PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 1 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CARautman
SCALE: 1" = 10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735

COLLAR COORDINATES:
N
E
STARTED:
COMPLETED:

COMMENTS: Oxide zone 0'-38'
mixed oxide & sulfide, 38'-610'
All potential Au.

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION: argillic	ALTERATION: silicic	FRACTURING	MINERAL py	GEOLOGY
0–70					

DESCRIPTIVE GEOLOGY

No Core - Overburden

Rubble

no pyrite whatever

Mostly rubble

clasts of porphyry (earlier than Ttp)

Breccia - Trachyte Porphyry Matrix (?)

V. crowded breccia of variable size clasts of pC schist + qtzite. Matrix is mostly undeterminable because of severe alteration; Appears to be trachyte porphyry where clast content diminishes.

Rock appears to contain clasts of a feldspar-rich porphyry. Is this an earlier porphyry than Ttp, not seen on surface? They probably are not hbl diorite porphyry.

Note - see following page for more discussion

Alteration - Intense argillic alt. of bulk rock, but esp. of schist frags. above ±35'. In this interval rock almost entirely silica and clay. Rock may have been a py-filled crackle breccia (?)

Intense hematite staining + replacement above ±20'. Intense limonite staining + replacement 20-37'. Mod. limonite + hem. mixed below ±37'

Mineralization - diss py + minor py veinlets preserved below ±37'

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt Union Chemex	Ag ~~%~~ opt Union Chemex	%	%	%	%	%	COMPOSITE ASSAYS	%
17–19	8.5	NC	1440		11	0.3ppm .010 .008	37.8ppm 1.2 1.04							.009
25	9.7		1441		7	0.7ppm .010 .020	6.6ppm .1 .30							.015
35	10.9		1442		20	0.4ppm .020 .010	5.6ppm .2 .18							.015
45	9.10		1443		43	0.4ppm	4.3ppm							
55	10.2		1444		27	<0.1ppm	5.7ppm							
65	9.11		1445		75	<0.1ppm	4.9ppm							

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Hoeckel Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 2 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CA Rautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

SECTION: 70, 80, 90, 100, 110, 120, 130, 140

ALTERATION: argillic, silicic, chlorite

FRACTURING

MINERAL

GEOLOGY

COMMENTS:

AVE. CORE REC'Y/HOLE:

DESCRIPTIVE GEOLOGY

Clast content changes from nearly all pC frags to nearly all porphyry frags over this intvl. Proportion of Matrix increases

Intrusion Breccia -
Clasts include variably altered pC schist + qtzite frags, largely replaced by highly altered porphyry frags below ± 75'. These porphyry frags may be hbl diorite porphyry - one clast has highly chloritized hbl xls to 5mm long. Most have no recog. hbl - too altered + bleached.
Matrix diff. to identify - dk gray to green, silicified ?? Possibly trachyte porph ?? (no qtz phenos)

Alteration - Clasts highly altered + bleached - probably chl. arg. + silicic in varying proportions. Most veinlet pyrite is at least partly alt. to limonite

Mineralization - pyrite principally dissem, becoming more vein-like and filling around breccia frags downward. Py. variably altered to limonite

Intense leaching

Quite intense jarosite from ox. of py

contact?

Deadwood Fm-Eds - Highly altered shale and silty shale. possibly once glauc., now. v. chl. rich $S_0 \sim 90°$ C.A. Quite brecciated in part

Rel. minor oxid.

Minor ox.

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt Union Chemex	Ag ~~%~~ opt Union Chemex	%	%	%	%	%	COMPOSITE ASSAYS
75	9.11		1588		80	<0.1ppm	4.8ppm						
85	9.11		1589		74	0.4ppm	4.2ppm						
95	9.11		1590		46	0.1ppm	6.7ppm						
105	9.11		1591		68	<0.1ppm	6.1ppm						
115	9.2		1592		71	0.5ppm .010 .018	6.4ppm nf .20						.014
125	11.2		1593		61	2.0ppm .040 .042	7.0ppm .2 .26						.041
135	10.0		1594		38	1.1ppm .010 .018	4.5ppm .2 .05						.014

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 2 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NQ
LOGGED BY: Johnson
SCALE: 1" = 10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 722'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

ALTERATION: argillic, silicic, chloritic
FRACTURING
MINERAL
GEOLOGY

COMMENTS:

AVE. CORE REC'Y/HOLE:

DESCRIPTIVE GEOLOGY

Deadwood Fm - Ꞓds

Shale + silty shale, perhaps orig. glauc. - highly altered.

mt

Mineralization - Abnt py diss, as veins, + as irreg masses. Py surrounds massive magnetite dist. throughout intvl

±2' Ttp dike (?) crackled + healed by v. qtz rich material (esp. lower 6")

Alteration - Not sure of relationship of py + mt. Py may be replacing mt. Py appears altering to jarosite, which locally stains rock. Abnt chlorite may be alt/meta. prod. of glauc. Ꞓd.

contact

Most py. oxid. to jarosite

Deadwood Fm - Ꞓdq

Qtzite, fine grained; unfoliated, fractured, moc. limonite along fracts.

contact

weak crackle texture

Trachyte Porphyry - Ttp v. fine grained var.

Max pheno size ≠ 3mm; prob. > 80% feldspar phenos, - v. crowded appearing. Faint trachytic texture. Weakly crackled locally, healed by py.

Alteration - groundmass probably silicified - granular appearance, indistinct pheno. outlines. Argillized feldspars alt to swelling clays. Sparse pe incls

contact

Deadwood Fm - Ꞓdq

Qtzite, fine-grained, unfoliated. Weakly fract. w/ iron-stained fract surfaces.

Py is diss and as veinlets

S_0 ~ 90° C.A.

weak crackle texture

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED~~ % RQD	Au ~~%~~ opt Union Chemex	Ag ~~%~~ opt Union Chemex	%	%	%	%	%	COMPOSITE ASSAYS	
145	10.6				52	0.3ppm .010 .005	6.6ppm nf .05							.008
155	10.2				24	0.5ppm .010 .008	8.7ppm .3 .06							.009
165	11.3				45	7.5ppm .180 .208	8.5ppm nf .14							.194
175	10.7				61	1.6ppm .060 .044	6.7ppm .1 .05							.052
185	10.9				42	2.0ppm .060 .064	6.5ppm .5 .12							.062
195	10.8				74	2.9ppm .180 .072	9.0ppm .3 .36							
205	9.10				70	4.6ppm .110 .098	11.7ppm .3 .20							.104

