

84-1089 - 13096

COMINCO LTD.

EXPLORATION  
NTS 93 L/2

WESTERN DISTRICT

ASSESSMENT REPORT

PERCUSSION DRILLING

RED, FEN 223 MINERAL CLAIMS

OMINECA MINING DIVISION, B.C.

LATITUDE: 54°10'N; LONGITUDE: 126°58'W

WORK PERIOD: SEPTEMBER 19-30, 1984

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**13,096**

NOVEMBER 1984

J.P. SORBARA

TABLE OF CONTENTS

	<u>PAGE</u>
I. SUMMARY . . . . .	1
II. LOCATION . . . . .	1
III. HISTORY . . . . .	1
IV. WORK DONE IN 1984 . . . . .	1
V. OWNERSHIP . . . . .	1
VI. GEOLOGY . . . . .	3
VII. PURPOSE OF DRILLING PROGRAM . . . . .	3
VIII. INTERPRETATION OF 1984 DRILL RESULTS . . . . .	3
IX. CONCLUSIONS . . . . .	3
X. REFERENCES . . . . .	4

ATTACHMENTS

PLATE 1 - LOCATION MAP

PLATE 2 - DRILL HOLE LOCATIONS AND GEOLOGY

PERCUSSION DRILL LOGS

APPENDIX I - ANALYTICAL RESULTS

APPENDIX II - STATEMENT OF EXPENDITURES

APPENDIX III - STATEMENT OF QUALIFICATIONS

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WESTERN DISTRICT

27 November 1984

PERCUSSION DRILLING ASSESSMENT REPORT

RED, FEN 223 MINERAL CLAIMS

OMINECA MINING DISTRICT, B.C.

I. SUMMARY

A percussion drilling program was carried out in 1984 on the Red and Fen 223 mineral claims, 40 km southwest of Houston, B.C. The work consisted of 22 holes totalling 1411 metres. The cuttings from these holes were split in 10 foot intervals and analyzed geochemically for Cu, Pb, Zn and Ag.

Results were low for all elements in every hole.

II. LOCATION

The Red and Fen 223 mineral claims are located in the Omineca Mining District, 40 km southwest of Houston, B.C. near Morice Lake. Access to the property is by logging road along the Morice River. The area is characterized by rolling hills and heavy forest.

III. HISTORY

The Red and Fen 223 are under option to Cominco from Vital Resources Ltd. and Anaconda Canada Ltd. who have been conducting geological mapping and diamond drilling over the past several years.

IV. WORK DONE IN 1984

Twenty-two percussion holes totalling 1411 metres, were drilled by Al Miller Percussion Ltd. of Kamloops, B.C. during the period of September 19-28, 1984. Percussion cuttings were collected by A. Roberts and microscopic examination was done by J.P. Sorbara. All samples were analyzed for Cu, Pb, Zn and Ag in Cominco's Exploration Research Laboratory in Vancouver.

V. OWNERSHIP

Thirty-four claims totalling 77 units constitute the Silver Red property which is under option to Cominco from Anaconda Canada and Vital Resources Ltd. The 1984 work was conducted on the Red and Fen 223 mineral claims.

SILVER RED PROPERTY

CLAIM	RECORD NO.	UNITS	DUE DATE	OWNER
COF 8-10	106927-29	3X1	March 27, 1987	Anaconda Canada
COF 11 Fr.	106930	1	March 27, 1987	Anaconda Canada
Fen 189 Fr.	91571	1	August 28, 1987	Anaconda Canada
Fen 190-196	91572-78	7X1	August 28, 1987	Anaconda Canada
Fen 223-226	93132-35	4X1	October 23, 1987	Anaconda Canada
Fen 227-230	93136-39	4X1	October 23, 1987	Anaconda Canada
Fen 231 Fr.	93142	1	October 23, 1987	Anaconda Canada
Fen 232-233	93140-41	2X1	October 23, 1987	Anaconda Canada
Fen 237 Fr.	93146	1	October 23, 1987	Anaconda Canada
Fen 253 Fr.	93147	1	October 23, 1987	Anaconda Canada
Code 4	30317	1	June 8, 1987	Anaconda Canada
Code 5-7	30318-20	3X1	June 8, 1989	Anaconda Canada
Code 14-15	30327-28	2X1	June 8, 1987	Anaconda Canada
Code 21 Fr.	55646	1	November 8, 1987	Anaconda Canada
Red	315	16	June 4, 1987	Vital Mines, Ltd.
Red 2	448	9	October 13, 1987	Vital Mines Ltd.
Jay 2	867	20	November 10, 1987	Vital Mines Ltd. (Vital Resources)

## VI. GEOLOGY

The claims are underlain by volcanic rocks of Tertiary and Mesozoic ages. Tertiary rocks include Fenton Creek Rhyolite and Buck Creek Andesite, while Mesozoic strata comprise the Tip Top Hill Pyroclastics Dacite and Hazelton Dacite and Andesite. Very little outcrop occurs on the property and structured data is very limited.

## VII. PURPOSE OF DRILLING PROGRAM

The percussion drilling program on the Red and Fen 223 mineral claims was initiated in 1984 to test a Pb-Zn-Ag soil anomaly coincident with a weak chargeability anomaly. The area drilled contained no outcrop and is situated immediately west of an area of earlier drilling by Anaconda Canada and others.

## VIII. INTERPRETATION OF 1984 DRILL RESULTS

Drilling in 1984 has shown the presence of fine-grained, maroon felsic crystal tuffs that are variously altered to sericite carbonate and minor clay. Very small amounts of pyrite mineralization occurs in some of the drill holes, but other than this no sulphide mineralization was observed. The geochemical results indicated only background levels of Cu, Pb, Zn and Ag in all holes.

## IX. CONCLUSIONS

The 1984 percussion drilling program on the Red and Fen 223 mineral claims did not succeed in identifying any significant new mineralization. The Pb-Zn-Ag soil anomaly, which was the target area for the drilling, is now believed to be the result of glacially transported overburden. No further work is anticipated in the area at this time.

Reported by:

*J. Paul Sorbara*

J.P. Sorbara, M.Sc.  
Geologist

Endorsed by:

*M.D. Gilh*  
F.D. Gilh, Assistant Manager  
Exploration, W.D.

Approved for  
Release by:

*G. Harden*  
G. Harden  
Manager, Exploration  
Western District

JPSo/cgs

## Distribution:

Mining Recorder (2)  
Western District  
JPSo

X. REFERENCES

Church, B.N., Geology, Exploration and Mining in British Columbia, 1972, p. 373.

APPENDIX I  
ANALYTICAL RESULTS

JPSO

LSD NO	FIELD NUMBER	DEPTH IN FEET TO	DE	PB	2H	8H
			PPM	PPM	PPM	PPM
88424757 PH84-1	6.0	20.0	18	6	73	1.4
88424760 PH84-1	25.0	35.0	2	48	142	1.4
88424761 PH84-1	50.0	40.0	0	28	47	1.4
88424762 PH84-1	65.0	30.0	0	27	47	1.4
88424763 PH84-1	50.0	40.0	4	35	36	1.4
88424764 PH84-1	65.0	70.0	7	63	49	1.4
88424765 PH84-1	70.0	80.0	11	49	52	1.4
88424766 PH84-1	80.0	70.0	13	38	56	1.4
88424767 PH84-1	70.0	100.0	37	18	57	1.4
88424768 PH84-1	100.0	110.0	27	15	73	1.4
88424769 PH84-1	110.0	120.0	31	7	57	1.4
88424770 PH84-1	120.0	130.0	24	22	69	1.4
88424771 PH84-1	130.0	140.0	18	14	59	1.4
88424772 PH84-1	140.0	150.0	18	13	57	1.4
88424773 PH84-1	150.0	160.0	13	15	57	1.4
88424774 PH84-1	160.0	170.0	17	22	69	1.4
88424775 PH84-1	170.0	180.0	25	34	70	1.4
88424776 PH84-1	180.0	170.0	27	28	74	1.4
88424777 PH84-1	190.0	200.0	29	12	56	1.4
88424778 PH84-2	50.0	70.0	12	60	54	1.4
88424779 PH84-2	70.0	80.0	12	21	61	1.4
88424780 PH84-2	80.0	70.0	13	59	54	1.4
88424781 PH84-2	90.0	100.0	2	24	62	1.4
88424782 PH84-2	100.0	110.0	18	27	68	1.4
88424783 PH84-3	30.0	20.0	12	24	67	1.4
88424784 PH84-3	70.0	60.0	17	58	79	1.4
88424785 PH84-3	60.0	40.0	16	35	71	1.4
88424786 PH84-3	70.0	100.0	17	29	83	1.4
88424787 PH84-3	100.0	110.0	10	36	77	1.4
88424788 PH84-3	110.0	120.0	10	29	42	1.4
88424789 PH84-3	120.0	130.0	11	31	65	1.4
88424790 PH84-3	130.0	140.0	15	17	61	1.4
88424791 PH84-3	140.0	150.0	12	19	52	1.4
88424792 PH84-3	150.0	160.0	13	12	46	1.4
88424793 PH84-3	160.0	170.0	11	26	42	1.4
88424794 PH84-3	170.0	180.0	16	18	46	1.4
88424795 PH84-3	180.0	190.0	16	13	54	1.4
88424796 PH84-3	170.0	200.0	17	17	63	1.4
88424797 PH84-4	0.0	20.0	1	6	56	1.4
88424798 PH84-4	20.0	30.0	2	37	86	1.4
88424799 PH84-4	30.0	40.0	2	51	77	1.4
88425000 PH84-4	40.0	50.0	24	31	86	1.4
88425001 PH84-4	50.0	60.0	14	49	74	1.4
88425002 PH84-4	60.0	70.0	8	43	67	1.4
88425003 PH84-4	70.0	80.0	5	28	76	1.4
88425004 PH84-4	20.0	30.0	4	36	62	1.4
88425005 PH84-4	30.0	100.0	3	32	77	1.4
88425006 PH84-4	100.0	110.0	1	21	65	1.4
88425007 PH84-4	110.0	120.0	2	29	61	1.4
88425008 PH84-4	120.0	130.0	3	33	53	1.4
88425009 PH84-4	130.0	140.0	2	36	64	1.4

