6000 0322 (4840)

– 1350 level –

7/7 ① Good exposure of typical WER (fragmental var.) all the way along in mine from 1440 to 1350.

② Spec A Good exposure of WER showing customary pink & white fragments & occasional grey & purplish fragments. Some fragments seem to show incipient "spherulite". Spec. illustrates this. Proportion of "pink" higher here than in lower levels.

③ Typical EB as shown, much silicified as usual.

④ Spec B (Bauxite) shows green chalcedonic matrix development to tuff(?) inclusion.

⑤ (Spec in case) Gypsum(?) xls 10" long hanging from roof

⑥ Btw. JVG WER shows more pyritization & pt. veining than hanging. Spec. (C) shows dark inclusion material - giving locally appearance not unlike EB

6000 0322 (4890)

Tonopah formation -- tuff

No.	Elev.	Coord.	Ad.	gr. chl.	calc.	Ab	py	ser.	sec qtz.	clay?	
✓57			VR	R	M-R	A	M	M	A	–?	
✓58			R	VR	M	M-R	M+	A	M+	–?	
✓59			–	–	R-M	R?	M	A–	M	M	
69			–	–	–	–?	M–	A–	(–?)	R?	much original qtz. Photo for shards.
✓76			–	–	VR	A	M	R	M-A	–?	
97			R	–	–	–	M-R	M	M-R	M?	
114			R	M	–	M-A	M+	M+	M	–	clastic
✓118			R	–	–	–	M+	M	(–?)	M-R?	much orig qtz?
✓123			A	–	–	M-	M	M–	M-R	M-R.	
137			–	–	–	–	A	A	(–?)	–	much orig qtz.
138			–	–	–	–	M+	A	(–)		orig qtz.
139			–	–	–	–	M-R	A	(–)		orig qtz? + recrystallization
140			M	R	–?	M	M–/+	M	( )	M	orig qtz + rks only of Ab + Ad.
141			M	–	A	M	M	R	( )	?	" " "
142			M	M-R	—	M	M–	M	( )		" "
✓143			M	M	VR?	M-	—	M	( )	M-	Epidote? gm qtz recrystallized
144			M	M+	M+	M	VR? —	M–	( )	?	GM qtz –
147			M	M	—	M	VR	M	( )	M-	epidote? "
✓150			A	—	—	M-	M	M	( )	–	Qtz fragments GM ad
186			?	–	–	—?	M	M+	M–		GM qtz –
188			A	M-	–	M–	M-	M-R	M-		GM ad
✓189			M?	–	–	M-	M–	M+	M-		GM qtz + ad
✓190			M?	M-	–	M	M–	M	R		Prob a flow? GM qtz + ad
✓203			A	—	—	—	M+	M+	M		GM ad
✓204			A	–	–	–	—	M+	M+		" "
259			–	–	–?	–	M+	A	R?		" qtz + ser.
279			M-	–	–	–	M-	A	A		" " " mainly
305			–	–	R+	–	M	A	M+	M	dark carb. " " "
353		6540N 10615E	–	–	–	–	M	A	—		Epi? orig qtz " " "
377			–	A	A	M-R	mag? M+	M-	—		oxid Fe? " " rare " " + ?
386			–	A	–	–	mag? M+	A	—		oxid Fe? GM m isotropic N ≈ 1.56
389		5115N 9305E	–?	M+	A	M+	M–	M	—		" qtz? + al? + ser.
✓398			–	–	–	–	M	M–	?	A?	GM qtz + clay –
✓399			–	–	–	–	M-	A	?	M?	GM qtz + sericite
✓403			M+	–	–	R-M?	M lim	A	( )	M-	fine gr sec carb? GM qtz + sericite
✓407			A	M	–	M	R	R	( )	M-?	GM qtz + ad
417			R	–	–	–	M+	A	( )		" " sericite

6000 0322 (4840)

