	7.6																				23.0		490			700				254		<0.1		

DATE	ALUMINUM TOTAL (MG/L)	ANTIMONY TOTAL (MG/L)	ARSENIC TOTAL (MG/L)	BARIUM TOTAL (MG/L)	BERYLLIUM TOTAL (MG/L)	BORON TOTAL (MG/L)	CADMIUM TOTAL (MG/L)	CALCIUM TOTAL (MG/L)	CHLORINE DISS. (MG/L)	CHROMIUM HEXAVALENT (MG/L)	COBALT TOTAL (MG/L)	COPPER TOTAL (MG/L)	CYANIDE as CN (MG/L)	FLUORIDE DISS. (MG/L)	IRON TOTAL (MG/L)	IRON DISS. (MG/L)	IRON TOTAL (MG/L)	LEAD TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MOLYBDENUM TOTAL (MG/L)	NICKEL TOTAL (MG/L)	POTASSIUM TOTAL (MG/L)	SELENIUM TOTAL (MG/L)	SILICA as SiO_2 (MG/L)	SILVER TOTAL (MG/L)	SODIUM TOTAL (MG/L)	ZINC TOTAL (MG/L)	VANADIUM TOTAL (MG/L)				COMMENTS
3-12-80																																			
3-26-80																																			
4-9-80																																			
4-23-80																																			
5-14-80																																			
5-28-80																																			
6-11-80																																			
6-25-80																																			
7-11-80																	2.330	0.004		0.020															Collected by Valley Camp personnel
7-24-80																	0.180			0.002					<0.001										
8-13-80																	0.110			<0.010					<0.001										Composite sampler not at 6 mi
8-27-80																	0.150																		
9-10-80																	0.160			0.010					<0.001										
9-24-80																	0.158																		
10-8-80																	0.250			0.010					<0.001										
10-22-80																	0.166																		
11-12-80																	0.230			0.010					<0.001										
11-21-80																	0.228																		
12-10-80																	0.185			0.011					<0.001										
12-24-80																	0.225																		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-001
Location Belina Mine Discharge

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TSS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL VOLATILE SOLIDS	SOLIDS TOTAL SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µmhos	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	PCi/L	PCi/L
1-14-81	16:21	0.4	-2	5	7.4	79.0	<2.0			16.0			1.20												14.0		365			450				250		4.0		
1-28-81		-0-																																					
2-11-81		-0-																																					
2-25-81	15:25	0.07	-2	4		27.0	<2.0			8.5			1.00												20.0		315							240		<0.1		
3-11-81	14:00	0.001	-2	3	7.7																				5.0		280			276				230		8.0		
3-25-81	14:10	0.01	5	3	7.8	17.0	<2.0			23.0			0.10												54.0		330			560				118		6.0		
4-8-81	14:48	0.07	6	5	8.0																				3.0		280			480				220		12.0		
4-22-81	15:30	0.06			8.0	79.0	<2			40.0			<1.0												154		295			450				212		10.0		
4-27-81		Pond			7.7	230	<2			76.0			10.1														370							120		3.74		
4-27-81		Pond			7.7	330	<2			64.0			9.3														350							108		1.87		
4-30-81		Pond			7.8	170	<2			61.0			3.2														405							126		1.37		
5-13-81	16:30	Pond	15	19																					27.0		293							190		<0.01		
5-27-81	15:30	0.016				23.0	<2			160			0.20												10.0		330							208		32.00		
6-10-81	15:40	Pond	26	21	8.4																				22.0		425			580				126		<0.01		
6-24-81	16:00	0.05	22	11	8.1								1.60												12.0		420			490				196		3.20		
7-8-81	16:30	0.04			8.1	4.0	2.0			5.3			<0.01												18.0		480			750				194		<0.01		
7-22-81	14:50	0.02	17	12	8.0																				1.0		380			540				198		<0.01		
8-12-81	15:20					Pond under remediation no discharge																																	
8-26-81	14:50	0.04	20	20	8.4																				20.0		350			445				192		1.90		
9-9-81	14:45	0.12	14	12	7.0								1.80												35.0		345			355				164		<0.01		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	PHOSPHORUS TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
1-14-81																	0.180			0.022					<0.001								Grab Samples
1-28-81																																	
2-11-81																																	
2-25-81																	0.120			0.020					0.001								
3-11-81																	0.050																
3-25-81																	3.240								0.002								
4-8-81																	0.147																Grab Sample
4-22-81																	4.640			0.090					0.002								
4-27-81																4.060																	
4-28-81																0.630																	
4-30-81																1.100																	
5-13-81																	3.450																Grab
5-27-81																	0.170								<0.001								
6-10-81																	2.290																
6-24-81																	0.040								0.002								
7-8-81																	0.050								0.001								
7-22-81																	0.166																
8-12-81																																	
8-26-81																	0.130								0.004								
9-9-81																	0.150								<.005								

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-001
Location Belina Mine Discharge

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as HDAS	SOLIDS TDS	SOLIDS TOTAL SUSPENDED	SOLIDS T.S.S.	SOLIDS TOTAL DISSOLVED	SOLIDS TOTAL VOLATILE DISSOLVED	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BICARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µmhos	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	PCI/L	PCI/L
9-23-81	14:21	0.02	18	12	8.0																				1.0		376			382				194		<0.01		
10-14-81	14:25	0.03	1	4	8.0	700	5			2.4			78.60												16.0		330			500				199.10		<0.01		
10-28-81	14:30	0.02	13	5	8.1																				4.0		325			236				168.50		<0.001		
11-11-81	13:23	0.003	4	4	7.5								1.40												5.0		370			320				182.40		<0.01		
11-25-81	13:00	0.004	-3	2	7.2																				1.0		335			340				196.30		<0.01		
12-9-81	16:50	0.002	4	1									0.20												23.0		385			260				168.80		8.00		
12-23-81	13:28	0.004	-10	1	7.7																				3.0		375			305				183.60		2.00		
1-13-82	13:00	-0-																																					
1-27-82		-0-																																					
2-10-82		-0-																																					
2-24-82	13:10	-0-																																					
3-10-82	15:00	0.07	3	1	9.5	2.0	<2.0			1.5			<1.0												2.0		500			729				196.80		4.00		
3-24-82		-0-																																					
4-14-82	14:00	0.04	11	3	7.7	7.0	<2.0			6.8			<1.0									51.0			2.0		340			510				194.10		6.00		
4-28-82		-0-																																					
5-12-82		-0-																																					
5-26-82	14:30	0.21	19	6	7.1								<1.0												1.0		610			659				192.90		10.00		
6-9-82	14:00	0.1	15	11	7.4								<1.0												44.00		490			448				198.50		8.00		
6-23-82	15:20	0.53			7.7																				217		415			690				98.50		4.00		

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MAGNESIUM TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
9-23-81																	0.158																	
10-14-81																	0.210								<0.001									
11-11-81																	0.166																	
11-25-81																	0.195								<0.001									
12-9-81																	0.155																	Grab Sample
12-23-81																	0.120								0.002									
1-13-82																	0.130																	Grab Sample
1-27-82																																		Trevor Whiteside
2-10-82																																		Trevor Whiteside
2-24-82																																		Trevor Whiteside
3-10-82																	0.050								<0.001									Grab Sample
3-24-82																																		Trevor Whiteside
4-14-82																	0.117								<0.001									Grab Sample
4-28-82																																		Trevor Whiteside
5-12-82																																		Trevor Whiteside
5-26-82																	0.120								<0.001									
6-9-82																	0.090								<0.001									
6-23-82																	2.550																	

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-001
Location Bolina Mine Discharge

DATE	TIME	FLOW (CFS)	TEMPERATURE AIR (°C)	TEMPERATURE WATER (°C)	pH	COLIFORM TOTAL (MPN)	COLIFORM FECAL (MPN)	FECAL STREP (MPN)	C.O.D. (MG/L)	B.O.D. (MG/L)	T.O.C. (MG/L)	DISSOLVED OXYGEN (MG/L)	OIL & GREASE (MG/L)	PHENOL (MG/L)	NITROGEN AMMONIA as NH_3-N (MG/L)	NITROGEN NITRATE as NO_3-N (MG/L)	NITROGEN NITRITE as NO_2-N (MG/L)	NITROGEN TOTAL KJELDAHL (MG/L)	NITROGEN ORGANIC (MG/L)	PHOSPHATE TOTAL as PO_4-P (MG/L)	PHOSPHATE ORTHO as PO_4-P (MG/L)	SULFATE as SO_4 (MG/L)	CHLORIDE as Cl (MG/L)	FLUORIDE as F (MG/L)	SOLIDS TSS (MG/L)	SOLIDS TOTAL DISSOLVED SOLIDS (MG/L)	SOLIDS T.D.S. (MG/L)	SOLIDS TOTAL SOLIDS (MG/L)	SOLIDS TOTAL VOLATILE SOLIDS (MG/L)	SPECIFIC CONDUCTANCE (µmhos)	TURBIDITY (FTU)	CARBONATE ALK. as CO_3 (MG/L)	BICARBONATE ALK. as HCO_3 (MG/L)	TOTAL ALK. as $CaCO_3$ (MG/L)	TOTAL HARDNESS as $CaCO_3$ (MG/L)	ACIDITY as $CaCO_3$ (MG/L)	ALPHA RADIO-ACTIVITY (pCi/L)	BETA RADIO-ACTIVITY (pCi/L)
7-14-82	14:30	0.5	24	14	7.5	49.0	49.0			47.0			2.0												50.0		480			730				264.30		7.00		
7-29-82	14:40	0.02	22	14	7.8																				1.0		422			581				286.70		3.00		
8-8-82	16:13	0.02	14	11	8.0								0.8												5.0		480			571				298.50		2.00		
8-25-82	14:25	0.02			7.9																				1.0		418			640				282.30		<0.01		
9-9-82	14:55	0.16	22	9	8.1								0.4												23.0		362			577				232.50		1.00		
9-22-82	14:30	-0-																																				
10-13-82	14:50	-0-																																				
10-27-82	11:48	0.01	1	2	7.7								<0.1												460	<0.1	382			820								
11-10-82	14:00	-0-	In-Accessible			Road	Closed		Snow																													
11-24-82		0.16			7.9								<0.1												48.0		610											
12-8-82					7.9								<0.1												1.0		462			700								
12-21-82	13:35	0.08	4	3	8.1								<0.1												<0.1		432											
1-27-83		0.06			7.60								<0.1												56.0		468											
2-21-83	12:55	0.06	6	3	7.5								0.2												47.0		402											
2-25-83					7.5																				42.0		448											
3-18-83					7.2								0.8												7.0		348											
4-13-83					7.3								<0.2												27.0		378											
4-21-83	11:43	0.08			8.1								<0.2												58.0		356			445								
4-27-83					7.60								2.00												53.0		260											
5-25-83					7.80								0.4												106		298											

DATE	ALUMINUM TOTAL (MG/L)	ANTIMONY TOTAL (MG/L)	ARSENIC TOTAL (MG/L)	BARIUM TOTAL (MG/L)	BERYLLIUM TOTAL (MG/L)	BORON TOTAL (MG/L)	CADMIUM TOTAL (MG/L)	CALCIUM TOTAL (MG/L)	CHLORIDE DISS. (MG/L)	CHROMIUM HEXavalent (MG/L)	COBALT TOTAL (MG/L)	COPPER TOTAL (MG/L)	CYANIDE as CN (MG/L)	FLUORIDE DISS. (MG/L)	GERMANIUM TOTAL (MG/L)	IRON DISS. (MG/L)	IRON TOTAL (MG/L)	LEAD TOTAL (MG/L)	MANGANESE TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MERCURY TOTAL (MG/L)	MOLYBDENUM TOTAL (MG/L)	NICKEL TOTAL (MG/L)	POTASSIUM TOTAL (MG/L)	SELENIUM TOTAL (MG/L)	SILICA as SiO_2 (MG/L)	SILVER TOTAL (MG/L)	SODIUM TOTAL (MG/L)	ZINC TOTAL (MG/L)	VANADIUM TOTAL (MG/L)				COMMENTS
7-14-82																	0.820								<0.001										
7-29-82																	0.050																		
8-8-82																	0.318								0.004										Grab Sample
8-25-82																	0.010																		
9-9-82																	0.914								0.005										Grab Sample
9-22-82																																			Pond under Repair
10-13-82																																			Pond under Repair
10-27-82																	0.018																		Below lower pond
11-10-82																																			
11-24-82																	1.17																		Collected by Valley Camp downstream
12-8-82																	0.090																		Collected by Valley Camp
12-21-82																	0.270																		
1-27-83																	0.780																		
2-21-83																	3.660																		
2-25-83																	0.310																		
3-18-83																	0.360																		
4-13-83																	0.380																		
4-21-83																	3.670																		Thawing - Storm Runoff
4-27-83																	0.200																		
5-25-83																	3.950																		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-001
Location Belina Mine Discharge

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL ORGANIC	NITROGEN ORGANIC	PHOSPHORUS TOTAL as PO_4	PHOSPHORUS ORTHO as PO_4	SULFIDE as SO_4	FLUORIDE as F	SULFATE as SO_4	SOLIDS TDS	SOLIDS TOTAL VOLATILE SOLIDS	SOLIDS T.S.S.	SOLIDS TOTAL VOLATILE SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	PCI/L	PCI/L
6-8-83					7.30								<0.1												56.0		532											
6-8-83					7.80								<0.1												77.0		528											
6-9-83					8.00								<0.1												44.0		504											
6-21-83	15:50	0.9	20	12	7.3								<0.1												123		836			523								
8-25-83	14:10	0.14	19	16	7.4								<0.1												85.0		832			605								
9-12-83	17:32	0.99	21	14	8.1								1.2												46.0		454			590								
10-19-83	16:51	0.29	7	8	7.4								<0.2												43.0		360			510								

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	STRONTIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
6-8-83																	2.350																	
6-8-83																	1.750																	
6-9-83																	1.650																	
6-21-83																	1.650																	
8-25-83																	1.590																	
9-12-83																	0.260																	
10-19-83																	0.370																	

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-002
Location Utah #2 mine discharge

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS TDS	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	μMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
7-25-77	11:50	1	13	12	5.8	330	<2			1.5		7.8	2.0												12.0		365							[illegible]		27.0		
8-12-77	11:15	0.1	6	9	7.8																				18.0		319							[illegible]		22.0		
9-29-77	16:00	0.7	18	12	7.4	27	<2.2			3.5		9.6	1.4												22.0		426							[illegible]		50.0		
11-9-77	11:50	0.4	-4	10	7.6							6.5													18.0		720							[illegible]		32.0		
11-22-77	14:35	1.3	-2	6	7.2	790	2			1.5		8.4	1.8												2.0		567							[illegible]		52.0		
12-14-77	15:30	0.5			7.35																				8.0		598							[illegible]		26.0		
1-28-77	14:00	1.7	2	7	[illegible]	270	<2			2.9		8.2	2.0												4.0		645							[illegible]		21.0		
2-11-78	14:20	0.1	2	9	7.8							9.6													15.0		580							312		42.0		
3-25-78	15:25	1.2	-5	7	7.8	220	<2			<1.0		9.4	2.4												6.0		500							270		37.0		
[illegible]	13:50	0.2	1	7	7.6							8.4													4.0		530							300		22.0		
3-28-78	17:00					33	<2						2.4												11.0		475							220		16.0		
2-9-79	9:20	0.5	4	12	7.8							7.0													10.0		528							210		30.0		
3-22-79	14:20	0.02	7	11	7.5	49	<2			1.9		10.0	5.9												47.0		406							266		16.0		
4-12-79	[illegible]	Trace		4	7.3							7.0													2.0		[illegible]							[illegible]		[illegible]		
4-26-79	14:20	Trace																																					
5-10-79	15:50	Trace																																					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXavalent CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
7-25-77																	0.126								<0.001									
8-12-77																	0.156																	
9-29-77																	0.134								<0.001									
11-9-77																	0.259																	
11-22-77																	0.149								<0.001									
12-14-77																	0.271																	
12-28-77																	1.558								<0.001									
1-11-78																	0.517																	
1-25-78																	0.613								<0.001									
[illegible]																	0.084																	
[illegible]																	0.256								<0.001									
[illegible]																	1.203																	
[illegible]																	0.070								<0.001									
4-12-78																	0.103																	No flow - [illegible]
4-26-78																																		
5-10-78																																		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-3
Location Clarified Mine Water