LGR NO	FIELD NUMBER	DRILL INTERVAL FROM (METRES) TO	Ca	Po	Zn	As
			PPM	PPM	PPM	PPM
88425010	PH84-4	140.0 - 150.0	41	39	64	6.4
88425011	PH84-4	150.0 - 160.0	1	35	74	6.4
88425012	PH84-4	160.0 - 170.0	2	33	72	6.4
88425013	PH84-4	170.0 - 180.0	61	35	73	6.4
88425014	PH84-4	180.0 - 190.0	41	26	60	6.4
88425015	PH84-4	190.0 - 200.0	61	18	58	6.4
88425016	PH84-5	64.0 - 80.0	22	19	57	6.4
88425017	PH84-5	80.0 - 90.0	15	15	52	6.4
88425018	PH84-5	90.0 - 100.0	16	17	56	6.4
88425019	PH84-5	100.0 - 110.0	13	27	54	6.4
88425020	PH84-5	110.0 - 120.0	2	12	57	6.4
88425021	PH84-5	120.0 - 130.0	23	15	56	6.4
88425022	PH84-5	130.0 - 140.0	27	20	55	6.4
88425023	PH84-5	140.0 - 150.0	14	22	58	6.4
88425024	PH84-5	150.0 - 160.0	9	25	38	6.4
88425025	PH84-5	160.0 - 170.0	14	26	41	6.4
88425026	PH84-5	170.0 - 180.0	15	22	49	6.4
88425027	PH84-5	180.0 - 190.0	11	12	36	6.4
88425028	PH84-5	190.0 - 200.0	15	40	46	6.4
88425029	PH84-7	67.0 - 86.0	3	48	53	6.4
88425030	PH84-7	86.0 - 96.0	7	21	50	6.4
88425031	PH84-7	96.0 - 106.0	3	51	78	6.4
88425032	PH84-7	106.0 - 116.0	61	29	62	6.4
88425033	PH84-7	116.0 - 126.0	2	10	47	6.4
88425034	PH84-7	126.0 - 136.0	5	27	51	6.4
88425035	PH84-7	136.0 - 146.0	4	30	55	6.4
88425036	PH84-7	146.0 - 156.0	6	29	55	6.4
88425037	PH84-7	156.0 - 166.0	2	20	45	6.4
88425038	PH84-7	166.0 - 176.0	51	14	35	6.4
88425039	PH84-7	176.0 - 186.0	1	15	55	6.4
88425040	PH84-7	186.0 - 196.0	3	12	67	6.4
88425041	PH84-7	196.0 - 206.0	4	11	57	6.4
88425042	PH84-8	27.0 - 40.0	13	20	71	6.4
88425043	PH84-8	40.0 - 50.0	14	15	62	6.4
88425044	PH84-8	50.0 - 60.0	13	22	62	6.4
88425045	PH84-8	60.0 - 70.0	4	10	77	6.4
88425046	PH84-8	70.0 - 80.0	3	17	72	6.4
88425047	PH84-8	80.0 - 90.0	2	15	57	6.4
88425048	PH84-8	90.0 - 100.0	61	9	55	6.4
88425049	PH84-8	100.0 - 110.0	61	5	48	6.4
88425050	PH84-8	110.0 - 120.0	61	11	70	6.4
88425051	PH84-8	120.0 - 130.0	1	15	51	6.4
88425052	PH84-8	130.0 - 140.0	4	15	62	6.4
88425053	PH84-8	140.0 - 150.0	5	18	58	6.4
88425054	PH84-8	150.0 - 160.0	1	15	97	6.4
88425055	PH84-8	160.0 - 170.0	3	15	101	6.4
88425056	PH84-8	170.0 - 180.0	2	21	95	6.4
88425057	PH84-8	180.0 - 190.0	61	23	115	6.4
88425058	PH84-8	190.0 - 200.0	3	20	121	6.4
88425059	PH84-8	5.0 - 20.0	2	6	64	6.4
88425060	PH84-9	20.0 - 30.0	11	24	96	6.4
88425061	PH84-9	30.0 - 40.0	12	35	106	6.4
88425062	PH84-9	40.0 - 50.0	5	32	133	6.4
88425063	PH84-9	50.0 - 60.0	61	33	77	6.4

LTD NO	FIELD NUMBER	DRILL INTERVAL FROM (METERS) TO	QI	PB	ZB	BB	
			PPM	PPB	PPB	PPM	
88425064	PH84-7	60.0	70.0	2	13	72	1,4
88425065	PH84-7	70.0	80.0	12	12	76	1,4
88425066	PH84-7	80.0	90.0	11	25	67	1,4
88425067	PH84-7	90.0	100.0	11	21	69	1,4
88425068	PH84-7	100.0	110.0	2	19	59	1,4
88425069	PH84-7	110.0	120.0	11	13	56	1,4
88425070	PH84-7	120.0	130.0	11	11	50	1,4
88425071	PH84-7	130.0	140.0	19	22	60	1,4
88425072	PH84-7	140.0	150.0	26	56	116	1,4
88425073	PH84-7	150.0	160.0	22	34	81	1,4
88425074	PH84-7	160.0	170.0	3	33	87	1,4
88425075	PH84-7	170.0	180.0	2	46	109	1,4
88425076	PH84-7	180.0	190.0	1	62	118	1,4
88425077	PH84-7	190.0	200.0	11	53	71	1,4
88425078	PH84-10	0.0	20.0	11	22	54	1,4
88425079	PH84-10	20.0	30.0	3	26	60	1,4
88425080	PH84-10	30.0	40.0	2	24	77	1,4
88425081	PH84-10	40.0	50.0	2	37	85	1,4
88425082	PH84-10	50.0	60.0	2	30	77	1,4
88425083	PH84-10	60.0	70.0	2	41	80	1,4
88425084	PH84-10	70.0	80.0	5	22	78	1,4
88425085	PH84-10	80.0	90.0	8	22	70	1,4
88425086	PH84-10	90.0	100.0	5	26	91	1,4
88425087	PH84-10	100.0	110.0	33	19	107	1,4
88425088	PH84-10	110.0	120.0	56	20	124	1,4
88425089	PH84-10	120.0	130.0	174	53	79	1,4
88425090	PH84-10	130.0	140.0	6	21	66	1,4
88425091	PH84-10	140.0	150.0	3	19	61	1,4
88425092	PH84-10	150.0	160.0	1	51	62	1,4
88425093	PH84-10	160.0	170.0	2	35	61	1,4
88425094	PH84-10	170.0	180.0	1	19	57	1,4
88425095	PH84-10	180.0	190.0	11	15	69	1,4
88425096	PH84-10	190.0	200.0	11	27	63	1,4
88425097	PH84-10	200.0	210.0	18	76	99	1,4
88425098	PH84-10	210.0	220.0	24	143	126	1,4
88425099	PH84-10	220.0	230.0	76	76	130	1,4
88425100	PH84-10	230.0	240.0	76	24	122	1,4
88425101	PH84-11	7.0	20.0	2	19	61	1,4
88425102	PH84-11	20.0	30.0	11	46	63	1,4
88425103	PH84-11	30.0	40.0	11	24	61	1,4
88425104	PH84-11	40.0	50.0	21	21	74	1,4
88425105	PH84-11	50.0	60.0	12	9	59	1,4
88425106	PH84-11	60.0	70.0	11	9	55	1,4
88425107	PH84-11	70.0	80.0	2	19	54	1,4
88425108	PH84-11	80.0	90.0	11	15	64	1,4
88425109	PH84-11	90.0	100.0	11	12	64	1,4
88425110	PH84-11	100.0	110.0	1	19	61	1,4
88425111	PH84-11	110.0	120.0	4	14	52	1,4
88425112	PH84-11	120.0	130.0	61	11	70	1,4
88425113	PH84-11	130.0	140.0	27	20	114	1,4
88425114	PH84-11	140.0	150.0	1	12	57	1,4
88425115	PH84-11	150.0	160.0	3	10	57	1,4
88425116	PH84-11	160.0	170.0	6	7	53	1,4
88425117	PH84-11	170.0	180.0	7	13	62	1,4

LAD NO	FIELD NUMBER	BOTTLE INTERVAL FROM (METERS) TO	CB		Zn		As	
			PPM	PPM	PPM	PPM	PPM	PPM
R6425118	PH84-11	180.0 - 190.0	3	21	53	6.4		
R6425119	PH84-11	190.0 - 200.0	51	5	51	6.4		
R6425120	PH84-13	2.0 - 20.0	4	9	59	6.4		
R6425121	PH84-13	20.0 - 30.0	1	44	24	6.4		
R6425122	PH84-13	30.0 - 40.0	4	46	89	6.4		
R6425123	PH84-13	40.0 - 50.0	1	18	57	6.4		
R6425124	PH84-13	50.0 - 60.0	1	43	71	6.4		
R6425125	PH84-13	60.0 - 70.0	21	16	69	6.4		
R6425126	PH84-13	70.0 - 80.0	2	37	72	6.4		
R6425127	PH84-13	80.0 - 90.0	4	23	68	6.4		
R6425128	PH84-13	90.0 - 100.0	41	20	76	6.4		
R6425129	PH84-13	100.0 - 110.0	3	16	64	6.4		
R6425130	PH84-13	110.0 - 120.0	2	20	66	6.4		
R6425131	PH84-13	120.0 - 130.0	2	20	58	6.4		
R6425132	PH84-13	130.0 - 140.0	5	63	78	6.4		
R6425133	PH84-13	140.0 - 150.0	6	14	59	6.4		
R6425134	PH84-13	150.0 - 160.0	34	21	85	6.4		
R6425135	PH84-13	160.0 - 170.0	24	32	107	6.4		
R6425136	PH84-13	170.0 - 180.0	36	12	78	6.4		
R6425137	PH84-13	180.0 - 190.0	38	33	75	6.4		
R6425138	PH84-13	190.0 - 200.0	41	35	71	6.4		
R6425139	PH84-14	65.0 - 80.0	25	10	50	6.4		
R6425140	PH84-14	80.0 - 90.0	18	65	59	6.4		
R6425141	PH84-14	90.0 - 100.0	28	35	63	6.4		
R6425142	PH84-14	100.0 - 110.0	18	44	57	6.4		
R6425143	PH84-14	110.0 - 120.0	21	76	59	6.4		
R6425144	PH84-14	120.0 - 130.0	18	60	71	6.4		
R6425145	PH84-14	130.0 - 140.0	17	64	63	6.4		
R6425146	PH84-14	140.0 - 150.0	23	56	64	6.4		
R6425147	PH84-14	150.0 - 160.0	17	47	41	6.4		
R6425148	PH84-14	160.0 - 170.0	26	47	73	6.4		
R6425149	PH84-14	170.0 - 180.0	35	42	71	6.4		
R6425150	PH84-14	180.0 - 190.0	21	53	72	6.4		
R6425151	PH84-14	190.0 - 200.0	20	38	78	6.4		
R6425152	PH84-15	12.0 - 20.0	24	16	45	6.4		
R6425153	PH84-15	20.0 - 30.0	30	14	53	6.4		
R6425154	PH84-15	30.0 - 40.0	22	14	48	6.4		
R6425155	PH84-15	40.0 - 50.0	17	11	47	6.4		
R6425156	PH84-15	50.0 - 60.0	18	7	37	6.4		
R6425157	PH84-15	60.0 - 70.0	16	8	41	6.4		
R6425158	PH84-15	70.0 - 80.0	18	5	45	6.4		
R6425159	PH84-15	80.0 - 90.0	21	14	54	6.4		
R6425160	PH84-15	90.0 - 100.0	15	22	49	6.4		
R6425161	PH84-15	100.0 - 110.0	45	20	57	6.4		
R6425162	PH84-15	110.0 - 120.0	42	11	51	6.4		
R6425163	PH84-15	120.0 - 130.0	40	11	62	6.4		
R6425164	PH84-15	130.0 - 140.0	25	26	60	6.4		
R6425165	PH84-15	140.0 - 150.0	38	19	58	6.4		
R6425166	PH84-15	150.0 - 160.0	61	17	74	6.4		
R6425167	PH84-15	160.0 - 170.0	21	13	66	6.4		
R6425168	PH84-15	170.0 - 180.0	26	18	68	6.4		
R6425169	PH84-15	180.0 - 190.0	17	21	57	6.4		
R6425170	PH84-15	190.0 - 200.0	13	63	51	6.4		
R6425171	PH84-16	109.0 - 120.0	10	61	100	6.4		