CORE SAMPLE INTERVALS & ASSAYS

The C. E. Hoskin Co., Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 4 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NC
LOGGED BY: CARautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION: argillic	silicic	chloritic	FRACTURING	MINERAL PY	GEOLOGY	DESCRIPTIVE GEOLOGY	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt Union Chemex	Ag ~~%~~ opt Union Chemex	%	%	%	%	%	COMPOSITE ASSAYS
210							Deadwood Fm - qtzite contact														
								215	9.7				63	0.8ppm .020 .018	4.4ppm .3 .08						.019
220							Precambrian Schist + Qtzite Dom. qtz-rich biot. (musc.) schist, well foliated w/ S_1 ~50° C.A. 7-8' qtzite at upper contact. Minor qtzites elsewhere Mineralization - pyrite mostly rest. to veinlets and fracts; v. weakly dissem. locally. Veinlets reach max. 3mm in qtzite units. Alteration - prob. weak argillic throughout. Chloritic alt incr. into underlying unit.	225	10.3				58	0.1ppm .010 .008	2.6ppm .7 .07						.009
230								235	9.11				39	0.1ppm .010 .006	2.4ppm .4 .02						.008
240								245	10.7				44	0.7ppm .010 .028	3.3ppm .2 .09						.019
							contact														
250							zone w/ mod. abnt magnetite Breccia - Clasts consist of highly alt. + chloritized pЄ schist and bleached white, highly alt. aphanite. Aphanite may be trachytic - no obvious qtz. (?). Aphanite clasts dom. above ±259, pЄ below. Clasts 5mm - 5cm	255	9.5				26	0.6ppm .010 .012	4.3ppm .4 .10						.011
260							v. weak slicks 45° C.A. Mineralization - py dissem. and as veinlets Clots and dissem mt may be alt. of py? K-spar-alt. coarse trachte porph. clast	265	10.4				45	<0.1ppm .010 .010	2.4ppm .2 .01						.010
270							Alteration - Rel. intense chloritization of clasts ± 259-272' Matrix indistinct - siliceous + chl. rich	275	10.5				30	0.3ppm	3.8ppm						
280																					

sparse limonite assoc w/ fracts only

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 5 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NC
LOGGED BY: C. Hautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION: argillic	ALTERATION: silicic	ALTERATION: chloritic	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS	
280							Breccia - see above							0.2ppm	4.7ppm							
							contact	285	9.6				44									
290						Heavy clays on fracts	Precambrian - Mostly a qtzitic biotite schist, w/ minor qtzites. Weakly brecciated in part. $S_1 \sim 50°$ C.A.	295	9.6				37	<0.1ppm .010 .008	2.9ppm .2 .01							.009
300						no attitude	Dike of v. fine grained Trachyte Porphyry — Alteration - dike appears quite silicified; Mineralization - dissem. py + weak crackle breccia veinlets in lower part.		10.3				31	3.7ppm .100 .088	7.3ppm .5 .22							.094
						contact ±50° C.A.																
310							Alteration - generally quite fresh rock w/ bright biot. flakes. Possible meta effect resulting in dev. of cordierite (??) - clots of lighter grn-gray material. Some alt. of py to limonite locally ↖porphroblasts?		9.7				50	<0.1ppm .010 .010	2.6ppm .4 .07							.010
320						heavy clay coating on fract.	Mineralization - py. ~~disem~~ and as small veinlets. Py fills weak crackle breccia 339-341'		11.1				82	0.1ppm	2.3ppm							
330							Igneo fragmental Dike - top contact ± 30° C.A. contains rounded frags of pc rock types. Texture of entire rock is granular - like sugar. Precambrian more brecciated adj to dike		9.9				51	0.2ppm .010 .018	3.0ppm .1 .02							.014
340									10.0				69	1.0ppm .020 .030	5.3ppm .3 .09							.025
350																						

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Mueller Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D
HOLE NO: DDH-41
SHEET 6 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NC
LOGGED BY: CARantman
SCALE: 1"=10'

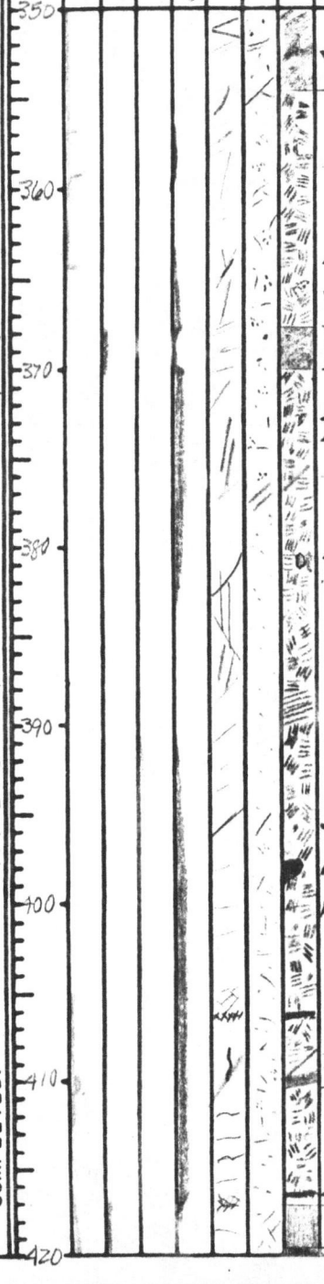
ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION | ALTERATION (argillic, silicic, chloritic) | FRACTURING | MINERAL | GEOLOGY



DESCRIPTIVE GEOLOGY

Precambrian - p€s - as above, rel. intact

Igneo-Frag. dike

contact

Brecciated Precambrian

Most frags < 5cm. Matrix extremely minor - virtually absent. Some clasts of altered Ttp. - probably more than shown on geol. column.

heavy clay on fract.

possible fluorite (?)

2' dike med-crs Trachyte Porphyry

clots of mt

5mm mt veinlet

1cm sanidine xl sitting in v. low matrix breccia

Alteration - Rather intense chloritzation locally, assoc. w/ limonite staining along fracts. Limonite alt. of py. Chl has nearly completely replaced some p€ frags. Veinlets, clots and dissem. magnetite occur w/in chloritized intervals, possibly as alt. of py. Py also alt. to limonite. Most intense limonite staining

Mineralization - Extensive py locally filling around breccia frags. Magnetite possibly as alt. of py.

clots and veinlets (+dissem) magnetite

rubble

heavy clay on fracts

Ttp dike

rubble

Trachyte Porphyry dike

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS	
355	11.0				75	0.2ppm .010 .024	3.4ppm .2 .04							.017
365	10.9				86	0.2ppm	3.1ppm							
375	10.7				71	0.1ppm	3.1ppm							
385	10.4				53	0.2ppm	3.6ppm							
395	10.0				47	0.1ppm	5.3ppm							
400	11.0				60	<0.1ppm	4.8ppm							
415	9.10				60	0.1ppm	4.7ppm							

CORE SAMPLE INTERVALS & ASSAYS

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D
HOLE NO: DDH-41
SHEET 7 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NC
LOGGED BY: C.A. Kautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION | ALTERATION: argillic, silicic, K-spar, chloritic | FRACTURING | MINERAL | GEOLOGY | DESCRIPTIVE GEOLOGY | DRILLING INTERVAL | % CORE RECOVERED | CORE SIZE | CORE SAMPLE INTERVALS & ASSAYS: SAMPLE INTERVAL | % REC'Y./SAMP. INT. | ~~ESTIMATED %~~ RQD | Au ~~%~~ opt | Ag ~~%~~ opt | % | % | % | % | % | COMPOSITE ASSAYS

420 430 440 450 460 470 480 490

heavy clay on fracts

poorly dev. slicks on fract.

v. heavy limonite on fracts — contact

heavy clay on fract

?