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
12-26-75					7.54									
1-26-76	15:20		-1.0	6.5	7.5				14.0		10.0	7.6	<1.0	
3-9-76	10:05		-2.0	8.0	7.8				4.8		14.0	7.7		
4-27-76	12:30	/	10	11	7.7				9.0		13.0	7.2	<1.0	
5-27-76	14:45	/	25	15.5	7.5					5.0		7.3		
6-4-76	11:25	0.6	3	11	7.8				6.0	1.5	10.0	6.1	<1.0	
8-2-76	12:30		17	14	7.7				9.0		9.0	7.4	<1.0	
9-30-76	12:55	/	23	13	7.3				7.0		9.5	8.0	1.9	
10-27-76	11:05		3	9	7.3				2.0		1.5	8.2	<1.0	
11-29-76	11:48		0	10	6.9				8.0		6.5	8.1	3.0	
12-28-76	11:15	3.3	4	9	7.6				14.0		12.0	7.5	2.9	

DATE	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	μMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
12-26-75			0.02			0.02		49.0					404.0			920.0	0.62	<0.01	407.48	334.0	389.0		
1-26-76			0.133			0.06	0.02	88.0	<0.01		63.0		520			790	0.20	<0.01	307.4	252	314		
3-9-76			0.085			0.160	0.120	30.0	<0.01		27.5		579			920	2.0	<0.01	424.5	348	356		
4-27-76			0.090			0.170	0.150	62.0	<0.01		58.0		540			830	0.85	<0.01	351	288	310		
5-27-76			0.045			0.093	0.090	68.0	<0.01		3.0	<0.1	590			900	1.20	<0.01	398.2	310	330		
6-4-76			0.05			0.180	0.160	46.0	<0.01		182		600			920	1.80	<0.01	412.5	338	346		
8-2-76			1.05			0.170	0.099	25.3	<0.01		16.0		590			900	3.50	<0.01	417.2	342	348.5		
9-30-76			0.04			0.160	0.095	70.0	<0.01		25.0		490			750	5.40	<0.01	290.4	238	319.2		
10-27-76			0.02			0.145	0.080	17.9	<0.01		41.0		530			810	14.00	<0.01	387.9	318	310		
11-29-76			0.04			0.150	0.095	20.4	<0.01		16.0		550			840	6.00	<0.01	400.2	328	280		
12-28-76			0.04 / 0.056			0.160	0.088 / 0.10	24.0	<0.01		5.0		530			810	3.1	<0.01	383.1	314	302		

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX. as CR.	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
12-26-75	<0.01		<0.001	0.15		<0.01	<0.001	97.6	10.0	<0.01		<0.01	<0.01	0.32
1-26-76	0.020	<0.001	<0.001	0.093	<0.001	<0.001	<0.001	54.4	10.0	<0.001	<0.001	0.014		0.33
3-9-76	0.024	<0.001	<0.001	0.095	<0.001	<0.001	<0.001	55.6	5.0	<0.001	<0.001	0.012		0.55
4-27-76	0.020	<0.001	<0.001	0.068	<0.001	<0.001	<0.001	72.8	8.0	<0.001	<0.001	0.009		0.37
5-27-76	0.065	<0.001	0.023	0.050	<0.001	<0.001	<0.001	69.6	12.0	<0.001	<0.001	0.008		0.29
6-4-76	0.021	<0.001	<0.001	0.050	<0.001	<0.001	<0.001	81.6	6.0	<0.001	<0.001	0.003		0.34
8-2-76	0.024		<0.001	0.066				82.0	14.0			0.005		0.50
9-30-76	0.010		<0.001	0.030				86.7	12.0			0.003		0.43
10-27-76	0.007		<0.001	0.029				52.0	10.0			0.005		0.24
11-29-76	0.004		<0.001	0.025				52.0	8.0			0.005		0.24
12-28-76	0.005		<0.001	0.016				64.0	8.0			0.007		0.22

DATE	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
12-26-75		0.014	0.025	<0.001	34.56	<0.01	<0.001			3.50	<0.01	1.05	<0.001	4.20	0.006	
1-26-76	0.048		0.149	0.014	42.70	0.023	<0.001	0.006	<0.001	2.27	0.030		<0.001	18.0	0.044	<0.001
3-9-76	0.044		0.156	0.013	34.08	0.022	<0.001	0.004	<0.001	3.03	0.009		<0.001	15.0	0.032	<0.001
4-27-76	<0.001		0.183	0.013	37.44	0.020	<0.001	<0.001	<0.001	3.93	0.011		<0.001	10.9	0.025	<0.001
5-27-76	<0.001		0.170	0.009	37.44	0.059	<0.001	<0.001	<0.001	2.71	0.042		<0.001	28.0	0.030	<0.001
6-4-76	<0.001		0.200	0.006	34.08	0.022	<0.0002	<0.001	<0.001	3.25	0.019		<0.001	20.0	0.025	<0.001
8-2-76	<0.001		0.268	0.005	35.0	0.020	<0.0002	<0.001	<0.001	3.61	0.015			15.0	0.018	
9-30-76	<0.001		0.260	<0.001	25.00	0.016	<0.0002	<0.001	<0.001	3.51	0.011			5.99	0.020	
10-27-76	<0.001		0.225	<0.001	43.2	0.009	<0.0002	<0.001	<0.001	3.19	<0.001			17.0	0.021	
11-29-76	<0.001		0.177	<0.001	36.0	0.012	<0.0002	<0.001	<0.001	4.08	<0.001			32.00	0.007	
12-28-76	<0.001		0.116	<0.001	34.0	0.011	<0.0002	<0.001	<0.001	3.10	<0.001			20.0	0.016	

COMMENTS

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-3
Location Clearsified mine water

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		GPM	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
3-17-77	13:45		0	11	7.5				6.0		5.0	8.8	2.8	
6-16-77	11:10		21	13	7.3				5.0		2.0	7.1	1.9	0.120

DATE	NITROGEN AMMONIA as NH_3-N	NITRATE as NO_3-N	NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as F	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	μMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
3-17-77	0.28	0.09	<0.01	0.50		0.077	0.038	30.0	<0.01		48.0	<0.1	490			750	25.0	<0.01	351.4	288	306			
6-16-77	0.14	0.02		0.50		0.038	0.016	8.0	<0.01		5.0	2.0	330			510	0.65	<0.01	378.2	310	306		0	0

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
3-17-77	0.013		<0.001	0.014		0.005	<0.001	66.4	4.0	<0.001		0.002		0.21			0.049	<0.001	33.60	0.010	<0.0002		<0.001	2.57	<0.001	7.3	<0.001	6.90	0.013					light snow
6-16-77	0.004	<0.001	<0.001	0.019	<0.001	0.045	<0.001	72.8	14.0	<0.001	<0.001	0.005	<0.01	0.29	<0.001		0.329	<0.001	29.76	0.014	<0.0002	<0.001	<0.001	3.11	<0.001	7.60	<0.001	13.50	0.015	<0.001				

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-3A
Location Mine Water

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
8-26-75					7.57									
12-26-75					7.35									
1-26-76	15:20	4.0	-1.0	3.5	8.0				16.0		14.0	8.2	<1.0	
4-28-76	12:20	2	10	11	7.5				34.0		38.0	6.8	<1.0	
5-27-76	14:30	1.4	25	11.5	7.4					7.0		7.7		
6-18-76	11:20	1.2	3	11	7.7				52.0	11.5	30.0	5.9	<1.0	
7-2-76	12:30	-0-												
9-30-76	12:45	2.5	23	13	7.6				28.0		35.0	8.2	2.3	
10-27-76	11:00	2	0	11	7.7				24.0		20.0	8.4	3.6	
11-29-76	11:10	1.8	-1	10	6.8				38.0		26.0	8.0	3.9	
12-28-76	11:05	4	4	11	7.7				36.0		33.0	7.5	2.5	

DATE	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	PC/L	PC/L
8-26-75		0.12				0.05		126.50					704.0			1220	2.70	<0.01	475.10	392.0	520.0		
12-26-75		0.11				0.05		58.0					633.0			970.0	0.73	<0.01	409.9	336.0	400.0		
1-26-76		0.130				0.08	0.03	90	<0.01		1024.0		515			790	0.19	<0.01	297.6	244	296		
4-28-76		0.050				0.090	0.070	46.0	<0.01		110		540			830	2.00	<0.01	366	300	308		
5-27-76		0.065				0.175	0.155	56.0	<0.01		53.0	<0.1	625			960	4.10	<0.01	412.3	338	344		
6-18-76		0.06				0.120	0.090	46.0	<0.01		256		590			900	68.40	<0.01	414.8	340	344		
7-2-76																							
9-30-76		0.05				0.130	0.095	25.0	<0.01		47.0		530			810	21.00	<0.01	375.8	308	335.4		
10-27-76		0.04				0.120	0.090	20.4	<0.01		86.0		525			800	22.00	<0.01	390.4	320	306		
11-29-76		0.05				0.140	0.100	19.1	<0.01		81.0		570			870	0.62	<0.01	427.0	350	300		
12-28-76		0.08				0.180	0.050	24.0	<0.01		44.0		620			800	23.0	<0.01	375.7	308	332		
		Avg 0.087					Avg 0.075																

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT DISS.	COPPER DISS.	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
8-26-75	<0.01		<0.01	<0.01		<0.01	<0.001	12560	10.0	<0.01		<0.01	<0.01	0.32		0.10	0.15	<0.01	49.44	<0.01	<0.001			3.53	<0.01	3.25	<0.001	6.39	0.08	
12-26-75	<0.01		<0.001	0.11		<0.01	<0.001	95.2	15.0	<0.01		<0.01	<0.01	0.27		0.012	0.025	<0.001	38.88	<0.01	<0.001			3.16	<0.01	3.00	<0.001	15.0	0.009	
1-26-76	0.021	<0.001	<0.001	0.100	<0.001	<0.001	<0.001	55.2	12.0	<0.001	<0.001	0.010		0.30	0.037		0.094	0.008	37.9	0.016	<0.0001	0.003	<0.001	2.95	0.012		<0.001	24.2	0.012	<0.001
4-29-76	0.064	<0.001	0.040	0.051	<0.001	<0.001	<0.001	56.8	8.0	<0.001	<0.001	0.009		0.27	<0.001		0.379	0.002	39.84	0.062	<0.0001	0.006	0.007	4.18	0.020		<0.001	21.0	0.087	<0.001
5-29-76	0.020	<0.001	<0.001	0.080	<0.001	<0.001	<0.001	82.4	10.0	<0.001	<0.001	0.010		0.35	<0.001		0.115	0.012	33.12	0.022	<0.0001	<0.001	<0.001	2.36	0.015		<0.001	30.0	0.038	<0.001
6-14-76	0.044	<0.001	0.022	0.040	<0.001	<0.001	<0.001	56.0	6.0	<0.001	<0.001	0.004		0.33	<0.001		0.280	<0.001	48.90	0.045	<0.0002	0.004	0.002	2.57	0.054		<0.001	22.0	0.073	<0.001
7-2-76																														
9-30-76	0.026		0.003	0.041				93.5	12.0			0.002		0.25	<0.001		0.266	<0.001	24.80	0.030	<0.0002	<0.001	<0.001	3.37	0.023			5.96	0.030	
10-27-76	0.008		<0.001	0.024				51.2	6.0			0.003		0.19	<0.001		0.288	<0.001	42.7	0.028	<0.0002	<0.001	<0.001	3.19	<0.001			16.0	0.064	
11-29-76	0.009		<0.001	0.023				36.0	8.0			0.009		0.20	<0.001		0.244	<0.001	50.4	0.019	<0.0002	<0.001	<0.001	4.26	<0.001			30.0	0.009	
12-28-76	0.010		<0.001	0.016				71.2	10.0			0.005		0.21	<0.001		0.260	<0.001	36.9	0.018	<0.0002	<0.001	<0.001	3.09	<0.001			6.1	0.074	

COMMENTS

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-3A
Location Utah #2 mine waste water

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
3-17-77	12:25	1.3	0	11	7.5				24.0		16.0	8.6	3.3	
6-16-77	10:50	2	21	13	7.5				6.0		4.0	7.9	3.5	0.005
6-14-78	15:55	1	20	4								9.4		

DATE	NITROGEN AMMONIA as NH_3-N	NITRATE as NO_3-N	NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HARDNESS as CaCO	SURFACTANT as MBAS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
3-17-77	0.055	0.10	<0.01	0.70		0.110	0.080	27.0	<0.01	
6-16-77	0.15	0.03		0.38		0.033	0.010	20.50	<0.01	
6-14-78										

DATE	SOLIDS TSS	TOTAL DISSOLVED SOLIDS	T.D.S.	TOTAL SOLIDS	TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	μMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
3-17-77	146	<0.01	510			780	55.0	<0.01	370.9	304	326			
6-16-77	12.0	0.2	320			520	1.20	<0.01	370.9	304	322		0	0
6-14-78														

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
3-17-77	0.018		<0.001	0.087		0.024	<0.001	71.2	6.0	<0.001		0.003		0.22
6-16-77	0.009	<0.001	<0.001	0.011	<0.001	0.015	<0.001	68.0	10.0	<0.001	<0.001	0.003	<0.01	0.29
6-14-78														

DATE	MANGANESE TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	
3-17-77			0.095	<0.001	35.37	0.016	<0.0002		0.002	2.97	<0.001	8.1	<0.001	6.72	0.033		
6-16-77			0.171	<0.001	36.48	0.004	<0.0002	<0.001	<0.001	3.15	<0.001	7.8	<0.001	7.52	0.036	<0.001	
6-14-78																	

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-6
Location Upper Eccles Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
[illegible]	[illegible]	3.7	8	7	8.3							6.9		
[illegible]2-76	11:30	1.7	24	12	8.1							8.4		
9-30-76	14:10	1	18	9	7.6				2.0		2.5	9.6	<1.0	
10-27-76	11:45	1.7	4	2	7.7				6.0		4.0	10.0		
11-29-76	15:30	1	-5	1	7.4				4.0		1.5	9.5	<1.0	
12-28-76	12:00	0.6	-4	2.5	7.6				14.0		10.0	8.8	<1.0	

DATE	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L
[illegible]								38.0	<[illegible]				350		
[illegible]2-76		0.09				0.220	0.150	25.3	<0.01				430		
9-30-76		0.05				0.175	0.055	25.0	<0.01		2.0		540		
10-27-76								21.4	<0.01		10.0		470		
11-29-76		0.12				0.080	0.030	32.6	<0.01		9.0		470		
12-28-76		0.17				0.070	0.035	33.5	<0.01		5.0		460		

DATE	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
[illegible]	530	3.50	<0.01	[illegible]	188	220		
[illegible]2-76	660	13.0	<0.01	302.5	248	261.1		
9-30-76	830	2.00	<0.01	373.3	306	259.1		
10-27-76	720	2.10	<0.01	339.2	278	276		
11-29-76	720	0.39	<0.01	339.2	278	308		
12-28-76	700	1.9	<0.01	324.5	266	286		