Monopoly formation - flows & dikes

Glassy Trachyte

No	Elev.	Coord	Ad	qr chl	calc	Ab	py	ser	sec qtz	deckik? clay		
75			A	—	—	—	M+	M-	A	M+	TuOr	qtz + ad.
79			R	—	—	—	M+	R	A	M+		qtz + glass
246			A	—	—	M	M-	—?	A	—	Unknown	pheno. qtz, ad + ?
253			M	—	—?	?	M-	M+	M+	M+		pheno qtz + ser.
281			—	—	—	M	M+	R	M+	M+	Photo.	qtz + glass?
325			M+	R	—	—	M	R	M+	M		qtz + glass
336			?	—	—	R	M—	R	M+	M		qtz + glass
360			M	—	—	?	M-	R+	A?	—	zoisite?	qtz + glass
378			—	—	—	M	M+	R+	M	—		feld (Ab?
431			?	—	—	—	M	M-	M+	M+		qtz + glass

Other flows

62			?	—	M-	M+	M+	M-	Par —	—	Anal? Photo?	feld laths
70			?	—	A (andesite)	M	M-	M+	R	M?		feld.
71			?	—	A (andesite)	M?	M-	M	R	M+	TuOr	feld -
72			?	—	M (and?)	M+	M+	M-	R	M		feld -
85			R?	—	—?	—	A	A	A	—	TuOr	qtz + ser.
87			M	—	—	R?	M+	M	M	—	TuOr	qtz ser feld
92			M	—	—	?	M+	M+	R	M+	TuOr R	feld ser qtz
209			—	—	—	M	M	R	M+	—	?	qtz + glass?
310			M	—	M (andesite)	—	M+	M	M	—	TuOr R zoisite?	ser + feld.
385			—	M+	—	M	M—	R	R	—		feld -

dikes.

116			—	M	R (and.)	—	M-	M-	R	M+	TuOr	feld + qtz
122			?	M	M (and	M+	M	M	M	?		feld ?

6000 0322 (4840)

Tonopah formation - breccias.

No.	Elev	Coord.	Ad	Green chlorite	calc.	Ab.	Py	ser.	sec. qtz.	clay.	TiO_2	Matrix.
60			R	R	R	—	R+	R+		R		largely qtz some ser
61			M?	VR	—	—	M-	M+	A	?		qtz + ser.
66			San?	A	M+	R	M-	R+	R	?		
67			San + M?	—	—	—	R+	M+	R	?		qtz, ser, ad.
74			local	R	—	—	M-	A		?	Adularized fragment +	qtz, ser
88			M	—	—?	?	M+	M+	M	?		qtz, ser ad.
89			A	—	—?	—	R+	M-	R	?	shards in incl. Fragments + matrix adularized.	
90			A	—	—	—	M	R	R	M+	much TiO_2 shards in matrix. Matrix ad	
96			A	—	—	R	M+	R+	M	M+		"
99			—?	—	—	—	M	A	M-	?		fine qtz + sericite.
107			A	M	—	R	M	M	M	M		qtz, ser, ad.
115			M?	—	—	—	M	M+		?		qtz + feld?
117			M?	M	—	M+	M	M		—	Ab in fragments.	qtz + feld? (ad?)
119			M-	R	—	—	M	M+	A	?		qtz + feld? + ser.
128				no		slide.						
145			R?	M	M-	M+	M	M-		?		qtz + feld?
146			M?	M-	?	M	M	M-	M?	?	tuff	qtz + ad?
148			M+	M-	?	M	M-	M-		?	tuff.	qtz + ad.
149			M	M	?	M	R	M-		?		qtz, ab? + ad.
161			M	R	—	M	R	M	M	?		coarse qtz - ser.
163			M?	—	—	M?	M+	M+		?	pre-br sericite?	
185			?	M	—	M-	R	A		?	pre-br ser + qtz?	qtz + ser.
192			?	R	R+	?	M	A	R	?	pre br ser?	qtz + ser.
205				no		slide						
211			?	—	—	?	M-	M+	M	?		qtz + ser.
242			?	—	—	?	M	A	A	?		qtz + ser
248			?	A	?	M	—	A		?		qtz, ser, chl?
324			M	—	—	?	R	A		M		qtz, ser, ad.
336			A	A	—	M?	—	M	M	?	??	
340			?	M	M	M	R	M	M	?		qtz, ser, chl.
347			?	M	—	M	R	M			pre-br. alt?	fine qtz?
351			?	M	M	M	—	M	R			fine qtz
380			?	R	M+	M	VR	A	—		prob WE	"
381			M	M	R	?	M-	M-	M	?	adularized incl in qtz matrix	chiefly qtz
384			—	M+	M+	M+	—	M-	—	—	iron oxides.	fine qtz feld?
391			A	—	—	M	M	M-	A	?		qtz + ser
397			A?	—	—	?	M+	M+		?	pre br. serie?	qtz, ad? + ser
402			?	—	—	A	M	M	M	?	xl tuff - shards in matrix	qtz chiefly
404		7440N 7485E	M?	—	—	?	M	M			pre br serie?	" " "
430			A?	—	R	M	M	M+	M		ad frag	qtz matrix