Trachyte Porphyry dike - feldspar porph. w/ phenos 3-7mm. Highly silicified + possibly K-spar flooded(?)

contact

Py-filled crackle breccia

jarosite on vert. fract.

Quite heavy limonite on vertical fracts ± clay

Precambrian - p€s + p€q So-50°C.A.

Degree of brecciation varies - typically minor

Mostly biot-rich schist and qtzitic schist. Minor qtzite and qtz veins locally

Alteration - some argillization + chloritization of biot, esp. along fracts w/ limonite alt. of py.

Mineralization - py weakly dissem; also clots + veinlets along fracts + around breccia frags.

Intrusion Breccia - Ttp Matrix

Frags. mostly p€ rock types; Matrix def. appears to be Trachyte Porphyry, w/ feldspar phenos to 5-7 mm max. Note: I thought at first that intvl 462-474 contained clasts of an aphanite (highly altered), but this probably is just an alteration effect on Ttp. matrix. Implies crackling + py healing is later - source??

Mineralization - Intense crackle breccia at top of interval.

Alteration - Feldspars in Ttp matrix gen. fresh. Rock highly chloritized below ± 475'

Drilling Interval	% Core Recovered	Core Size	Sample Interval	% Rec'y./Samp. Int.	~~Estimated %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	Composite Assays
425	10.2				40	<0.1ppm	5.6ppm						
435	10.9				60	0.4ppm .040 .050	5.4ppm .2 .15						.045
445	10.4				50	3.1ppm .040 .060	6.6ppm — .14						.050
454	9.2				20	4.5ppm .080 .090	12.3ppm .4 .27						.085
461 465	10.9				47	14.8ppm .380 .364	28.7ppm .6 .72						.372
475	10.0				28	3.5ppm .080 .084	7.4ppm .4 .16						.082
485	10.8				69	1.8ppm .040 .052	7.8ppm .4 .20						.046

PROJECT: Gilt Edge
LOCATION: Deadwood, SD.
HOLE NO: DDH-41
SHEET 8 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CAFautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION: argillic	silicic	K-spar	chloritic	FRACTURING	MINERAL py	GEOLOGY	DESCRIPTIVE GEOLOGY	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS
490								Clasts seem to become less distinguishable downward. ≡ closer packing and less matrix?														
								Brecciated Precambrian	495	9.9				74	0.2ppm .020 .003	3.4ppm .2 .10						.012
500								Unit is continuous with interval above described as Intrusion Breccia. Proportion of matrix varies from quite obvious to almost none. At irreg. intervals there are 3-10cm thick zones nearly free of pЄ incls. - trachyte porph.	505	10.1				59	0.5ppm .020 .006	4.5ppm .2 .12						.013
510								heavy jarosite + clay on vert. fracts.														
								Alteration - Mild but definite potassic alt. of the more inclusion-free Ttp zones. pЄ frags extensively chloritized throughout. Rather intense limonite + clay along most subvert. fracts. Seems to be a lot of subvert. shearing in several intervals	515	9.11				66	0.3ppm .010 .004	5.4ppm .3 .18						.007
520								small fault-plane at 20°C.A., slicks ±50°CA in plane														
								Mineralization - Pyrite dissem. and as clots and thin veinlets. Most py quite fresh despite Fe ox staining along fracts. Incl.-free Ttp "dikelets" (?) contain only weak dissem. py as v. small cubes	525	10.2				62	1.0ppm .020 .030	6.3ppm .3 .19						.025
530								small fault-plane at 20°C.A., slicks 20-30°C.A. in plane; rubble zone - highly alt + Fe ox stained														
								— indistinct contact —	535	10.1				49	1.5ppm .010 .036	7.6ppm .3 .20						
								bxa decreases														
540								**Precambrian Schist** (Biot-rich) Slightly brecciated at top, but brecciation decreases downward, so that by 542, have intact schistosity at ± 50°C.A. Biot. flakes rather coarse. Chloritization decreases downward.														
								— contact —	545	10.0				36	0.9ppm .020 .020	7.9ppm .3 .18						.020
550								limonite-stained feathery coating on vert. fract.														
								hem. replaces rock here (5cm); v. weak shear w/some Fe ox stained clay gouge														
								Precambrian Amphibole Schist Schistose rock with prominent acicular amphibole (?) xls as much as 1mm long on schistosity. see continued description next page	555	10.1				62	1.9ppm .010 .032	7.3ppm .3 .15						
560								S_1 ~ 50° CA.														

The C. F. Hoeckel Co., Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, SD
HOLE NO: DDH-41
SHEET 9 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CAKautman
SCALE: 1" = 10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION: argillic	silicic	K-spar	chloritic	FRACTURING	MINERAL	GEOLOGY
560–630							

DESCRIPTIVE GEOLOGY

Precambrian Amphibole Schist

Dark gray-green schistose rock composed of v. fine-grained qtz, feldspar and acicular amphibole generally ± 1mm long in plane of schistosity. Schistosity generally 50° C.A. Sparse feldspar-rich "segregations", exp at 582'

Alteration – Rock is probably somewhat chloritized – more intensely so assoc w/ oxidized intervals + iron staining. Some argillization in these intvls as well. Rather heavy jarosite with clays ± chlorite on some fracts – generally these are sub parallel core axis. Epidote possible locally, but may be Feox stained clay (assoc w/ feldspar "patches").

Mineralization – Dissem. py is uncommon. Most py occurs as irreg elots and veinlets at various attitudes

← heavy jarosite

← Feldspar-rich patch – orig. iq. segregation ??

} heavy jarosite + clay on this group of fracts

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS	
565	10.4				75	0.2ppm .010 .003	3.1ppm .2 .08							.007
575	10.0				81	0.6ppm	3.8ppm							
585	10.1				73	0.3ppm	3.7ppm							
595	10.4				67	0.2ppm	2.7ppm							
605	10.4				48	0.9ppm	3.1ppm							
615	10.4				60	0.3ppm	2.8ppm							
625	9.11				66	0.8ppm .020 .006	2.6ppm — .05							.013

CORE SAMPLE INTERVALS & ASSAYS

The C. E. Hoeksel Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 10 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CAFautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90
TOTAL DEPTH: 735

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION | ALTERATION (argillic, silicic, K-spar, chloritic) | FRACTURING | MINERAL | GEOLOGY

DESCRIPTIVE GEOLOGY

630

chlorite + minor Fe ox on fracts

Precambrian Amphibole Schist

Muchas above

640

white calcite coats fract.

Brecciation increases

v. heavy (black) chlorite + clear calcite on open fract, all lightly iron stained

Breccia –

Exclusively frags of amphibole schist Some intvls merely crackled; some intvls distinct clasts.

650

Alteration – Propylitic alt probably affects most of entire pЄ section here. Chlorite + calcite + probable pistachio green epidote. A second generation of chlorite coats open fract surfaces w/ or w/o iron staining. This chlorite quite coarse + nearly black in color.

660

1cm veinlet w/ py + mt (rather vuggy)

±3cm frags. of a phaneritic ig. rk. – monzonite – ?