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
6-14-76								36.8	2.5					0.27
8-2-76	0.007	<0.001	<0.001	0.019	<0.001	<0.001	<0.001	70.0	8.0	<0.001	<0.001	0.079		0.34
9-30-76	0.005	<0.001	<0.001	0.040	<0.001	<0.001	<0.001	77.4	12.0	<0.001	<0.001	0.006		0.25
10-27-76								84.0	4.0					0.19
11-29-76	0.006	<0.001	<0.001	0.012	<0.001	<0.001	<0.001	44.8	6.0	<0.001	0.005	0.002		0.18
12-28-76	0.005	<0.001	<0.001	0.013	<0.001	<0.001	<0.001	70.4	2.0	<0.001	0.006	0.009		0.15

DATE	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
6-14-76					18.72					1.28				4.18		
8-2-76	<0.001		0.364	<0.001	21.0	0.190	<0.0002	<0.001	<0.001	2.24	0.005		<0.001	4.00	0.032	<0.001
9-30-76	<0.001		0.055	<0.001	16.0	<0.001	<0.0002	<0.001	<0.001	2.11	<0.001	6.20	<0.001	39.0	0.028	<0.001
10-27-76					15.8					1.94		6.0		12.0		
11-29-76	<0.001		0.338	<0.001	47.0	0.011	<0.0002	<0.001	<0.001	2.75	<0.001		<0.001	3.80	0.022	<0.001
12-28-76	<0.001		0.380	<0.001	26.4	0.012	<0.0002	<0.001	<0.001	2.23	<0.001	6.0	<0.001	6.0	0.059	<0.001

COMMENTS

1-76

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-6
Location Upper Fraser River

Coastal States Station

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
5-17-77	14:40	0.6	0	1	7.8				10.0		16.0	9.0	<1.0	
6-16-77	12:30	0.3	18	14	7.7				8.0		5.0	7.0	<1.0	<0.001
5-10-78	14:10	4.5	15	4	7.0						6.0	7.0	10.4	
6-14-78	16:40	8.5	22	9	7.4						28.0	7.5		0.004
7-12-78	9:15	2.1	[illegible]	14.5	7.6							7.0	5.8	
8-23-78	14:15	0.4	20	12.5	8.1						26.0	8.6	1.0	0.010
10-25-78	11:40	0.3	3	0.5	7.1							11.1	1.5	0.003
11-8-78	10:55	0.5	3.0	0.3	7.4						8.0	11.8		
12-20-78	11:10	0.1	-2	2	7.22						19.0	11.0	1.6	0.001
2-28-79	12:13		Inaccessible											
4-19-79	11:55		In-accessible											
5-11-79	[illegible]	[illegible]	[illegible]	0.3	7.4						10.0	9.3	<1.0	0.042
6-20-79	[illegible]	[illegible]	16	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	9.7	[illegible]	<0.001
7-18-79	10:57	1	24	12	7.52						7.5	7.4	<1.0	0.014
8-26-79	10:10	0.4	16	7.5	7.50						3.0	7.2		<0.001
9-18-79	[illegible]	[illegible]	[illegible]	0.35	7.80						10.0		7.3	<0.001
11-29-79	12:10	0.6	-5	0.3	7.3							9.2		0.062
2-29-80			In-Accessible											
4-29-80			In-Accessible											
5-14-80	[illegible]	[illegible]	10	3	7.8							[illegible]		0.058

DATE	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L
5-17-77	0.21	0.15	<0.01	0.39		0.055	0.024	28.0	<0.01		10.0	<0.1	412		
6-16-77	0.18	0.05		0.50		0.310	0.120	10.8	<0.01		3.0	<0.1	230		
5-10-78		1.05	<0.01	0.19			0.035	14.0			88.0		248		
6-14-78	0.10	0.49	<0.01	0.15			0.022	14.0			42.0		160		
7-12-78								27.0			8.0		228		
8-23-78								20.0			6.0		220		
10-25-78								19.0			4.0		255		
11-8-78		0.59	<0.01	0.10			0.090	23.0			11.0		260		
12-20-78		0.74	<0.01	0.11			0.020	22.0			16.0		286		
2-28-79															
4-19-79															
5-11-79		2.40				0.06		9.0			22.0		360		
6-20-79		2.66				[illegible]	[illegible]	24.0			9.0		[illegible]		
7-18-79		0.05				0.020		23.0			4.0		229		
8-26-79		0.20				<0.001		15.0			1.0		212		
9-18-79		1.59					0.060	40.0			24.0		298		
11-29-79						0.080		22.0			24.0		377		
2-29-80															
4-29-80															
5-14-80	<0.01					<0.001		18.0			22.5		225		

DATE	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	µMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
5-17-77	630	3.50	<0.01	297.7	244	262			
6-16-77	350	2.00	<0.01	251.3	206	202		0	0
5-10-78	395			298					
6-14-78	240			155.1					
7-12-78	386			222.04					
8-23-78	335			236.7					
10-25-78	440			263.5					
11-8-78	462			288.04					
12-20-78				302.56					
2-28-79									
4-19-79									
5-11-79		4.0		246.44	[illegible]		[illegible]		
6-20-79	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
7-18-79	410	2.50	<0.01	236.68	194		10.0		
8-26-79	405	3.10		239.12	196		10.0		
9-18-79	505			262.52	216		18.0		
11-29-79	475			297.68					
2-29-80									
4-29-80									
5-14-80	390			234.24					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX as CrO_4	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
5-17-77	0.014		<0.001	0.020		0.003	<0.001	73.6	4.0	<0.001		0.010		0.16
6-16-77	0.008	<0.001	<0.001	0.045	<0.001	0.014	<0.001	64.0	6.0	<0.001	<0.001	0.009	<0.01	0.24
5-10-78			<0.001				<0.001	68.2	2.0	<0.001		0.006		0.14
6-14-78			<0.001				<0.001	45.6	10.0	<0.001		<0.001		0.13
7-12-78			<0.001					28.0	2.0					
8-23-78			<0.001					60.0	2.0			0.006		0.14
10-25-78			<0.001				<0.001	65.6	1.5	<0.001		0.005		0.15
11-8-78			<0.001	<0.001			<0.001	72.2	2.0	<0.001		0.004	<0.01	0.15
12-20-78			<0.001	0.002			<0.001	78.6	10.0	<0.001		0.127		0.16
2-28-79														
4-19-79														
5-11-79			<0.001	0.050		0.095	<0.001	65.60	6.0	0.005		0.005	0.002	0.11
6-20-79			[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
7-18-79			<0.001	0.025		0.095	<0.001	61.60	4.0	0.003		0.008	<0.001	0.14
8-26-79			<0.001	0.036		0.070	<0.001	60.50	3.0	<0.001		0.025	<0.001	0.14
9-18-79			<0.001	0.025		0.060	<0.001	58.80	1.0	<0.001		0.010		0.15
11-29-79								80.00	4.0					
2-29-80														
4-29-80														
5-14-80								69.40	6.0					

DATE	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
5-17-77		0.609	<0.001	18.72	0.018	<0.0002		<0.001	1.34	<0.001	4.3	<0.001	61.15	0.060	
6-16-77		0.625	<0.001	14.40	<0.001	<0.0002	<0.001	<0.001	1.31	<0.001	4.0	<0.001	2.19	0.012	<0.001
5-10-78		0.029	<0.001	15.92	0.016	<0.0002			1.176	<0.001	5.2	<0.001	2.88	0.009	
6-14-78		0.161	<0.001	6.24	0.032	<0.0002			0.688	<0.001	4.85	<0.001	[illegible]	0.004	
7-12-78		0.062	<0.001	5.28	0.010	<0.0002			1.005	<0.001		<0.001	54.0	0.010	
8-23-78		<0.001	<0.001	14.4	0.002	<0.0002			1.178	<0.001		<0.001	3.01	0.007	
10-25-78		0.056	<0.001	20.10	0.005	<0.0002			1.220	<0.001			3.21	0.008	
11-8-78		0.091		17.28	0.014				1.387	<0.001	7.25	<0.001	3.33	0.003	
12-20-78		0.100	<0.001	19.64	0.012	<0.0002			1.272	<0.001	5.80	<0.001	7.50	0.004	
2-28-79															
4-19-79															
5-11-79	0.024	0.637	0.061	13.44	0.007	<0.0002			1.151	<0.001		0.004	3.74	0.015	
6-20-79	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]			[illegible]	7.41	0.012	
7-18-79	[illegible]	0.140	[illegible]	15.94	0.007	<0.0002			1.004	<0.001		0.002	3.02	0.016	
8-26-79	0.020	0.140	<0.001	12.40	0.020	<0.0002			0.42	<0.001		<0.001	5.00	0.05	
9-18-79		0.250	<0.001	18.72	0.089	<0.0002			3.00	<0.001		<0.001	8.10	0.005	
11-29-79		0.180		14.84	0.012				1.291				3.32		
2-29-80															
4-29-80															
5-14-80		0.155		1.12	0.019				1.300				[illegible]		

COMMENTS

In-Accessible
In-Accessible

A 1-79

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station YC-6
Location Eccles Creek above South Fork Eccles Creek
Coastal States Station

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK. as CO_3	Bi-CARBONATE ALK as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MANGANESE DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	
4-8-78																															
[illegible]-2-79																															
3-29-79																															
4-12-79																															
5-11-79			<0.001	0.02		0.070	<0.001			<0.001		0.008						<0.001							<0.001		<0.001		0.007		
6-20-79			<0.001	0.030		0.020	<0.001			<0.001		0.001						<0.001							<0.001		<0.001		0.008		
7-27-79			<0.001	0.020		0.080	<0.001			<0.001		0.005				0.010	0.140	<0.001							<0.001		<0.001		0.009		
8-23-79			<0.001	0.020		<0.001	<0.001			<0.001		0.003				0.015	0.160	<0.001							<0.001		<0.001		0.005		
[illegible]																															
[illegible]																															
[illegible]																															
[illegible]																															
[illegible]																															
[illegible]																															
[illegible]			<0.001	0.020		0.[illegible]	<0.001			0.001		0.010				0.060	0.140	<0.001							<0.001		<0.001		0.005		
[illegible]																	0.250														
[illegible]																	0.100														
[illegible]																	0.175														
[illegible]																	0.100														
[illegible]																	0.100														

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-6
Location Eccles Creek above South Fork
Coastal States Station

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HARDNESS as CaCO3	SURFACTANT as MBAS	SOLIDS TDS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.S.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as CaCO3	TOTAL HARDNESS as CaCO3	ACIDITY as CaCO3	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	μMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
1-26-80	09:00	[illegible]	[illegible]	[illegible]	[illegible]									<0.002	<0.01					0.030		42.0			310		315			320			207.62					
2-21-80	12:47	1.8	29	15	7.7									<0.001	<0.01					0.030		10.5			4.0		210			320			224.48					
3-25-80	16:05	1.2	14	11	7.8	13000	33.0				4.00	7.2	35.40	0.226	<0.01	2.45				0.090		14.0			90.0		265			400	3.70		225.72	330		<0.1	1.4	2.0
5-16-80	09:00	0.267	12	9	8.6									0.005	<0.01					0.080		15.0			7.0		258			295			240.26					
6-2-80	14:04	0.25	21	8	8.6									<0.001	0.10					0.040		12.0			9.0		285			440			331.84					
11-19-80	10:44		-6	0	7.4									<0.001	<0.01					0.270		16.5			90.0		310			250			336					
12-24-80	09:50		-4	0	7.7									0.230	<0.01					0.120		10.0			72.0		270			242			329.40					
1-27-81	11:35		-2	0	7.8									0.014	<0.01					0.050		10.0			7.0		295			265			356.24					
2-25-81	In-Accessible																																					
3-11-81	13:40		4	1	7.9									<0.001	<0.01					0.080		7.2			11.0		265			258			314.26					
4-9-81	15:33	0.9	7	2	8.1									0.266	0.15					1.280		44.0			524		290			248			285.48					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXavalent	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
1-26-80								52.80	3.0								0.170		18.72	0.020				0.75				2.60						
2-21-80								58.40	4.0								0.100		12.48	0.005				0.99				2.80						
3-25-80			<0.001	0.080		0.086	<0.001	69.60	16.0	<0.001		0.010	0.001	0.16		0.760	3.720	<0.001	19.68	0.070	<0.0002			2.33	0.005		<0.001	3.70	0.060					Rain yesterday
5-16-80								71.20	3.1	<0.001							0.095		19.72	0.021			<0.001	0.85				2.50						
6-2-80								72.80	1.5								0.490		17.28	0.002				1.79				12.00						
11-19-80								86.40	2.14								0.830		20.64	0.100				2.18				7.00						
12-24-80								84.00	4.00								0.350		17.28	0.030				2.10				3.50						
1-27-81								87.20	4.67								0.330		16.80	0.031				1.90				7.50						
2-25-81																																		
3-11-81								78.40	6.38								0.120		17.28	0.020				1.29				5.30						
4-9-81								83.20	6.00								0.310		16.32	0.028				1.95				5.10						

R 1-78

CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

WATER QUALITY DATA

Station VC-6
Location Eccles Creek above South Fork

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4-P MG/L	PHOSPHATE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	HYDROXIDE as OH MG/L	SURFACTANT as MBAS MG/L	SOLIDS TDS MG/L	SOLIDS TOTAL SETTLEABLE SOLIDS ML/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	SPECIFIC COND µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK as HCO_3 MG/L	TOTAL ALK as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
7-1-87	10:40	1.31	24	18	7.3																	221			46		553			661			222					

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS MG/L	CHROMIUM HEXAVALENT CR. MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L	GERMANIUM TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MAGNESIUM TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L	SULFIDE as S MG/L	MAJOR CATIONS MEQ/L	MAJOR ANIONS MEQ/L	$\frac{C-A}{C+A} \times 100$	COMMENTS
7-1-87								80.1	11.7		-								33.4					5.8				27.8				8.17	8.56	-2.33	

R-7-87

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-7
Location Boardinghouse Creek above Mud Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFITE as SO_3	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
12-6-76	15:55	1.2	-2	2	8.5				8.0		5.0	9.8					0.075			0.11	0.09	69.0	<0.01				410			630	0.19	<0.01	236.6	198	244			
4-28-76	12:20	2	5	10	8.2				22.0		19.0	9.0										50.0	<0.01				418			640	20.0	<0.01	290.6	230	294			
8-2-76	10:45	0.3	15	11	8.2				8.0		6.0	8.2					0.05			0.150	0.120	32.6	<0.01				430			660	2.0	<0.01	295.2	242	304			
10-27-76	12:20	0.5	4	4								9.5																											
11-23-76	16:10	1.5	-4	1	7.6				7.5		5.0	9.8										35.0	<0.01				520			800	0.48	<0.01	350.9	304	224			

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT Cr_6	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MAGNESIUM TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
[illegible]	[illegible]	[illegible]	<0.001	[illegible]	<0.001	[illegible]	<0.001	[illegible]	[illegible]	<0.001	<0.001	<0.001		0.23	<0.001		0.078	0.015	[illegible]	[illegible]	<0.0001	<0.001	<0.001	[illegible]			<0.001	[illegible]	0.067	<0.001				
[illegible]								[illegible]	[illegible]					0.21					[illegible]					[illegible]				[illegible]						
[illegible]	[illegible]	<0.001	<0.001	0.220	<0.001	<0.001	<0.001	[illegible]	[illegible]	<0.001	0.007	0.006		0.39	<0.001		0.194	<0.001	[illegible]	[illegible]	[illegible]	<0.001	<0.001	[illegible]	0.015		<0.001	[illegible]	0.078	<0.001				
[illegible]																																		
[illegible]								[illegible]	[illegible]					0.27					[illegible]					[illegible]				[illegible]						

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-8
Location Mud Creek below Clear Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
1-26-76	16:00	1.7	-2.0	2.5	8.5							9.6		
4-28-76	15:15	3	12	8	8.2	4300	230			4.9				
6-14-76	12:20	6.4	5	5	8.2	430	430			4.8		8.0		
8-2-76	10:45	2.1	18	11	8.2	4300	2300			3.0		8.8		
9-30-76	13:25	1	19	12		2300	430			4.5		11.8		
10-27-76	12:30	0.9	4	7	7.7	9300	2300			2.4		10.8		
11-29-76	16:00	0.9	-4	3	7.7	9300	2300			3.4		8.7		
12-29-76	12:20	1	2	5	7.7	9300	2300			3.5		9.6		