40
37
33
22
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6000 0322 (4840)

Dwaypal formation

Sand Grass andesite member.

No.	Elev.	Co-ord	Ad	gr. chl.	calc	Ab	py	ser	sec qtz	clay	Tur.		
30			R+	M	sud R	?	M	M+	M+	M	R		qtz mo aerie ?
31			–?	M	–	–?.	M	A	M+	R	R		qtz, ser, chl.
45					no	slide							
49			–?	M	M	M+	M+	M–	R+	–	?		qtz, Nak feld?
68			–	A	sud R	M	–	M–	–	M	R+		Nak feld + chl.
81			R+	M+	sud VR	M	M+	M–	M+	M	M		feld, chl.
110			–?	M	M+	M	–	R	VR	–	?	zoisite M+	Nak feld chl.
113					no	slide							
120			R?	R+	–	M–	M	A	A	–	A		qtz ser (feld)
121			–	A	M–	M	–	R+	–?	–	?	zoisite? epidote M+	Nak feld chl
125					No	slide.							
127					No	slide							
162			–	M+	M	M	VR	R+	VR	R?	M+		Nak? feld, chl.
170			A	M	–	–	M+	M+	M+	M'	M		ser, chl, qtz, feld?
191			M+	M	–	–	M	M+	M+	A	M?		" " " "
193					No	slide.							
206					No	slide.							
208			A?	–	–	–	M+	M	A	M–	?		G.T. not Ch. feld.
222			?	M+	M	M+?	–	M–	amyg	?	M+?	zoisite?	Nak? feld + chl.
223													IC has -
224			M+	A	R	?	M	M	M+	M–	M+	zoisite?	feld chl ser.
231			?	M+	M	M?	– mag	M–	R	–	M+		Nak feld + chl.
235			M?	M+	–	–?	–	A		–	?		ser largely
238			M–?	M+	M+	?	– mag	–	–	–	M+	labradorite ~~andesine~~.	plag chl
273			?	M+	M+	A	R	M–	A	R?	M–?		chl + ser qtz + feld.
282			?	A	–	M–	M+	M+	M	–?	M?		Nak feld chl ser
313			?	M–	–	?	M	A	M–	?	M?		qtz feld? ~~add~~ chl.
314			–?	R	R	–	A	A	A	–?	M?	zoisite? R?	qtz, ser.
315			–	M+	–	M–	– mag	M+	A	–	M?		qtz ser chl.
406			–	M	–	M	– mag	M	M–	?	M?	zoisite epidote M	Nak feld, chl
413			~~chl~~?	A	M	M	– hem	M	M	?	M		Nak feld, chl ser.
428			–	M	M+	M	– mag	R	M	?	M		qtz? Nak feld chl.
429			–?	M	–	M	M+	M–	M	?	R	clastic	Nak feld

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6000 0322 (4840)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CHEMICAL LABORATORY

Report of analysis No. D—150

Material received from T. B. Nolan

(No letter)

Halotrichite. Tonopah District.

The material, consisting of light yellow colored stalactites and incrustations, although shown by optical examination to be not homogeneous, conforms fairly well to the formula $R_2O_3.RO.4SO_3.15H_2O$. Except for a deficiency of H_2O this agrees with the composition of the halotrichite group of minerals, which likewise are found under similar conditions, geologically.

The analysis, although not complete, is probably adequate in view of the heterogeneous and variable character of the material.

	Per cent	Ratios				
SO_3	39.40	49.25	49.25	or	4 x ~~.99~~ 1.00	(x 12.35)
H_2O+	19.02	105.7	179.2	"	15 x ~~1.0~~ .97	"
H_2O-	13.23	73.5				
Fe_2O_3	13.84	8.65	11.65	"	1 x .94	"
Al_2O_3	3.08	3.0				
FeO	.32	.44	13.15	"	1 x 1.06	"
ZnO	1.50	1.85				
MnO	7.00	9.86				
BaO(?)	.84	.55				
MgO	.18	.45				
Na_2O+K_2O	n.d.	...				
Ash	.20	...				
	98.61					

Optically, at least, three well defined compounds are seen to be present; their exact determination would be a matter of great difficulty in view of the complexity of this group of hydrous sulphate minerals. It is also possible that molecular changes have occurred in the preparation of the thin section.

Examined by Clark Milton Reported May 12, 1932

R. C. Wells

Chief Chemist.

12/11/31

The Elko flora is closely related in age to the Mascall Miocene, and to a lesser extent to the Bridge Creek of Lower Miocene or Upper Oligocene age. Its dominant species is Taxodium miocenicum, which

check spelling

with associated Sequoia langsdorfii and Alnus carpinoides indicate the moderately humid climatic conditions of the middle Miocene.

Tonopah formation

6000 0322 (4849)

	6T (Spurr)				TR (Spurr)	
	1170 Bel 2580S, 865W B,6 x B	765 Mont 9880N, 9555E B,6 x B	Belmont XC Spurr DO adapt B6B	700RP 60' sadapt B6B	1500 hy B6B	1200 hy stalk 634 young
SiO_2	71.79	72.27	75.44	75.45	68.86	75.17
Al_2O_3	15.44	16.38	13.77		16.33	15.83
Fe_2O_3	2.00	1.96	0.80	0.78	2.21	0.17 (FeS_2)
FeO	0.10	0.19	0.05		0.38	0.90 .013
CaO	tr	tr	tr		1.30	0.46 .008
MgO	0.08	0.49	tr		0.68	0.39
Na_2O	1.21	0.22	0.27	1.12	1.76	2.08
K_2O	5.51	3.71	6.39	5.74	5.00	3.18
	95.93	95.22	96.72	83.09	96.52	98.18
					CO_2	0.61 .014
					H_2O	2.16
						100.95

qtz, ad

+ sec or deuteric or both.

others appear to have mixed Nak feld –

intermediate in age between the Keyport trachyte and "Montana breccia". In the two previous reports by the writer this name

Spurr, J.E. op cit (Econ. Geol vol 10) pp 729-732

was retained with the rank of a formation, although it was recognized that the andesite ~~[illegible]~~ formed two or more intercalated masses of flows & breccias within the Donopah formation.

Anderson, T.B. op cit (Univ Nev. Bull vol 24) pp 13-15; (Univ Nev. Bull vol 29) pp 16-19.

In summary, the Donopah formation ~~[illegible]~~, as the name is used in this report, ~~includes~~ is composed of a series of interbedded flows, tuffs, and breccias and includes in whole or in part rocks that have been formerly assigned to the Donopah rhyolite, Lower rhyolite, Glassy trachyte, Montana breccia, and Sandgrass andesite.

Distribution. -

53137

Room No.

1. Mr..... .....

2. Mr..... .....

3. Mr. Nolan..... .....

From Chemistry

6000 0322 (480)