670

Mineralization – pyrite is mostly as v. thin veinlets and v. weakly dissem. At 664' – mt + py occur together in a vuggy vein 1cm across.

680

rel. abrupt incr. in bna →

Precambrian Amphibole Schist

Degree of brecciation decreases quickly; then rock is again an intact amphibole-rich schist

690

700

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS	
635	10.7				71	0.3ppm .010 .004	2.0ppm — .01							.007
645	9.10				81	<0.1ppm .005 <.003	1.9ppm .1 .01							.002
655	10.0				82	0.1ppm .010 <.003	2.1ppm — .01							.002
665	9.6				63	0.1ppm	2.2ppm							
675	9.5				56	0.3ppm	2.2ppm							
685	10.10				62	<0.1ppm	2.0ppm							
695	10.3				46	<0.1ppm	1.5ppm							

The C. F. Hoeckel Co., Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-11
SHEET 11 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NQ
LOGGED BY: CHRautman
SCALE: 1" = 10'

ELEVATION:
BEARING:
INCLINATION: -90
TOTAL DEPTH: 735

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION: argillic	ALTERATION: silicic	ALTERATION: K-spar	ALTERATION: chloritic	FRACTURING	MINERAL	GEOLOGY
700							
710							
720							
730							

DESCRIPTIVE GEOLOGY

Precambrian Amphibole Schist

Much as before. Intensity of schistosity varies somewhat - May be weakly brecciated locally

735' E.O.H.

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAY'S.	
705	11.1				95	<0.1ppm	2.1ppm							
715	10.7				70	0.3ppm	1.5ppm							
725	9.4				87	0.4ppm	2.0ppm							
	5.1				32	<0.1ppm	1.2ppm							

CORE SAMPLE INTERVALS & ASSAYS

The C. E. Hoechst Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 1 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CARautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION: argillic	ALTERATION: silicic	FRACTURING	MINERAL PY	GEOLOGY	DESCRIPTIVE GEOLOGY	DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt Union/Chemex	Ag ~~%~~ opt Union/Chemex	%	%	%	%	%	COMPOSITE ASSAYS
0						No Core - Overburden														
10							17 19	8.5	NC	1440		11	0.3ppm .010 .008	37.8ppm 1.2 1.04						.009
20						Breccia - Trachyte Porphyry Matrix (?)	25	9.7		1441		7	0.7ppm .010 .020	6.6ppm .1 .30						.015
30							35	10.9		1442		20	0.4ppm .020 .010	5.6ppm .2 .18						.015
40							45	9.10		1443		43	0.4ppm	4.3ppm						
50							55	10.2		1444		27	<0.1ppm	5.7ppm						
60							65	9.11		1445		75	<0.1ppm	4.9ppm						
70																				

Rubble

Mostly rubble

no pyrite whatever

clasts of porphyry (earlier than Ttp)

Breccia - Trachyte Porphyry Matrix (?)

V. crowded breccia of variable size clasts of p€schist + qtzite. Matrix is mostly undeterminable because of severe alteration; Appears to be trachyte porphyry where clast content diminishes.

Rock appears to contain clasts of a feldspar-rich porphyry. Is this an earlier porphyry than Ttp, not seen on surface? They probably are not hbl diorite porphyry.

Note - see following page for more discussion

Alteration - Intense argillic alt. of bulk rock, but esp. of schist frags. above ±35'. In this interval rock almost entirely silica and clay. Rock may have been a py-filled crackle breccia (?)

Intense hematite staining + replacement above ±20'. Intense limonite staining + replacement 20-37'. Mod. limonite + hem. mixed below ±37'

Mineralization - diss py + minor py veinlets preserved below ±37'

The C. F. Hoeckel Co., Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 2 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CAKautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION: 70, 80, 90, 100, 110, 120, 130, 140

ALTERATION: argillic, silicic, chloritic

FRACTURING

MINERAL py

GEOLOGY

DESCRIPTIVE GEOLOGY

Clast content changes from nearly all pℓ frags to nearly all porphyry frags over this intvl. Proportion of matrix increases

Rel. minor oxid.

Intrusion Breccia –

Clasts include variably altered pℓ schist + qtzite frags, largely replaced by highly altered porphyry frags below ≈75'. These porphyry frags may be hbl diorite porphyry – one clast has highly chloritized hbl xls to 5mm long. Most have no recog. hbl – too altered + bleached.

Matrix diff. to identify – dk gray to green, silicified ?? Possibly trachyte porph ?? (no qtz phenos)

Minor Ox.

Alteration – Clasts highly altered + bleached – probably chl. arg. + silicic in varying proportions. Most veinlet pyrite is at least partly alt. to limonite

Intense leaching

Mineralization – pyrite principally disseminated becoming more vein-like and filling around breccia frags downward. Py. variably altered to limonite

Quite intense jarosite from ox. of py

contact?

Deadwood Fm – Ꞓds – Highly altered shale and silty shale. possibly once glauc., now v. chl. rich. $S_0 \sim 90°$ C.A. Quite brecciated in part

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt Union Chemex	Ag ~~%~~ opt Union Chemex	%	%	%	%	%	COMPOSITE ASSAYS	
75	9.11		1588		80	<0.1ppm	4.8ppm							
85	9.11		1589		74	0.4ppm	4.2ppm							
95	9.11		1590		46	0.1ppm	6.7ppm							
105	9.11		1591		68	<0.1ppm	6.1ppm							
115	9.2		1592		71	0.5ppm .010 .018	6.4ppm nf .20							.014
125	11.2		1593		61	2.0ppm .040 .042	7.0ppm .2 .26							.041
135	10.0		1594		38	1.1ppm .010 .018	4.5ppm .2 .05							.014

CORE SAMPLE INTERVALS & ASSAYS

The C.F. Hoeckel Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 3 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CARautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION | ALTERATION (argillic, silicic, chloritic) | FRACTURING | MINERAL py | GEOLOGY

DESCRIPTIVE GEOLOGY

mt

Deadwood Fm-Eds
Shale + silty shale, perhaps orig. glauc. - highly altered.

±2' Ttp dike (?) crackled + healed by v. qtz rich material (esp. lower 6")

Mineralization - Abnt py diss, as veins, + as irreg masses. Py surrounds massive magnetite dist. throughout intvl

Alteration - Not sure of relationship of py + mt. Py may be replacing mt. Py appears altering to jarosite, which locally stains rock. Abnt chlorite may be alt/meta. prod. of glauc. Ed.

— contact —

Most py. oxid. to jarosite

Deadwood Fm-Edg
Qtzite, fine grained; unfoliated, fractured, mod. limonite along fracts.

— contact —

weak crackle texture

Trachyte Porphyry-Ttp v. fine grained var.
Max pheno size ±3mm; prob. >80% feldspar phenos, - v. crowded appearing. Faint trachytic texture. Weakly crackled locally, healed by py.
Alteration - groundmass probably silicified - granular appearance, indistinct pheno. outlines. Argillized feldspars alt to swelling clays. Sparse pe incls

— contact —

weak crackle texture

Deadwood Fm-Edg
Qtzite, fine-grained, unfoliated. Weakly fract. w/ iron-stained fract surfaces.
Py is diss and as veinlets
$S_o \sim 90°$ C.A.