DATE	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	μMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
1-26-76			0.180			0.30	0.26	96.0	0.01				476			730	0.24	<0.01	265.9	218	280		
4-28-76								56.0	<0.01				432			660	0.52	<0.01	271.2	226	268		
6-14-76																							
8-2-76			0.11			0.330	0.170	55.0	<0.01				500			770	2.2	<0.01	324.9	267	258		
9-30-76																							
10-27-76								119	<0.01				655			1000	2.20	<0.01	388.6	312	360		
11-29-76																							
12-29-76								110	<0.01				640			980	1.75	<0.01	373.3	306	370		

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
1-26-76	0.047	<0.001	0.006	0.131	<0.001	0.012	<0.001	68	2.0	<0.001	<0.001	0.015		0.25
4-28-76								60.0	6.0					0.27
6-14-76														
8-2-76	0.014	<0.001	0.004	0.450	<0.001	0.017	<0.001	86.0	10.0	<0.001	<0.001	0.015		0.40
9-30-76														
10-27-76								90.4	4.0					0.39
11-29-76														
12-29-76								89.6	4.0					0.35

DATE	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
1-26-76	0.007		0.093	0.006	26.40	0.068	<0.0001	0.004	<0.001	1.67	0.005		<0.001	18.0	0.046	<0.001
4-28-76					28.3					2.57				9.0		
6-14-76																
8-2-76	<0.001		0.305	<0.001	27.0	0.102	<0.0002	<0.001	<0.001	2.54	0.019		<0.001	4.20	0.017	<0.001
9-30-76																
10-27-76					32.16					2.88				33.0		
11-29-76																
12-29-76					35.04					2.90				28.6		

COMMENTS

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-8
Location Mud Creek below Clear Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHORE TOTAL as PO_4-P	PHOSPHORE ORTHO as PO_4-P	SULFATE as SO_4	HARDNESS as CaCO	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	μMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	PC/L	PC/L
3-1-77	14:20	1	0	5		23000	930			2.6		9.4																											
6-16-77	13:30	1	29	16		43000	7500			1.5		8.8																											

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	HERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
3-1-77																																		
6-16-77																																		

R 1-76

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-9
Location Lower Eccles Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL ALBUMIN	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS TDS	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND	TURBIDITY	CARBONATE ALK as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
1-26-76	16:20	4.0	-4.0	1.0	7.9				10.0		8.0	9.6				0.260				0.13	0.10	117	<0.01				495			760	0.20	<0.01	246.4	202	244		
3-9-76	09:15	1.4	-5.0	2.0	8.3				1.5		6.0	9.8										55.8	<0.01				448			680	0.91	<0.01	290.3	238	270		
4-20-76	13:00	4.3	12	7	8.1				16.0		19.0	8.1				0.165				0.180	0.110	50.0	<0.01				387			595	0.25	<0.01	269.9	204	240		
6-14-76	12:05	5.7	12	6	8.3				14.0		19.0	7.0										46.0	<0.01				395			600	1.10	<0.01	255.7	209	222		
8-2-76	11:10	2.9	18	14	8.3				6.0		5.0	8.4				0.15				0.140	0.110	35.8	<0.01				410			630	4.0	<0.01	273.2	224	2568		
9-30-76	14:25	2.1	20	11	7.5				12.0		15.0	8.7										36.0	<0.01				420			640	2.80	<0.01	280.6	230	232		
10-27-76	11:35	3.5	-1	2	7.6				5.0		3.0	10.6				0.12				0.110	0.080	36.4	<0.01				450			690	4.30	<0.01	312.3	256	268		
11-29-76	15:15	2.2	-1	1.0	7.2				6.0		4.0	9.7										40.0	<0.01				438			670	0.45	<0.01	309.9	254	2660		
12-28-76	11:45	1.8	6	1	7.8				18.0		16.0	9.6				0.06				0.170	0.080	35.0	<0.01				440			670	2.20	<0.01	309.9	254	286		

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.	COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	
1-26-76	0.153	<0.001	0.005	0.151	<0.001	0.013	<0.001	55.2	5.0	<0.001	<0.001	<0.001		0.18	<0.001		0.135	0.013	9.60	0.150	<0.0001	<0.001	<0.001	1.64	0.002		<0.001	66.0	0.017	<0.001	
3-9-76	0.148	<0.001	0.002	0.131	<0.001	0.010	<0.001	63.2	<0.01	<0.001	<0.001	<0.001		0.50	<0.001		0.142	0.008	26.88	0.040	<0.0001	<0.001	<0.001	1.24	<0.001		<0.001	12.1	0.015	<0.001	
4-20-76	0.120	<0.001	0.008	0.159	<0.001	0.015	<0.001	50.4	2.0	<0.001	<0.001	0.008		0.25	<0.001		0.228	<0.001	27.3	0.049	<0.0001	<0.001	<0.001	2.20	<0.001		<0.001	8.0	0.013	<0.001	
6-14-76								57.6	2.0					0.21					12.72					1.04				17.00			
8-2-76	0.028	<0.001	<0.001	0.026	<0.001	<0.001	<0.001	65.0	8.0	<0.001	<0.001	0.098		0.43	<0.001		0.427	<0.001	23.0	0.063	<0.0002	<0.001	<0.001	2.02	0.013		<0.001	5.00	0.016	<0.001	
9-30-76								66.9	8.0					0.20					15.80					1.91				19.0			
10-27-76	0.006		<0.001	0.027		<0.001		72.0	4.0			0.010		0.40	<0.001		0.333	<0.001	21.10	0.063	<0.0002	<0.001	<0.001	1.97	0.002			13.0	0.018		
11-29-76								24.8	4.0					0.27					18.90					2.54				14.0			
12-28-76	0.014		<0.001	0.005		<0.001		63.2	4.0			0.017		0.24	<0.001		0.410	<0.001	30.72	0.012	<0.0002	<0.001	<0.001	2.02	<0.001			2.80	0.081		

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station YC-9
Location Eccles Creek
Picnic Mud Creek
Coastal States Station

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFIDE as SO_4	HARDNESS as CaCO	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL DISSOLVED SOLIDS	SOLIDS T.S.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COLOR	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY	
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	#WHOBCH	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L	

DATE	ALUMINUM DISS.	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS.	BERYLLIUM DISS.	BORON DISS.	CADMIUM DISS.	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEXavalent	COBALT DISS.	COPPER DISS.	CYANIDE as CN	FLUORIDE DISS.	IRON DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	NITROGEN DISS.	PHOSPHORUS DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L					
11-9-78																																			
12-27-78																																			
2-8-79																																			
7-18-79																																			
5-11-79			<0.001	0.51		0.105	<0.001			<0.001		0.017						<0.001							<0.001		<0.001		0.017					
6-20-79			<0.001	0.045		0.060	<0.001			<0.001		0.002						<0.001							<0.001		<0.001		0.012					
7-20-79			<0.001	0.050		0.030	<0.001			<0.001		0.003				0.010	0.760	<0.001							<0.001		<0.001		0.007					
8-23-79			<0.001	0.016		0.060	<0.001			<0.001		<0.001						<0.001							<0.001		<0.001		0.006					
9-26-79			<0.001	0.013		0.030	<0.001			<0.001		0.015						<0.001							<0.001		<0.001		0.009					

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station MC-9
Location Eagles Creek [illegible]
Mine Creek
Coastal States Station

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4-P MG/L	PHOSPHATE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	HYDROXIDE as OH MG/L	SURFACTANT as MBAS MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL SETTLEABLE SOLIDS MG/L	SOLIDS TDS MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	COND. µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
3-17-77	12:00	3.5	7	2	7.8				12.0		11.0	9.5	<1.0		0.27	0.05	<0.01	0.35		0.038	0.026	50.0	<0.01		38.0	<0.1	420			640	3.50	<0.01	273.3	224	264			
4-16-77	11:50	17	22	15	7.6				6.0		4.0	7.8	<1.0	<0.001	0.14	0.03		0.65		0.130	0.080	28.0	<0.01		14.0	<0.1	280			410	2.20	<0.01	276.7	226	258		0	0
5-10-78	15:00	5.0	14	10	7.9						19.0	8.2	1.6			0.72	<0.01	0.10			0.020	33.0			309		250			380			242					
6-14-78	17:15	11.3	25	11.5	7.3						12.0	8.6		0.003	0.10	0.36	<0.01	0.12			0.020	10.0			247		162			290			162.48					
7-12-78	15:55	2.4	27	17	8.0							8.0	1.2									36.0			27.0		238			418			256.68					
8-23-78	13:05	1.5	21.5	13.5	8.0						14.0	6.8	2.0	0.080								28.0			11.0		240			370			251.3					
12-26-78	11:15	3.2	4	4	7.1							10.4	1.3	0.010								40.0			12.0		279			470			280.6					
12-20-78	10:25	1.3	-10	0.5	7.91						7.0	12.4	<1.0	0.004								43.0			10.0		302			460			297.7					
2-28-79	11:50	2.1	-1	2	8.0							9.7	1.0	<0.001		0.10					0.025	38.0			23.0		311			490			307.44	252				
4-19-79	11:25	2.6	9	6	7.72							9.4	3.8	0.004		0.40					0.30	40.0			217		305			470			292.04	232				
5-11-79	16:15	5.2	5	9	8.45						5.0	8.3	<1.0	0.022	0.20	1.48				0.34		30.0			258		300			490	6.5		322.92	236		22.0		
6-27-79	[illegible]	[illegible]	[illegible]	-5	7.6	179.0	3.0			<1.0	2.0	7.85	1.8	<0.001	<0.01	0.23				0.020	0.010	14.0			24.0		240			450	10.0		262.50	[illegible]		12.0	3.5	10.0
8-23-79	09:35	2.4	13	5.5	8.0	330	13.0			1.6	4.0	9.1	<1.0	<0.001	<0.05	<0.01						32.0			10.0		290			490	2.00		285.40	234		14.0	<2.0	3.5
9-26-79	08:50	3	6	6	7.65						3.0	8.0		<0.001	<0.01	0.82				<0.001		32.0			5.0		286			510	2.6		280.60	230		15.0		
10-25-79	15:50	[illegible]	5	2	7.70							9.3	1.2	<0.001		<0.01					0.060	44.0			24.0		270			560			256.77	212		14.0		
11-30-79	10:49	1.8	-7	0.3	6.9							10.9		0.008	<0.01					0.070		40.0			23.5		298			525			292.80					
2-27-80	14:27	2.5	8	3	9.2							10.0	14.20	0.016		12.0				0.210	0.080	280			550		585			520			268.40	220		12.0		
3-27-80	11:40	2.4	1	3	8.95									0.008	<0.01					0.140		48.0			71.0		319			570			290					
4-29-80	11:09	17.4	7	3	9.2							9.2		<0.001	0.10					0.000		32.0			1268		238			415			[illegible]					
5-11-80	10:18	14.4	10	4.5	7.5							9.8		<0.001	<0.01					0.150		38.0			107		269			435			246.44					

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEXAVALENT Cr_6 MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L	HERMANIUM TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L				COMMENTS
3-17-77	0.021		<0.001	0.009		<0.001	<0.001	64.0	4.0	<0.001	-	0.015		0.16			0.092	<0.001	24.96	0.053	<0.0002		0.007	1.90	<0.001	5.0	<0.001	7.10	0.023					
4-16-77	0.046	<0.001	<0.001	0.063	<0.001	0.025	<0.001	58.4	6.0	<0.001	<0.001	0.005	<0.01	0.23	<0.001		0.346	<0.001	26.88	0.050	<0.0002	<0.001	<0.001	1.98	<0.001	5.5	<0.001	4.24	0.014	<0.001				
5-10-78			<0.001				<0.001	67.2	8.0	<0.001		0.007		0.16			0.040	<0.001	16.32	0.012	<0.0002			1.676	<0.001	5.25	<0.001	4.92	0.016					
6-14-78			<0.001				<0.001	51.2	12.0	<0.001		0.004		0.14			1.887	0.003	4.80	0.141	<0.0002			1.887	<0.001	5.10	<0.001	3.49	0.015					
7-12-78			<0.001					27.0	4.0								0.122	<0.001	7.68	0.043	<0.0002			1.488	<0.001		<0.001	53.0	0.013					
8-23-78			<0.001					56.8	4.0			0.003		0.15			0.216	<0.001	22.1	0.038	<0.0002			1.988	<0.001		<0.001	3.14	0.014					
10-25-78			<0.001				<0.001	57.6	5.0	<0.001		0.003		0.15			0.241	<0.001	26.3	0.011	<0.0002			1.520	<0.001			2.50	0.012					
12-27-78			<0.001				<0.001	73.6	6.0	<0.001		0.003		0.18			0.354	<0.001	24.0	0.066	<0.0002			1.695	<0.001			3.41	0.004					
2-28-79			<0.001				<0.001	68.8	<0.1	<0.001		0.004		0.17			0.380	<0.001	22.56	0.076	<0.0002			2.229	<0.001		<0.001	14.30	0.005				Overcast	
4-19-79			<0.001				<0.001	77.0	9.0	<0.001		0.002		0.16			5.840	0.002	21.12	0.187	<0.0002			1.952	<0.001		<0.001	4.09	0.013					
5-11-79			0.002	0.550		0.11	<0.001	70.4	6.0	0.014		0.007	0.002	0.13		0.022	5.980	0.006	18.72	0.043	<0.0002			0.633	<0.001		0.002	7.01	0.502					
6-27-79			<0.001	0.320		0.065	<0.001	67.2	3.0	0.002		0.015	0.001	0.014		1.154	1.040	0.005	14.52	0.036	<0.0002			1.151	<0.001		0.003	12.5	0.016					
8-23-79			<0.001	0.020		0.025	<0.001	96.00	2.0	0.005		0.006	<0.001	0.23		0.040	0.190	<0.001	3.36	0.004	<0.0002			4.100	<0.001		<0.001	4.10	0.013					
9-26-79			<0.001	0.024		0.050	<0.001	64.20	4.0	<0.001		0.014	0.001	0.17		0.020	0.340	<0.001	6.20	0.005	<0.0002			1.560	<0.001		<0.001	34.6	0.018					
10-25-79			<0.001	0.320		0.050	<0.001	59.60	7.0	<0.001		0.015		0.17			0.296	<0.001	24.48	0.062	<0.0002			2.850	<0.001		<0.001	7.20	0.036					
11-30-79								74.40	4.0								0.670		22.56	0.095				2.112				3.41						
2-27-80			<0.001	0.150		0.110	<0.001	72.00	12.0	0.002		0.010		0.17			14.90	0.007	82.00	0.400	<0.0002			2.40	<0.001		<0.001	6.50	0.020					
3-27-80								77.20	10.0								1.940		24.96	0.130				2.112				7.00						
4-29-80								65.60	7.0								1.790		14.04	0.146				2.26				7.30						
5-11-80								62.80	6.0								1.820		12.48	0.150				2.10				7.50						

R 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-9
Location Eccles Creek above Mud Creek Coastal States Station