LGR NO	FIELD NUMBER	DRILL INTERVAL FTS (NETSES) TO	CE	Pb	Zn	Ag	
			PPM	PPM	PPM	PPM	
R8425172	PH84-16	120.0	130.0	18	55	80	1,4
R8425173	PH84-16	130.0	140.0	19	87	88	1,4
R8425174	PH84-16	140.0	150.0	20	49	141	1,4
R8425175	PH84-16	150.0	160.0	22	25	61	1,4
R8425176	PH84-16	160.0	170.0	20	20	49	1,4
R8425177	PH84-16	170.0	180.0	5	15	49	1,4
R8425178	PH84-16	180.0	190.0	19	17	56	1,4
R8425179	PH84-16	190.0	200.0	18	107	440	1,3
R8425180	PH84-17	2.0	20.0	74	41	69	1,4
R8425181	PH84-17	20.0	30.0	93	49	59	1,4
R8425182	PH84-17	30.0	40.0	39	42	54	1,4
R8425183	PH84-17	40.0	50.0	36	31	55	1,4
R8425184	PH84-17	50.0	60.0	28	26	50	1,4
R8425185	PH84-17	60.0	70.0	25	15	47	1,4
R8425186	PH84-17	70.0	80.0	26	21	47	1,4
R8425187	PH84-17	80.0	90.0	23	46	57	1,4
R8425188	PH84-17	90.0	100.0	34	17	58	1,4
R8425189	PH84-17	100.0	110.0	24	33	55	1,4
R8425190	PH84-17	110.0	120.0	14	16	61	1,4
R8425191	PH84-17	120.0	130.0	40	37	61	1,4
R8425192	PH84-17	130.0	140.0	20	46	56	1,4
R8425193	PH84-17	140.0	150.0	30	24	63	1,4
R8425194	PH84-17	150.0	160.0	21	35	66	1,4
R8425195	PH84-17	160.0	170.0	23	27	67	1,4
R8425196	PH84-17	170.0	180.0	20	29	63	1,4
R8425197	PH84-17	180.0	190.0	26	23	42	1,4
R8425198	PH84-17	190.0	200.0	32	17	54	1,4
R8425328	PH84-18	44.0	60.0	17	19	51	1,4
R8425329	PH84-18	60.0	70.0	32	37	53	1,4
R8425330	PH84-18	70.0	80.0	30	22	56	1,4
R8425331	PH84-18	80.0	90.0	31	20	55	1,4
R8425332	PH84-18	90.0	100.0	27	22	47	1,4
R8425333	PH84-18	100.0	110.0	19	22	64	1,4
R8425334	PH84-18	110.0	120.0	26	24	58	1,4
R8425335	PH84-18	120.0	130.0	28	21	56	1,4
R8425336	PH84-18	130.0	140.0	32	18	55	1,4
R8425337	PH84-18	140.0	150.0	26	28	66	1,4
R8425338	PH84-18	150.0	160.0	27	21	66	1,4
R8425339	PH84-18	160.0	170.0	27	20	67	1,4
R8425340	PH84-18	170.0	180.0	26	24	63	1,4
R8425341	PH84-18	180.0	190.0	13	20	66	1,4
R8425342	PH84-18	190.0	200.0	21	16	62	1,4
R8425343	PH84-19	3.0	20.0	7	18	46	1,4
R8425344	PH84-19	20.0	30.0	11	43	53	1,4
R8425345	PH84-19	30.0	40.0	6	39	69	1,4
R8425346	PH84-19	40.0	50.0	7	47	53	1,4
R8425347	PH84-19	50.0	60.0	7	40	53	1,4
R8425348	PH84-19	60.0	70.0	6	52	56	1,4
R8425349	PH84-19	70.0	80.0	3	32	49	1,4
R8425350	PH84-19	80.0	90.0	7	32	44	1,4
R8425351	PH84-19	90.0	100.0	5	69	43	1,4
R8425352	PH84-19	100.0	110.0	7	50	66	1,4
R8425353	PH84-19	110.0	120.0	5	39	51	1,4
R8425354	PH84-19	120.0	130.0	17	25	76	1,4

LAS NO	FIELD NUMBER	DELL THERM.	D	F	Z	G
		FROM (NETS) TO	PPM	PPM	PPM	PPM
88425355	P884-17	130.0	140.0	21	20	67
88425356	P884-18	140.0	150.0	25	38	69
88425357	P884-19	150.0	160.0	22	35	71
88425358	P884-17	160.0	170.0	32	43	80
88425359	P884-19	170.0	180.0	34	51	92
88425360	P884-17	180.0	190.0	35	52	92
88425361	P884-17	190.0	200.0	44	42	92
88425362	P884-20	64.0	80.0	27	34	67
88425363	P884-20	80.0	90.0	33	74	67
88425364	P884-20	90.0	100.0	31	50	61
88425365	P884-20	100.0	110.0	37	42	69
88425366	P884-20	110.0	120.0	26	26	82
88425367	P884-20	120.0	130.0	25	26	89
88425368	P884-20	130.0	140.0	32	34	63
88425369	P884-20	140.0	150.0	36	26	77
88425370	P884-20	150.0	160.0	35	41	75
88425371	P884-20	160.0	170.0	28	47	102
88425372	P884-20	170.0	180.0	21	76	78
88425373	P884-20	180.0	190.0	11	43	77
88425374	P884-20	190.0	200.0	9	37	58
88425375	P884-20	200.0	210.0	11	43	55
88425376	P884-20	210.0	220.0	15	55	52
88425377	P884-21	220.0	230.0	12	66	69
88425378	P884-20	230.0	240.0	8	62	69
88425379	P884-20	240.0	250.0	6	58	62
88425380	P884-20	250.0	260.0	7	74	62
88425381	P884-20	260.0	270.0	8	86	66
88425382	P884-20	270.0	280.0	10	54	75
88425383	P884-20	280.0	290.0	12	71	66
88425384	P884-20	290.0	300.0	8	80	65
88425385	P884-21	30.0	100.0	16	24	52
88425386	P884-21	100.0	110.0	18	54	49
88425387	P884-21	110.0	120.0	17	31	59
88425388	P884-21	120.0	130.0	14	55	73
88425389	P884-21	130.0	140.0	17	32	71
88425390	P884-21	140.0	150.0	21	46	98
88425391	P884-21	150.0	160.0	15	37	85
88425392	P884-21	160.0	170.0	18	55	107
88425393	P884-21	170.0	180.0	14	46	67
88425394	P884-21	180.0	190.0	32	57	56
88425395	P884-21	190.0	200.0	35	50	67
88425396	P884-21	200.0	210.0	18	67	68
88425397	P884-21	210.0	220.0	16	41	47
88425398	P884-21	220.0	230.0	17	54	64
88425399	P884-21	230.0	240.0	17	37	69
88425400	P884-21	240.0	250.0	18	66	64
88425401	P884-21	250.0	260.0	15	43	66
88425402	P884-21	260.0	270.0	20	57	64
88425403	P884-21	270.0	280.0	25	53	69
88425404	P884-21	280.0	290.0	21	66	82
88425405	P884-21	290.0	300.0	19	46	65
88425406	P884-21	7.0	20.0	6	13	66
88425407	P884-22	20.0	30.0	14	15	53
88425408	P884-22	30.0	40.0	1	53	53

LGR NO	FIELD NUMBER	DRILL INTERVAL FROM (METRES) TO	Cu	Pb	Zn	Ag	
			PPM	PPM	PPM	PPM	
R8425409	PH84-22	40.0	50.0	1	31	46	<.4
R8425410	PH84-22	50.0	60.0	3	26	54	<.4
R8425411	PH84-22	60.0	70.0	3	34	56	<.4
R8425412	PH84-22	70.0	80.0	5	27	51	<.4
R8425413	PH84-22	80.0	90.0	2	32	52	<.4
R8425414	PH84-22	90.0	100.0	10	22	84	<.4
R8425415	PH84-22	100.0	110.0	2	16	50	<.4
R8425416	PH84-22	110.0	120.0	1	18	44	<.4
R8425417	PH84-22	120.0	130.0	4	11	57	<.4
R8425418	PH84-22	130.0	140.0	2	14	48	<.4
R8425419	PH84-22	140.0	150.0	5	20	55	<.4
R8425420	PH84-22	150.0	160.0	1	12	37	<.4
R8425421	PH84-22	160.0	170.0	12	13	40	<.4
R8425422	PH84-22	170.0	180.0	1	31	67	<.4
R8425423	PH84-22	180.0	190.0	11	27	46	<.4
R8425424	PH84-22	190.0	200.0	11	22	47	<.4
R8425425	PH84-22	200.0	210.0	11	22	42	<.4
R8425426	PH84-22	210.0	220.0	11	42	55	<.4
R8425427	PH84-22	220.0	230.0	2	43	60	<.4
R8425428	PH84-22	230.0	240.0	2	29	55	<.4
R8425429	PH84-22	240.0	250.0	2	38	68	<.4
R8425430	PH84-22	250.0	260.0	11	47	67	<.4
R8425431	PH84-22	260.0	270.0	3	23	69	<.4
R8425432	PH84-22	270.0	280.0	3	51	80	<.4
R8425433	PH84-22	280.0	290.0	4	49	81	<.4
R8425434	PH84-22	290.0	300.0	2	118	68	<.4
R8425435	PH84-6	67.0	89.0	32	22	63	<.4
R8425436	PH84-6	89.0	99.0	29	15	65	<.4
R8425437	PH84-6	99.0	106.0	29	11	57	<.4
R8425438	PH84-6	106.0	116.0	29	14	66	<.4
R8425439	PH84-6	116.0	126.0	26	27	63	<.4
R8425440	PH84-6	126.0	133.0	25	12	70	<.4
R8425441	PH84-6	133.0	140.0	32	10	62	<.4
R8425442	PH84-6	140.0	150.0	24	14	69	<.4
R8425443	PH84-6	150.0	160.0	23	16	59	<.4
R8425444	PH84-6	160.0	170.0	27	12	54	<.4
R8425445	PH84-6	170.0	180.0	26	11	49	<.4
R8425446	PH84-6	180.0	190.0	22	15	48	<.4
R8425447	PH84-6	190.0	200.0	23	27	58	<.4
R8425448	PH84-12	11.0	30.0	18	17	55	<.4
R8425449	PH84-12	30.0	40.0	23	16	57	<.4
R8425450	PH84-12	40.0	50.0	22	16	62	<.4
R8425451	PH84-12	50.0	60.0	23	25	58	<.4
R8425452	PH84-12	60.0	70.0	22	19	60	<.4
R8425453	PH84-12	70.0	80.0	20	20	66	<.4
R8425454	PH84-12	80.0	90.0	21	14	59	<.4
R8425455	PH84-12	90.0	100.0	17	16	54	<.4
R8425456	PH84-12	100.0	110.0	20	10	54	<.4
R8425457	PH84-12	110.0	120.0	17	12	55	<.4
R8425458	PH84-12	120.0	130.0	13	11	47	<.4
R8425459	PH84-12	130.0	140.0	8	21	40	<.4
R8425460	PH84-12	140.0	150.0	6	32	55	<.4
R8425461	PH84-12	150.0	160.0	19	22	51	<.4
R8425462	PH84-12	160.0	170.0	7	36	50	<.4

LAB NO	FIELD NUMBER	TOTAL INTERVAL FROM (METRES) TO	CU	PB	Zn	As	
			PPM	PPM	PPM	PPM	
R0425463	PH04-12	170.0	180.0	5	47	65	1.4
R0425464	PH04-12	180.0	190.0	11	37	77	1.4
R0425465	PH04-12	190.0	200.0	7	54	81	1.4

I=INSUFFICIENT SAMPLE X=SMALL SAMPLE C=PRECEDES CALIBRATION U=BEING CHECKED R=REVISES  
 If requested analyses are not shown, results are to follow.