CORE SAMPLE INTERVALS & ASSAYS

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt Union Chemex	Ag ~~%~~ opt Union Chemex	%	%	%	%	%	COMPOSITE ASSAYS
145	10.6				52	0.3ppm .010 .005	6.6ppm nf .05						.008
155	10.2				24	0.5ppm .010 .008	8.7ppm .3 .06						.009
165	11.3				45	7.5ppm .180 .208	8.5ppm nf .14						.194
175	10.7				61	1.6ppm .060 .044	6.7ppm .1 .05						.052
185	10.9				42	2.0ppm .060 .064	6.5ppm .5 .12						.062
195	10.8				74	2.9ppm .180 .072	9.0ppm .3 .36						
205	9.10				70	4.6ppm .110 .098	11.7ppm .3 .20						.104

The C. F. Hoeckel Co., Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-4
SHEET 4 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NC
LOGGED BY: CAHardman
SCALE: 1" = 10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

SECTION: 210, 220, 230, 240, 250, 260, 270, 280

ALTERATION: argillic, silicic, chloritic

FRACTURING

MINERAL: py

GEOLOGY

COMMENTS:

AVE. CORE REC'Y/HOLE:

DESCRIPTIVE GEOLOGY

Deadwood Fm - qtzite contact

Precambrian Schist + Qtzite

Dom. qtz-rich biot. (musc.) schist, well foliated w/ $S_1 \sim 50°$ C.A.
7-8' qtzite at upper contact. Minor qtzites elsewhere

Mineralization - pyrite mostly rest. to veinlets and fracts; v. weakly dissem. locally. Veinlets reach max. 3mm in qtzite units.

Alteration - prob. weak argillic throughout. Chloritic alt incr. into underlying unit.

contact

zone w/ mod. abnt magnetite

v. weak slicks 45° C.A.

K-spar-alt. coarse trachte porph. clast

Breccia -

Clasts consist of highly alt. + chloritized pt schist and bleached white, highly alt. aphanite. Aphanite may be trachytic - no obvious qtz. (?). Aphanite clasts dom. above ± 259, pt below. Clasts 5mm - 5cm

Mineralization - py dissem. and as veinlets
Clots and dissem mt may be alt. of py?

Alteration - Rel. intense chloritization of clasts ± 259-272'

Matrix indistinct - siliceous + chl. rich

sparse limonite assoc w/ fracts only

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt Union Chemex	Ag ~~%~~ opt Union Chemex	%	%	%	%	%	COMPOSITE ASSAYS
						0.8ppm	4.4ppm						
215	9.7				63	.020 .018	.3 .08						.019
						0.1ppm	2.6ppm						
225	10.3				58	.010 .008	.7 .07						.009
						0.1ppm	2.4ppm						
235	9.11				39	.010 .006	.4 .02						.008
						0.7ppm	3.3ppm						
245	10.7				44	.010 .028	.2 .09						.019
						0.6ppm	4.3ppm						
255	9.5				26	.010 .012	.4 .10						.011
						<0.1ppm	2.4ppm						
265	10.4				45	.010 .010	.2 .01						.010
						0.3ppm	3.8ppm						
275	10.5				30								

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Mueller Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 5 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NC
LOGGED BY: C.H. Leutman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION argillic	silicic		chloritic	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY
280								Breccia - see above contact
290								Heavy clays on fracts Precambrian - Mostly a qtzitic biotite schist, w/ minor qtzites. Weakly brecciated in part. $S_1 \sim 50°$ C.A.
300								no attitude Dike of v. fine grained Trachyte Porphyry Alteration - dike appears quite silicified Mineralization - dissem. py + weak crackle breccia veinlets in lower part. contact ± 50° C.A.
310								Alteration - generally quite fresh rock w/ bright biot. flakes. Possible meta effect resulting in dev. of cordierite (??) - clots of lighter grn-gray material. Some alt. of py to limonite locally ↖ porphroblasts?
320								heavy clay coating on fract. Mineralization - py. disem and as small veinlets. Py fills weak crackle breccia 339-341'
330								Igneo fragmental Dike - top contact ± 30° C.A. contains rounded frags of pC rock types. Texture of entire rock is granular - like sugar Precambrian more brecciated adj to dike
340								
350								

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	ESTI-~~MATED~~ ~~%~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS	
						0.2ppm	4.7ppm							
285	9.6				44									
						<0.1ppm	2.9ppm							
						.010	.2							
295	9.6				37	.008	.01							.009
						3.7ppm	7.3ppm							
						.100	.5							
	10.3				31	.088	.22							.094
						<0.1ppm	2.6ppm							
						.010	.4							
	9.7				50	.010	.07							.010
						0.1ppm	2.3ppm							
	11.1				82									
						0.2ppm	3.0ppm							
						.010	.1							
	9.9				51	.018	.02							.014
						1.0ppm	5.3ppm							
						.020	.3							
	10.0				69	.030	.09							.025

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Mueller Co., Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D
HOLE NO: DDH-41
SHEET 6 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NC
LOGGED BY: C. Hautman
SCALE: 1" = 10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

ALTERATION: argillic, silicic, chloritic
SECTION
FRACTURING
MINERAL
GEOLOGY

COMMENTS:

AVE. CORE REC'Y/HOLE:

DESCRIPTIVE GEOLOGY

Precambrian - pЄs - as above, rel. intact

Igneo-frag. dike

contact

Brecciated Precambrian

Most frags < 5cm. Matrix extremely minor - virtually absent. Some clasts of altered Ttp. - probably more than shown on geol. column.

Alteration - Rather intense chloritization locally, assoc. w/ limonite staining along fracts. Limonite alt. of py. Chl has nearly completely replaced some pЄ frags. Veinlets, clots and dissem. magnetite occur w/in chloritized intervals, possibly as alt. of py. Py also alt. to limonite. Most intense limonite staining

Mineralization - Extensive py locally filling around breccia frags. Magnetite possibly as alt. of py.

heavy clay on fract.
possible fluorite (?)
2' dike med-crs Trachyte Porphyry
clots of mt
5mm mt veinlet
1cm sanidine xl sitting in v. low matrix breccia
clots and veinlets (+dissem) magnetite
rubble
heavy clay on fracts
Ttp dike
rubble
Trachyte Porphyry dike

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS	
355	11.0				75	0.2ppm .010 .024	3.4ppm .2 .04							.017
365	10.9				86	0.2ppm	3.1ppm							
375	10.7				71	0.1ppm	3.1ppm							
385	10.4				53	0.2ppm	3.6ppm							
395	10.0				47	0.1ppm	5.3ppm							
400	11.0				60	<0.1ppm	4.8ppm							
415	9.10				60	0.1ppm	4.7ppm							

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Hoeckel Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D
HOLE NO: DDH-41
SHEET 7 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NC
LOGGED BY: CARautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

DESCRIPTIVE GEOLOGY

heavy clay on fracts

poorly dev. slicks on fract.

Precambrian - p€s + p€q So-50°C.A.