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL RETURABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	µMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
6-25-80	13:55	12.1	24	12	8.85							7.9		<0.002	<0.01					0.060		50.0			16.0		210			330			168.36					
7-24-80	13:15	3.4	27	16	8.6									0.002	<0.01					0.080		28.0			32.0		240			360			236.68					
8-25-80	14:30		14	12	9.0	35000	3300			3.1	4.00	8.0	<0.01	<0.001	0.16	0.64				0.900		45.0			2224		396			475	22.0		291.80	240		6.0	1.1	1.8
9-16-80	08:17	2.3	9	7	8.3									0.026	<0.01					0.060		25.5			22.0		268			410			285.24					
10-7-80	10:30	2.4	11	6	8.4									0.044	0.10					0.030		24.0			9.0		265			400			287.92					
11-19-80	10:04	3.6	-7	0.5	7.8									<0.001	<0.01					0.160		44.0			28.0		290			248			297.68					
12-24-80	12:00	3.2	6	2	7.7									0.007	<0.01					0.120		33.0			20.0		320			300			307.44					
1-27-81	10:50	2.7	0	1	7.8									<0.001	<0.01					0.030		16.0			20.0		285			265			331.84					
2-25-81	14:30	3.8	10	5	8.1									0.003	<0.01					<0.001		21.0			30.0		246			380			280.60					
3-11-81	12:48	2.4	2	3	7.9									<0.001	<0.01					0.070		20.0			17.0		265			275			280.60					
4-8-81	12:58	2.3	8	6	8.1									0.003	0.15					0.020		26.0			115		290			332			278.16					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
6-25-80								56.0	2.0								0.640		11.52	0.040				1.05				2.60						
7-24-80								64.80	4.0								0.470		14.88	0.050				1.49				3.10						
8-25-80			0.014	0.550		0.120	<0.001	72.00	20.0	<0.001		0.020	0.015	0.24		0.070	51.50	0.040	25.92	0.046	<0.0002			1.58	0.007		0.002	13.40	0.380					
9-16-80								61.60	3.6	<0.001							0.410		27.84	0.055			<0.001	1.50				3.20						
10-7-80								59.20	2.7								0.580		24.48	0.055				2.18				4.80						
11-19-80								76.80	2.49								0.710		23.04	0.085				2.11				3.60						
12-24-80								72.80	26.00								1.120		27.36	0.080				1.95				14.70						
1-27-81								73.60	5.00								1.200		23.04	0.095				2.00				5.20						
2-25-81								20.20	10.00								0.740		49.90	0.080				2.34				4.60						
3-11-81								67.20	10.64								0.360		21.60	0.070				2.16				4.30						
4-8-81								79.20	16.00								0.750		15.84	0.090				2.40				6.80						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-9
Location Eccles Creek above Mud Creek
Coastal States Station

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK as HCO_3	TOTAL ALK as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY	
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	μMHOS/CM	FTU	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L	

DATE	ALUMINUM DISS	ANTIMONY DISS.	ARSENIC DISS.	BARIUM DISS	BERYLLIUM DISS	BORON DISS	CADMIUM DISS	CALCIUM DISS.	CHLORIDE DISS.	CHROMIUM HEX as CR	COBALT DISS.	COPPER DISS.	CYANIDE as Cn	FLUORIDE DISS.	GERMANIUM DISS.	IRON DISS.	IRON TOTAL	LEAD DISS.	MAGNESIUM DISS.	MANGANESE DISS.	MERCURY DISS.	MOLYBDENUM DISS.	NICKEL DISS.	POTASSIUM DISS.	SELENIUM DISS.	SILICA as SiO_2	SILVER DISS.	SODIUM DISS.	ZINC DISS.	VANADIUM DISS.				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
[illegible]-5-80																	0.640																	
[illegible]-21-80																	0.470																	
[illegible]-5-80			<0.001	0.150		0.100	<0.001			<0.001		0.016				0.070	5.450	0.036							<0.001		<0.001		0.009					
[illegible]-80																	0.410																	
10-7-80																	0.580																	
11-19-80																	0.710																	
12-24-80																	1.120																	
[illegible]-27-81																	1.200																	
[illegible]-25-81																	0.740																	
[illegible]-11-81																	0.360																	
4-2-81																	0.650																	

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-13
Location Long Canyon Creek

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
2-27-80	In-Accessible													
4-29-80	In-Accessible													
6-25-80	11:00	2.0	21	4	8.45							9.1		0.013
8-25-80	12:24	0.2	10	10	8.5							6.7	0.70	<0.001
12-10-80	15:05	-0-												
2-25-81		-0-												
4-8-81	12:00		In-Accessible											
6-24-81	09:50	0.04	In	12	8.5									<0.001
8-26-81	09:26	-0-												
10-14-81	10:49	-0-												
12-23-81	11:45		In-Accessible											
2-24-82			In-Accessible											
4-14-82			In-Accessible											
6-9-82	11:55	3.1	13	6	7.6									<0.001
8-11-82	09:27	0.08	19	11	7.2									<0.001
10-13-82	09:55		In-Accessible											
12-21-82	In-Accessible													
2-21-83	In-Accessible													
4-21-83	In-Accessible													
6-21-83	11:55	8.5	22	7	7.5									0.158

DATE	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL ALBUMIN	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	CHLORIDE as Cl	FLUORIDE as MBAS	SOLIDS TDS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.S.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	μmhos	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
2-27-80																								
4-29-80																								
6-25-80						0.060		12.0			23.0		110			180			119.56					
8-25-80						0.100	0.050	9.0			24.0		221			240			231.80	190		6.0		
12-10-80																								
2-25-81																								
4-8-81																								
6-24-81	0.15					0.160		17.0			2.0		157			220			175.68	150		<0.01		
8-26-81																								
10-14-81																								
12-23-81																								
2-24-82																								
4-14-82																								
6-9-82	0.42					0.090		26.0			19.0		154			213			149.10	122.20				
8-11-82	0.10					0.080		10.0			8.0		279			283			262.70	215.30				
10-13-82																								
12-21-82																								
2-21-83																								
4-21-83																								
6-21-83	<0.01					0.480		12.0			185		140			197			141.50					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEX. as CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
2-27-80														
4-29-80														
6-25-80								16.40	<0.1					
8-25-80			<0.001	0.020		<0.001	<0.001	52.40	14.0	<0.001		0.010		0.13
12-10-80														
2-25-81														
4-8-81														
6-24-81								48.80	5.14					
8-26-81														
10-14-81														
12-23-81														
2-24-82														
4-14-82														
6-9-82								47.00	0.40					
8-11-82								46.40	34.70					
10-13-82														
12-21-82														
2-21-83														
4-21-83														
6-21-83								34.40	2.00					

DATE	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
2-27-80																				
4-29-80																				
6-25-80			0.170		10.08	0.030				0.53				1.70						
8-25-80		0.030	0.490	<0.001	11.04	0.010	<0.002			1.11	<0.001		<0.001	12.50	0.002					
12-10-80																				
2-25-81																				
4-8-81																				
6-24-81			0.250		10.08	<0.001				0.82				2.00						
8-26-81																				
10-14-81																				
12-23-81																				Snow
2-24-82																				Snow - Frozen
4-14-82																				Snow
6-9-82		0.140	0.250		7.10	0.040				0.52				1.8						
8-11-82			0.220		16.32	0.007				0.50				41.0						
10-13-82																				Snow -
12-21-82																				Snow
2-21-83																				Snow
4-21-83																				Snow
6-21-83			2.450		5.76	0.087				0.82				8.9						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-13
Location Long Canyon Creek

DATE	TIME	FLOW CFS	TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L
8-24-83	15:50	0.2	17	12	6.7								0.5	0.069
10-19-83	09:05		3	1	7.7									<0.001
12-[illegible]-83	Inaccessible													
3-27-84	11:45		Inaccessible											
6-26-84	16:30	4.7	18	8	7.5									

DATE	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4-P MG/L	PHOSPHATE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	HYDROXIDE as OH MG/L	SURFACTANT as MBAS MG/L
8-24-83	<0.01	<0.01				0.45		14		
10-19-83	0.85					<0.01		18		
12-[illegible]-83										
3-27-84										
6-26-84	<0.1					0.164		8.6		

DATE	SOLIDS TSS MG/L	SOLIDS TOTAL SETTLEABLE SOLIDS ML/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	SPECIFIC COND. µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
8-24-83	145		180			332			222	182		<0.01		
10-19-83	3.0		220			353			234.29					
12-[illegible]-83														
3-27-84														
6-26-84	117		127			204			63	104				

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEX as CR MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L
8-24-83			<0.001	0.750		0.200	<0.001	34.10	1.9	<0.001		<0.001		0.11
10-19-83								64.80	4.00					
12-[illegible]-83														
3-27-84														
6-26-84								37.2	2.8					

DATE	MANGANESE TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MAGNESIUM TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	PHOSPHORUS TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L	COMMENTS
8-24-83		0.865	2.650	0.002	4.69	0.076	<0.0002			0.8	<0.001		<0.001	41.0	0.095		Scattered Showers
10-19-83			0.060		12.48	0.010				0.9				2.40			
12-[illegible]-83																	Covered with Snow
3-27-84																	Covered with Snow
6-26-84			1.98		7.1	0.05				0.86				1.83			

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-14
Location Whiskey Canyon Creek below sediment pond

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
4-29-80	11:48		In Accessible																																				
6-25-80	14:40	[illegible]	25	10.5	8.7							7.7		0.002	0.15					0.060		37.0			34.0		180			300			156.16					
7-25-80	15:25	0.6	15	12	8.7							7.9	[illegible]	0.010	<0.01	0.68				0.040	0.020	39.0			18.0		299			460			202.28	222		<0.1		
10-7-80	09:40	0.5	9	6	8.9									<0.001	<0.01					0.080		12.0			21.0		251			390			295.24					
12-10-80	14:37	-0-																																					
2-25-81		-0-																																					
4-9-81	15:20	-0-																																					
6-24-81	15:45		[illegible]	12	8.2									<0.001	0.10					0.210		125			147		366			492			[illegible]	200		<0.01		
8-26-81	14:30	0.07	20	11	8.4								0.40	<0.001	<0.01	0.16				0.190	0.040	55.5			3.0		320			390			263.52	220		<0.01		
10-14-81	13:58	0.04	0	4	8.4									<0.001	0.21					0.250		60.0			22.0		320			500			282.90					
12-23-81	13:40	-0-	In Accessible																																				
2-24-82			In Accessible																																				
4-14-82			In Accessible																																				
6-9-82	13:40		19	6	7.5									0.003	0.40					0.070		28.0			28.0		220			372			200.70	164.50				
8-11-82	16:32	0.07	15	10	8.4									0.004	0.07					0.110		21.0			36.0		346			514			290.80	238.40				
10-13-82	15:25		7	5	7.8								<0.1	0.005	0.05	0.21				1.230	1.150	52.0			418		288			419			175.90	144.20		4.00		
12-21-82	In Accessible																																						
2-21-83	In Accessible																																						
4-21-83	In Accessible																																						
6-21-83	15:45	1.1	18	11	7.7									0.070	0.20					0.220		21.0			75.0		134			170			107.40					

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXav CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MANGANESE TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
4-29-80																																		Rain & Snow
6-25-80								41.20	2.0								0.350		11.52	0.040				1.18				2.70						
7-25-80			<0.001	0.050		0.050	<0.001	73.60	18.0	<0.001		0.020		0.19		0.030	0.390	<0.001	23.04	0.620	<0.0002			2.36	<0.001		<0.001	3.90	0.050					
10-7-80								59.20	3.5								0.288		8.68	0.050				2.75				12.00						
12-10-80																																		
2-25-81																																		
4-9-81																																		
6-24-81								30.40	17.90								0.540		13.36	0.080				3.86				6.30						
8-26-81			0.002	0.045		0.090	0.002	52.80	28.00	<0.001		<0.001		0.21		<0.001	0.330	<0.001	37.92	0.060	<0.0002			3.90	0.005		<0.001	7.60	0.130					
10-14-81								60.00	11.10								0.380		21.16	0.065				4.10				31.00						
12-23-81																																		Frozen - Snow
2-24-82																																		Frozen - Snow
4-14-82																																		Snow
6-9-82								54.00	10.10							0.340	0.390		15.10	0.040				1.68				5.3						
8-11-82								50.40	54.70								0.350		39.36	0.055				1.50				21.0						Recent Rain
10-13-82			0.002	0.065		0.120	<0.001	53.60	8.70	<0.001		0.030		0.11		6.650	11.100	0.015	13.44	0.305	<0.0002			0.74	0.006		0.001	7.4	0.190					
12-21-82																																		Inaccessible - Snow
2-21-83																																		Snow
4-21-83																																		Snow
6-21-83								28.80	4.00								0.850		4.80	0.035				0.68				10.0						

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VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station VC-14
Location Whiskey Canyon Creek below sediment pond

DATE	TIME	FLOW	TEMPERATURE AIR	TEMPERATURE WATER	pH	COLIFORM TOTAL	COLIFORM FECAL	FECAL STREP.	C.O.D.	B.O.D.	T.O.C.	DISSOLVED OXYGEN	OIL & GREASE	PHENOL	NITROGEN AMMONIA as NH_3-N	NITROGEN NITRATE as NO_3-N	NITROGEN NITRITE as NO_2-N	NITROGEN TOTAL KJELDAHL	NITROGEN ORGANIC	PHOSPHATE TOTAL as PO_4-P	PHOSPHATE ORTHO as PO_4-P	SULFATE as SO_4	HYDROXIDE as OH	SURFACTANT as MBAS	SOLIDS TSS	SOLIDS TOTAL SETTLEABLE SOLIDS	SOLIDS T.D.S.	SOLIDS TOTAL SOLIDS	SOLIDS TOTAL VOLATILE SOLIDS	SPECIFIC COND.	TURBIDITY	CARBONATE ALK. as CO_3	BI-CARBONATE ALK. as HCO_3	TOTAL ALK. as $CaCO_3$	TOTAL HARDNESS as $CaCO_3$	ACIDITY as $CaCO_3$	ALPHA RADIO-ACTIVITY	BETA RADIO-ACTIVITY
		CFS	°C	°C		MPN	MPN	MPN	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	ML/L	MG/L	MG/L	MG/L	µMHOS	FTU	MG/L	MG/L	MG/L	MG/L	MG/L	pCi/L	pCi/L
3-25-83	13:54	0.04	19	11	7.4								0.6	0.045	<0.01	0.12				0.17		20			34.0		295			592			274.30	238		<0.01		
10-19-83	16:50	0.01	7	5	7.5									<0.001	0.50					<0.02		115			10.0		420			659			285.98					
12- -83	Inaccessible																																						
3-27-84	11:00	0.13	0	2	8.0										<0.1					0.048		98			31		408			661			148					
6-26-84	14:05	0.46	14	8	7.4										<0.1					0.055		155			18		398			532			100	164				

DATE	ALUMINUM TOTAL	ANTIMONY TOTAL	ARSENIC TOTAL	BARIUM TOTAL	BERYLLIUM TOTAL	BORON TOTAL	CADMIUM TOTAL	CALCIUM TOTAL	CHLORIDE DISS.	CHROMIUM HEXAVALENT CR	COBALT TOTAL	COPPER TOTAL	CYANIDE as CN	FLUORIDE DISS.	GERMANIUM TOTAL	IRON DISS.	IRON TOTAL	LEAD TOTAL	MAGNESIUM TOTAL	MANGANESE TOTAL	MERCURY TOTAL	MOLYBDENUM TOTAL	NICKEL TOTAL	POTASSIUM TOTAL	SELENIUM TOTAL	SILICA as SiO_2	SILVER TOTAL	SODIUM TOTAL	ZINC TOTAL	VANADIUM TOTAL				COMMENTS
	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L				
3-25-83			<0.001	0.810		0.150	<0.001	30.10	4.2	<0.001		<0.001		0.11		0.350	0.980	0.012	5.20	0.033	<0.0002			0.6	<0.001		<0.001	75.5	0.064					
10-19-83								98.40	16.00								0.240		29.28	0.120				1.7				5.70						
12- -83																																		Covered with Snow
3-27-84								13.3	14.6								0.61		44.4	0.038				3.48				9.47						
6-26-84								86.3	7.7								0.56		28.8	0.05				2.94				4.62						Scattered Rain Showers

R 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station W 19-1
Location Whiskey Canyon Well