#### ANALYTICAL METHODS

- CU: AQUA REGIA DECOMPOSITION / AAS
- PB: AQUA REGIA DECOMPOSITION / AAS
- Zn: AQUA REGIA DECOMPOSITION / AAS
- As: AQUA REGIA DECOMPOSITION / AAS

APPENDIX II

STATEMENT OF EXPENDITURES  
FOR THE 1984 PERCUSSION DRILLING  
ON THE RED AND FEN 223 MINERAL CLAIMS

Salaries

A.P. Roberts	12 days @ \$161.04	\$ 1,932.48
J.P. Sorbara	16 days @ 155.76	2,492.16

Percussion Drilling

Al Miller Percussion Drilling Ltd.  
Direct: 4,630 ft @ \$6.50/ft = \$30,095.00  
Indirect: Mobilization and Demobilization 6,015.50  
                                                 \$36,110.50         36,110.50

Chemical Analyses

363 Samples @ \$9.58/sample	<u>3,477.60</u>
TOTAL	\$44,012.74

Signed:

*J. Paul Sorbara*  
J.P. Sorbara, M.Sc.  
Geologist, Cominco Ltd.

APPENDIX III

STATEMENT OF QUALIFICATIONS

I, J. PAUL SORBARA, OF THE CITY OF DELTA, IN THE PROVINCE OF BRITISH COLUMBIA,  
HEREBY CERTIFY:-

1. THAT I am a geologist residing at 6703 Nicholson Road, Delta, British Columbia, with a business address at 700-409 Granville Street, Vancouver, British Columbia;
2. THAT I graduated with a B.Sc. in geology from the University of Toronto, Toronto, Ontario in 1976, and with a M.Sc. in geology from the University of Toronto in 1979.
3. THAT I have practiced geology with Cominco Ltd. from 1979 to 1984.

Signed:

*J. Paul Sorbara*

J. Paul Sorbara, M.Sc.  
Geologist, Cominco Ltd.

OVERBURDEN DEPTH - 0

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
0-20	Altered Tuff	Mixed with clay	Fairly abundant	25% of fragments have high clay	Mixed with clay		Present in 75% of fragments	<1%	No	NIL	-Probably felsic 25% highly altered -Bleached
20-30	Altered Tuff	Mixed with clay	Moderately abundant	25% of fragments have high clay	Possibly with clay		Present in 75% of fragments	Trace	No	NIL	-Bleached -Hematite specks -Probably crystal tuff
30-40	Altered Tuff	Small eyes	Minor	In 20% of fragments	Visible flakes		Present in 75% of fragments	Trace	No	Soft black mass on surface of 1 grain	-Bleached (slightly less) -Trace chlorite, minor iron stain
40-50	Altered Tuff, maybe some intrusive (f.g. quartz, chlorite, K-spar)	More abundant, some crystals	Minor	Present in approx. 10-20% of fragments	Some with chlorite		Present in most fragments	NIL	NIL	NIL	-Chlorite 3-4% -More Fe stain (yellow)
50-60	Altered Crystal Tuff	Mixed with chlorite, some crystal mixed with clay -	Fairly abundant	Present in 25% of fragments	Some with clay		Present in 70% of fragments	No	No	NIL	-Some purple fragments with euhedral quartz crystals -chlorite fairly abundant. -More bleached than 40-50!

OVERBURDEN DEPTH - 0

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
60-70	Altered Felsic Tuff	Mixed with chlorite & crystals	Fairly abundant	Present in approx. 35% of fragments	Probably mixed with clay		Present in approx. 65% of fragments (very f.g.)	NIL	NIL to Tr	NIL	-Minor Fe, Mn stain
70-80	Altered Felsic Tuff	Mixed with chlorite & free quartz	Moderately abundant	Present in 25-30% of fragments	Probably mixed with clay		Present in approx. 70% of fragments	NIL	NO	NIL	-Mn & Fe stains -Chlorite in 5% of fragments, bleached grey colour
80-90	Altered (Bleached) Tuff	2-3% of fragments are quartz- chlorite	Fairly abundant	Present in approx. 35% of fragments with quartz & ser- icitic	Mixed with clay and chlorite, some flakes visible		Present with approx. 65% of fragments	NIL	NIL	NIL	-Chlorite fairly abundant -Amphibole present (3 or 4 fragments)
90-100	Altered Tuff Probably Felsic	Mixed with clay and CO <sub>3</sub>	Minor to moderate	20% of frag- ments clay rich	Mixed with chlorite and quartz (minor)	5% of frag- ments chlorite rich	Present in 70-80% of fragments	Trace	NIL	NIL	-Not as bleached as some -Limonite staining
110-120	Altered Tuff (Maroon)	Crystals & fine sucro- sic	Moderately abundant	About 15% of fragments contain clay	Mixed with clay	Minor	Present in 85% of frag- ments	Trace	NIL	NIL	-Overall colour dark to medium grey

OVERBURDEN DEPTH - 0

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
130-140	Altered Tuff	Minor crystals & mixed with chlorite	Minor	Present in 25-30%	Minor with chlorite	Mixed with clay and sericite	Present in 70% of fragments	Trace to NIL	NIL	NIL	-Overall colour medium grey, some hematite stain
150-160	Altered Tuff	Minor crystals & mixed with chlorite	Fairly abundant	Present in 20%	Trace with chlorite	About 3% of fragments are chlorite rich	Present in 80% of fragments	NIL	NIL	NIL	-Medium grey to maroon mixed.
170-180	Altered Tuff	5% of grains are quartz, along with parts of others	Fairly abundant (approx 3%)	Present in approx. 15%	Probably mixed with chlorite	Mixed with quartz in 1 or 2%	Present in 85%	Trace	NIL	NIL	-Mostly maroon reddish grey
190-200 E.O.H.	Altered Crystal Tuff	2-3% white sucrosic grains (with clay)	Moderate (1 or 2%)	10-15% of grains have clay	Minor to trace clay and chlorite	Some mixed with quartz	Present in 80-85%	NIL	NIL	Trace of black, soft with dark brown streak	-Largest fragment mottled maroon, dark grey and white -Some euhedral crystals of quartz

OVERBURDEN DEPTH - 59'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
59-70	Maroon Fel-sic Crystal Tuff	Present in most frag-ments a few discrete grains	Minor (~1%)	Minor	Minor	Minor dis-seminations with 1 large fragment with chl./ sericite	Present in 90-95% of fragments	Trace	Tr	NIL	-Overall colour dark maroon to gray. -Large fragments contain white cry-stals of quartz, CO <sub>3</sub> and possibly feldspar
80-90	Maroon tuff or Crystal tuff	Some dis-crete grains mixed in many	Minor	Present in about 10% of grains or less	Trace	Trace	Present in approx. 90% of grains	Minor	NIL	NIL	-Overall colour mottled maroon -Minor limonitic stain
100-110 E.O.H.	Altered (bleached) Tuff	Mixed with clay and some dis-crete grains	Abundant	Present in 80% of grains with quartz	Minor with Qtz. & CO <sub>3</sub>	NIL	Present in approx. 20% of grains	Minor	NIL	NIL	-Some limonite stain -mostly bleached bone white colour (90-100' is mixture of 80-90' and 100-110')

OVERBURDEN DEPTH - 56'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
56-70	Bleached Tuff	Mixed with clay and some separate grains	2-3% CO <sub>3</sub>	Present in 75-80% of chip	Probably mixed with clay	Present in 1 or 2% of grains	Approx. 15-20% of grains contain biotite	Mod.- amount	Tr	NIL	-Coarser fracture contains higher % of dark fragments (overburden?) -Bleached -Some Fe stain
80-90	Bleached Tuff	Mixed with clay	2-3%	Present in 90-95% of grains	Minor mixed with quartz and clay	Trace	Trace	Trace	Tr	NIL	-Minor light brown Fe stain -Complexly bleached
100-110	Bleached Tuff	Mixed with clay	2-3%	Present in 95%	Mixed with clay and quartz	Trace	Present in 5% of grains	NIL	Minor	NIL	-Very bleached
120-130	Altered Crystal Tuff	Mixed with clay and in dark fragments too	Approx. 1%	Present in 25% of grain	Minor or trace mixed with clay	Trace	Present in 75% of grain	Minor	Minor	NIL	-Some crystals in dark fragments (quartz, feldspar) -110-120 look the same as 120-130
140-150	Felsic Crystal Tuff	Mixed with clay and in dark fragments	Minor to trace	Present in approx. 10% of grains	Minor with clay	Trace	Present in 90% of grains	Mod. (<1%)	Tr	NIL	-White crystals and fragments in dark chips (quartz, feldspar)

OVERBURDEN DEPTH - 561

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
160-170	Felsic Crystal Tuff	Mixed throughout	Approx. 2%	Present in 5-10%	Trace with clay	Trace	Present in 90-95%	Minor	Tr	Trace (shiny, hard, block Irregular fragments)	-White crystals in dark chips (quartz, feldspar)
180-190	Felsic Crystal Tuff	Mixed in both bleached and non-bleached	Approx. <1%	Present in 5-10%	Trace	Trace	95% of grain	Minor	Tr	NIL	-Not very bleached -White crystals and fragments in dark chips (quartz and feldspar)
200 E.O.H.	Felsic Crystal Tuff	Mixed in both bleached and non-bleached	Approx. <1%	Present in 5-10%	Trace	Trace	95% of grain	Minor	Tr	NIL	-Not very bleached -White crystals and fragments in dark chips (quartz and feldspar)