Degree of brecciation varies - typically minor

Mostly biot-rich schist and qtzitic schist. Minor qtzite and qtz veins locally

Alteration - some argillization + chloritization of biot, esp. along fracts w/ limonite alt. of py.

Mineralization - py weakly dissem; also clots + veinlets along fracts + around breccia frags.

v. heavy limonite on fracts — contact

heavy clay on fract

Trachyte Porphyry dike - feldspar porph. w/ phenos 3-7mm. Highly silicified + possibly K-spar flooded(?)

contact

Quite heavy limonite on vertical fracts ± clay

Py-filled crackle breccia

Intrusion Breccia - Ttp Matrix

Frags. mostly p€ rock types; Matrix def. appears to be Trachyte Porphyry, w/ feldspar phenos to 5-7 mm max. Note: I thought at first that intvl 462-474 contained clasts of an aphanite (highly altered), but this probably is just an alteration effect on Ttp. matrix. Implies crackling + py healing is later - source??

Mineralization - Intense crackle breccia at top of interval.

Alteration - Feldspars in Ttp matrix gen. fresh. Rock highly chloritized below ± 475'

jarosite on vert. fract.

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS
425	10.2				40	<0.1ppm	5.6ppm						
435	10.9				60	0.4ppm .040 .050	5.4ppm .2 .15						.045
445	10.4				50	3.1ppm .040 .060	6.6ppm — .14						.050
454	9.2				20	4.5ppm .080 .090	12.3ppm .4 .27						.085
461 465	10.9				47	14.8ppm .380 .364	28.7ppm .6 .72						.372
475	10.0				28	3.5ppm .080 .084	7.4ppm .4 .16						.082
485	10.8				69	1.8ppm .040 .052	7.8ppm .4 .20						.046

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Haeckel Co., Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 8 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CHPautman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES: N E
STARTED:
COMPLETED:

SECTION: 490, 500, 510, 520, 530, 540, 550, 560

ALTERATION: argillic, silicic, K-spar, chloritic

FRACTURING

MINERAL FY

GEOLOGY

COMMENTS:

AVE. CORE REC'Y/HOLE:

DESCRIPTIVE GEOLOGY

Clasts seem to become less distinguishable downward. ≧ closer packing and less matrix?

Brecciated Precambrian

Unit is continuous with interval above described as Intrusion Breccia. Proportion of matrix varies from quite obvious to almost none. At irreg. intervals there are 3-10cm thick zones nearly free of pℂ incls. – trachyte porph.

Alteration – Mild but definite potassic alt. of the more inclusion-free Ttp zones. pℂ frags extensively chloritized throughout. Rather intense limonite + clay along most subvert. fracts. Seems to be a lot of subvert. shearing in several intervals

Mineralization – Pyrite dissem. and as clots and thin veinlets. Most py quite fresh despite Fe ox staining along fracts. Incl.-free Ttp "dikelets" (?) contain only weak dissem. py as v. small cubes

heavy jarosite + clay on vert. fracts.

small fault-plane at 20° C.A., slicks ±50° C.A. in plane

small fault-plane at 20° C.A., slicks 20-30° C.A. in plane

rubble zone – highly alt + Fe ox stained

bxa decreases

indistinct contact

Precambrian Schist (Biot-rich)

Slightly brecciated at top, but brecciation decreases downward, so that by 542, have intact schistosity at ± 50° C.A. Biot. flakes rather coarse. Chloritization decreases downward.

contact

Precambrian Amphibole Schist

Schistose rock with prominent acicular amphibole (?) xls as much as 1mm long on schistosity.

see continued description next page

S_1 ~ 50° C.A.

limonite-stained feathery coating on vert. fract.

hem. replaces rock here (5cm)

v. weak shear w/some Fe ox stained clay gouge

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS
495	9.9				74	0.2ppm .020 .003	3.4ppm .2 .10						.012
505	10.1				59	0.5ppm .020 .006	4.5ppm .2 .12						.013
515	9.11				66	0.3ppm .010 .004	5.4ppm .3 .18						.007
525	10.2				62	1.0ppm .020 .030	6.3ppm .3 .19						.025
535	10.1				49	1.5ppm .010 .036	7.6ppm .3 .20						
545	10.0				36	0.9ppm .020 .020	7.9ppm .3 .18						.020
555	10.1				62	1.9ppm .010 .032	7.3ppm .3 .15						

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Hoeckel Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, SD
HOLE NO: DDH-41
SHEET 9 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CARautman
SCALE: 1" = 10'

ELEVATION:
BEARING:
INCLINATION: -90°
TOTAL DEPTH: 735'

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

ALTERATION: argillic, silicic, K-spar, chloritic

SECTION: 560, 570, 580, 590, 600, 610, 620, 630

FRACTURING

MINERAL

GEOLOGY

DESCRIPTIVE GEOLOGY

heavy jarosite

Feldspar-rich patch – orig. ig. segregation ??

heavy jarosite & clay on this group of fracts

Precambrian Amphibole Schist

Dark gray-green schistose rock composed of v. fine-grained qtz, feldspar and acicular amphibole generally ± 1mm long in plane of schistosity. Schistosity generally 50° C.A. Sparse feldspar-rich "segregations", esp at 582'

Alteration – Rock is probably somewhat chloritized – more intensely so assoc w/ oxidized intervals + iron staining. Some argillization in these intvls as well.
Rather heavy jarosite with clays ± chlorite on some fracts – generally these are sub parallel core axis. Epidote possible locally, but may be Feox stained clay (assoc w/ feldspar "patches").

Mineralization – Dissem. py is uncommon. Most py occurs as irreg clds and veinlets at various attitudes

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS	
565	10.4				75	0.2ppm .010 .003	3.1ppm .2 .08							.007
575	10.0				81	0.6ppm	3.8ppm							
585	10.1				73	0.3ppm	3.2ppm							
595	10.4				67	0.2ppm	2.7ppm							
605	10.4				48	0.9ppm	3.1ppm							
615	10.4				60	0.3ppm	2.8ppm							
625	9.11				66	0.8ppm .020 .006	2.6ppm — .05							.013

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Mueller Co. Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 10 OF 11

CONTRACTOR: Boyles Bros.
CORE SIZE: NC
LOGGED BY: CAKaufman
SCALE: 1"=10'

ELEVATION:
BEARING:
INCLINATION: -90
TOTAL DEPTH: 735

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

SECTION: 630, 640, 650, 660, 670, 680, 690, 700

ALTERATION: argillic, silicic, K-spar, chloritic

FRACTURING

MINERAL

GEOLOGY

COMMENTS:

AVE. CORE REC'Y/HOLE:

DESCRIPTIVE GEOLOGY

chlorite + minor Feox on fracts

Precambrian Amphibole Schist

Muchas above

white calcite coats fract.

Brecciation increases

v. heavy (black) chlorite + clear calcite on open fract, all lightly iron stained

Breccia –

Exclusively frags of amphibole schist. Some intvls merely crackled; some intvls distinct clasts.

Alteration – Propylitic alt probably affects most of entire pC section here. Chlorite + calcite + probable pistachio green epidote. A second generation of chlorite coats open fract surfaces w/ or w/o iron staining. This chlorite quite coarse + nearly black in color.