DATE	TIME		TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L	NITROGEN AMMONIA as NH3-N MG/L	NITROGEN NITRATE as NO3-N MG/L	NITROGEN NITRITE as NO2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO4-P MG/L	PHOSPHATE ORTHO as PO4-P MG/L	SULFATE as SO4 MG/L	CHLORIDE as Cl MG/L	FLUORIDE as MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL RETURNABLE SOLIDS MG/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	COND. µMHOS/CM	TURBIDITY NTU	CARBONATE ALK. as CO3 MG/L	BI-CARBONATE ALK. as HCO3 MG/L	TOTAL ALK. as CaCO3 MG/L	TOTAL HARDNESS as CaCO3 MG/L	ACIDITY as CaCO3 MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
12-5-79	15:55	0.03		6.0	7.60	<2.2	<2.2		5.0	<1.0				0.001	<0.01	0.30				0.121		24.0			16.0		306			500	2.00		305	250				
12-5-79	17:00	0.03		6.0	7.60	<2.2	<2.2		5.6	<1.0				0.001	<0.01	0.24				0.120		26.0			19.0		300			500	2.00		309.88	254				
7-19-80	15:14	0.13		7.0	7.50	<2.2	<2.2			<1.0	<1.0		4.00	<0.001	<0.01	0.42				0.002		11.0			70.0		370			570	5.40		251.32	210				
7-19-80	15:15	0.13		7.0	7.60	<2.2	<2.2			<1.0	<1.0		1.20	0.014	<0.01	0.32				0.005		94.0			14.0		360			550	1.20		268.40	220				
10-7-80	09:00			9.0	8.5									<0.001	0.20					0.040		15.0			3.0		290			450			341.60					
12-10-80	14:05			5	7.2									0.001	<0.01					0.030		16.5			6.0		294			450			339.16					
2-25-81	15:00				8.0								1.20	0.009	<0.01	0.20				0.006		40.0					302			460			280.60	230		<0.1		
4-8-81	14:59			3	8.0									0.035	0.14					0.025		22.0			2.0		277			270			307.14					
8-26-81	15:06			13	8.1								<0.01	<0.001	<0.01	0.26				0.160	0.040	36.0					290			370			292.80	240		12.00		
10-14-81	14:46				8.0									<0.001	0.19					0.200		18.0					293			440			334.40					
12-23-81	13:39			4	7.6									0.006	2.48					0.420		20.0			6.0		293			285			327.90	268.75				
2-24-82	13:06				7.5									<0.001	1.14					0.090		18.0			2.0		298			450			329.30	278.30				
4-14-82	14:18			4	7.4									0.038	0.07					0.330		24.0					315			503			341.70	278.30				
6-9-82	14:13			8	7.1									0.008	0.50					0.090		9.0					390			476			350.10	287				
8-11-82	16:22			11	7.8									<0.001	0.13					0.100		3.0					306			457			332.30	272.40				
10-13-82	15:07		10	9	7.4								0.8	<0.001	0.06	0.17				0.150	0.040	15.0					285			496			325.30	266.60		9.00		
12-21-82			No	Sample	Collected																																		
2-21-83	13:10		6	5	7.8									0.096	0.21					0.180		34.0					349			436			365.30					
4-21-83	11:58			4	7.9									<0.001	0.15					0.08		30.0			19.0		308			406			314.8					
6-21-83	15:30		21	10	7.6									0.030	<0.01					0.120		33.0					316			373			317.20					

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEXavalent CR MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L	GERMANIUM TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MAGNESIUM TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L				COMMENTS
12-5-79							<0.001	76.00	4.0	<0.001		0.005	<0.001			0.010	0.470	<0.001	20.16	0.010	<0.0002			1.418	<0.001		<0.001	2.50	0.105					Total Depth 720'
12-5-79							<0.001	75.20	4.0	<0.001		0.005	<0.001			0.010	0.465	<0.001	21.12	0.011	<0.0002			1.419	<0.001		<0.001	2.51	0.104					Total Depth 720'
7-18-80			<0.001				<0.001	67.40	4.0	<0.001		0.007	<0.001				0.310	<0.001	19.68	0.022	<0.0002			12.50	<0.001		<0.001	35.80	0.015					
7-19-80			<0.001				<0.001	66.40	4.0	<0.001		0.005	<0.001				0.228	<0.001	19.60	0.014	<0.0002			10.70	<0.001		<0.001	31.75	0.021					
10-7-80								68.00	0.4								0.200		23.04	0.020				1.33				12.10						
12-10-80								75.20	2.35								0.120		19.68	0.005				1.35				2.70						
2-25-81			0.001	0.070		0.015	<0.001	89.30	6.00	<0.001		0.010		0.19			0.810	0.030	10.20	0.010	<0.0002			1.36	0.001		<0.001	7.60	1.270					
4-8-81								72.80	7.00								0.850		23.50	0.014				1.29				3.00						
8-26-81			<0.001	0.070		0.020	<0.001	76.00	3.74	<0.001		0.010		0.17		<0.001	0.040	0.144	21.60	<0.001	<0.0002			1.33	0.003		<0.001	2.50	0.380					
10-14-81								73.60	3.70								0.140		19.68	0.010				9.55				9.30						
12-23-81								78.00	4.20								0.046		23.00	0.002				1.55				2.65						
2-24-82								71.00	3.70								0.010		21.50	<0.001				1.32				11.00						
4-14-82								70.00	1.80								0.020		23.00	0.010				1.35				15.0						
6-9-82								76.00	2.50								0.010		23.60	0.002				1.32				2.8						
8-11-82								75.20	15.30								0.012		19.20	0.003				1.29				42.0						
10-13-82			<0.001	0.060		0.100	<0.001	77.60	3.90	<0.001		0.009		0.13		0.019	0.020	<0.001	16.32	0.005	<0.0002			1.38	0.005		<0.001	18.0	0.850					
12-21-82																																			Pump under repair
2-21-83								74.40	2.40								0.600		17.76	0.005				1.35				34.0						
4-21-83								72.00	7.80								0.150		23.04	0.004				1.39				8.0						
6-21-83								72.00	10.00								0.600		21.60	0.011				1.42				16.0						

R 1-78

VAUGHN HANSEN ASSOCIATES
Consultants / Engineers

WATER QUALITY DATA

Station W119-1
Location Whiskey Canyon Well

DATE	TIME		TEMPERATURE AIR °C	TEMPERATURE WATER °C	pH	COLIFORM TOTAL MPN	COLIFORM FECAL MPN	FECAL STREP. MPN	C.O.D. MG/L	B.O.D. MG/L	T.O.C. MG/L	DISSOLVED OXYGEN MG/L	OIL & GREASE MG/L	PHENOL MG/L	NITROGEN AMMONIA as NH_3-N MG/L	NITROGEN NITRATE as NO_3-N MG/L	NITROGEN NITRITE as NO_2-N MG/L	NITROGEN TOTAL KJELDAHL MG/L	NITROGEN ORGANIC MG/L	PHOSPHATE TOTAL as PO_4-P MG/L	PHOSPHATE ORTHO as PO_4-P MG/L	SULFATE as SO_4 MG/L	CHLORIDE as Cl MG/L	SURFACTANT as MBAS MG/L	SOLIDS TSS MG/L	SOLIDS TOTAL SETTLEABLE SOLIDS ML/L	SOLIDS T.D.S. MG/L	SOLIDS TOTAL SOLIDS MG/L	SOLIDS TOTAL VOLATILE SOLIDS MG/L	SPECIFIC COND. µMHOS/CM	TURBIDITY FTU	CARBONATE ALK. as CO_3 MG/L	BI-CARBONATE ALK. as HCO_3 MG/L	TOTAL ALK. as $CaCO_3$ MG/L	TOTAL HARDNESS as $CaCO_3$ MG/L	ACIDITY as $CaCO_3$ MG/L	ALPHA RADIO-ACTIVITY pCi/L	BETA RADIO-ACTIVITY pCi/L
8-25-83	13:06		24	12	7.2								<0.1	0.024	<0.01	<0.01				0.15		34					310		496			312.20	260		<0.01		
10-19-83	16:35			7	7.6									<0.001	0.20					0.14		30					340		477			285.48					
6-26-84	13:25			11	7.4										<0.1					<0.01		27.7					325		517			153	251				

DATE	ALUMINUM TOTAL MG/L	ANTIMONY TOTAL MG/L	ARSENIC TOTAL MG/L	BARIUM TOTAL MG/L	BERYLLIUM TOTAL MG/L	BORON TOTAL MG/L	CADMIUM TOTAL MG/L	CALCIUM TOTAL MG/L	CHLORIDE DISS. MG/L	CHROMIUM HEXAVALENT CrO_4 MG/L	COBALT TOTAL MG/L	COPPER TOTAL MG/L	CYANIDE as CN MG/L	FLUORIDE DISS. MG/L	GERMANIUM TOTAL MG/L	IRON DISS. MG/L	IRON TOTAL MG/L	LEAD TOTAL MG/L	MANGANESE TOTAL MG/L	MANGANESE TOTAL MG/L	MERCURY TOTAL MG/L	MOLYBDENUM TOTAL MG/L	NICKEL TOTAL MG/L	POTASSIUM TOTAL MG/L	SELENIUM TOTAL MG/L	SILICA as SiO_2 MG/L	SILVER TOTAL MG/L	SODIUM TOTAL MG/L	ZINC TOTAL MG/L	VANADIUM TOTAL MG/L				COMMENTS
8-25-83			<0.001	0.079		0.090	<0.001	74.50	11.20	<0.001		<0.001		0.12		0.530	0.650	<0.001	20.50	0.015	<0.0002			1.5	<0.001		<0.001	16.5	0.036					
10-19-83								72.00	6.00								0.060		21.60	<0.001				1.3				2.70						
6-26-84								72.5	12.5								1.36		27.6	<0.01				1.50				4.30						

R 1-76

SEEP AND SPRING INVENTORY WATER QUALITY DATA SUMMARY - SHEET 1a OF 2

Station	Date	PARAMETER, mg/l																
		Q (cfs)	Temp (°C)	Acidity ($CaCO_3$)	Alk ($CaCO_3$)	As	Ba	Bicarb	B	Cd	Ca	Cl	Cr	Cond (umhos/cm)	Cu	F	Fe (diss)	Fe (Tot)
2-2	9/06/78	0.027	10	-	-	-	-	258.6	-	-	71.2	8.0	-	395	-	-	-	-
6-3	7/17/79	0.022	5.5	-	-	-	-	158.6	-	-	46.4	<0.1	-	255	-	-	-	-
6-3	10/01/79	<.001	6.0	14.0	160.0	<.001	0.02	195.2	<.001	<.001	64.00	2.0	<.001	370	0.004	0.07	0.01	0.64
6-3	8/14/90	-	-	-	-	-	-	246.0	-	-	52.9	0.64	-	-	-	-	-	-
6-12	7/17/79	0.001	6.0	-	-	-	-	151.28	-	-	46.4	<.1	-	240	-	-	-	-
7-11	7/17/79	0.013	7.0	-	-	-	-	134.2	-	-	35.2	<.1	-	194	-	-	-	-
7-11	10/01/79	<.002	4.0	14.0	200.0	<.001	0.01	244.0	-	<.001	84.0	6.0	0.002	490	0.001	0.11	0.01	0.66
7-11	7/23/90	-	-	-	-	-	-	188.0	-	-	51.2	13.9	-	-	-	-	<.01	-
19-10	6/26/79	0.009	7.0	-	-	-	-	197.64	-	-	48.0	2.0	-	320	-	-	-	-
24-6	10/26/78	0.002	5.0	-	-	-	-	290.4	-	-	79.2	0.01	-	352	-	-	-	-
24-12	6/25/79	0.007	6.0	-	-	-	-	353.8	-	-	78.4	<.1	-	535	-	-	-	-
24-12	10/03/79	-	-	-	-	-	-	305.0	-	-	96.8	34.0	-	490	-	-	-	-
24-12	7/23/90	-	-	-	-	-	-	10.0	-	-	37.6	0.27	-	-	-	-	-	-
25-5	6/25/79	0.029	4.0	-	-	-	-	212.28	-	-	58.40	<.1	-	310	-	-	-	-
25-5	10/03/79	-	-	-	-	-	-	319.64	-	-	105.6	28.0	-	500	-	-	-	-
25-5	8/07/90	-	-	-	-	-	-	326.0	-	-	67.1	1.31	-	-	-	-	-	-
25-13	10/26/78	0.007	2.5	-	-	-	-	283.0	-	-	71.2	0.01	-	430	-	-	-	-
25-13	6/26/79	0.056	7.0	-	-	-	-	36.6	-	-	1.6	<.1	-	71	-	-	-	-
25-13	10/01/79	0.001	11.0	16.0	126.0	<.001	0.01	153.72	-	<.001	56.0	<.1	<.001	300	.003	0.11	0.01	0.26
25-13	7/23/90	-	-	-	-	-	-	196.0	-	-	40.2	0.41	-	-	-	-	-	-
25-15	6/26/79	0.07	8.0	-	-	-	-	41.48	-	-	1.6	2.0	-	176	-	-	-	-
25-17	9/06/79	0.004	5.0	-	-	-	-	278.1	-	-	70.4	6.0	-	405	-	-	-	-
25-18	10/26/78	0.009	4.0	-	-	-	-	231.8	-	-	62.4	0.01	-	322	-	-	-	-
25-20	6/25/79	0.011	5.0	-	-	-	-	36.6	-	-	12.8	<.1	-	69	-	-	-	-
29-1	7/25/79	0.004	8.0	-	-	-	-	297.68	-	-	84.0	24.0	-	515	-	-	-	-
29-2	7/17/79	0.004	7.0	-	-	-	-	309.88	-	-	74.4	<.1	-	560	-	-	-	-

SEEP AND SPRING INVENTORY WATER QUALITY DATA SUMMARY - SHEET 1b OF 2

Station	Date	PARAMETER, mg/l																	
		Pb	Mg	Mn	Hg	NO_3 (as N)	Oil & Grease	Phenol	PO_4 (as P)	K	Se	Ag	Na	SO_4	TDS	Zn	pH	Carbonate	Hardness
2-2	9/06/78	-	8.1	-	-	-	-	-	-	3.56	-	-	2.1	4.0	213	-	7.35	-	-
6-3	7/17/79	-	5.76	-	-	-	-	-	-	0.478	-	-	1.43	10.0	143	-	-	-	-
6-3	10/01/79	<.001	14.0	0.003	<.0002	0.06	-	-	0.11	0.779	-	-	1.88	55.0	238	0.02	7.4	-	-
6-3	8/14/90	-	17.9	-	-	-	<.5	-	-	2.3	-	-	3.4	<1.0	223	-	-	-	-
6-12	7/17/79	-	2.88	-	-	-	-	-	-	0.377	-	-	1.68	8.0	145	-	-	-	-
7-11	7/17/79	-	5.28	-	-	-	-	-	-	0.335	-	-	2.30	6.0	119	-	-	-	-
7-11	10/01/79	<.001	19.2	<.001	<.0002	26	-	-	0.06	0.693	0.001	<.001	2.13	80.0	316	0.006	7.4	-	-
7-11	7/23/90	-	15.0	0.012	-	-	-	-	-	0.4	-	-	4.3	23.5	251	-	-	2.1	222
19-10	6/26/79	-	12.48	-	-	-	-	-	-	1.275	-	-	3.05	13.0	220	-	-	-	-
24-6	10/26/78	-	9.60	-	-	-	-	-	-	1.257	-	-	2.95	9.0	190	-	7.5	-	-
24-12	6/25/79	-	22.08	-	-	-	-	-	-	1.283	-	-	2.33	10.0	320	-	-	-	-
24-12	10/03/79	-	5.76	-	-	-	-	-	-	1.240	-	-	19.5	14.2	323	-	6.9	-	-
24-12	7/23/90	-	30.9	-	-	-	-	-	-	1.2	-	-	2.7	31.8	226	-	-	111	211
25-5	6/25/79	-	6.72	-	-	-	-	-	-	0.338	-	-	1.50	<3.0	200	-	-	-	-
25-5	10/03/79	-	2.88	-	-	-	-	-	-	1.54	-	-	16.0	11.1	330	-	7.4	-	-
25-5	8/07/90	-	21.9	-	-	-	-	-	-	0.8	-	-	2.4	28.0	296	-	-	-	-
25-13	10/26/78	-	13.44	-	-	-	-	-	-	0.808	-	-	1.95	10.0	232	-	7.5	-	-
25-13	6/26/79	-	0.48	-	-	-	-	-	-	0.555	-	-	10.2	<3.0	32	-	-	-	-
25-13	10/01/79	-	9.60	.001	<.0002	.24	-	-	.060	.633	.001	<.001	1.15	53.0	199	.005	7.4	-	-
25-13	7/23/90	-	12.7	-	-	-	-	-	-	0.4	-	-	2.2	12.5	177	-	-	-	162
25-15	6/26/79	-	0.48	-	-	-	-	-	-	0.236	-	-	17.1	7.6	52.0	-	-	-	-
25-17	9/06/79	-	11.0	-	-	-	-	-	-	2.95	-	-	4.1	4.0	219	-	-	-	-
25-18	10/26/78	-	9.6	-	-	-	-	-	-	0.664	-	-	2.1	14.0	174	-	-	-	-
25-20	6/25/79	-	0.96	-	-	-	-	-	-	0.634	-	-	1.19	8.5	43	-	-	-	-
29-1	7/25/79	-	4.4	-	-	-	-	-	-	1.987	-	-	7.24	13.0	310	-	-	-	-
29-2	7/17/79	-	25.44	-	-	-	-	-	-	1.643	-	-	4.13	49.0	310	-	-	-	-