OVERBURDEN DEPTH - 0'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
20-30	Bleached Volcanic	Mixed with clay and trace of sericite	3 or 4%	Present in all fragments	Mixed with clay and quartz	Trace	Disseminated euhedral cry- stals to 1mm total approx. 1% or less	Trace	Tr or NIL	NIL	-Very bleached, slightly weathered
40-50	Bleached Volcanic (Felsic)	Mixed with clay and sericite	3 or 4%	Present in almost all fragments	Mixed with clay and quartz	Trace	Some disseminated, euhedral cry- stals less than above	Tr to NIL	Tr or NIL	NIL	-Approx. 25% of fragments are light brown (slightly less altered in Fe stain)
60-70	Bleached Felsic Volcanic	Mixed with clay and sericite	3 or 4%	Present in almost all fragments	Mixed with clay and quartz	NIL	Trace small specks	NIL	Tr or NIL	NIL	-Only 5% of frag- ments are brown, probably weathering
80-90	Bleached Felsic Volcanic	Mixed with clay and sericite	Approx. 4%	Present in almost all fragments	Mixed with clay and quartz	Trace	Trace	Tr to NIL	Tr	NIL	<5% of fragments are brown
100-110	Bleached Felsic Volcanic	Mixed with CO <sub>3</sub> and sericite	2-3%	Mixed with quartz and CO <sub>3</sub>	Mixed with quartz and CO <sub>3</sub>	Trace	<Trace	<Tr	Tr	NIL	-1% brown fragments -Totally bleached
120-130	Bleached Felsic Volcanic	Mixed with CO <sub>3</sub> and sericite	4%	Mixed with quartz and CO <sub>3</sub>	Mixed with quartz and CO <sub>3</sub>	Trace	<Trace	<Tr	Tr	NIL	-Totally bleached

OVERBURDEN DEPTH = 0

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
140-150	Bleached Felsic Volcanic	Mixed with CO <sub>3</sub> and sericite	4%	Mixed with quartz and CO <sub>3</sub>	Mixed with quartz and CO <sub>3</sub>	Trace	<Trace	<Tr	Tr	NIL	-Totally bleached
160-170	Bleached Felsic Volcanic	Mixed with CO <sub>3</sub> and sericite	2-3%	Mixed with quartz and CO <sub>3</sub>	Mixed with quartz and CO <sub>3</sub>	Trace	<Trace	<Tr	Tr	NIL	-Some euhedral calcite -1% brown fragments
180-190	Bleached Felsic Volcanic	Mixed with CO <sub>3</sub> and sericite	3%	Mixed with quartz and CO <sub>3</sub>	Mixed with quartz and CO <sub>3</sub>	Trace	<Trace	<Tr	Tr	NIL	-Totally bleached -No euhedral calcite
190-200 E.O.H.	Bleached Felsic Volcanic	Mixed with CO <sub>3</sub> and sericite	3%	Mixed with quartz and CO <sub>3</sub>	Mixed with quartz and CO <sub>3</sub>	Trace	<Trace	<Tr	Tr	NIL	-Totally bleached -No euhedral calcite

OVERBURDEN DEPTH - 64'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
64-80	Felsic Crystal Tuff (Partly altered/ bleached)	Present in maroon and bleached chips	Approx. 2%	Present in 40%	Mixed with quartz and clay	Minor to moderate	Present in 60% of frag- ments	Minor	Tr	NIL	-Overall colour reddish grey -Reddish chips have white crystal frag- ments
90-100	Felsic Crystal Tuff (Partly bleached)	Mixed with clay etc. in bleached fragments and also in maroon fresh fragments	Approx. 3%	Present in 2-3% of frag- ments	Mixed with clay, CO <sub>3</sub> , quartz	Minor to moderate	Present in approx. 60- 65%	Mod.	Tr	NIL	-Blue soft mineral Irregular to con- choidal fracture -Some green crystal- line (probably secondary Cu min.)
110-120	Bleached (Partly) Felsic Tuff	In most chips	2-3%	Present in approx. 60%	Mixed with clay and quartz	Minor to moderate	Present in approx. 40% of fragments	Minor	Tr	NIL	-More bleached than above
130-140	1/3 Felsic Crystal Tuff 1/3 Grey, Partly Alt. Volc. with Biotite, 1/3 Bleached Volcanic	Present in almost all fragments	1 or 2%	Present in approx. 30% to 60%	Present in 2/3	Minor	Present in 2/3 of frag- ments (both red and grey)	Minor	NIL	NIL	-Trace secondary Cu -1/3 grey with Bi, Ser., and Qtz. -1/3 white with Ser. and Qtz. -1/3 red with cry- stal fragments

OVERBURDEN DEPTH - 64'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
150-160	Bleached Volcanic	Present in 95% with sericite	3 or 4%	Present in small amounts in 90%	Present in 95%	Trace	A few (~3%) red and grey grains with biotite	NIL	Tr to Minor	NIL	-Almost all fragments are quartz-sericite
170-180	Bleached Volcanic	Present in 95% with sericite	1 or 2%	Present in small amounts in 90%	Present in 95%	Minor	A few (~3%) red and grey grains with biotite	Minor	Minor	NIL	-Almost all fragments are quartz-sericite
190-200 E.O.H.	Bleached Volcanic  Some wire fragments in this hole	Present in 95% with sericite	2 to 3%	Present in small amounts in 90%	Present in 95%	Trace	Present in 5%	Minor to mod.	Minor	NIL	-Almost all fragments are quartz-sericite

OVERBURDEN DEPTH - 67'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
67-80	Felsic Cry- stal Tuff With Bleach- ed Volcanic (Possibly same)	Present in almost all fragments	Approx. 1\$	Some with quartz and sericite	Present with quartz 50-60%	Minor	Present in approx. 40%	Mod.	NIL	NIL	-Approx. 40% of fragments are red crystal tuff
90-100	Felsic Crystal Tuff	In most fragments	2-3%	Some with sericite	Present in approx. 40%	Moderate to fairly abun- dant (~10% of grains with chlorite)	Present in approx. 60% of grains	Mod.	NIL	NIL	-Trace secondary Cu -Reddish grains contain small white crystal fragments
100-120	Felsic Tuff (Maroon with mala- chite)	Present in most frag- ments	Approx. 4%	<10% bleached fragments with clay	Present in ~10%	Moderate	Present in 70-80%	Fairly Abun- dant	NIL	NIL	-Minor sparry cal. -Malachite in 3-4% of grains
130-140	Felsic Tuff (Maroon with mala- chite)	Present in most frag- ments	1-2%	Present in approx. 5%	With quartz in 10% of fragments (bleached)	Minor	Present in ~80-90%	Minor to mod.	NIL	NIL	-Some secondary Cu -Overall colour medium to dark grey
150-160	Felsic Lithic Tuff (Maroon)	Present in most frag- ments	2-3%	Present in approx. 5%	With quartz in 10% bleached fragments and in some fresher red fragments	Minor to moderate	Present in 80-90%	Mod. amount	NIL	NIL	-Some secondary Cu (bluish-green min.) -Reddish hematite colouring in darker chips

OVERBURDEN DEPTH - 67'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
170-180	Felsic Lithic Tuff (Maroon)	Present in most frag- ments	Approx. 2%	With quartz- sericite in approx. 50%	With quartz in ~50% of fragments	Minor to moderate	Present in approx. 50%	Trace	NIL	NIL	-More bleached than above, some second- ary Cu -Overall colour light grey
190-200 E.O.H.	Felsic Crystal Tuff  Some (brass) wire frag- ments in this hole	Present in most frag- ments	2-3%	Minor	With quartz in some fragments	Minor	Present in 90%	Fairly Abun- dant	Trace	NIL	-Overall colour med- ium to dark grey -Minor sparry cal- cite -Less altered than above

OVERBURDEN DEPTH - 69'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
69-80	Bleached Felsic Tuff	Present in most pieces	1 or 2%	Minor with quartz and sericite	With quartz in 90% of fragments	Minor	Present in 10% darker red fragments and in some bleached fragments	Minor to trace	Tr to NIL	NIL	-Pieces of wire (brass) -Bleached -Bone white colour
90-100	Partly (60-70%) Bleached Felsic Vol- canic	In almost all fragments	1 or 2%	Minor with quartz and sericite	Mixed with quartz in some frag- ments (~50%)	Trace	Present in about 30%	Trace	NIL	NIL	-90% of fragments are bleached or partly bleached
110-120	Felsic Tuff Partly Bleached	Present in most	2-3%	Some with quartz-sericite	Mixed with quartz in ~40%	Trace	Present in smaller amts. In 50-60%		NIL	NIL	-All fragments 50- 100% bleached -Some fragments have white shards in dark matrix -Some hematite stain
130-140	Bleached Tuff	Present in all fragments	1-2%	Some with sericite	Mixed with quartz in 60%	Minor to trace	Present in small amounts In ~20%	Trace	Tr	NIL	-Very bleached
150-160	Bleached Tuff	Present in all fragments	Approx. 3%	Minor or trace with quartz- sericite	Mixed with quartz in 70%	Trace	Small amounts In ~30%	NIL	Tr	NIL	-Hematite stain -Slightly less bleached

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
170-180	Fine grained Maroon Fel- sic Tuff	Present in almost all fragments	Trace	Trace	Minor with quartz in some frag- ments	Minor	Present in ~70-80%	Minor	NIL	NIL	-Not bleached (~1%)
190-200	E.O.H. Fine grained Maroon Fel- sic Tuff	Present in almost all fragments	Approx. 1%	Trace to minor	Slightly less than 170-180	Minor	Present in ~70-80%	Minor	NIL	NIL	-Slightly more bleached than above

OVERBURDEN DEPTH - 27'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
27-40	Bleached Tuff	Present in all fragments	Trace	Minor or trace with quartz-sericite	Mixed with quartz in ~50% of fragments	Trace to NIL	Present in small amounts in ~30% of fragments	Trace	Tr	NIL	-~10% brown stained weathered fragments of different lithologies (O/B?) -Mostly bleached
50-60	Bleached Tuff	Present in all fragments	3%	Minor or trace with quartz-sericite	Mixed with quartz in most fragments	Trace	Seams and blebs in 70% of fragments	Trace	Tr	NIL	-More biotite than usual and biotite is more stringer-like -Bleached, but not 100% -Overall colour bone white
70-80	Bleached Tuff (Not totally bleached)	Present in all fragments	~3-4%	Minor or trace with quartz-sericite	Mixed with quartz in most fragments	Trace	Small blebs in ~70%	Trace	Tr	NIL	-About 1/3 of chips have slight maroon or pinkish shade -Somewhat less bleached than above
90-100	Maroon Fine Grains, Felsic Tuff Slightly Bleached	Present in all fragments	<1%	Minor with quartz-sericite	Mixed with quartz in 15% white fragments and some in maroon fragments	Trace	Present in blebs in 75% of fragments	Trace to NIL	Tr to NIL	NIL	-Overall colour maroon (light) -15-20% of chips are bone white, rest are maroon

OVERBURDEN DEPTH - 27'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
100-110	Maroon Fine Grains Felsic Tuff Slightly Bleached	Present in all fragments	<1%	A few bleached grains with minor clay	Mixed with quartz in 10% white fragments and minor in maroon	Trace	Present in ~75%	Trace to NIL	Tr to NIL	NIL	-Overall colour dark grey to maroon
120-130	Maroon Felsic Tuff	Present in all fragments	<1%	NIL to trace	Present in ~5% quartz rich fragments	Trace to NIL	Fine grained biotite in 90-95%	Trace	Tr to NIL	NIL	-Maroon colour -Very minor bleaching
140-150	Maroon Felsic Tuff	Present in all fragments	<1%	NIL to trace	Present in ~10% quartz rich fragments	Trace to NIL	Fine grained biotite in 90-95%	Trace	Tr to NIL	NIL	-Maroon colour -Very minor bleaching -Slightly more bleached fragments than above
160-170	Maroon Felsic Tuff	Present in all fragments	<1%	Minor with quartz-sericite	Present in 10-15% white fragments minor to trace in others	Trace to NIL	Fine grained biotite in 90-95%	Trace	Tr to NIL	NIL	-10-15% bleached fragments
180-190 200 E.O.H.	Maroon Felsic Tuff	Present in all fragments	<1%	Minor with quartz-sericite	Present in 10-15%	Trace to NIL	Fine grained biotite in 90-95%	Trace	Tr to NIL	NIL	-10% bleached

OVERBURDEN DEPTH - 5'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
5-20	Maroon Felsic Tuff	Present in almost all fragments (f.g.)	Approx 1-2%	Minor with sericite	Mixed with quartz in white frag- ments minor or trace in maroon	Trace to NIL	Small specks in approx. 40%	Trace	Tr	NIL	-50% bleached frag- ments -40% maroon -10% brown stained overburden chips
30-40	Bleached Felsic Tuff	Present in almost all fragments (f.g.)	3-4%	Minor with sericite	Mixed with quartz in 85% white fragments	Trace	Blebs and stringers in bleached and maroon tuffs	Trace to Minor	NIL	NIL	-Almost all bleached but biotite still present in many bleached fragments
50-60	Bleached Felsic Tuff	Present in almost all fragments (f.g.)	Approx. 1%	Minor with sericite	Mixed with quartz in 90% white fragments	Trace	Blebs and stringers in bleached and maroon tuffs	Trace to Minor	NIL	NIL	-Almost all bleached but biotite still present in many bleached fragments
70-80	Bleached Felsic Tuff	Present in almost all fragments (f.g.)	Approx. 1%	Minor with sericite	Mixed with quartz in 90% white fragments	Minor	Blebs and stringers in 15-20% of fragments	Minor	Minor	NIL	-90% bleached white fragments -10% pinkish, part- ially bleached
90-100	Bleached Felsic Tuff	Present in almost all fragments (f.g.)	Approx. 1%	Minor with sericite	Mixed with quartz in 90% white fragments	Minor	Blebs and stringers in 15-20% of fragments	Minor	Minor	NIL	-90% bleached white fragments -10% pinkish, part- ially bleached
110-120	Bleached Felsic Tuff	Very thin grained in almost all chips	<1%	Minor with sericite	With quartz in some fragments (30-40%)	Trace to NIL	In pink and white chips ~30% of chips	NIL	Trace	NIL	-60% pinkish frag- ments -40% bleached white

OVERBURDEN DEPTH - 5'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
130-140	Bleached Felsic Tuff	Very fine grained in almost all chips	1-2%	Minor with sericite	With quartz in some fragments (30-40%)	Trace to NIL	Small blebs in ~40-45% of chips	Trace to NIL	Trace	NIL	~50% pinkish ~50% grey and white
150-160	Bleached Felsic Tuff	Very fine grained in almost all chips	2-3%	Minor with sericite	Mixed with quartz in white chips	Trace	Small blebs in pinkish chips and 10-20% of white chips	Trace to NIL	Trace	NIL	~40% pinkish ~60% grey and white
170-180	Bleached Felsic Tuff	Very fine grained in almost all chips	1-2%	Minor with sericite	Mixed with quartz in white chips	Trace	Small blebs in pinkish chips and 10-20% of white chips	Trace	Trace	NIL	-70% white and grey -30% pinkish
190-200 E.O.H.	Bleached Felsic Tuff	Very fine grained in almost all chips	Approx. 2%	Minor with sericite	Mixed with quartz in white chips	Trace	Present in pinkish chips and 5% of white chips	Trace	Trace	NIL	-30% pink to partially white -70% white

OVERBURDEN DEPTH - 5'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
5-20	Maroon Felsic Tuff	Present in almost all fragments (f.g.)	Approx 1-2%	Minor with sericite	Mixed with quartz in white frag- ments minor or trace in maroon	Trace to NIL	Small specks in approx. 40%	Trace	Tr	NIL	-50% bleached frag- ments -40% maroon -10% brown stained overburden chips
30-40	Bleached Felsic Tuff	Present in almost all fragments (f.g.)	3-4%	Minor with sericite	Mixed with quartz in 85% white fragments	Trace	Blebs and stringers in bleached and maroon tuffs	Trace to Minor	NIL	NIL	-Almost all bleached but biotite still present in many bleached fragments
50-60	Bleached Felsic Tuff	Present in almost all fragments (f.g.)	Approx. 1%	Minor with sericite	Mixed with quartz in 90% white fragments	Trace	Blebs and stringers in bleached and maroon tuffs	Trace to Minor	NIL	NIL	-Almost all bleached but biotite still present in many bleached fragments
70-80	Bleached Felsic Tuff	Present in almost all fragments (f.g.)	Approx. 1%	Minor with sericite	Mixed with quartz in 90% white fragments	Minor	Blebs and stringers in 15-20% of fragments	Minor	Minor	NIL	-90% bleached white fragments -10% pinkish, part- ially bleached
90-100	Bleached Felsic Tuff	Present in almost all fragments (f.g.)	Approx. 1%	Minor with sericite	Mixed with quartz in 90% white fragments	Minor	Blebs and stringers in 15-20% of fragments	Minor	Minor	NIL	-90% bleached white fragments -10% pinkish, part- ially bleached
110-120	Bleached Felsic Tuff	Very thin grained in almost all chips	<1%	Minor with sericite	With quartz in some fragments (30-40%)	Trace to NIL	In pink and white chips ~30% of chips	NIL	Trace	NIL	-60% pinkish frag- ments -40% bleached white

OVERBURDEN DEPTH - 0

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
0-20	Felsic Tuff	Abundant fine-grained	<1%	NIL	Trace with quartz	Trace	Present in very fine flecks in 80%	Trace	Trace	NIL	-Some specular hematite (fairly common) -Little or no alteration -Maroon colour
30-40	Felsic Tuff (fine-grained, maroon)	Abundant fine-grained	Approx. 2%	NIL	A few white grains with minor sericite	Trace	In 80-90% of grains	Trace	NIL	NIL	-Still some specular hematite -Maroon and fresh
50-60	Felsic Tuff (fine-grained, maroon)	Abundant fine-grained	Approx. 1%	NIL	Mixed with quartz in approx. 40%	Trace	In 80-90% of grains	Trace	NIL	NIL	-10% bleached grains
70-80	Felsic Tuff (fine-grained, maroon)	Abundant fine-grained	Approx. 1%	NIL	Mixed with quartz in 60%	Trace	Fine to medium grain in approx. 40%	Trace	NIL	NIL	-Wire fragments Partly bleached
90-100	Bleached Felsic Tuff	Abundant fine-grained	Approx. 2%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Fine to medium grain in approx. 40%	NIL	Trace	NIL	-Overall colour light grey -Bleached
100-110	Bleached Felsic Tuff	Abundant fine-grained	Approx. 4%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Fine grained in ~20%	NIL	Trace	NIL	-Overall colour light grey -Bleached

OVERBURDEN DEPTH - 0

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
120-130	Bleached Felsic Tuff	Abundant fine-grained	Approx. 4%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Small specks in ~50-60%	NIL	Tr to NIL	NIL	-Overall colour light grey -Bleached
140-150	Bleached Felsic Tuff	Abundant fine-grained	1-2%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Small specks in 50-70% or more	NIL	Tr to NIL	NIL	-Overall colour light grey -Bleached
160-170	Bleached Felsic Tuff	Abundant fine-grained	Approx. 1%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Small specks in 90%	NIL	Tr to NIL	NIL	-Overall colour light grey -Bleached
190-200	Mixed Bleached & Non-bleached Felsic Tuff	Abundant fine-grained	<1%	Minor or trace with quartz-sericite	Mixed with quartz in 1/3 of grains trace in some others	Trace	Abundant in 2/3 of chips	Fairly Abundant	Tr to NIL	NIL	-Only 1/3 of chips bleached -Overall colour dark grey
210-220	Mixed Bleached & Non-bleached Felsic Tuff	Abundant fine-grained	<1%	Minor	Mixed with quartz in 1/3 of grains trace in some others	Approx. 1/3 of grains contain chlorite	Fairly abundant in 2/3	Trace	Tr to NIL	NIL	-Mixed lithologies -1/3 red to dark grey -1/3 bleached white -1/3 chloritic

OVERBURDEN DEPTH - 0

OVERBURDEN DEPTH - 0

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
0-20	Felsic Tuff	Abundant fine-grained	<1%	NIL	Trace with quartz	Trace	Present in very fine flecks in 80%	Trace	Trace	NIL	-Some specular hematite (fairly common) -Little or no alteration -Maroon colour
30-40	Felsic Tuff (fine-grained, maroon)	Abundant fine-grained	Approx. 2%	NIL	A few white grains with minor sericite	Trace	In 80-90% of grains	Trace	NIL	NIL	-Still some specular hematite -Maroon and fresh
50-60	Felsic Tuff (fine-grained, maroon)	Abundant fine-grained	Approx. 1%	NIL	Mixed with quartz in approx. 40%	Trace	In 80-90% of grains	Trace	NIL	NIL	-10% bleached grains
70-80	Felsic Tuff (fine-grained, maroon)	Abundant fine-grained	Approx. 1%	NIL	Mixed with quartz in 60%	Trace	Fine to medium grain in approx. 40%	Trace	NIL	NIL	-Wire fragments Partly bleached
90-100	Bleached Felsic Tuff	Abundant fine-grained	Approx. 2%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Fine to medium grain in approx. 40%	NIL	Trace	NIL	-Overall colour light grey -Bleached
100-110	Bleached Felsic Tuff	Abundant fine-grained	Approx. 4%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Fine grained in ~20%	NIL	Trace	NIL	-Overall colour light grey -Bleached

OVERBURDEN DEPTH - 0

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
120-130	Bleached Felsic Tuff	Abundant fine-grained	Approx. 4%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Small specks in ~50-60%	NIL	Tr to NIL	NIL	-Overall colour light grey -Bleached
140-150	Bleached Felsic Tuff	Abundant fine-grained	1-2%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Small specks in 50-70% or more	NIL	Tr to NIL	NIL	-Overall colour light grey -Bleached
160-170	Bleached Felsic Tuff	Abundant fine-grained	Approx. 1%	Minor or trace with quartz-sericite	Mixed with quartz in almost all grains	Trace	Small specks in 90%	NIL	Tr to NIL	NIL	-Overall colour light grey -Bleached
190-200	Mixed Bleached & Non-bleached Felsic Tuff	Abundant fine-grained	<1%	Minor or trace with quartz-sericite	Mixed with quartz in 1/3 of grains trace in some others	Trace	Abundant in 2/3 of chips	Fairly Abundant	Tr to NIL	NIL	-Only 1/3 of chips bleached -Overall colour dark grey
210-220	Mixed Bleached & Non-bleached Felsic Tuff	Abundant fine-grained	<1%	Minor	Mixed with quartz in 1/3 of grains trace in some others	Approx. 1/3 of grains contain chlorite	Fairly abundant in 2/3	Trace	Tr to NIL	NIL	-Mixed lithologies -1/3 red to dark grey -1/3 bleached white -1/3 chloritic

OVERBURDEN DEPTH - 0

OVERBURDEN DEPTH - 7'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
7-20	Partially Bleached Felsic Tuff (Maroon)	Abundant fine-grained	NIL	Trace	Minor with quartz	NIL	Fine specks in 90% of grains	NIL to Trace	NIL	NIL	-Partially bleached -Overall colour light grey to fairly pinkish
30-40	Felsic Tuff	Abundant fine-grained	Approx. 1%	NIL	Minor with quartz	Trace	Fine specks fairly abundant in almost all grains	NIL to Trace	NIL	NIL	-Very little bleaching -Dark grey
50-60	Felsic Tuff (Maroon) to Chloritic	Abundant fine-grained	<1%	NIL	Minor with quartz in greenish grains, trace in others	About 25% of grains are rich in fine-grained chlorite	Fine specks fairly abundant in almost all grains	NIL to Trace	NIL	NIL	-Most chips dark -Dark pinkish grey
70-80	Felsic Crystal Tuff	Abundant fine-grained	NIL	NIL	Minor	Minor	Fine specks fairly abundant in almost all grains	NIL	NIL	NIL	-Some fragments have good feldspar crystals (crystal tuff) -Minor specular hematite
90-100	Felsic Crystal Tuff (Slightly Bleached)	Abundant fine-grained	<1%	NIL	Some with quartz in lighter chips	Trace	Fine specks fairly abundant in almost all grains	NIL	NIL	NIL	-2/3 partially bleached grey chips -1/3 unbleached pinkish grey chips

OVERBURDEN DEPTH - 7'

OVERBURDEN DEPTH - 111

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
11-30	Felsic Tuff Mostly Bleached, Sericitized	Abundant in all chips	1-6%	Trace in bleached chips	Mixed with quartz in bleached chips	NIL	Abundant in fresh chips Trace in bleached	Fairly abun- dant	Minor	NIL	-15% chips are fresh maroon volcanics -90% bleached white
40-50	Felsic Cry- stall Tuff (Partly Bleached)	Abundant in all chips	Some clean calcite crystals approx. 2%	NIL to trace	Some with quartz in most strong- ly bleached chips	Trace	Trace	Fairly Abun- dant	Minor	NIL	-Most chips light grey and partly bleached -Relic crystals visible
60-70	Felsic Cry- stall Tuff (Partly Bleached)	Abundant in all chips	Approx. 3%	NIL to trace	Some with quartz in most strong- ly bleached chips	NIL	Trace	Minor	Minor	NIL	-Most chips light grey and partly bleached -Relic crystals visible
80-90	Felsic Cry- stall Tuff Slightly to Moderately Bleached	Abundant in all chips	2-3%	Replacing plagioclase in some larger chips	Some in most bleached chips	NIL	Some fine- grained in freshest chips	Fairly abun- dant	Minor	NIL	-Most chips medium grey -Less bleached than than above
100-110	Bleached to Partly Bleached Felsic Tuff	Abundant in all chips	Approx. 3%	Minor in some bleached chips	Mixed with quartz in bleached chips	Trace	Minor	Fairly abun- dant	Trace	NIL	-Most chips bleached or partly bleached

OVERBURDEN DEPTH - 11'

OVERBURDEN DEPTH - 2'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
2-20	Felsic Maroon Cry-stal Tuff	Abundant	<1%	Trace	Minor in a few bleached grains	Minor	Fine specs abundant	Minor	Trace	NIL	-Some spec. hematite -Overall colour grey
30-40	Felsic Maroon Cry-stal Tuff	Abundant	Approx. 1%	NIL	Minor in a few bleached grains	Minor	Fine specs abundant	Minor	Trace	NIL	-Some spec. hematite -Overall colour grey
50-60	Felsic Ma-roon Tuff and Bleached Tuff with Iron Stain	Abundant	<1%	Minor reddish brown clay on stained samples	Some mixed with quartz is siccotic grains	Trace	Fine specs in grey chips (2/3)	Minor	Trace	NIL	-About 1/3 of chips are brown stained, siccotic and quartz rich -Rest are fresh grey -Specular hematite
70-80	Felsic Ma-roon Tuff Slightly Sericitized	Abundant	Approx. 1%	Trace	Some seri-cite in grey grains	Trace	Fine specs in most chips	Minor	Trace	NIL	-Only 10% of chips are brown-stained siccotic -Rest are fresh grey
90-100	Felsic Ma-roon Tuff	Abundant	<1%	NIL	Trace in some grains	NIL	Fine specs in most chips	Trace	NIL	NIL	-Mostly fresh -A few bleached chips -Some specular hematite

OVERBURDEN DEPTH - 2'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
65-80	Mixed Volcanics	Abundant	1%	Trace	Minor	Moderate	Minor (in red chips)	Trace	NIL	NIL	-Mixture of red, grey, green and white chips -Some euhedral calcite
90-100	Mixed Volcanics	Abundant	1-2%	Trace	Minor	Moderate	Minor (in red chips)	Trace	NIL	NIL	-Mixed chips, but with more red than above
110-120	Variously Bleached Crystal Tuff	Abundant	2-3%	Trace	In white chips	Minor	Moderate	Minor	NIL	NIL	-Mostly dark red crystal tuff
130-140	Variously Bleached Crystal Tuff	Abundant	2-3%	Trace	80% of chips contain some	Moderate	Moderate	NIL	NIL	NIL	-Most chips are 50-75% altered -Some fresh red -Trace secondary Cu
150-160	Variously Bleached Crystal Tuff	Abundant	2-3%	Trace	80% of chips contain some	Moderate	Moderate	NIL	NIL	NIL	-Most chips are 50-75% altered -Some fresh red -Trace secondary Cu
170-180	Mostly Bleached Tuff	Abundant	2-3%	Trace	80% of chips contain some	Moderate	Minor	NIL	Trace One large grain	NIL	-90% bleached
190-200	Mostly Bleached Tuff	Abundant	2-3%	Trace	80% of chips contain some	Moderate	Minor	NIL	NIL	NIL	-90% bleached

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
12-20	Maroon, Felsic Cry- stal Tuff	Abundant	<1%	NIL	Trace	Minor	Abundant	Minor	NIL	NIL	-Trace of alteration mostly fresh
30-40	Maroon, Felsic Cry- stal Tuff	Abundant	<1%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-Fresh
50-60	Maroon, Felsic Cry- stal Tuff	Abundant	<1%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-Fresh
70-80	Maroon, Felsic Cry- stal Tuff	Abundant	<1%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-Fresh
90-100	Maroon, Felsic Cry- stal Tuff	Abundant	<1%	NIL	Minor	NIL	Abundant	Minor	NIL	NIL	-10-15% bleached
110-120	Partly Bleached Felsic Cry- stal Tuff	Abundant	<1%	Trace	Moderate	Minor	Moderate	Minor	NIL	NIL	-50% bleached
130-140	Partly Bleached Felsic Cry- stal Tuff	Abundant	<1%	Trace	Moderate	Trace	Abundant	Minor	NIL	NIL	-25% of chips very altered -75% very fresh

OVERBURDEN DEPTH - 12'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
150-160	Partly, Bleached Felsic Cry- stal Tuff	Abundant	<1%	Trace	Moderate	Trace	Abundant	Minor	NIL	NIL	-25% of chips very altered -75% very fresh
170-180	Partly, Bleached Felsic Cry- stal Tuff	Abundant	<1%	Trace	Moderate	Minor	Moderate	Minor	NIL	NIL	-50% bleached
190-200	Bleached Tuff	Abundant	<1%	Minor	Abundant	Minor	Minor	Minor	NIL	NIL	-75% bleached -Few fresh fragments

OVERBURDEN DEPTH - 109'

OVERBURDEN DEPTH - 2'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
2-20	Felsic Crystal Tuff	Abundant	1%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-A few weathered pieces otherwise fresh
30-40	Felsic Crystal Tuff	Abundant	1%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-A few weathered pieces otherwise fresh
50-60	Felsic Crystal Tuff	Abundant	1%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-A few weathered pieces otherwise fresh
70-80	Bleached Tuff	Abundant	2%	Minor	Abundant	NIL	Trace	Minor	Minor	NIL	-Bleached grey to bone white colour
90-100	Mixed Bleached & Unbleached Crystal Tuff	Abundant	2%	Trace	Moderate	Trace	Abundant	Minor	Trace	NIL	-50% bleached -50% fresh
110-120	Bleached & Partly Bleached Tuff	Abundant	<1%	Minor	Abundant	NIL to trace	Minor	Minor	NIL	NIL	-Overall colour grey to reddish grey

OVERBURDEN DEPTH - 2'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	DIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
130-140	Bleached & Partly Bleached Tuff	Abundant	<1%	Minor	Abundant	NIL to trace	Minor	Minor	NIL	NIL	-Overall colour grey to reddish grey
150-160	Mixed Bleached & Partly Bleached Felsic Crystal Tuff	Abundant	<1%	Minor	Moderate	NIL	Moderate	Minor	NIL	NIL	-Grey and red
170-180	Mostly Fresh Felsic Crystal Tuff	Abundant	<1%	NIL to trace	Minor	NIL	Abundant	Minor	NIL	NIL	-Mostly grey
190-200 E.O.H.	Felsic Crystal Tuff	Abundant	<1%	NIL	Minor	NIL	Abundant	Minor	NIL	NIL	-Fresh grey

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
44-60	Slightly Bleached Felsic Tuff	Abundant	<1%	Trace	Minor	NIL	Abundant	Trace	NIL	NIL	-Grey to reddish grey in some bleached portions of chips
70-80	Felsic Crystal Tuff	Abundant	<1%	NIL	Trace	NIL	Abundant	Trace	NIL	NIL	-Fresh grey
90-100	Bleached Tuff	Abundant	1%	Minor	Abundant	NIL	Trace	Trace	NIL	NIL	-Almost entirely bleached
120-130	Bleached Tuff	Abundant	1%	Minor	Abundant	NIL	Minor	Trace	NIL	NIL	-Slightly less bleached than 90-100
140-150	Mixed Bleached & Fresh Crystal Tuff	Abundant	1%	Minor	Moderate	Trace	Moderate	Minor	NIL	NIL	-50% fresh -50% bleached
160-170	Mixed Bleached & Fresh Crystal Tuff	Abundant	1%	Minor	Moderate	Trace	Moderate	Minor	NIL	NIL	-50% fresh -50% bleached
180-190 E.O.H. @ 200	Mixed Bleached & Fresh Crystal Tuff	Abundant	1%	Minor	Abundant	Trace	Moderate	Minor	NIL	NIL	-75% bleached -25% fresh