1cm veinlet w/ py + mt (rather vuggy)

±3cm frags. of aphanitic ig. rk. – monzonite – ?

Mineralization – pyrite is mostly as v. thin veinlets and v. weakly dissem. At 664' – mt + py occur together in a vuggy vein 1cm across.

rel. abrupt incr. in bxa

Precambrian Amphibole Schist

Degree of brecciation decreases quickly; then rock is again an intact amphibole-rich schist

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS
635	10.7				71	0.3ppm .010 .004	2.0ppm — .01						.007
645	9.10				81	<0.1ppm .005 <.003	1.9ppm .1 .01						.002
655	10.0				82	0.1ppm .010 <.003	2.1ppm — .01						.002
665	9.6				63	0.1ppm	2.2ppm						
675	9.5				56	0.3ppm	2.2ppm						
685	10.10				62	<0.1ppm	2.0ppm						
695	10.3				46	<0.1ppm	1.5ppm						

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Haeckel Co., Denver

PROJECT: Gilt Edge
LOCATION: Deadwood, S.D.
HOLE NO: DDH-41
SHEET 11 OF 11

CONTRACTOR: Boyles Bros
CORE SIZE: NQ
LOGGED BY: C.H. Rautman
SCALE: 1" = 10'

ELEVATION:
BEARING:
INCLINATION: -90
TOTAL DEPTH: 735

COLLAR COORDINATES:
N E
STARTED:
COMPLETED:

COMMENTS:

AVE. CORE REC'Y/HOLE:

SECTION	ALTERATION: argillic	ALTERATION: silicic	ALTERATION: K-spar	ALTERATION: chloritic	FRACTURING	MINERAL	GEOLOGY	DESCRIPTIVE GEOLOGY
700								Precambrian Amphibole Schist Much as before. Intensity of schistosity varies somewhat - May be weakly brecciated locally
710								
720								
730								
								735' E.O.H.

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	~~ESTIMATED %~~ RQD	Au ~~%~~ opt	Ag ~~%~~ opt	%	%	%	%	%	COMPOSITE ASSAYS	
705	11.1				95	<0.1ppm	2.1ppm							
715	10.7				70	0.3ppm	1.5ppm							
725	9.4				87	0.4ppm	2.0ppm							
	5.1				32	<0.1ppm	1.2ppm							

CORE SAMPLE INTERVALS & ASSAYS

The C. F. Hoeckel Co. Denver

81 DDH 41

1

core size	Interval	core Block	Msrd 10' mt	RQD	Rock	Alter & Min.
NCHQ	10-20	19	8.5	11	-Breccia- PE incl. too oxidized to dtm matrix 70-80%	Good FeO_2 very fractured
	30	25	9.7	7		
	40	35	10.9	20	probably Tr matrix incl ⇒ 70-80%	36 + less fractured
	50	45	9.10	43		
	60	55	10.2	27		
	70	65 ✓	9.11 ✓	75 ✓		Good py Vein Min + replacement of PE incl
	80	75	9.11	80		
	90	85	9.11	74		
	90-100	95	9.11	46		
	110	105	9.11	68		
	120	115	9.2	71		
	130	125	11.2	61		
	140	135 ✓	10.0 ✓	38 ✓		
	150	145	10.6	52	148 Fault Gouge	
	160	155	10.2	24		
	170	165	11.3	45	168 contact	
	180	175	10.7	67	← Deadwood Quartzite	very vussy filled w/ limonite FeO_2
	190	185	10.9	42		good Py Min.
	190-200	195	10.8	74	definite Quartzite	very vussy w/ good veins of limonite + fresh Py
	210	205 ✓	9.10 ✓	70 ✓		poss. Kspar alt.
	220	215	9.7	63	218 contact PE 50° CA - ~~[illegible]~~ contact	
	230	225	10.3	58		
	240	235	9.11	39		
	250	245	10.7	44	contact ? very 248 - Brecciated - crumbly + well fractured	
	260	255	9.5	26		
	270	265	10.4	45		
	280	275 ✓	10.5 ✓	30 ✓	contact 283 - schist w/ Foliation 45° CA	vein py min
	290	285	9.6	44		
	290-300	295	9.6	37		

DDH - 41

core size	Interval	core Block	used 10' int	RQD	Rock	Alter & Min.
NCHQ	300-310	305	10.3	31	301 contact Quartzite 308 contact schist	
	320	312 315	9.7	50	↓ PE schist + Quartzite	crumbly + broken where hvy oxidized along fractures
	330	325	11.1	82		
	340	339	9.9	51		
	350	345 ✓	10.0 ✓	69 ✓	becomes brecciated again	
	360	353	11.0	75	matrix unI.D. 1% matrix 99% incl.	
	370	365	10.9	86		
	380	375	10.7	71		- limonite FeO_2 along fractures -
	390	385	10.4	53		
	390-400	395	10.0	47		
	410	405	11.0	60	4	
	420	415 ✓	9.10 ✓	60 ✓	416-418 2' intrusive Rx possible Trachyte	
	430	425	10.2	40		
	440	435	10.9	60	PE -	
	450	445	10.4	50		
	460	454 <	9.2	20	450-453 2-3' intrusive coarse grained Trachyte Porph	
	470	461 465	10.9	47	↓ PE	
	480	475	10.0	28	crackle Breccia	vein + vug FeS_2 Min
	490	485 ✓	10.8 ✓	69 ✓	90-99% inclusions	
	490-500	495	9.9	74	intermixed PE schist w/ Quartzite	
	510	505	10.1	59	schist micaceous + phylitic	
	520	515	9.11	66	some intermixed PE crackle Breccia zones	
	530	525	10.2	62		
	540	535	10.1	49		
	550	545	10.0	36		
	560	555 ✓	10.1 ✓	62 ✓		
	570	565	10.4	75		
	580	575	10.0	81		
	590	585	10.1	73		
	590-600	595	10.4	67		

2/16

.75

8) 6.00 1/8 .