SEEP AND SPRING INVENTORY WATER QUALITY DATA SUMMARY - 2a OF 2

Station	Date	PARAMETER, mg/l																
		Q (cfs)	Temp (°C)	Acidity ($CaCO_3$)	Alk ($CaCO_3$)	As	Ba	Bicarb	B	Cd	Ca	Cl	Cr	Cond (umhos/cm)	Cu	F	Fe (diss)	Fe (Tot)
30-13	6/26/79	0.002	6.0	-	-	-	-	336.72	-	-	84.8	16.0	-	640	-	-	-	-
30-15	7/18/79	0.004	5.0	-	-	-	-	192.76	-	-	46.4	4.0	-	300	-	-	-	-
31-13	6/17/79	0.017	5.0	-	-	-	-	241.56	-	-	62.4	2.0	-	370	-	-	-	-
31-13	7/17/79	0.004	6.0	-	-	-	-	258.64	-	-	68.0	<.1	-	420	-	-	-	-
31-13	10/04/79	-	-	-	-	-	-	278.16	-	-	94.4	20.0	-	410	-	-	-	-
31-13	7/23/90	-	-	-	-	-	-	278.0	-	-	64.1	<.1	-	-	-	-	-	-
32-2	7/17/79	<.001	9.0	-	-	-	-	466.04	-	-	75.2	28.0	-	800	-	-	-	-
35-10	6/25/79	0.011	8.0	-	-	-	-	207.4	-	-	54.4	<.1	-	300	-	-	-	-
35-13	6/26/79	0.013	6.0	-	-	-	-	253.76	-	-	72.0	2.0	-	360	-	-	-	-
35-13	10/01/79	<.002	7.0	20.0	240.0	<.001	0.03	292.8	-	<.001	84.0	2.0	0.001	380	0.001	0.13	0.01	0.27
35-13	8/14/90	-	-	-	-	-	-	192.0	-	-	46.3	1.47	-	-	-	-	-	-
36-1	6/27/79	0.009	4.0	-	-	-	-	-	-	-	-	-	-	390	-	-	-	-
36-3	6/27/79	0.083	3.0	-	-	-	-	80.52	-	-	24.8	<.1	-	128	-	-	-	-
36-3	10/01/79	<.001	3.0	18.0	172.0	<.001	0.03	209.84	0.06	<.001	68.0	2.0	<.001	360	0.005	0.08	0.01	0.23
36-3	8/10/90	-	-	-	-	-	-	196.0	-	-	48.2	<.1	-	-	-	-	-	-
36-7	6/27/79	0.018	6.0	-	-	-	-	102.48	-	-	34.4	2.0	-	182	-	-	-	-
36-7	10/01/79	0.001	5.0	12.0	150.0	<.001	0.02	183.0	-	<.001	48.0	4.0	<.001	250	.003	.11	0.01	1.2
36-17	10/04/79	-	-	-	-	-	-	268.4	-	-	81.6	18.0	-	430	-	-	-	-
36-17	7/23/90	-	-	-	-	-	-	293.0	-	-	56.3	<.1	-	-	-	-	-	-
36-19	7/16/79	-	-	-	-	-	-	168.36	-	-	40.8	2.0	-	230	-	-	-	-
36-19	10/01/79	0.001	6.0	14.0	134.0	<.001	0.01	163.48	-	<.001	44.0	2.0	<.001	300	0.002	0.09	0.01	0.15
36-19	7/23/90	-	-	-	-	-	-	144.0	-	-	42.6	<.1	-	-	-	-	-	-
36-21	7/16/79	0.011	7.0	-	-	-	-	251.32	-	-	61.6	2.0	-	385	-	-	-	-
36-23	7/20/79	0.004	9.0	-	-	-	-	234.24	-	-	64.8	2.0	-	315	-	-	-	-
36-23	7/23/90	-	-	-	-	-	-	258.0	-	-	72.8	<.1	-	-	-	-	-	-

SEEP AND SPRING INVENTORY WATER QUALITY DATA SUMMARY - 2b OF 2

Station	Date	PARAMETER, mg/l																	
		Pb	Mg	Mn	Hg	NO_3 (as N)	Oil & Grease	Phenol	PO_4 (as P)	K	Se	Ag	Na	SO_4	TDS	Zn	pH	Carbonate	Hardness
30-13	6/26/79	-	32.64	-	-	-	-	-	-	1.527	-	-	9.36	63.0	380	-	-	-	-
30-15	7/18/79	-	12.0	-	-	-	-	-	-	0.703	-	-	4.4	13.0	179	-	-	-	-
31-13	6/17/79	-	14.4	-	-	-	-	-	-	0.999	-	-	1.41	17.0	227	-	-	-	-
31-13	7/17/79	-	14.4	-	-	-	-	-	-	0.979	-	-	1.63	6.0	233	-	-	-	-
31-13	10/04/79	-	4.8	-	-	-	-	-	-	1.146	-	-	4.00	12.2	272	-	-	-	-
31-13	7/23/90	-	20.1	-	-	-	-	-	-	0.7	-	-	1.8	24.2	262	-	-	-	244
32-2	7/17/79	-	21.12	-	-	-	-	-	-	2.013	-	-	75.3	21.0	528	-	-	-	-
35-10	6/25/79	-	10.08	-	-	-	-	-	-	0.444	-	-	1.62	9.6	184	-	-	-	-
35-13	6/26/79	-	4.8	-	-	-	-	-	-	0.383	-	-	4.20	4.0	215	-	-	-	-
35-13	10/01/79	<.001	12.0	<.001	<.0002	-	-	-	0.06	0.583	<.001	<.001	2.09	20.0	250	0.004	7.3	-	-
35-13	8/14/90	-	6.8		-	-	<.5	-	-	0.5	-	-	3.0	<1	167	-	-	-	-
36-1	6/27/79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36-3	6/27/79	-	2.4	-	-	-	-	-	-	0.537	-	-	1.32	8.0	81	-	-	-	-
36-3	10/01/79	<.001	12.0	0.003	<.0002	0.77	<1.0	0.004	0.08	0.726	<.001	<.001	2.17	45.0	233	0.008	7.1	-	-
36-3	8/10/90	-	6.5	-	-	-	-	-	-	0.6	-	-	1.9	<1	180	-	-	-	-
36-7	6/27/79	-	1.92	-	-	-	-	-	-	0.664	-	-	1.64	10.3	150	-	-	-	-
36-7	10/01/79	0.003	7.20	0.005	<.0002	-	-	-	0.11	0.914	0.001	<.001	3.0	6.0	165	0.003	7.2	-	-
36-17	10/04/90	-	5.76	-	-	-	-	-	-	1.11	-	-	10.0	10.5	280	-	7.8	-	-
36-17	7/23/90	-	15.3	-	-	-	-	-	-	0.2	-	-	22.2	11.5	259	-	-	2.5	238
36-19	7/16/79	-	3.36	-	-	-	-	-	-	0.349	-	-	13.9	6.0	155	-	-	-	-
36-19	10/01/79	<.001	19.2	<.001	<.0002	-	-	-	0.06	0.521	<.001	<.001	1.33	50.0	198	0.008	7.2	-	-
36-19	7/23/90	-	5.2	-	-	-	-	-	-	0.2	-	-	1.4	5.7	126	-	-	-	121
36-21	7/16/79	-	10.08	-	-	-	-	-	-	0.479	-	-	8.0	6.0	219	-	-	-	-
36-23	7/20/79	-	9.12	-	-	-	-	-	-	0.491	-	-	1.86	6.0	206	-	-	-	-
36-23	7/23/90	-	10.6	-	-	-	-	-	-	0.2	-	-	1.9	4.2	221	-	-	-	209

Pond 004A - Discharge Data as compiled from Valley Camp Monthly Reports.

Date	Flow Max	pH Min	pH Max	SS Max	O&G Max	Fe(T) Max	TDS Max
1/85	0						
2/85	15	7.50	7.50	17.00	0.40	0.61	1180
3/85	40	7.50	8.02	36.00	0.40	0.90	1340
4/85	100	7.32	7.35	251.00	0.40	1.12	510
5/85	105	8.01	8.03	45.00	0.40	2.96	561
6/85	80	7.34	7.36	52.00	0.40	1.62	740
7/85	60	7.32	8.27	30.00	0.40	1.01	670
8/85	70	8.22	8.35	14.00	0.40	0.61	696
9/85	60	7.55	7.88	8.80	0.41	0.23	680
10/85	65	8.00	8.04	14.00	0.40	0.16	594
11/85	70	7.89	8.60	11.00	0.42	0.69	500
12/85	35	7.82	8.57	14.00	0.40	0.50	501
1/86	0						
2/86	30	7.64	7.64	3.20	2.06	0.04	470
3/86	35	7.68	7.71	92.00	4.02	2.26	372
4/86	110	7.44	7.60	17.00	0.50	0.86	405
5/86	140	7.40	7.71	27.00	0.50	0.84	561
6/86	65	7.64	7.81	19.00	3.11	1.10	705
7/86	95	7.70	7.72	14.00	0.50	0.35	690
8/86	0						
9/86	0						
10/86	0						
11/86	0						
12/86	0						
1/87	0						
2/87	0						
3/87	0						
4/87	0						
5/87	0						
6/87	0						
7/87	0						
8/87	0						
9/87	0						
10/87	0						
11/87	0						
12/87	0						
1/88	0						
2/88	0						
3/88	0						
4/88	0						
5/88	3	7.74	7.87	36.00	8.00	1.11	740
6/88	0						
7/88	0						
8/88	0						
9/88	0						
10/88	0						
11/88	0						
12/88	0						

1/89	0						
2/89	0						
3/89	0						
4/89	0						
5/89	0						
6/89	0						
7/89	0						
8/89	0						
9/89	0						
10/89	0						
11/89	0						
12/89	0						
1/90	0						
2/90	0						
3/90	0						
4/90	15	7.66	7.66	14.00	5.06	1.40	531
5/90	0						
6/90	0						
7/90	0						
8/90	0						
9/90	0						
10/90	0						
11/90	0						
12/90	0						
Minimum	0		7.32	3.20	0.40	0.04	372
Maximum	140		8.60	251.00	8.00	2.96	1340
Average	17		7.76	37.63	1.48	0.97	655
Std Dev	33		0.33	54.11	2.06	0.70	235

Pond 005A - Discharge Data as compiled from Valley Camp Monthly Reports.

Date	Flow Max	pH Min	pH Max	SS Max	O&G Max	Fe(T) Max	TDS Max
1/85	247	7.48	8.30	35.00	0.40	1.59	435
2/85	171	7.55	8.19	6.00	0.40	1.35	419
3/85	162	7.62	7.83	63.00	0.40	0.72	365
4/85	112	7.37	7.99	10.00	0.40	0.68	349
5/85	215	8.03	8.07	81.00	0.40	4.38	475
6/85	180	7.74	7.84	71.00	0.40	0.72	680
7/85	292	7.39	7.98	70.00	0.40	1.45	504
8/85	225	7.88	8.22	68.00	0.40	1.22	482
9/85	265	7.42	7.55	34.00	0.40	0.54	562
10/85	220	7.86	7.86	13.00	0.40	0.10	529
11/85	224	7.45	7.57	12.00	0.40	0.80	542
12/85	238	7.40	7.50	13.00	0.40	0.71	482
1/86	210	7.50	7.50	1.60	0.40	0.13	440
2/86	220	7.42	7.47	3.20	15.40	0.09	470
3/86	202	7.45	7.56	4.40	2.41	0.06	495
4/86	202	6.70	7.66	7.20	0.50	0.50	490
5/86	377	7.30	7.81	12.00	4.75	0.50	507
6/86	377	7.59	7.64	26.00	0.50	1.02	525
7/86	319	7.49	7.66	24.00	0.50	0.93	554
8/86	224	7.73	7.84	12.00	0.50	0.33	507
9/86	45	7.59	7.66	3.20	4.46	0.37	533
10/86	135	7.56	7.74	3.40	0.50	0.11	407
11/86	197	7.55	8.30	28.00	0.50	0.38	598
12/86							
1/87	148	7.52	7.79	3.60	0.50	0.05	500
2/87	157	7.66	7.71	7.60	0.50	0.76	538
3/87	139	7.50	7.52	10.00	0.50	0.10	479
4/87	112	7.50	7.66	6.40	1.16	0.21	579
5/87	112	7.66	7.82	9.20	0.98	0.27	566
6/87	126	7.64	7.88	14.00	2.38	0.92	540
7/87	238	7.44	7.76	9.60	0.50	0.20	661
8/87	112	7.73	8.70	8.00	4.47	0.21	554
9/87	148	7.57	8.20	32.00	2.11	0.66	575
10/87	135	7.44	7.68	35.00	1.41	0.40	585
11/87	180	7.20	7.66	23.00	0.50	0.28	447
12/87	224	7.58	7.62	17.00	0.50	0.21	458
1/88	202	7.62	7.73	21.00	1.17	2.00	610
2/88	215	7.57	7.84	12.00	8.82	0.33	599
3/88	229	7.57	7.66	24.00	3.76	1.05	535
4/88	135	7.67	7.71	31.00	2.29	0.17	652
5/88	368	7.52	7.66	61.00	5.18	0.72	509
6/88	202	7.62	7.66	31.00	3.42	0.33	609
7/88	139	7.58	7.74	12.00	3.64	0.10	471
8/88	189	7.66	7.82	10.00	4.16	0.26	431
9/88	292	7.69	7.84	78.00	1.17	0.63	477
10/88	220	7.71	7.88	7.20	5.18	0.18	489
11/88	202	7.69	7.82	32.00	8.37	0.33	485
12/88	382	7.69	7.82	33.00	5.73	0.36	423

1/89	112	7.43	7.88	14.00	9.41	0.25	491
2/89	94	7.69	7.81	24.00	3.29	0.28	565
3/89	292	7.46	7.64	6.00	4.59	0.18	460
4/89	328	7.48	7.81	5.00	3.87	0.37	460
5/89	157	7.48	7.64	12.00	8.82	0.65	
6/89	166	7.51	7.69	2.00	1.18	0.17	395
7/89	135	7.62	7.71	16.00	4.35	0.24	460
8/89	162	7.78	7.81	14.00	2.12	0.86	528
9/89	148	7.69	7.84	8.80	1.41	0.68	466
10/89	67	7.69	7.86	15.00	5.18	0.17	486
11/89	54	7.79	7.82	1.50	3.88	0.11	459
12/89	189	7.76	7.82	4.00	0.50	0.24	663
1/90	153	7.74	8.11	5.00	1.06	0.84	390
2/90	189	7.74	7.81	2.00	0.82	0.96	390
3/90	135	7.86	8.59	1.50	4.35	0.18	367
4/90	148	7.67	7.74	1.50	3.76	0.16	432
5/90	67	7.72	7.82	3.00	0.94	0.33	554
6/90	148	7.37	7.39	4.50	4.00	0.19	374
7/90							
8/90							
9/90							
10/90							
11/90							
12/90							
Minimum	45		6.70	1.50	0.40	0.05	349
Maximum	382		8.70	81.00	15.40	4.38	680
Average	191		7.69	19.51	2.57	0.56	501
Std Dev	76		0.24	20.23	2.85	0.63	76

APPENDIX 722.100b

1984 Seep and Spring Inventory - Cedar Creek Associates

CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH

Seep and Spring Inventory

and

Proposed Seep and Spring Monitoring Program

Submitted to

Valley Camp of Utah, Inc.
Helper, Utah

Submitted by

Cedar Creek Associates
Fort Collins, Colorado

November 30, 1984

INVENTORY

On October 16, 1984, Cedar Creek Associates initiated field studies to inventory seeps and springs and characterize associated wetland vegetation on Valley Camp of Utah, Inc.'s mine permit area. The purpose of this inventory and the subsequent proposed monitoring program was to satisfy the requirements of Condition No. 7 imposed on Valley Camp of Utah, Inc.'s mine permit application. The following sections describe the methods employed to inventory seeps and springs, provide the results of the inventory, and propose a program to monitor seeps and springs on the permit area.