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
3-20	Bleached Felsic Tuff	Abundant	<1%	Some with sericite	Abundant	NIL	NIL	NIL	NIL	NIL	-Bleached and weathered bone white
30-40	Partly Bleached Tuff	Abundant	<1%	Some with sericite	Abundant	NIL	Moderate	NIL	Minor to Trace	NIL	-Greyish white colour, some blot- ite remaining in bleached chips
50-60	Partly Bleached Tuff	Abundant	1-2%	Some with sericite	Abundant	NIL	Moderate	NIL	Minor	NIL	-Slightly less blot- ite than 30-40
70-80	Bleached Tuff	Abundant	1-2%	Some with sericite	Abundant	NIL	Minor	NIL	Minor	NIL	-Very little blotite left
90-100	Felsic Cry- stal Tuff	Abundant	1-2%	NIL	Minor	NIL	Abundant very fine-grained	NIL	Minor	NIL	-Light grey, quite fresh
110-120	Felsic Cry- stal Tuff	Abundant	1-2%	NIL	Minor	NIL	Abundant very fine-grained	NIL	Minor	NIL	-Medium grey
130-140	Bleached Tuff	Abundant	1%	Minor	Abundant	Trace	Trace	Minor	Trace	NIL	-Bone white
150-160	Bleached Tuff	Abundant	1%	Minor	Abundant	NIL	Minor	Trace	Trace	NIL	-Not 100% bleached

OVERBURDEN DEPTH - 3'

OVERBURDEN DEPTH - 64'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
64-80	Mixed Volcanics										-Probably overburden
90-100	Maroon Crystal Tuff	Abundant	<1%	NIL	Minor	Trace	Abundant	Minor to Trace	NIL	NIL	-80% maroon fresh -20% bleached white -Trace secondary Cu
110-120	Maroon Crystal Tuff	Abundant	<1%	NIL	Minor	Trace	Abundant	Minor to Trace	NIL	NIL	-80% maroon fresh -20% bleached white -Trace secondary Cu
130-140	Maroon Crystal Tuff	Abundant	<1%	NIL	Trace	NIL	Abundant	Minor to Trace	NIL	NIL	-Fresh
150-160	Maroon Crystal Tuff	Abundant	<1%	Trace	Minor	NIL	Abundant	Minor to Trace	NIL	NIL	-20% bleached -80% fresh
170-180	Bleached Tuff	Abundant	<1%	Minor	Abundant	Trace	Minor	Minor to Trace	NIL	NIL	-80% bleached -20% maroon tuff
190-200	Bleached Tuff	Abundant	1-2%	Minor	Abundant	Trace	NIL	NIL	NIL	NIL	-95% bleached

OVERBURDEN DEPTH - 64'

OVERBURDEN DEPTH - 86'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
100-110	Felsic Cry- stal Tuff	Abundant	<1%	NIL	Trace to Minor	NIL	Abundant	Mod- erate	Trace	NIL	-Fresh grey with a few white chips
120-130	Felsic Cry- stal Tuff (Partly Bleached)	Abundant	<1%	Trace	Minor	NIL	Moderate	Minor	Trace	NIL	-Light grey partly bleached
140-150	Bleached Felsic Tuff	Abundant	1%	Minor	Abundant	NIL	Trace	Minor	Trace	NIL	-Bone white
160-170	Bleached Felsic Tuff	Abundant	1%	Minor	Abundant	NIL	Trace	Minor	NIL	NIL	-Bone white
180-190	Partly Bleached Tuff	Abundant	1%	Trace	Moderate	NIL	Trace	Minor	NIL	NIL	-Some biotite left in chips
210-220	Partly Bleached Tuff	Abundant	1%	Trace	Moderate	NIL	Trace	Minor	NIL	NIL	-Some biotite left in chips
230-240	Slightly Bleached Felsic Tuff	Abundant	1%	NIL	Minor	NIL	Abundant	Minor	NIL	NIL	-Medium grey colour

OVERBURDEN DEPTH - 86'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
250-260	Slightly Bleached Felsic Tuff	Abundant	1%	NIL	Minor	NIL	Abundant	Minor	NIL	NIL	-Medium grey colour
270-280	Bleached Tuff	Abundant	1%	Minor	Abundant	NIL	Trace	Minor	NIL	NIL	-Bone white
290-300	Bleached Tuff	Abundant	1%	Minor	Abundant	NIL	Trace	Minor	NIL	NIL	-Bone white

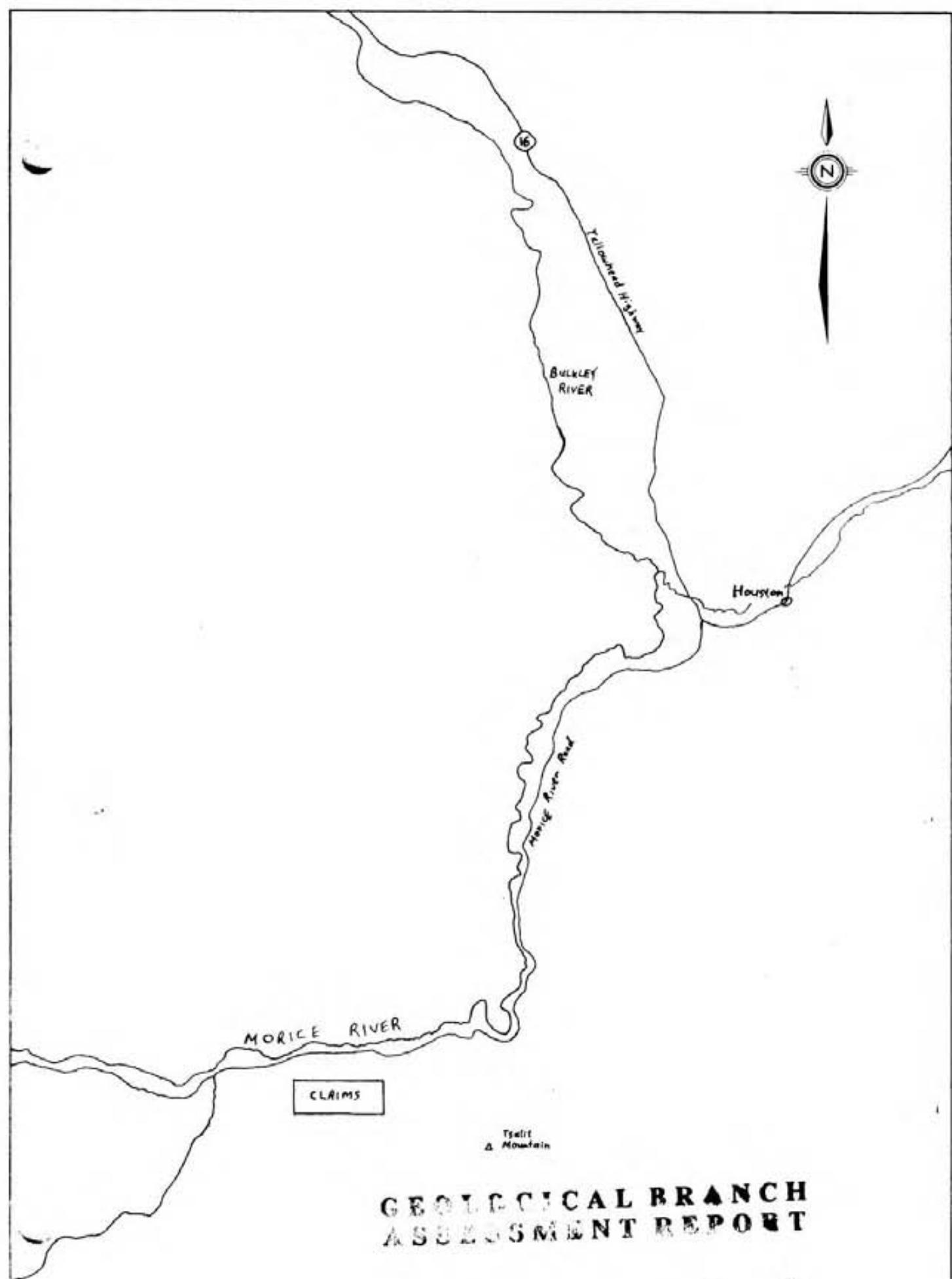
OVERBURDEN DEPTH - 7'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
7-20	Mixed Fresh, Altered & Weathered Chips										-Overburden contam- ination
30-40	Maroon, Felsic Cry- stal Tuff	Abundant	Approx. 1%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-A few bleached chips
50-60	Mixed Bleached & Fresh Cry- stal Tuff	Abundant	1-2%	Trace	Minor	NIL	Abundant	Minor	NIL	NIL	-Approx. 40% bleached
70-80	Mixed Bleached & Fresh Cry- stal Tuff	Abundant	1-2%	Trace	Minor	NIL	Abundant	Minor	NIL	NIL	-Approx. 40% bleached
90-100	Slightly Bleached Tuff	Abundant	1-2%	Trace	Minor	NIL	Abundant	Minor	NIL	NIL	-30% bleached
110-120	Maroon Fel- sic Crystal Tuff	Abundant	1-2%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-<5% bleached

OVERBURDEN DEPTH - 7'

DEPTH (feet)	ROCK TYPE	QUARTZ	CO <sub>3</sub>	CLAY	SERICITE	CHLORITE	BIOTITE	MAG	PY	OTHER SULPHIDES	COMMENTS
130-140	Maroon Fel-sic Crystal Tuff	Abundant	1-2%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-<5% bleached
150-160	Maroon Fel-sic Crystal Tuff	Abundant	1-2%	NIL	Trace	NIL	Abundant	Minor	NIL	NIL	-<5% bleached
170-180	Maroon Fel-sic Crystal Tuff	Abundant	1-2%	Trace	Minor	NIL	Abundant	Minor	NIL	NIL	-10% bleached
190-200	Maroon Fel-sic Crystal Tuff	Abundant	Approx. 1%	Trace	Trace	NIL	Abundant	Minor	NIL	NIL	-Fresh
210-220	Maroon Fel-sic Crystal Tuff	Abundant	Approx. 1%	Trace	Trace	NIL	Abundant	Minor	NIL	NIL	-Fresh
230-240	Maroon Fel-sic Crystal Tuff	Abundant	Approx. 1%	Trace	Trace	NIL	Abundant	Minor	Trace	NIL	-Fresh

OVERBURDEN DEPTH - 7"



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**13,096**

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