56

160

65

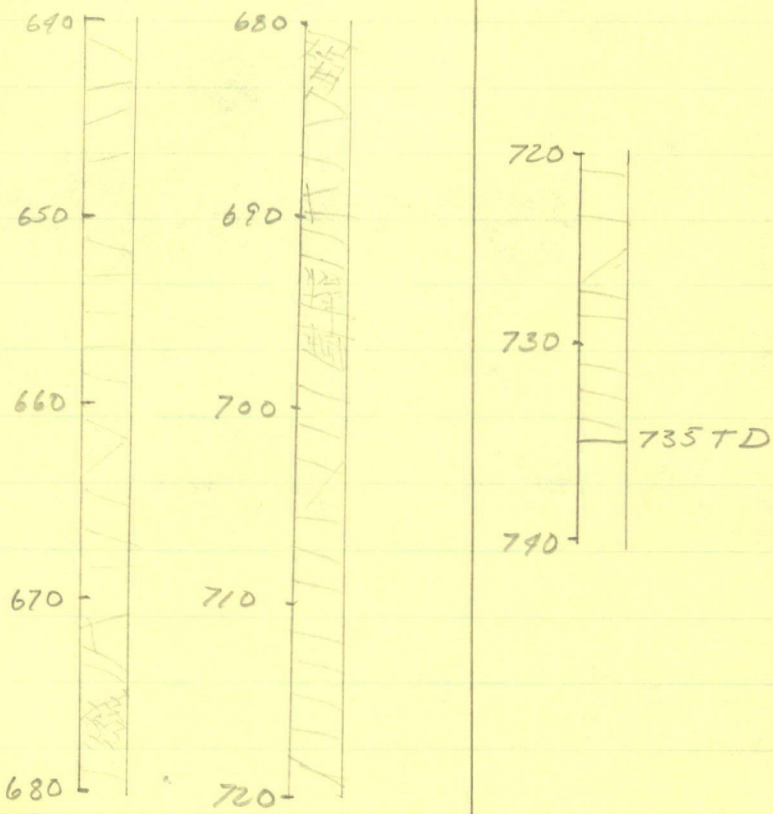
.6

.390

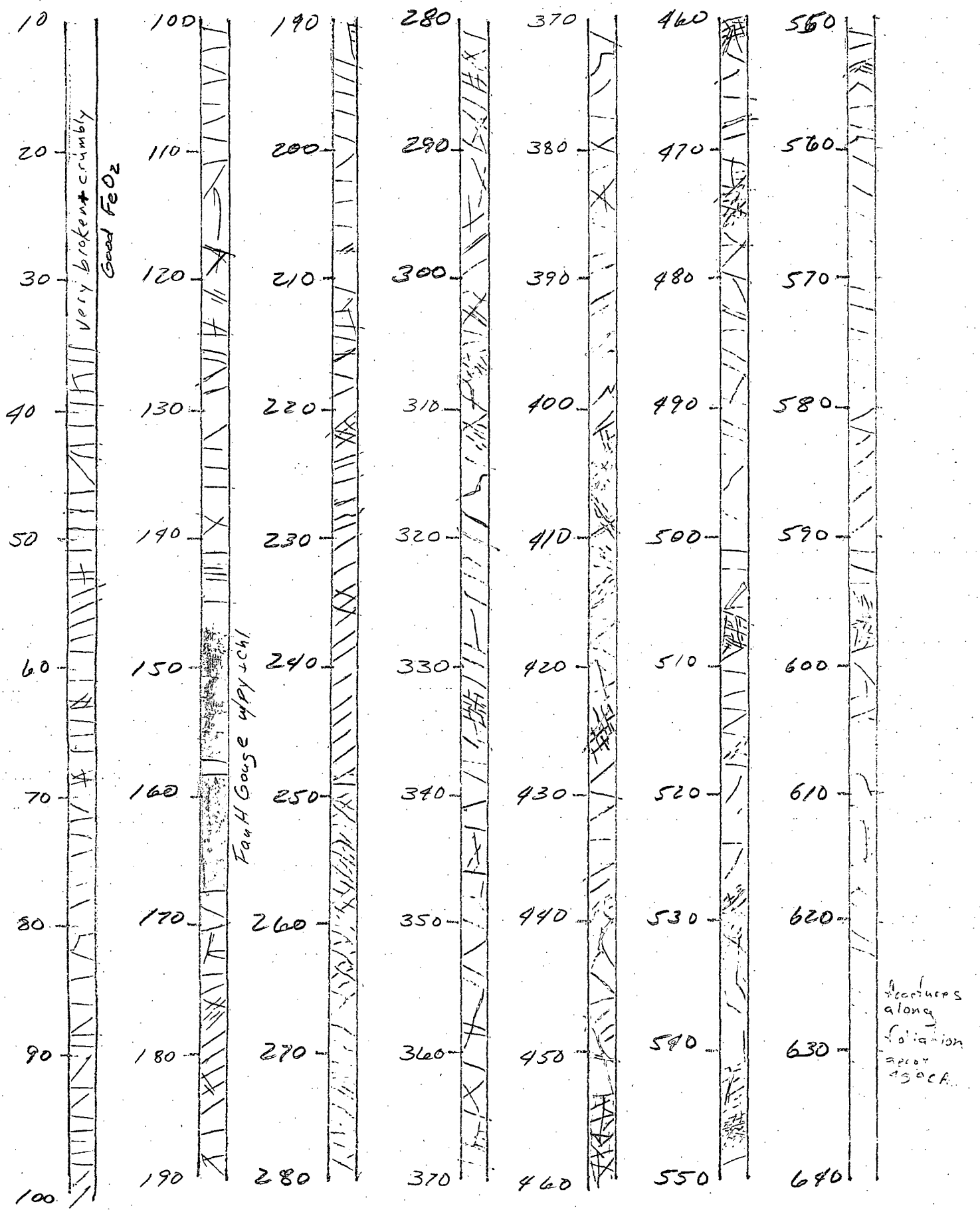
81-DDH-41

core size	Interval	core Block	msnd 10' int	RQD	Rock	Alter & Min
NCHQ	600 - 610	605	10,4	48	continue intermixed PE crackle breccia w/ PE sediments	py vein, vug replacement min.
	620	615	10,4	60		
	630	625 ✓	9,11 ✓	66 ✓		
	640	635	10,7	71		
	650	645	9,10	81		
	660	655	10,0	82		
	670	665	9,6	63		
	680	675	9,5	56		
	690	685	10,10	62		
	690 - 700	695 ✓	10,3 ✓	46 ✓		
	710	705	11,1	95		
	720	715	10,7	70		
	730	725	9,4	87		
	TD - 735	735 ✓	5,1 ✓	32 ✓		

Fracture Pattern continued



81-DDH-41



10
20
30
40
50
60
70
80
90
100
very broken + crumbly
Good FeO2
100
110
120
130
140
150
160
170
180
190
Fault Gouge w/py + chl
190
200
210
220
230
240
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610
620
630
640
fractures along foliation

DDH-41 -90° 735' T.D.

This hole appears to have been drilled immediately outside the Gilt Edge Hill intrusive complex. Breccias, especially involving pC rock types are quite common.

The top of the hole contains a thick breccia sequence of precambrian fragments that are replaced downward rather abruptly by highly altered fragments of a porphyritic rock (hbl diorite porph?). This breccia is replaced by a fault block(?) & preserving a sequence 80' thick of Deadwood shale and Deadwood sandstone that contains a 17 ft sill of Trachyte porphyry. This sequence overlies a thin pC qtzite replaced by extensive schists. Most of the upper 330 ft ± of the Precambrian section is biotite-rich, but below this level, the schists & breccias are all amphibole bearing. All pC rock types may be brecciated for many tens of feet. Some breccias are obviously intrusion-related with a probable trachyte porphyry matrix; several thin dikes of trachyte porphyry intrude the sequence. Other breccias are merely broken and jostled pC frags.

Gold mineralization is related to: oxidized zone material - v.low grades (.02); Deadwood Fm and immediately adjacent (and included) igneous rocks (.05-.1); Trachyte Porphyry dikes - (.1) - 3 dikes (one in Eds, two in pCs) all run ± 0.1opt; sometimes pyrite healed crackle breccias adj to Ttp. Alteration is difficult to relate to gold, but possibly silicification is important (?), but not consistently.