METHODOLOGY

To provide information on the size, source, and amount of water; vegetation present; photo-documentation; and an evaluation of wildlife utilization of each seep and spring, Cedar Creek personnel attempted to visit each of the 73 permit area springs during mid-October, 1984. However, only 18 springs were inventoried as a result of an unseasonably heavy snowstorm on October 17, 1984. This snowstorm and subsequent cold weather and snowstorms precluded completing the inventory in 1984. Springs inventoried included all those occurring in Sections 24 and 25 within the northern portion of the permit area, except for six springs in the SE 1/4 of Section 25 (see Plate 1, Valley Camp of Utah, Inc. permit application).

Standardized data sheets were completed for each spring visited. Information provided on these data sheets included location; slope; aspect; the size of the area around the spring supporting wetland, riparian, or other indicator species of vegetation; and vegetation species present. Where possible, information on the vigor and percent cover of vegetation stratum was recorded. In most cases (particularly for herbaceous species) data on vigor and percent cover could not be provided because of snow cover and decadent or dormant vegetation.

Other data recorded included source and flow of each spring, pertinent wildlife observations, and comments on wildlife habitat. Wildlife observations were limited due to the season in which the inventory occurred. The quantity of flow for each spring was obtained, where possible, by timing the filling a container of known capacity and then converting to gallons per

minute of discharge. The source of each spring was determined from hydrology information presented in the permit application.

As a final inventory procedure, a photograph of each spring site and an additional photograph of the surrounding vegetation community was taken for each spring visited. The frame number of each picture and camera orientation was noted on each data sheet.

RESULTS

Although only 18 springs were inventoried, it was determined that this was a sufficient number visited to adequately characterize the majority of the springs on the permit area and to propose an appropriate monitoring program. In addition, all springs had been previously visited and characterized by Vaughn Hansen Associates (Ground water Hydrology Report, mine permit application). Data sheets completed for the 18 springs inventoried are provided in Appendix 1.

Flows in the majority of the springs are low (less than 10 gpm), and Vaughn Hansen Associates (Ground Water Hydrology Report, mine permit application) concluded from variation in flows (from spring to summer) and geological information that "much, if not all, of the water found in a given spring originates in the small surface depression or basin immediately adjacent to the spring." Wetland habitat supported by these springs is represented primarily by small isolated stands of annual forbs and perennial grasses adapted to growing in close proximity to moist situations. Since wetland habitat supported by these springs is limited or nonexistent, the major value of these springs to most wildlife is their use as a local source of water and their contribution to total streamflow in associated drainages. In addition, springs in the permit area are relatively abundant (average of one for every 37 acres, excluding perennial streams), and travel distances between water sources are relatively short for most wildlife and livestock that utilize the area.

PROPOSED MONITORING PLAN

Based on the preliminary findings, Valley Camp of Utah, Inc. will commit, pursuant to OSM approval, to monitoring a representative sample of springs on a yearly basis. Monitoring will occur in late summer to coincide with low flow periods since low flow is the most limiting factor controlling the extent and vigor of associated wetland vegetation. Approximately 15 control and 15 potentially affected springs will be monitored each year. Control springs will be chosen from areas under which mining will not occur, while potentially affected springs will be monitored in areas under which mining will occur or has occurred. Other criteria to be used for selection of control springs will be similarity in source (formation), amount of flow, slope, aspect, and vegetation to the potentially affected springs. Control springs will be monitored in conjunction with the potentially affected springs so that potential mining related impacts to springs can be discerned from yearly fluctuations in springflow attributable to climatic variation. Monitoring at each spring will consist of measurement of flow present and photo-documentation of associated wetland vegetation. In order to maintain consistency in the specific area to be photographed from year to year, a permanent stake will be placed to mark the photo station at each spring. During the first year of monitoring the height of the camera from the ground and compass direction (degrees) of the camera orientation will be recorded. This height and camera orientation will be repeated from year to year for each spring. A chalkboard with the date and spring number will be placed in each photograph for identification purposes.

At the end of each year of monitoring, Valley Camp of Utah, Inc. will submit a summary of the results to the OSM.

Appendix 1

Spring Inventory Data Sheets and Photos

CEDAR CREEK ASSOCIATES

SEEP AND SPRING INVENTORY
VALLEY CAMP OF UTAH, INC.

General Information

Seep, Spring Identification: 25-17 Date: 10/16/84 Time: 10:00 am

Observers: Viert/Phelan Elevation: 9,440'

Legal Description: NW 1/4, SW 1/4, Sec. 25, T 13S, R 6 E

Dimensions: 200' X 125' Acreage: 0.57

Slope (Est.): 20% Aspect: NW

USFWS Classification: Non-applicable (N/A)

Vegetation Information

Species	Vigor	% Cover (Est.)	Importance
Trees			
None			
Shrubs			
Ribes sp., Sambucus sp.	N/A	<5%	N/A
Herbaceous			
Rudbeckia laciniata, Geranium sp. Festuca sp., Carex spp., Poa sp.	N/A	? (snow cover)	N/A

Adjacent Communities Spruce fir forest

Comments: Photo No and Orientation: 1-1 146° seep, 1-2 Adj. 40°

Hydrology Information

Source of water: Blackhawk Formation

Quantity of water (gal/min): None flowing - frozen

Comments:

Wildlife Information

	Species Observed	Species Sign Observed
Mammals		
		snowshow hare tracks
Birds		
Reptiles and Amphibians		

Habitat Considerations

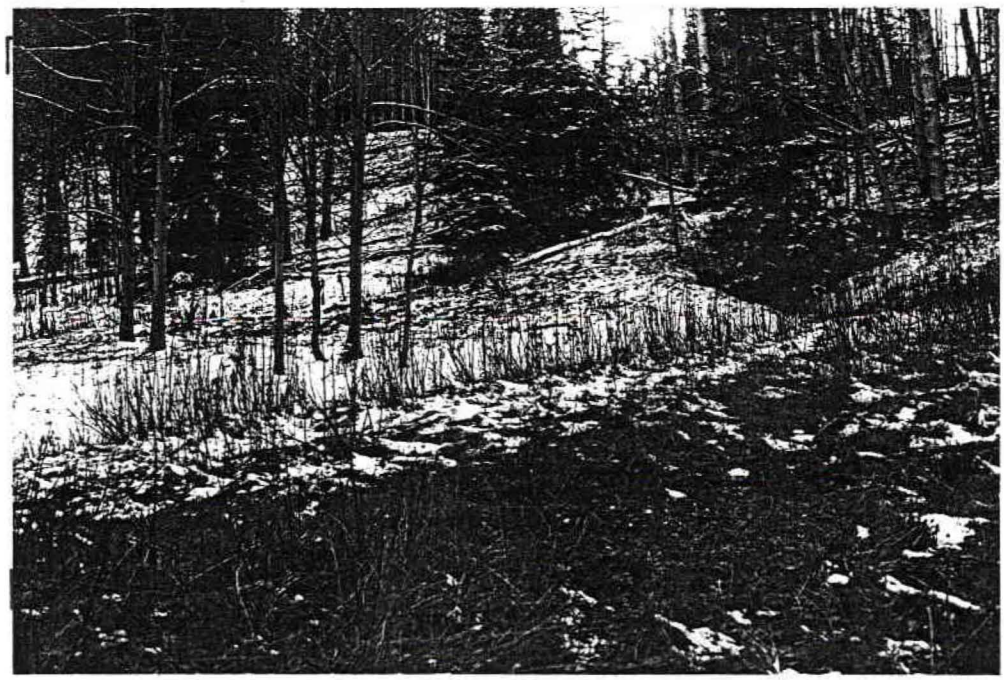
Sambucus - good mule deer browse; no significant wetland vegetation

Comments: open meadow in spruce-fir firest; 2-3 inches snow cover

Photo Log

Area Photo

Site Photo



Wildlife Information

Species Observed	Species Sign Observed
Mammals	
2 mule deer does bedded down near spring	elk pellets
Birds	
Reptiles and Amphibians	

Habitat Considerations

No significant wetland vegetation

Comments: Good elk habitat -- forb meadow on open aspen hillside

CEDAR CREEK ASSOCIATES

SEEP AND SPRING INVENTORY
VALLEY CAMP OF UTAH, INC.

General Information

Seep, Spring Identification: 25-14 Date: 10/16/84 Time: 5:14 pm

Observers: Phelan, Viert Elevation: 9,280'

Legal Description: SE 1/4, NE 1/4, Sec. 25, T 13S, R 6 E

Dimensions: 15' X 100' Acreage: 0.03

Slope (Est.): 50% Aspect: ESE

USFWS Classification: Non-applicable

Vegetation Information

Species	Vigor	% Cover (Est.)	Importance
Trees			
None			
Shrubs			
None			
Herbaceous			
Veratrum sp., Poa sp., Agropyron sp., mixed annual forbs & perennial grasses	N/A	50%	N/A

Adjacent Communities Forb meadow & Aspen

Comments: Photo Nos. & orientation: Site 1-36, 230°; Adj. 1-37, 10°

Hydrology Information

Source of water: Blackhawk Formation

Quantity of water (gal/min): < 0.25 gpm

Comments:

Photo Log

Area Photo

Site Photo

Wildlife Information

	Species Observed	Species Sign Observed
Mammals		
Birds		
Reptiles and Amphibians		

Habitat Considerations

No significant wetland vegetation

Comments: grasses heavily grazed

CEDAR CREEK ASSOCIATES

SEEP AND SPRING INVENTORY
VALLEY CAMP OF UTAH, INC.

General Information

Seep, Spring Identification: 25-13 Date: 10/16/84 Time: 4:40 pm

Observers: Phelan, Viert Elevation: 9,280'

Legal Description: NE 1/4, NE 1/4, Sec. 25, T 13S, R 6 E

Dimensions: 10' X 120' Acreage: 0.03

Slope (Est.): 45% Aspect: E

USFWS Classification: Non-applicable

Vegetation Information

Species	Vigor	% Cover (Est.)	Importance
Trees			
None			
Shrubs			
None			
Herbaceous			
Veratrum sp., Rudbeckia laciniata, Poa sp., Cirsium sp., Agropyron sp., Carex spp.	N/A	40%	N/A

Adjacent Communities forb/meadow

Comments: Photo Nos. & orientation: Site 1-34, 310°; Adj. 1-35, 0°

Hydrology Information

Source of water: Blackhawk Formation

Quantity of water (gal/min): 0.25 gpm

Comments:

Photo Log

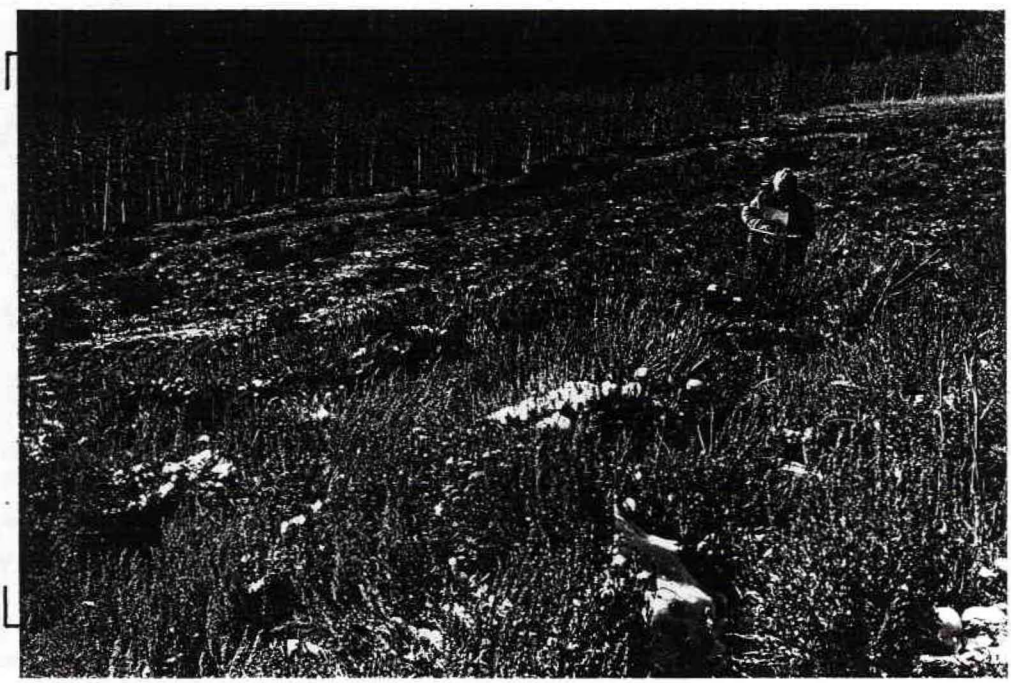
Area Photo

Site Photo

Photo Log

Area Photo

Site Photo



Wildlife Information

	Species Observed	Species Sign Observed
Mammals		
Birds		
Reptiles and Amphibians		

Habitat Considerations

No significant wetland vegetation

Comments:

CEDAR CREEK ASSOCIATES

SEEP AND SPRING INVENTORY
VALLEY CAMP OF UTAH, INC.

General Information

Seep, Spring Identification: 25-12 Date: 10/16/84 Time: 4:25 pm

Observers: Phelan, Viert Elevation: 9,180'

Legal Description: NW 1/4, NE 1/4, Sec. 25, T 13S, R 6 E

Dimensions: 30' dia. Acreage: 0.02

Slope (Est.): 45% Aspect: W

USFWS Classification: Non-applicable

Vegetation Information

Species	Vigor	% Cover (Est.)	Importance
Trees			
None			
Shrubs			
Artemisia tridentata, *Chrysothamnus* sp., *Symphoricarpos occidentalis*	good	30%	N/A
Herbaceous			
Rudbeckia laciniata, *Poa* sp., *Stipa* sp., misc. annual forbs, *Wyethia* sp.	N/A	20%	N/A

Adjacent Communities Big Sagebrush/Rabbitbrush

Comments: Photo Nos. & orientation: Site 1-32, 300°; Adj. 360°, 1-33

Hydrology Information

Source of water: Blackhawk Formation

Quantity of water (gal/min): No flow

Comments: