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Carole

Hole No. 907-3

Collar location: UVX Mine - 950 Level 907 D.D.S. ~ 4,180' Elev. Mine grid 11,261 N 7,307 E

Inclination: + 20° (at collar)

Azimuth: 240° (S60°W) at collar

Length: 107 feet

Driller: Longyear Co. - Phoenix, AZ. Bert Hansen + Dennis Sager, drillers

Core recovery: ~90% in most si except for ~15% 57'-67' Overall ~70%

Dates: March 21 to 23, 1988

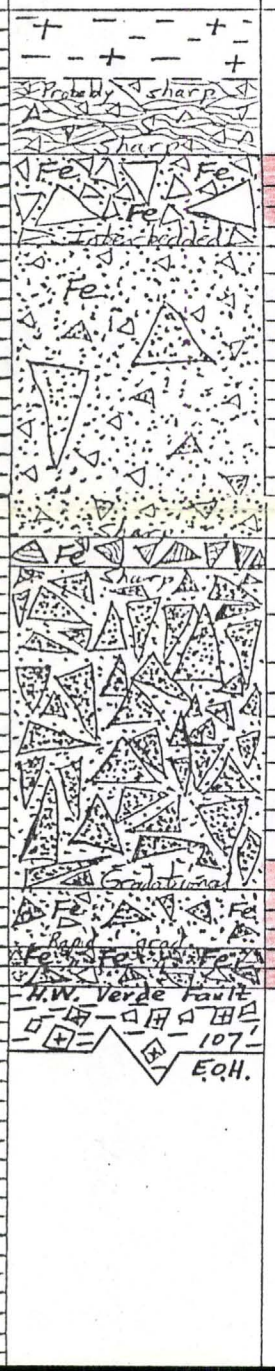
Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using fire assay, one assay ton. and AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core throughout. Overall drilling rate 30.6 ft/shift; 10-hr. shifts, 2 shifts/day.

All steel removed from hole.

Core Size RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)		Rock type	Lithology
1.875" diameter	ϕ	20						Silicic-altered diorite	ϕ-9' Blotchy purple-gray + white, soft (H ~6.0) silicic-alt'd diorite with some relict intrusive bx clasts of si.
	ϕ	ϕ							
	ϕ	30						Beige-banded si. bx.	9'-15' Beige-banded silica with ~30% light gray clasts (ϕ-½", X̄=¼"). No porosity; very hard, blocky drilling.
	ϕ	60	Box 1						
	40	95			.098	7.71	15'-22'=7' at .10/4.7; 15'-36'=21' at .07/2.8 oz/t Au/Ag	Yellow + red silica grit + saccharoidal si. bx.	15'-24' Blotchy, red-br. + mustard yellow saccharoidal silica with ~70% gray-red clasts (ϕ-6", X̄=2") Iron grades less, from 15'-17' (~25% Fe) to 17'-24' (~10% Fe).
	40	95			.100	2.59			
	30	100	2		.097	2.41			
	40	95			.035	1.99			
	10	90	3		.031	1.71			
	10	80			.060	3.04			
	10	95	4		.047	1.14			
					.066	1.30			
					.086	1.31			
					.038	.91			
					.067	1.57			
					.039	2.31			
					.022	2.78			
					.008	1.48			
					.013	1.33			
All NQ core;	10	60			.010	1.23			54'-57' Red-brown, hematitic, slightly saccharoidal matrix with ~50% beige-banded clasts (ϕ-2", X̄=1"). Vugs ≤1%, ≤¼". Sharp contacts at 54' and 57'.
	20	95			.019	.81		Banded clasts in Fe matrix	
	ϕ	10			.027	.66			
	ϕ	5							
	ϕ	10	5		.015	.63		Tan + yellow silica grit	57'-90' Mustard yellow, fine-grained silica matrix to ~80% white, tan, + some few lt. gr. clasts (ϕ-5", X̄=2"). Clasts are very gritty and porous. Yellow matrix occurs as swirly, irregular bands.
	ϕ	30			.017	1.16			
	40	80			.035	1.00			
	20	90			.017	.36			
	40	90	6		.062	4.12	84'-100'=16' at .16/3.5; 74'-100'=26' at .12/3.2		
	40	90			.069	1.92			
	40	60	7		.050	2.13			
	50	95			.066	2.53			
	60	95			.086	3.49			
	40	80	Box 8		.149	2.70			
	ϕ	90			.212	2.46			
					.243	2.93			
					.189	5.13			
					.116	5.13			
					.204	3.06			
								Diorite fault bx + gge.	98'-100' Blotchy gray, mustard-yellow, + red-brown saccharoidal + slightly porous silica with ~40% lt. gr. clasts (ϕ-4", X̄=2"). May be a tectonic mix of the above units.
									100'- Very sharp tectonic contact
									100'-107'+ Purple-gray, silicic-alt'd diorite fragments (ϕ-2", X̄=½") in tan clayey diorite-derived fault gouge. Saturated with water, very slip-prone, and tends to lock up drill rods and bind.



Conde

Hole No. 907-2

Collar location: U.V.X. Mine – 950 Level, 907 DDS. ~ 4,180 Elev. Mine Grid 11,261 N 7,307 E

Inclination: + 40° (at collar)

Azimuth: 240° (S60°W) at collar

Length: 105 feet

Driller: Longyear Co., Phoenix, AZ — Bert Hansen + Dennis Sager, drillers.

Core recovery: ~70 % overall

Dates: March 16 to 21, 1988

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using fire assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core throughout.

Overall drilling rate 15.0 ft./shift; 10 hr. shifts, 2 shifts/day.

All steel removed from hole.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
ϕ 10 ϕ ϕ 10 ϕ 30 50 30 50 ϕ ϕ 60 30 20 40 40 70 20 40 60 20 10 ϕ ϕ	20 20 30 50 50 80 70 100 95 95 30 30 90 60 40 90 90 100 90 50 60 100 80 90 70 40 60	20 40 60 80 100	Sharp, intrusive; Sharp; Gradational; Fe; Fe; Rapid grad.; Grad.; Grad.; Fe; Fe; 105' E.O.H.	.277 .090 .322 .097 .239 .312 .142 .264 .053 .046 .069 .083 .101 .108 .068 .068 .042 .043 .013 .013 .026 .020 .024	2.98 .79 1.38 1.08 1.67 1.31 .89 .95 .41 .92 2.03 .88 2.37 1.32 2.56 .67 1.43 2.14 1.13 .69 .99 .85 1.46	22'-44' = 22' at .21/1.13 oz/t Au/Ag	22'-67'=45' at .14/1.3	silicic-altered diorite; Beige-banded si. bx.; Ferruginous, saccharoidal to gritty red + yellow silica.; Saccharoidal to gritty tan silica; Red + yellow saccharoidal silica.; Beige-banded si. bx.	ϕ-9' Blotchy purple-gray + white, soft (11~6.0) silicic-altered diorite. Intrusive contact with silica, below. 9'-22' Beige-banded silica with ~30% light gray clasts (ϕ-½", x̄=¼"). No porosity. Very hard, blocky drilling. Poor RQD and thus an unstable mining wall. 22'-26' Red-brown, ferruginous (~20% Fe) slightly saccharoidal, slightly porous. silica with ~30% lt. gray + red-brown clasts (ϕ-1", x̄-½") 26'-44' Patchy, heterogeneous mustard yellow and red-brown saccharoidal to gritty silica with ~50% even more mixed clasts types (ϕ-4", x̄=1") from yell-br to mustard, red-br, lt. gr., gray. Some porosity, Fe ~10% overall. 44'-75' White, tan, red-brown, + yellow-brown, blotchy + swirly patterned (with tan predominant), low iron, saccharoidal to gritty, porous, silica with ~60% lt. gr, white, yell-br. + red. br. similarly "sanded" clasts (ϕ-4", x̄=1") 75'-90' Red-gray + yell.-brown saccharoidal silica with ~70% lt. gray + gray brown clasts (ϕ-2", x̄=1") and ~5% vugs (≤1"). Not much fine porosity other than the vugs. 90'-105+' Gray, brown, + beige-red-banded silica with ~40% lt. gr., brown, + beige-banded clasts (ϕ-4", x̄=1") with few vugs, low porosity. Grades more ferruginous with depth. Interval 97'-105+' avg. ~15% Fe.

1.875" diameter NQ core; All Box 1 2 3 4 5 6 7

Castle

Preliminary

Page 1 of 2

Incomplete Assays

Hole No. 902-7

U.V.X. Mine – 950 Level
902 DDS. ~4,180' Elev.

Collar location: Mine Grid 11,405 N – 7,215 E

Inclination: +45° at collar

Azimuth: 230° (S50°W) at collar

Length: 160 feet

Driller: Longyear Co., Phoenix, AZ
Bert Hansen + Dennis Sager, drillers.

Core recovery: ~95% in diorite
~90% in chert

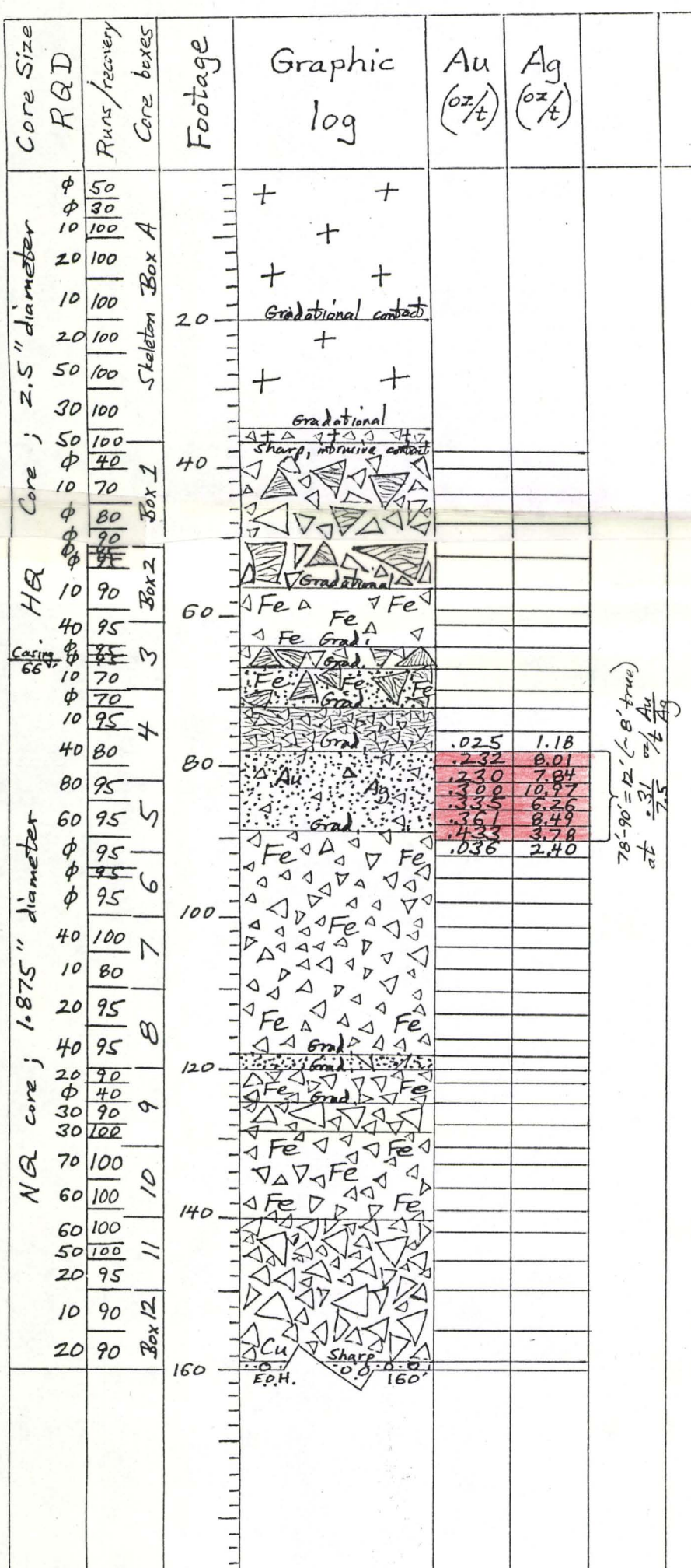
Dates: Nov. 30 to Dec. 8, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ
Using fire assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core thru 66', then cased down to NQ thru 160', end of hole.

Overall drilling rate = 13.3 ft/shift, 10 hr. shifts, 2 shifts/day. All casing + steel removed from hole.



Rock type	Lithology
Argillic-alt'd diorite	
Silicic-alt'd diorite	
Massive + banded (hornfelsed) silica bx.	
Saccharoidal to gritty silica	
Tegl stope fill	

Note: Sense of orientation indications are erratic and contorted. Best evidence is ~45° to core axis (conservative estimate). Thus true thicknesses are ~.70 times drill intercepts

0'-37' Diorite; as follows:

0'-20' Red-gray argillic altered diorite with red, hematite-lined fractures. So-called "red blocky schist" on old plans

20'-35' Silver-gray + purple-gray silicic-alt'd diorites. Crudely foliated and possibly flow-banded.

35'-37' Intrusive breccia of silicic-alt'd (silver-gray to wh) clasts (~70%, ϕ-2", x̄=½") of dk in red-br. dk matrix.

37'-159' Chert; as follows:

37'-56' Intimate mixture of biege banded si clasts and purple-gray massive si clasts in red-brown si and stringers of red-br. dk. Clasts (hornfelsed) are ϕ-6", x̄=3" overall ~60%. Few (≤1%) vugs. Considerable 2nd generation bx in evidence.

56'-64' Red-br., very ferruginous (~30% Fe) silica matrix with ~20% blotches of yellow si (goethitic-?) and ~20% lt. gr. si clasts (ϕ-½", x̄=¼"). ~3% vugs (≤½")

64'-67' Red-br. + biege-banded si matrix with ~70% biege-banded + lt. gr. si clasts (ϕ-3", x̄=1"). ≤1% vugs (≤¼").

67'-72' Red-br., very ferruginous (~30% Fe) gritty + porous silica matrix with ~40% biege banded clasts (ϕ-6", x̄-2").

72'-78' Biege, banded si with ~50% lt. gr. clasts (ϕ-½", x̄-¼")

78'-89' Saccharoidal to gritty, very porous silica of mottled red-br., yell-br, mustard, and dk. gr. colors. Also ~20% lt. gr. si clasts (ϕ-½", x̄=¼"). Banding contorted ϕ-90° to CA.

89'-118' Yellow-brown, dk br, + red-br. limonitic + hematitic, (very ferruginous; Fe ~20% overall, but variable) with ~40% gray + red-br. hem. si clasts (ϕ-1", x̄=½"). Up to 15% vugs (≤1") Grades from more limonite at 90' to more hem at 117'. Overall "limonitic + vuggy".

118'-120' Red-br + br. si matrix with ~80% clasts supported (maybe just 2 large clasts) gray + yellow-gr. saccharoidal si clasts (ϕ-18", x̄-6").

120'-125' Dark red-br., very hematitic (~10% Fe) si matrix with ~50% gray + red-gr. clasts (ϕ-2", x̄=1"). ≤5% vugs (≤½"). Clast alignment ~45° to core axis

125'-129' Tan + red-br, hematitic (~5% Fe) silica with ~50% gray + red-gr. clasts (ϕ-4", x̄=1").

129'-140' Dark red-br., very ferruginous si with ~40% gray + red gr. clasts (ϕ-2", x̄=½") Up to 6% vugs (≤½") Banding or foliation ~50°-60° to core axis.

140'-159' Red-brown, hematitic si with ~60% gray, red-gr. + biege-banded, angular clasts (ϕ-4", x̄=1"). Clast alignment ~40°-50° to CA. Some $CuCO_3$ within chert (not only in trax but diss. throughout) 157'-159'.

159' Edge of stope, midway between 903 + 800 levels, presumably "silica ore" for Cu-Au-Ag-SiO_2. Gob-filled with Tertiary debris including well-rounded pebbles from Tegl. above.

Carole

Hole No. 902-6

Collar location: U.V.X. Mine – 950 Level, 902 D.D.S. ~4,180' Elev. Mine Grid 11,405 N, 7,215 E

Inclination: +45° at collar

Azimuth: 250° (S70°W) at collar

Length: 146 feet

Driller: Longyear Co., Phoenix, AZ; Bert Hansen + Dennis Sager, drillers.

Core recovery: ~95% in diorite; ~90% in chert

Dates: November 19 thru 30, 1987

Assayer: Iron King Assay, Inc.-Humboldt, AZ. Using fire assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core thru 82 ft; then cased down and drilled NQ core thru 143 ft (E.O.H. for charging purposes) to stope. Pushed rods 3 ft further however, to sample the stope fill. Overall drilling rate 14.3 ft./shift. (10 hr. shifts, 2 shifts/day). All casing + rods removed from hole.

Core Size	RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)	Rock type
HQ core; 2.5" diameter	10	80	Skeleton Box A					Argillic-altered diorite
	10	80						
	10	95						
	10	95		20				
	ϕ	95						
	10	95						
	20	100			Gradational			
	30	~~100~~						
	30	~~100~~						
	30	100		40				Silicic-altered diorite
	20	95						
	20	95			Sharp, intrusive			
	ϕ	60	Box 1			.013	1.00	Ferruginous + tan-banded (hornfelsed) si. bx.
						.005	.62	
	ϕ	90				.036	.33	
	30	~~80~~		60		.026	.51	
	ϕ	80			Gradational	.098	2.46	
	ϕ	60	2			.057	7.02	Earthy + saccharoidal si. bx.
	ϕ	~~80~~				.030	4.75	
						.027	6.53	
	50	95				.296	6.38	
						.067	1.77	
	ϕ	95	3			.013	.80	Red + gray clasts + hornfelsed matrix
	HQ (82)	95		80		.007	.57	
NQ core; 1.875" diameter	NQ ϕ	80	4			.047	4.63	
	ϕ	80				.006	1.24	
	50	~~95~~				.003	.89	
	50	95			Grad.	.037	3.79	Ferruginous si. bx.
	10	80	5			.020	1.83	
	50	90		100		.056	3.05	
	ϕ	60				.252	4.95	
					Gradational	.117	2.31	
	60	100	6			.029	1.23	Limonitic, slightly vuggy silica breccia
						.034	1.25	
	90	100				.023	1.02	
						.023	.93	
						.029	.74	
	70	100	7	120		.027	1.25	
						.027	1.79	
	60	100				.070	2.04	
						.032	1.75	
	80	100	8			.027	1.22	
						.020	.98	
	50	100				.009	.93	
	30	100	Box 9			.016	.87	
				140		.023	1.61	
	20	90		143	Sharp (man-made)	.027	1.39	
	ϕ	10		146	Fill – Old Stope	.029	2.16	Old Stope
					Gob +/or cave.			Gob-filled +/or caved

60'-74' = 14' (~10' true) at .09 Au/5.0 Ag oz/t

97-105 = 8' (~6' true) at .13 Au/3.2 Ag oz/t

Lithology

Note: Bedding crudely indicated to average ~45° to core axis. Thus true thicknesses are ~.70 times drill intercepts.

ϕ-49' – Diorite; variously altered as follows:

ϕ-34 Red-gray, crudely foliated (~60° to core axis) argillic alt'd diorite with red, hematite-lined fractures. So-called "red, blocky schist", on old plans.

34-49 Silver-gray and purple gray, silicic-alt'd diorite with ~5% wt to lt. gray silica clasts (intrusive bx) exhibiting assimilated margins. Foliation ~40°-60° to core axis.

49'-143' Chert or silica; variously massive, banded, saccharoidal, ferruginous, etc., as follows:

49'-62' Red-br. + tan-banded hematitic (very ferruginous ~40% Fe) matrix with ~30% lt. gr. clasts (ϕ-2", x̄ = ½"). Very dense, hard siliceous hematite. Probably hornfelsed.

62'-70' Red-br + yell. br. gritty to earthy, poorly cemented matrix (~15% Fe) with ~40% gray-brown clasts (ϕ-½", x̄ = ¼"). Porous.

70'-74' Clast-supported si bx of ~80% lt. gr. + red-gr. clasts, saccharoidal (ϕ-3", x̄ = 1") in red-br + yell. br. mottled, + flow banded hem. + lim silica matrix. ~5% vugs (≤½")

74-93' Tan, banded + red-br. si matrix with ~40% clasts (ϕ-2", x̄ = ½") of which most larger ones are blood red, most smaller are lt. gray. This is a notoriously barren lithology wherever it occurs.

93'-105' Black-brown + yell. br very ferruginous (~30% Fe) silica with ~20% gray + yell-br. clasts (ϕ-1", x̄ = ½"). Fe occurs as both specular (but fine gr.) hem. + goethite.

105'-143' Brown + yellow-brown, slightly limonitic + hematitic, (~7% Fe overall, variable locally) with ~60% matrix-supported clasts (lt. gray, ϕ-6", x̄ = 1"). ≤5% vugs, ≤½" each. Some silica-healed fractures. Locally banded colors/facies of Fe, sinuous and flowing, but averaging ~45° to core axis. Long axes of vugs + alignment of clasts also ~45° to core axis.

143' – Edge of old stope midway between PO3 and 800 levels. Probably mined for "silica ore" (Cu, Au, Ag, SiO2). Rods pushed thru gob +/or cave material, quite loose, to firm stop at 146'.

143'-146' – Small sample returned was dk br. + yell br. silica with ~40% lt. gr. si clasts (ϕ-½", x̄ = ¼").

Carole

Hole No. 902-5

Collar location: U.V.X. Mine – 950 Level, 902 DDS. ~4,180' Elev. Mine Grid: 11,405 N – 7,215 E

Inclination: +25° at collar

Azimuth: 250° (S70°W) at collar

Length: 98 feet

Driller: Longyear Co., Phoenix, AZ; Bert Hansen + Dennis Sager, drillers.

Core recovery: ~95% in diorite; Avg ~90% in chert

Dates: November 12 thru 18, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ. Using fire assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ for entire hole.

Overall drilling rate = 12.3 ft/shift, 10 hr. shifts, 2 shifts/day.

All rods removed from hole.

Core Size	RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
2.5" diameter	φ	60	Skeleton Box A							Argillic-altered diorite	φ-51' Diorite; variously altered as follows:
	φ	30									φ-20' Red-gray, argillic-altered diorite with red, hematite-lined fractures.
	20	95									
	30	95									
	20	95									
	20	95		20							
	φ	80								Silicic-altered diorite	20'-51' Silver gray + purple gray silicic-altered diorite with crude foliation and banding ~60° to core axis.
	φ	~~80~~									
	φ	95									
	20	95									
	10	95		40							
	10	100									
	40	~~100~~									
	20	95									
All HQ core;	φ	30	Box 1		Sharp	.006	.26	Sludge:		Very ferruginous silica breccia	51'-98'+ Chert or silica; variously ferruginous and brecciated as follows:
	φ	20		60		.005	.28	.003	.21		51'-69' Dark red-brown, very ferruginous (up to 40% Fe, locally) silica matrix with ~50% lt. gr., wt, + biege "jigsaw puzzle" type clasts (φ-2", $\bar{x}$=½").
	φ	70				.005	.97	.003	.37		
	φ	80				.008	.51				
	φ	80				.025	1.38				69'-75' Dk red br., hematite-rich si bx (~15% Fe) with ~70% clast-supported biege-banded + some yellow gritty clasts (φ-4", $\bar{x}$=1").
	φ	~~80~~	2			.001	1.39				
	φ	~~80~~				.018	1.72				
	φ	~~90~~				.009	1.97				
	φ	~~95~~				.105	2.41				75'-80' Red-br. ferruginous si bx (~30% Fe) with ~20% red-br., yell-br., + gray clasts (φ-2", $\bar{x}$=½").
	φ	~~95~~				.091	1.35				
	φ	95	3	80	Gradational	.055	1.04				80'-95' Red-br., ferruginous (~20% Fe) si bx. with ~70% matrix-supported yell. br. (gritty), red-br., red, gray, + dk. gray heterogeous clast types (φ-4", $\bar{x}$=½"). Yellow grit clasts no doubt carry the Au reported. Fe locally up to 40%.
	φ	95				.047	1.17				
	φ	~~95~~	4			.027	.99				
	φ	~~95~~				.017	.99				
	φ	95	5	98	Grad. 98 E.O.H.					Tectonic si bx	95'-98'+ (EOH) Same as 80'-95' but tectonicly shattered to split-pea size fragments by a hanging wall splay of the Verde Fault.

80'-92' = 12' (~10' true) at .08 oz/t Au / 1.5 oz/t Ag

Note: Sense-of-orientation indicators crudely indicate bedding ~60° to core axis. Therefore true thicknesses are about .87 times drill intercepts.

Hole No. 902-4

 Carde

Collar location: U.V.X. Mine - 950 Level 902 D.D.S. ~4,180' Elev. Grid: 11,405 N - 7,215 E

Inclination: +14° at collar

Azimuth: 175° (S5°E) at collar

Length: 215 feet

Driller: Longyear Co., Phoenix, AZ Bert Hansen + Dennis Sager, drillers

Core recovery: ~95% in diorite ~80% in chert (mostly si grit)

Dates: November 5 thru 12, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ using Fire Assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core thru 77 ft, NQ core 77'-215' (E.O.H.) Overall drilling rate 19.5 ft/shift, 10 hr. shifts, 2 shifts/day.

All casing + steel removed from hole.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ core; 2.5" diam.	ϕ 95 10 95 ϕ 95 ϕ 95 40 95 60 95 40 95 ϕ 95 ϕ 95 ϕ 20	Box A Skeleton	20 Gradational contact 40 Gradational contact					Argillic-altered diorite Silicic-altered diorite	**ϕ-50' - Diorite** - variously altered as follows: ϕ-24' Red-gray, very fine grained, crudely foliated, argillic-altered diorite with red hematite-lined fractures in abundant orientations. So-called "red rocky schist" on old plans. 24'-48' Silvery gray + pale purple-gray/white (blotchy) silicic-altered diorite. Crude foliation 45°-60° to core axis. 48'-50' Red-gray diorite breccia + gouge (tectonic) with ~20% gray chert clasts against contact.
HQ NQ	10 90 10 80 ϕ 80 10 95 10 95 ϕ 90 ϕ 70 70 70 ϕ 90 ϕ 90 ϕ 70 30 70 10 95 30 95 ϕ 90 10 90 50 90 30 60 50 60 20 40 ϕ 10 ϕ 10 20 60 ϕ 90 ϕ 10 10 10 20 90 60 100 70 100 40 70 60 100 30 90 70 100 40 80 ϕ 20 ϕ 40 ϕ 30 ϕ 10 40 80 20 60 50 95 40 95 60 95 40 95 60 100 70 100 70 100 80 100 80 100 80 100 80 80 ϕ 90 10 70 ϕ 90	Skel. Box B Box 1 2 3 Box 4 5 6 7 8 9 10 11 Box 12	60 80 100 120 140 160 180 200 215 Gradational Fe Interbedded contact Grad. 215' E.O.H.	.008 .58 .021 1.16 .084 1.97 .132 2.87 .097 2.67 .199 1.74 .009 .58 .003 .55 <.001 .49 .046 6.51 .110 12.20 .103 9.35 .278 26.02 .067 9.63 .261 12.39 .068 1.32 .134 7.57 .067 1.46 .091 3.52 .082 4.51 .047 1.05 .073 1.23 .061 2.40 .101 1.03 .056 1.50 .059 1.92 .076 1.32 .087 1.38 Not assayed .034 .96 .050 1.95 .031 1.95 .037 1.68 .017 1.38 .084 1.97 .081 6.80 .158 4.42 .026 8.31 .049 2.33 .090 2.72 .060 4.17 .057 3.04 .068 3.56 .065 5.55 .055 3.94 .078 7.14 .153 22.14 .176 34.89 .441 26.26 .206 13.09 .155 5.85 .055 2.85 .130 5.74 .115 8.49 .104 2.06 .108 1.50 .070 1.19 .092 1.92 .029 .77 .057 1.48 .059 1.18 .040 1.69 .007 .68 .019 .77 .003 .48	80-90' = 10' (~7' true) at .13 oz/t Au, 2.5 oz/t Ag 99-112' = 13' (~9' true) at .14 oz/t Au, 12.4 oz/t Ag 165-192' = 27' (~19' true) at .16 oz/t Au, 12.0 oz/t Ag	Massive + banded (hornfelsed) silica Silica grit + hornfelsed matrix Red clasts + hornfelsed matrix. Ferruginous silica grit Silica grit Saccharoidal si. bx. Massive + banded (hornfelsed) silica. Fault shattered si	**50'-215'+ - Chert** or silica, variously hornfelsed, brecciated, + mineralized as follows: 50'-80' Complex mixture of beige, banded and purple-gray, massive (both hornfelsed) silica breccia with ~50% relict gray clasts (ϕ-2"; x̄=1"). No remaining vugs. 80'-90' Complex mixture of hard gray silica bx clasts (~50%) mustard yellow si grit clasts (~30%), and 20% beige, banded silica matrix (some hornfelsing). Clasts overall ~1/10-2", x̄=1/2". ~2% vugs (≤1/4"). 90'-99' Beige banded + gray si matrix, no vugs, with ~60% small gray + large blood red (overall 1/10-4", x̄=2") si clasts. Typically barren in other holes as well. 99'-103' Red-brown + yellow-brown, vuggy + porous, ferruginous (~10% Fe) slightly gritty matrix with ~30% gray clasts (1/10"-1/2", x̄=1/4") 103'-112' Red-brown, slightly hematitic, porous silica grit with ~60% very angular, heterogeneous clast types (ϕ-4", x̄=1/2") incl. dk. gray, gray, red-br., yell-br., and white (hard + gritty). No apparent sorting or grading of clasts. ~1% $CuCO_3$ 112'-133' Light tan to white, very porous, friable silica grit with ~10% lt. gray si clasts (ϕ-1", x̄=1/4") Grit particles from fine to coarse sand size, loosely poorly cemented. 133'-165' Yellow-brown, red-brown, + light tan, very porous silica grit with ~30% same color grit clasts (ϕ-4", x̄=1"). Crudely banded 30°-60° to core axis. Very heterogeneous + contorted so that one can't be sure what is matrix vs. what is clasts. 165'-175' Tan, porous silica grit with ~30% lt. gray + tan grit clasts + some hard si clasts (ϕ-1", x̄=1/2") Very much like 112'-133' + portions of 133'-165'. 175'-196' Red, yellow, + tan, porous silica grit with only ~10% lt. gray clasts (ϕ-3", x̄=1/2"). Trace $CuCO_3$ as ~1/4" blotches, si. grit colors crudely banded ~40°-60° to core axis. 196'-204' Saccharoidal but hard (not gritty) red-brown + yellow-brown silica with ~40% lt. gray si clasts (ϕ-4", x̄=2"). 204'-212' Red-gray, massive, and beige, banded, hornfelsed silica with ~60% pale purple-gray relict clasts (ϕ-3", x̄=1"). Banding variously 40°-60° to core axis. 212'-215'+ (E.O.H.) Same as 204'-212' but tectonically shattered to split-pea size throughout. Virtually impossible to core; destroyed bit in 3-foot run. Likely a HW splay of the Verde Fault.

Higher grade assay intervals noted above.

Lower grade averages include:

a) Two higher grade grit intervals (99'-112' and 165'-192') plus low grade divider (112'-165' = 53' at $\frac{.066}{2.53}$) totals 99' to 192' = 93' (~65' true) at $\frac{.10}{6.7}$ oz/t $\frac{Au}{Ag}$

b) Overall grit zone from 99' to 204' = 105' (~74' true) at $\frac{.10}{6.1}$ oz/t $\frac{Au}{Ag}$

Carole

Hole No. 902-3

Collar location: U.V.X. Mine - 950 Level 902 Drift. Mine grid: 11,405 N - 7,215 E ~4,180' Elev.

Inclination: +25° at collar

Azimuth: 230° (S50°W) at collar

Length: 120 feet

Driller: Longyear Co., Phoenix, AZ. Bert Hansen + Dennis Sager, drillers

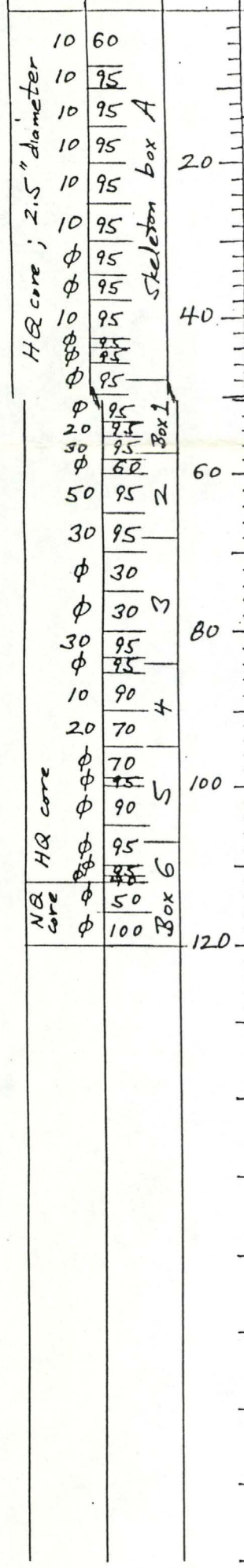
Core recovery: ~95% in diorite ~80% in chert (mostly grit).

Dates: Oct. 30 thru Nov. 4 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ using fire assay, one assay ton and AA. followups for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core thru 112 ft. NQ core 112'-120' (E.O.H.) Overall drilling rate 15.0 ft/shift (10-hr shifts, 2 shifts/day). All rods + casing successfully removed from hole.



Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
									Note: Sense-of-orientation indicators poor but crudely indicative of ~60° angle of bedding to core axis. Therefore true thicknesses ~.87 times drill intercept thicknesses.
HQ core; 2.5" diameter	10 60	10	Graduational	Core				Argillic-altered diorite	ϕ-34' Diorite, variously altered as follows:
	10 95	20		.021	.78				ϕ-15' Red-gray, crudely foliated (~ °to core axis) argillic-altered diorite with red hematite-lined fractures. So-called "red blocky schist" on old plans.
	10 95			.073	.99				15'-34' Silvery-gray, crudely foliated (~ °to CA) silicic-altered diorite
	10 95			.176	1.54			Silicic-altered diorite	
	10 95			.067	1.76				
	10 95			.184	1.91				34'-110' Chert or silica; variously massive, banded, ferruginous, gritty, and brecciated as follows:
	ϕ 95			.174	2.54	Sludge .054	1.37		
	ϕ 95			.285	2.62				34'-36' Pale purple-gray, massive, hornfelsed chert. Only some relicts of gray breccia clasts remain. No vugs or porosity.
	ϕ 95			.122	2.65				
	ϕ 95			.064	3.32				36'-50' Beige + tan, banded (hornfelsed) silica breccia with ~30% gray + white clasts (⅛-2", x̄ = ½") No vugs. (Except 44'-46' is very ferruginous, ~20% Fe, red brown matrix with 1"-2" white si clasts).
	ϕ 95			.126	6.43				
	ϕ 95			.114	3.75				
	ϕ 95			.042	3.38			Massive + banded (hornfelsed) silica	
	ϕ 95			.109	4.12	.033	1.38		
	ϕ 95			.141	17.87	.078	17.07		
	ϕ 95			.058	15.44				
	ϕ 95			.235	30.33				
	ϕ 95			.097	16.26				
	ϕ 95			.110	15.73				
	ϕ 95			.128	3.51				
	ϕ 95			.110	6.53				
	ϕ 95			.114	1.57				
	ϕ 95			.193	3.04	.067	9.52		
	ϕ 95			.110	1.85				
	ϕ 95			.062	1.38	.105	7.12		
	ϕ 95			.087	2.59				
	ϕ 95			.099	2.95				
	ϕ 95			.077	2.41				
	ϕ 95			.067	1.62				
	ϕ 95			.011	.41				
NQ core	ϕ 50			.005	.47				
	ϕ 100	120	E.O.H.						

Ferruginous silica grit

Silica grit

Silica bx + silica grit

Diorite fault breccia + gouge

96'-110' Patchy red-br + yell-br, complex of silica grit and hard gray silica, perhaps 70% gray, red-br + yell-br, clasts (⅛-2", x̄ = 1"). Locally porous. Hard portions exhibit incipient ridge banding (hornfelsing?) of matrix.

110'-112' Fault breccia dominated by diorite clasts and diorite gouge matrix. Gray green with red stain.

112'-120+ (E.O.H.) Diorite fault gouge; gray-green, clayey, can be cut in half with a knife.

Intercepts:

Highest grade within silica grit zone = 75'-90' = 15' (~13' true) at .14 oz/t Au / 16.4 oz/t Ag

Overall silica grit zone = 50'-96' = 46' (~40' true) at .13 / 7.3

Silica grit + succeeding partial grit = 50'-110' = 60' (~52' true) at .12 / 6.1

Carde

Hole No. 902-2

Collar location : U.V.X. Mine - 950 Level, 902 DPS. Elev. ~4,180' Mine grid: 11,405N - 7,215E

Inclination : +14° at collar

Azimuth : 200° (S20°W) at collar

Length : 194 feet (193 ft. on driller's rept.)

Driller : Longyear Co., Phoenix, AZ Bert Hansen + Dennis Sager, drillers.

Core recovery : ~95% in diorite. ~95% in chert + grit zone. ~30% in faulted chert zone.

Dates : October 21-29, 1987

Assayer : Iron King Assay, Inc. - Humboldt, AZ using fire assay, one assay ton and A.A. follow-up for low grades.

Logger : Don White, geologist

Remarks : Drilled with Longyear 34 pneumatic rig. HQ core thru 120 feet. NQ core for balance (120'-194'). Overall drilling rate 13.8 ft./shift (10 hr. shifts, 2 shifts/day). Hole aborted in tectonically shattered chert of Verde Fault zone when final five feet (189'-194') destroyed 3 drill bits, with no sign of abating. All casing + steel removed from hole.

Core Size / RQD / Runs/recovery / Core boxes

Core size: HQ core, Ø-120'; HQ core; 2.5" diameter; NQ core; 1.875" diameter (HQ above 120', NQ below)

RQD	Runs/recovery
Ø	60
10	80
20	95
Ø	95
10	70
Ø	30
Ø	90
20	90
Ø	70
Ø	80
Ø	90
Ø	80
Ø	80
Ø	100
10	100
20	95
Ø	95
Ø	95
Ø	95
Ø	95
Ø	95
Ø	95
Ø	95
Ø	95
Ø	95
Ø	95
40	80
20	80
40	95
100	100
60	100
20	95
80	100
60	95
70	100
60	95
10	95
10	95
Ø	80
Ø	40
Ø	10
Ø	5
Ø	60
Ø	30
Ø	30
Ø	60
Ø	40
Ø	30
Ø	70
Ø	30
Ø	30
Ø	30
Ø	30

Core boxes: Skeleton Box A; Box 1; Box 2; 3; 4; 5; 6; 7; 8; skeletonized 9; 10; Partly 11; Box 12; Box 13

Footage: 20, 40, 60, 80, 100, 120, 140, 160, 180, 194 E.O.H.

Graphic log

Au / Ag (oz/t)

Au (oz/t)	Ag (oz/t)
.004	.47
.003	.76
Not	assayed
.012	1.03
Not	assayed
.035	2.76
.071	2.58
.126	3.92
.238	3.64
.237	12.88
.251	9.74
.506	8.16
.065	6.14
.508	16.57
.172	8.26
.229	5.69
.132	1.07
.072	.49

82'-105' = 23' (~20' true) at .23 Au 7.1 Ag

79'-107' = 28' (~24' true) at .21 oz/t Au, 6.1 oz/t Ag

Core Au	Core Ag	Sludge Au	Sludge Ag
.006	.71		
.006	.87	.002	.57
.004	.68	.002	.55
.004	.44	.001	.49
.004	.47	No sample	
.002	.44	.002	.39
.003	.43	.001	.37
.004	.55	.002	.51
.014	.51	.001	.50
.012	.64	.002	.50

Rock type

- Argillic-altered diorite (Red blocky schist)
- Silicic-altered diorite
- Massive + banded (hornfelsed) silica breccia
- Ferruginous si bx
- Ferruginous si grit
- Silica grit
- Saccharoidal si. bx.
- Fault bx + gge
- Silicic-altered diorite
- Fault bx + gouge
- Tectonicly shattered chert
- EOH 194'

Lithology

Note: Sense-of-orientation indicators poor but crudely indicate ~60° ∡ bedding to core axis. Therefore true thickness ≅ .87 (intercept)

Ø-39' Diorite; variously altered as follows:

Ø-20' Red-gray, fine grained, crudely foliated (~60° to Core Axis) argillic-altered diorite with red hematite-filled fractures. So-called "red blocky schist" on old plans.

20'-39' Silvery gray + pale purple-gray, crudely foliated (~60° to C.A.) very fine grained silicic-altered diorite.

39'-107' Chert or silica, variously massive, banded, brecciated, gritty, ± Fe, as follows:

39'-42' Pale purple-gray, massive, exceedingly hard, hornfelsed silica breccia (relict clasts still discernable).

42'-56' Biege, tan, + brown, banded, hornfelsed silica breccia with relict clasts (1/10"-2", $\bar{X}$ = 1/2") forming about 60% of rock. No vugs remaining.

56'-73' Biege, banded silica bx with ~80% clast-supported clasts including smaller gray clasts and much larger blood red clasts (overall gray + red, 1/10"-8", $\bar{X}$ = 2") and ~2% small (≤1/4") vugs despite banding + hornfelsing.

73'-79' Dark brown + yellow-brown, very dense, very ferruginous (~20% Fe) massive silica with about 20% gray + brown silica clasts (1/10-1/2", $\bar{X}$ = 1/4") and very few vugs (≤1%, ≤1/10").

79'-87' Red-brown + yellow brown, very ferruginous, porous silica grit with ~30% red-br. + gray silica grit clasts (1/10"-2", $\bar{X}$ = 1/2").

87'-102' Red, yellow (mustard) + tan grit with ~40% red, yellow, + tan grit clasts (1/10"-2", $\bar{X}$ = 1/2"). Very porous and friable. Color patterns include swirls, bands, and blotches.

102'-107' Red-br. + yell-br., hard but saccharoidal textured, silica bx with ~40% gray, tan, + white, hard si clasts (1/10"-2", $\bar{X}$ = 1/2"). May be a better cemented version of the silica grit above.

107'-109' Diorite fault breccia and gouge. Clearly tectonic. Probably a splay of the Verde Fault.

109'-152' Diorite, light biege and tan, very fine grained, foliated (~60° to core axis) silicic-altered. Bounded on both sides by tectonicly faulted diorite breccia and gouge (angular diorite clast in red-brown, clayey gouge) and hence interpreted as a fault sliver.

Note: 143-145' = Massive purple gray hornfelsed silica clast (intrus. bx-?)

152'-155' Diorite fault breccia + gouge. Very likely another major strand of the Verde Fault.

155'-194' Tectonicly shattered version of the silica breccia lithology intersected 56'-73'. Red + red brown, slightly hematitic matrix with ~30% gray + lt. gray silica clasts (1/10"-2", $\bar{X}$ = 1/2"). "Core" is only broken marble- and golf-ball-sized fragments but each 2-3 feet of drilling yields a 5-gal. bucket of fine-medium grained, angular silica sand interpreted as tectonic bx product (rather than "grit" as above).

Hole aborted at 194' when 3 bits consumed/destroyed to penetrate last 5 feet drilled; no sign of abatement of difficult drilling conditions ahead.

Hole No. 902-1

Carole

U.V.X. Mine - 950 Level
902 D.D.S. ~4,180' Elev.

Collar location: Mine grid 11,405 N; 7,215 E

Inclination: +40° at collar

Azimuth: 175° (S 5° E) at collar.

Length: 230 feet

Driller: Longyear Co., Phoenix, AZ
Bert Hansen & Dennis Sager, drillers

Core recovery: ~90% in diorite (0-65')
~95% avg. in chert

Dates: October 9 thru 21, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ
Using fire assay, one assay ton and AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. NQ core thru 196' (one foot into fan ride at ~ 188'-195'). BQ core from 196' thru E.O.H., 230' at stope. Overall drilling rate 13.5 ft/shift (10-hr. shifts, 2 shifts/day) not incl move from 809 DDS.

All casing & steel removed from hole.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type
NQ core, 1.875" diameter, to 196'	Skeleton box A	0						Argillic-altered diorite (Red, blocky schist)
		20						
		40	Gradational contact					
	Skel. box B	60	sharp					Silicic-altd diorite
	Box 1		intrusive contact	.001	.32			Massive + banded (hornfelsed) silica
	2	80	Fe-stained, fabric-bedded	.001	.31			
	3		contact	.002	.55			
			gradational	.010	.46			
			Fe Grad. Fe	.009	.12			
			Fe Grad.	.023	1.29			
			Grad.	.017	2.15			
			Grad. Fe	.149	7.82			Very ferruginous silica breccia
	4	100	Fe	.110	1.68			
			Fe	.007	.30			
	5		Fe	.008	.32			
			Fe	.010	.21			
			Fe	.008	.33			
	6		Fe	.010	.35			
			Fe	.013	.21			
			Fe	.005	.31			
			Fe Grad.	.028	2.00			
		120	Grad. Fe	.009	1.52			
	7			.003	.82			Gray + red silica breccia
				.002	.53			
				<.001	.50			
	8		Grad.	<.001	.45			
				<.001	.49			
				<.001	.51			
				<.001	.61			
		140		<.001	.43			
	9			<.001	.48			
				<.001	.40			
				<.001	.52			
				<.001	.32			
	10			<.001	.40			
			Sharp	.001	.40			
				.022	1.46			Vuggy, limonitic silica breccia
	11	160		.024	2.59			
				.063	3.10			
				.029	1.36			
	12			.055	2.07			
				.031	1.36			
				.027	2.42			
				.026	1.45			
	13			.033	1.76			
				.046	.90			
		180		.036	1.13			
				.081	1.26			
				.069	1.24			
			903 Int. Level 7th Floor X-Cut	—	—			Old Workings
NQ	1							
BQ	50			.063	2.01			Vuggy, limonitic silica breccia
		200		.079	2.71			
	14			.060	2.73			
				.037	1.66			
	15			.102	2.65			
				.057	2.18			
				.029	1.46			
	16			.034	1.09			
				.048	1.25			
		220		.068	.53			
BQ core, 1.43" diam.				.023	1.91			
	17			.010	1.95			
		230	E.O.H.	.022	.78			Gray si bx
			824 Stope	Void				824 Stope

Box 13: 20 70 Void

88'-93' = 5' (~3.5' true) at .15 Au / .1 Ag

182'-222' = 40' (incl. 7' void, 188'-195') (or ~28' true) at .06 Au / .7 Ag

Note: Few reliable sense-of-orientation indicators but bedding to core axis is estimated at 45°. Hence multiply drill intercepts by .70 for true thicknesses.

Lithology

0'-6.5' = Diorite, as follows:

0'-40' Red-gray, fine grained, crudely foliated, argillic-altered diorite with red hematite filling abundant anastomosing fractures. So-called "red, blocky schist".

40'-65' Silvery gray (with pale purple tint), very fine grained, foliated (~45° to core axis) silicic-altered diorite.

65'-230+ Chert or silica, variously massive, banded, brecciated, and ferruginous, as follows:

65'-82' Purple gray, massive and tan/beige, banded (both hornfelsed) silica breccias with ~40% lt. gr. + gray silica clasts (1/10"-1/2", $\bar{x}$ = 1/4") Massive dominant 65'-73', banded dominant 73'-82'. No vugs, virtually no Fe, clasts obscured.

82'-85' Dark red-brown + black, very dense, hemiticic si bx with ~40% Fe and clasts of same color, composition; ~60% clasts (1/10"-1", $\bar{x}$ = 1/2"). Some vugs.

85'-91' Gray + brown silica with ~60% gray, red, + tan clasts (1/10"-6", $\bar{x}$ = 2").

91'-117' Clast-supported Fe-rich si-bx with ~80% dk. gray to charcoal black clasts (1/10"-1", $\bar{x}$ = 1/2") in lt. gr. to black, exceedingly dense, very ferruginous matrix of same composition as clasts. Overall, perhaps 50% Fe! Very "crackly"; shatters into so many pea-size, angular, shards when split, etc.

117'-121' Yellow brown, limonitic silica bx with ~40% gray clasts (1/10"-2", $\bar{x}$ = 1/2"). Fe ~15%.

121'-140' Gray si bx. with ~60% lt. gr. + blood red clasts (gray clasts small, 1/10"-1", $\bar{x}$ = 1/4", red clasts large, 2"-6", $\bar{x}$ = 4"), both with abundant silica-healed fractures & several generations.

140'-153' Very similar to 121'-140' except that the matrix has an incipient tan/beige banding as though slightly hornfelsed.

153'-178' Yellow brown + brown, limonitic, vuggy (~5%, ≤ 1") matrix silica with ~50% lt. gr., tan banded, & red-brown silica clasts (1/10"-4", $\bar{x}$ = 1"). Clear display of 2nd + 3rd generation hydrothermal breccias by inclusion of bx clasts within clasts!

[188'-195'] Void - 7B Floor above 903 Int. level, X-Cut, bridged by casing.

178'-224' (except void, as noted, 188'-195') Dark brown & brown, limonitic (5-15% Fe) vuggy (~5%, ≤ 1") matrix with ~30% dk. br. & yellow-brown similar limonitic clasts (1/10"-1", $\bar{x}$ = 1/2"). Vugs lined with microxln qtz + yellow limonitic/aerobic crust.

224'-230' Clast-supported si bx of ~90% lt. gr. + wt. crackled + healed clasts (1/4"-8", $\bar{x}$ = 4") in red-br. silica-hematite matrix.

230'+ Old gob-filled or caved stope at or slightly above 800 sill level. 824 stope.

Carole

Hole No. 809-9

Collar location: UUX Mine - 800 Level, 809 D.D.S. Mine grid 11,790 N 6,905 E

Inclination: -5° at collar

Azimuth: 150° (S 30° E) at collar

Length: 187 feet

Driller: Longyear Co. - Phoenix, AZ. Burt Hansen + Dennis Sager, drillers

Core recovery: ~100% Φ-123' and 153' to 187' (diorite and hard chert). ~40% 123-153' (silica grit).

Dates: Sept. 30 thru Oct. 6, 1987

Assayer: Iron King Assay, Inc - Humboldt, AZ. Using fire assay, one assay ton and AA followup for low grades.

Logger: Don White, geologist.

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core thru end of hole (187'). Overall drilling rate 20.8 ft/shift (10 hr. shifts; 2 shifts/day). All steel removed from hole.

NQ Core; 1.875" diameter. NQ core thru end of hole (187').

Core Size | RQD | Runs/recovery | Core boxes | Footage | Graphic log | Au (oz/t) | Ag (oz/t) | Rock type

RQD	Runs/recovery	Core boxes	Footage	Au (oz/t)	Ag (oz/t)	Rock type
30	10	Box B Skeleton Box A				
30	95					
30	95					
60	95					
40	95		20			
30	95					
40	95					
50	95					
50	95		40			
10	95					
10	95					Silicic-altered diorite
30	95					
10	95					
10	95					
30	80	Box 1 Skeleton				
50	80					
60	100		60			
60	100			.003	.79	
60	100			.002	.56	
95	100			<.001	.37	
95	100		80	.041	.54	Massive + banded (hornfelsed) silica bx
95	100			.230	1.30	
95	100			.053	.78	
95	100			.154	.88	
95	100			.122	1.12	
95	100			.070	.73	
95	100			.133	.95	
95	100			.151	.65	
95	100			.259	.92	
95	100		100	.166	1.36	Gray, clast-supported silica breccia
95	100			.317	.68	
95	100			.369	.72	
95	100			.433	.86	
95	100			.700	.97	
95	100			.100	.62	
95	100			.196	.51	
95	100			.162	.79	
95	100			.184	.63	
60	80		120	.213	.85	
40	80			.093	1.07	
20	30			.130	1.04	
Φ	10			.197	1.49	
40	80			.228	3.44	Silica grit
Φ	5			.149	.39	
Φ	5			.144	.34	
20	60		140	.399	.47	
80	100			.075	.81	
100	100			.199	.97	
100	100			.203	2.00	
50	100			.493	1.55	
40	100			.118	.48	
20	100			.168	.59	Gray si bx
40	100		160	.047	.77	
40	100			.008	.70	Banded (hornfelsed) si bx
30	100			.003	.90	
				.002	.93	Silicic-altered diorite
			180			
			187			

Fe, Fe

EOH, 187'

Core

Sludge

83'-123' = 40' (~28' true) at .21/.09 oz/t Au/Ag

123'-160' = 37' (~26' true) at .19/1.2 oz/t Au/Ag

Overall 83'-160' = 77' (~54' true) at .20/1.0 oz/t Au/Ag

Note: Bedding ~45° to core axis as indicated by diorite foliation + banding in hornfelsed silica. So true thicknesses are ~70% of drill intercepts.

Φ'-71' Diorite - silicic-altered, as follows:

Φ-50' Purple + white, blotchy, well foliated, sil-altd dk. Foliation nearly parallels core axis (Φ-20°)

50'-71' Both purple + white (blotchy patterned) and tan/beige banded, foliated sil-altd dk. Banding 10° to 35° to CA from 50'-68'. Banding 35-80° to CA from 68'-71'.

71'-169' Chert; variously hornfelsed, brecciated, and mineralized, as follows:

71'-83' Massive + banded, hornfelsed, red-brown, yell-br. + tan chert with ~40% ht.gr. + wt. clasts (1/10-2", x̄ = 1/2"). Banding ~45° to core axis.

83'-91' Light gray + white, clast-supported silica breccia of ~90% clasts (1/2"-14", x̄ = 6") in red-br. hematitic silica matrix. Abundant silica-healed frax. ~3' vug at 89.5'

91'-101' Clast-sup. si bx of ~80% ht.gr. + wt clasts (1/10"-2", x̄ = 1") in red br. hem. SiO2 matrix. Many healed fractures.

101'-109' Matrix-sup. si bx of ~70% ht.gr. + wt clasts (1/10"-6", x̄ = 3") in pale red-br/tan saccharoidal silica matrix. Good display of at least 3 generations of silica-healed frax, accompanied by intrusive bx + hydro-fracturing

109'-123' Clast-sup. si bx of ~80% ht.gr., wt. + tan clasts (1/10-4" x̄ = 2") in pink-tan saccharoidal silica matrix. Grades continuously to silica grit by 123'.

123'-133' Pinkish-tan fine grained silica grit (friable, highly porous) with ~40% tan, gray, ht.gr., + wt. grit clasts (≤2", x̄ = 1/2")

133'-153' Yellow-tan silica grit (fine grained, friable, porous) with ~50% very heterogeneous clasts (≤1", x̄ = 1/2") from yellow-tan grit clasts thru hard, gray, ht.gr. + tan silica clasts. Slightly limonitic/goethitic.

153'-160' Matrix-sup si bx of ~80% ht.gray + tan clasts (1/10"-3", x̄ = 1") in purple-gray (hematitic-?) matrix. Both clasts + matrix are saccharoidal textured

160'-164' Beige-tan banded (hornfelsed) si bx with ~30% clasts (1/4"-2" x̄ = 1/2") from ht.gr to tan.

164'-169' Beige-tan, massive + banded (hornfelsed) + ferruginous silica bx with ~30% gray clasts (1/10"-1/2", x̄ = 1/4")

169'-187'+(E.O.H.) Diorite; light, silvery gray, silicified, sericitized, silicic-altered diorite with generally massive character but some relict foliation ~45° to CA. No sign of increasing or decreasing intensity of alteration from 169'-187'.

Carde

Hole No. 809-8

Collar location: U.V.X. Mine - 800 Level 809 P.D.S. Mine grid 11,790 N 6,905 E

Inclination: +33° at collar

Azimuth: 185° (S 5° W) at collar

Length: 235 feet

Driller: Longyear Co. - Phoenix, AZ Bert Hansen & Dennis Sager, drillers

Core recovery: ~90% in diorite ~95% in chert

Dates: Sept. 22 thru 30, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ Using fire assay, one assay ton, + AA. followup for low grades.

Logger: Don White, geologist.

Remarks: Drilled with Longyear 34 pneumatic rig. NQ core to 177 ft. at which point 7' void (177'-184') bridged with casing set to 185'. BQ core from 185'-E.O.H. Overall drilling rate 21.4 ft/shift (not including 2½ shifts equipment repair) 10 hr shifts 2 shifts/day.

All casing + rods removed from hole.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
									Note: Bedding difficult to recognize in chert, but crudely indicated ~45° to core axis. Therefore true thickness ~70% of drill intercepts
NQ; 1.875" diameter	ϕ 70							Silicic-altered diorite	ϕ'-152' Diorite, silicic-altered and incl. chert clasts as noted:
	20 50								
	ϕ 80								ϕ'-30' Purple + white, blotchy, well foliated, silicic-alt'd diorite
	30 100								
	40 100								30'-90' Beige + tan, prominently banded, foliated silicic-alt'd dk with an intrusive bx zone of ~50% silica clasts ≤3"; white + lt. gray, 55'-60'. Banding 40°-60° to core axis.
	40 100								
	60 100								
	60 100	Skeleton Box A							
	30 100								
	60 100								
	60 100								
	80 100								
	40 100								
	60 100			<.001	.30				
	10 100								
	20 100	Skeleton Box B							
	ϕ 90								
	ϕ 40								90'-110' Same as ϕ'-30' (silicic-alt'd dk).
	10 80								
	ϕ 40								
	ϕ 40								110'-117' Blue-gray silicic-alt'd diorite with green-gray ripples + bands and ~20% beige + red-brown silica clasts (≤1").
	10 100								
	ϕ 80								117'-130' Beige + tan, foliated + banded, silicic alt'd dk with ~20% lt. gr. + wh. silica clasts (≤2") clearly occurring as intrusive breccia.
	ϕ 20								
	10 100								
	10 100	Sked. Box C							130'-132' Red-brown, hematitic, silica breccia
	10 100								
	10 100								132'-140' Beige + red-gray silicic-alt'd dk with much contorted banding (flow-banding?)
	10 100								
	20 100								140'-143' Light gray + brown-gray, very dense, very ferruginous silica breccia with some x-cutting veinlets or filled fractures with $CuCO_3$ ≤ ¼" thick.
	30 100								
	30 100	Box 1							143'-152' Red-gray, granular looking, silicic-alt'd dk. with crude banding ~50° to CA., ~10% beige + wh si clasts ≤ 1"
	20 100								
	30 100	Box 2							152'-229' Chert - variously banded, brecciated, as follows:
	40 100								
	ϕ 90								152'-155' Matrix-supported bx of ~60% wh. + lt. gr. clasts (1/16"-4", x̄=2") in yell-br + red-br. frontaled, banded silica matrix.
	30 90	3							
	80 100								155'-162' Clast-supported bx of ~90% large wh. + lt. gr. clasts (1"-12", x̄=6") in yell-br. + red br. si. matrix. Abundant si-healed frax. ≤2% vugs, ≤½" each. Tr. disseminated $CuCO_3$ throughout.
	80 100								
	Void VOID	4	700-level drift	Void	Old Workings			700-level Drift	
	ϕ 50								162'-177' Matrix-supp. bx of ~60% lt gr. clasts (¼"-6" x̄=2") in yell-br + dk. br. limonitic, vuggy matrix. Matrix has disseminated fine voids (≤5%, ≤½"). Clasts have many si-healed frax.
	50 100			.083	.99				
	50 100			.422	1.21			Translucent gray si. bx.	
	60 100	5		.011	.75				
	60 100			.102	2.92				
	80 100			.019	.99				
	90 100	6		.045	1.30				
	90 100			.029	1.63				
	90 100	7		.042	1.46				177'-184' Void - Probable 700-level drift intersected nearly perpendicular by drill hole.
	90 100			.127	2.51				
	50 80			.083	1.20				
	60 80	Box 8		.029	.97				
	10 100			.018	.82				
	30 100	9		.022	.44			Si-bx with limonitic vuggy matrix	184'-206' Clast-supported silica breccia with ~90% very large, homogeneous, light, translucent gray clasts (1"-15", x̄=8") in yellow-brown, limonitic silica matrix. Matrix + micro-vuggy. Clasts are frax. + silica-healed throughout. Looks just like 809-2 Arizona
				.010	.34				
				.019	.34				
				.024	.77				
				.019	.61			Banded (contorted) chert	206'-219' ~20% lt. gr clasts (1/16"-4", x̄=1") in vuggy (≤7½, ≤1") yell-br limonitic si matrix. Micro-xln qtz + trace bitryoidal $CuCO_3$ lining some vugs.
				.039	.86				
				.014	.54				219'-225' ~20% lt. gr. si clasts (1/16"-2", x̄=½") in yell br. + dk. br. + beige, banded + frontaled si matrix.
								Silici-alt'd diorite	225'-229' One large lt. gr. si clast (?). ≤2% voids. Many si-healed frax.
									229'-235' (E.O.H.) Beige, foliated (~60° to core axis) silicic-alt'd diorite. Very fine grained, with red-brown, hematitic speckles. Some ≤¼" thick massive $CuCO_3$-filled frax, just like in si core, suggesting supergene &/or assimilated/remobilized history.

Overall zone, 152'-206' = 54' (~38' true) at .08 oz/t Au, 1.9 oz/t Ag

152'-158' = 6' (~4' true) at .15 oz/t Au, 5.6 oz/t Ag

187'-194' = 7' (~5' true) at .21 oz/t Au, 1.6 oz/t Ag

Fe

235 E.O.H.

Carole

Hole No. 809-7

Collar location: U.V.X. Mine - 800 Level 809 RDS. Mine grid 11,790N 6,905S

Inclination: +16° at collar

Azimuth: 225° (S45°W) at collar

Length: 335 feet

Driller: Longyear Co. - Phoenix, AZ. Bert Hanson & Dennis Sager, drillers

Core recovery: Avg. ~95% in diorite, ϕ-234'. Avg ~90% in silica, 234'-335'

Dates: July 27 thru Aug. 6, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using fire assay, one assay ton, and AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core from collar thru 335 ft (E.O.H.). Overall drilling rate 19.7 ft/shift (10-hr. shifts; 2 shifts/day). All casing and steel removed from hole.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ core; 1.875" diameter	20 80 / 20 100 / 20 100 / 30 100 / 40 100 / 40 100 / 40 100 / 40 100 / 50 100 / 60 100 — Skeleton Box A	20						Silicic-alt'd diorite	ϕ'-234' = Diorite; variously altered as follows:
									ϕ-6' Purple + white, blotchy, silicic-alt'd dt.
									6'-16' Beige, foliated + banded (~45° to core axis) silicic-alt'd dt.
		40						Silicic-alt'd diorite with intrus. bx of silica	16'-54' Same as 6'-16' but containing 5-20% pale gray + milky white silica clasts (intrusive bx.)
	70 100 / 70 100 / 80 100 / 60 100 / 20 100 / 40 100 / ϕ 20 / ϕ ~~40~~ / 60 100 / 60 100 / 20 100 / 40 100 / 50 100 — Skeleton Box B	60						Silicic-alt'd diorite	54'-66' Beige + light gray, banded + foliated silicic-alt'd dt.
								Argillic-alt'd diorite	66'-75' Beige to red-brown argillic-altered diorite with hematite-lined fractures. "Grotty" rough coring. So-called "red-blocky schist".
		80						Propylitically alt'd diorite	75'-101' Gray-green, fine to med. grained, massive propylitically altered diorite with clearly visible feldspar phenocrysts (relicts, usually pseudomorphed by clays, kaolin + sericite, etc.)
	40 100 / 40 100 / 20 100 / 20 100 / 40 100 / 30 100 / ϕ 100 / ϕ 100 / ϕ 100 / 20 100 — Box C	100							
		120							101'-165' Argillic-alt'd dt (red blocky sch.) like 66'-75' [139'-140' is red, clayey, gouge]
		140						Argillic-altered diorite	
	60 100 / 60 100 / 30 100 / ϕ 60 / ϕ 30 / 10 80 — Box D	160	CO_3 vike CO_3						161'-162' and 165'-167' Black and white carbonatite dikes. Black, subangular breccia fragments of unknown composition (perhaps chloritic) up to 50% ($\bar{x}$=30%) (1/10"-1/4", $\bar{x}$=1/8") in white calcite matrix (matrix supported). ~5% white calcite as clean x-cutting veinlets ≤1/4" thick. No impregnation or dissemination of CO_3 in wall rock. Sharp contacts with no visible altn.
			CO_3 Dike CO_3	.005	.19			CO_3 Dike	
								Clay gouge	
		180						Argillic alt'd diorite	167'-171' Red, clayey gouge
									171'-183' Argillic alt'd dt (red blocky sch) as above
	30 90	200							
	20 100 / 10 100 / ϕ 100 — Box E							Argillic-altered diorite	183'-230' Purplish gray, "smooth-coring" massive to crudely foliated (~50° to CA) silicic-altered diorite.
		220							[198'-201' and 209'-210' are red, clayey gouge zones]
	10 100 / 10 100 / ϕ 80 — Skel. Box 1								230'-234' Beige and tan, massive, intensely silicified diorite with small (1/10"-1/2", $\bar{x}$=1/4") red-br. blotchy spots and some red-br. hematite-lined fractures. ~1% $CuCO_3$ on frax.
	50 80 / ϕ 70 / 10 60 / ϕ 60 / ϕ 90 / 30 100 — Box 2	240		.004	.62			Silicified diorite	
				.020	1.70				
				.031	5.39				
			Fe	.067	3.39				
	90 100 / 50 100 / 80 100 — Box 3			.048	8.72				
				.037	3.58				
			Fe Fe	.452	1.10				234'-335+ Silica; variously massive, banded, ferruginous, cupriferous, auriferous, brecciated as follows:
	20 100 — Box 4	260		.126	.65				234'-244' Tan + brown, massive + banded silica (hornfelsed) with ~60% dark brown matrix supported clasts (1/4-2", $\bar{x}$=1")
				.106	1.65				244'-251' Yellow-brown, limonitic, and vuggy (≤10%, 1/10-1", $\bar{x}$=1/4") si with ~20% lt. gr. si clasts (1/10-1/2", $\bar{x}$=1/4")
	80 100 — Box 4		Fe	.080	1.50			Massive & banded silica	251'-254' Dark red-br. hematitic si bx with ~20% lt. gr. clasts (1/10-2", $\bar{x}$=1"). ≤2% vugs (≤1/4") Few silica-healed fractures.
				.040	.44				254'-256' Same (as 251'-254') but 50% clasts (1/4"-4" $\bar{x}$=2")
				.045	.99				256'-263' Same but some limonite in matrix, ~10% clasts (1/10-2", $\bar{x}$=1/2")
	90 100 / 70 100 — Box 5		Fe	.027	3.21			Limonitic + vuggy silica	263'-265' Clast-supported si bx of 95% lt. gr. large clasts (3"-10", $\bar{x}$=6") with red-br. hem. matrix. Many si-healed frax.
			Fe	.020	6.15				265'-269' Red-br + yell-br. hem. & lim. matrix with ~50% lt. gr. clasts (1/10"-4", $\bar{x}$=1"). Vugs ≤5%, ≤1/2", some si-healed frax.
				.023	9.88				269'-275' Red-br hem matrix with ~70% lt. gr. si clasts (1/10"-4", $\bar{x}$=2")
	ϕ 95 / 20 95 — Box 6	280	Fe	.050	1.07			Ferruginous silica breccia	275'-286' Red-br. hem. si. matrix with ~70% very large clasts (1/2"-12"; $\bar{x}$=4") of lt.+dk. gray si. ≤1% vugs. Many si-healed fractures.
				.014	1.32				286'-306' Brown and red-brown, hematitic silica matrix with ~60% lt.+dk. gray + green-gray silica clasts (1/10"-6"; $\bar{x}$=2") ≤1% vugs, ≤1/4", some silica-healed frax. ~4% Cu as $CuCO_3$ in patches and as veinlets. Correlates with auriferous "silica ore" intercept up-dip in 809-4
				.019	.76				
				.041	2.27				
	40 95			.028	2.99				
				.080	1.69				
	70 100 — Box 7		Cu Cu	.052	3.36				
			Fe	.063	1.25				
				.348	3.56				
	60 100 — Box 8			.041	.24				
			Cu	.059	3.39				
	10 100			.054	2.58				
	30 100	300	Fe Fe	.024	5.50				
				.040	1.41				
	10 70 — Box 9		Cu	.058	1.56	.052	1.39		306'-316' Dark red-br. hematitic silica matrix with ~20% gray + brown-gray clasts (1/10"-1"; $\bar{x}$=1/2"). Few (≤1%) vugs. Few silica-healed frax. Some incipient banding of matrix.
	ϕ 95			.050	1.18				
	10 95		Fe	.032	1.46				
	ϕ 95 — Box 10			.027	1.12				
	ϕ 95	320		.026	.89				
	ϕ 95			.014	.60				316'-332' Same as 306-316 except ~60% lt.+dk. gr. clasts (1/4"-4"; $\bar{x}$=2") and more banding of matrix.
	ϕ 95 — Box 11		Fe	.003	.50				
	ϕ 95			.004	.56				332'-335'+ Same but ~40% gray clasts (1/10"-1/2"; $\bar{x}$=1/4")
	ϕ 95 — Box 12	335	Fe E.O.H. 335'	.005	.69				

Trace to 2% $CuCO_3$ thruout 215'-296'

254'-263' = 9' (~6' true) at .18 oz/t Au 1.3 oz/t Ag

283'-298' = 15' (10' true) at .10 oz/t Au 2.3 oz/t Ag

Sludge

3-8% $CuCO_3$

Trace $CuCO_3$

Carole

Hole No. 809-6

Collar location: Mine grid 11,790N 6,905E (U.V.X. Mine - 800 Level 809 D.D.S.)

Inclination: +23° at collar

Azimuth: 218° (S38°W) at collar

Length: 339 feet

Driller: Bert Hanson + Dennis Sager, drillers (Longyear Co. - Phoenix, AZ)

Core recovery: ~100% in diorite ϕ-149'; ~83% in chert 149'-339'

Dates: July 10 thru 24, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using fire assay, one assay ton and A.A. followup for low grades

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core from collar thru 191'. NQ core from 191'-339' (E.O.H.)

Overall drilling rate 16.1 ft./shift using 10-hr. shifts, 2 shifts/day.

All casing + steel removed from hole.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology (Note: Bedding probably ~45° to core axis. Therefore true thicknesses ~70% of drill intercepts.)
HQ core (2.5" diam.)	20 -100 50 100 40 100 50 100 ϕ 100 30 100 ϕ 100 40 100 20 100 20 100 ϕ 100	Skeleton Box A	20 40					Silicic-altered diorite	ϕ-149' Diorite - variously altered as follows: ϕ-23' Blotchy purple, white, + beige, silicic alt'd dt with foliation ~50° to core axis.
	40 100 50 100 80 100 50 100 30 100 20 100 20 100 10 100 40 100 40 100 70 100	Skeleton Box B	60 80					Silicic-altered diorite with intrusive si bx	23'-62' Beige, prominently banded (petrified wood-like) silicic alt'd dt with clasts of white + lt. gray chert as intrusive bx. frags. ≤ 6" dia, ≤ 30% of core. Margins of bx frags appear melted and obscured as though partially assimilated by the plutonic dt. Clasts generally elongate and conformable with diorite banding.
	30 100 20 100 40 100 40 100 70 100	Skeleton Box C	100 120					(Red, blocky, schist) Argillic-altered diorite	62'-140' Beige + red-brown, fine to med. grained, argillic alt'd diorite with anastomosing network of red-brown, hematite-filled fractures. Core surface is rough and crumbly. No clear foliation or banding.
	30 100 20 100 40 100 40 100 40 100		140					Silicic-altered diorite	140'-149' Pale purple + white (tan + beige) silicic alt'd dt.
	ϕ 40 80 100 50 100 30 95 ϕ 95 ϕ 95 ϕ 50 ϕ 50	Box 1 Box 2 Box 3	160 180	.055 .086 .066 .076 .057 .095 .089 .010 .002 .001	.32 .23 .56 .56 1.13 1.20 1.76 .39 .18 .26			Massive si	149'- Sharp intrusive contacts
	ϕ 80 ϕ 95 ϕ 95 ϕ 95 ϕ 95 ϕ 70	Box 4 Box 5	200	.004 .002 .007 .012 .009	.61 .52 1.15 1.95 1.99			Limonitic, vuggy, silica breccia	149'-339' Chert; variously massive, banded, ferruginous, cupriferous, auriferous, brecciated,... as follows. 149'-150' Beige, massive, exceedingly hard, hornfelsed chert.
	10 95 40 100 30 100	Box 6		.069 .030 .095	5.35 1.23 1.24			Massive hematitic silica.	150'-170' Light + dark brown, frothy-textured (~20% pore space, (limonite) ≤1" vugs) silica breccia with much Fe, trace $CuCO_3$ minerals, and clasts comprising ~30% (1/10-1", $\bar{x}$ = 1/2") lt. gray chert
	60 100 10 95 10 60 10 70 40 90 80 100 60 100	Box 7 Box 8 Box 9	220 240	.098 .150 .130 .036 .040 .050 .009 .008 .006 .001 .002 .007	3.88 2.98 2.91 1.98 1.98 1.45 .60 .29 .19 .30 .34 .69			Massive + banded silica	170'-176' Red-brown, very hematitic, very dense, massive SiO_2 silica
	20 100 40 100 40 100 ϕ 40 80 100 50 100 30 95 ϕ 95 ϕ 95 ϕ 50 ϕ 50	Box 10 Box 11 Box 12 Box 13	260 280	.009 .006 .008 .105 .191 .100 .074 .041 .116 .023 .083 .571 .009 .001 .001	.79 .77 1.00 1.65 2.40 1.35 1.56 1.61 .93 .75 .97 1.69 .32 .09 .42			Clean, silica breccia	176'-181' Red-brown, very hematitic, loose + porous SiO_2 mud + grit. Appears to be a primary or alt'n texture, not tectonic
	80 100 40 100 30 100 20 100 40 100 40 100 70 100	Box 14 Box 15 Box 16	300 320	.117 .048 .033 .063 .049 .013 .021 .024 .088 .051 .001 .002 .004	.91 1.48 1.36 3.50 1.17 .43 .18 .25 .49 .20 .10 .15 .23			Ferruginous, cupriferous silica breccia	181'-186' Brown + red-br. si. bx. with ~30% dk. gr. clasts (1/2-2", $\bar{x}$=1")
	10 60 10 70 40 90 80 100 60 100	Box 17 Box 18	340	.004 .001 <.001 <.001	.20 <.01 <.01 <.01			Massive + banded + tectonically shattered silica.	186'-194' Beige + tan, massive + banded chert matrix with ~20% lt. gray clasts (1/4-2", $\bar{x}$=1") No vugs or porosity.
	ϕ 90	E.O.H.	339'						194'-203' Brown, very ferruginous (lim. + hem.) si bx with ~50% lt. + dk. gray + dk. brown clasts (1/10"-3", $\bar{x}$=1"). ~2% vugs (≤1/4")
								Ferruginous silica breccia	203'-211' Tan + beige, massive + banded silica with ~20% lt. + dk. gray si clasts (1/10"-1", $\bar{x}$=1/2"). ≤2% vugs (≤1/10")
								Very ferruginous si. bx.	211'-221' Dk. red-br. + yel-br., very ferruginous (lim. + hem.) vuggy (≤5% ≤1/2") si bx with ~30% lt. gr. clasts (1/4"-6", $\bar{x}$=1")
								Clean, coarse silica breccia	221'-249' Clast-supported breccia of ~90% lt. gray to milky white remarkably coarse clasts (1/4"-10", $\bar{x}$=5") with a red-brown, slightly hematitic matrix. Vugs ≤3%, ≤1/2". Many silica-healed fractures.
								Ferruginous, cupriferous silica breccia	249'-255' Red-br + yel-br, very ferruginous (locally ~40% Fe) si. bx. with ~40% coarse gray + br. clasts (1/4"-6", $\bar{x}$=1")
									255'-275' Clast-supported si bx of ~80% lt. + dk gr., greenish-gray + brown clasts (1/4"-10", $\bar{x}$=4") in dark red-br., locally very hematitic matrix. Also locally very cupriferous. ~3-5% $CuCO_3$ overall. Vugs ≤3%, ≤1".
								Ferruginous si bx with banded matrix	275'-284' Clast-supported si bx of 80% lt. + dk gray clasts (1/10"-3", $\bar{x}$=1") in red-br. hematitic + locally tan, banded si matrix. Few (≤1%) vugs. Locally grungy (tectonic). Tr-2% $CuCO_3$
								Ferruginous silica breccia	284'-293' Red-br + yel-br, very ferruginous (both hem. + lim.) si. bx. with ~40% lt. gr. clasts (1/10"-2", $\bar{x}$=1") and ~3% vugs (≤1/2"). Tr-2% $CuCO_3$
									293'-324' Red-brown, hematitic si bx with ~60% lt. + dk gr. clasts (1/10"-6", $\bar{x}$=1/2"). Tr-2% $CuCO_3$. ≤1% vugs.
								Massive + banded + tectonically shattered silica.	324'-339' Pale opaque gray massive to banded, hornfelsed chert with no significant Fe or Cu. No vugs. Only ~10% relict fine clasts (gray, 1/10"-1/2", $\bar{x}$=1/4"). Intensely tectonically shattered from 1/2" to fine sand size angular grains.

249'-275' = 26' (~18' true) at .14 Au, 1.4 Ag

Sludge: Au .080, Ag .96

Carole

Hole No. 809-5

U.V.X. Mine - 800 Level
809 D.D.S.

Collar location: Mine grid 11,790 N 6,905 E

Inclination: +12° at collar

Azimuth: 185° (S5°W) at collar

Length: 195 feet

Longyear Co. - Phoenix, AZ

Driller: Bert Hanson + Dennis Sager, drillers

Core recovery: ~95% overall

Dates: July 6 thru July 10, 1987

Iron King Assay, Inc. - Humboldt, AZ

Assayer: Using fire assay, one assay ton and AA. followup for low grades

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core from collar thru 195 ft, end of hole. Overall drilling rate ~24.0 ft/shift (10-hr. shifts, 2 shifts/day)

All steel removed from hole.

NQ core; 1.875" diameter.

NQ core through End of hole

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)
20	80	0			
20	80				
50	100				
50	100				
60	100				
φ	60	20			
φ	20				
20	90			.003	.36
10	90				
φ	50				
φ	80	40			
φ	95				
20	95				
φ	90				
10	95				
φ	95				
φ	95				
φ	90				
φ	50	60		.221	.39
φ	95			.045	.83
φ	95			.057	.85
φ	95			.010	.88
10	90			.043	1.49
30	95	80		.088	4.17
70	80			.054	1.54
20	95			.034	1.26
20	95				
10	95				
φ	95	100			
40	95				
50	95			.007	.50
60	100			.128	2.99
100	100			.047	2.23
100	100			.120	2.01
100	100			.274	1.09
90	100			.143	.70
100	100			.146	.20
100	100	140		.140	.39
90	100			.207	.42
80	100			.208	.43
50	100			.124	.22
70	100			.148	1.20
50	100			.037	1.31
φ	80			.015	.63
φ	20	180		<.001	.20
φ	60			<.001	.25
195' E.O.H.		195'		<.001	.40

137-168' = 31' (~25' true) at .15 Au, 1.1 Ag

Box A skeleton
Box B skeleton
Box 1
2
3
4
5
6
7
8
9
10
Box 11

Rock type	Lithology
Silicic-altd diorite	Note: Bedding ~55° to core axis. Therefore true thicknesses ~82% of drill intercepts.
	0-15' Purple + white, blotchy, silicic-altered diorite with prominent foliation ~45° to core axis (CA.)
	15-24' Beige, foliated, silicic-altd dt. with pale purple + wt. blotches and hints of remnant assimilated si clasts
	24-36' Beige + tan, foliated, silicic-altd dt with ~50% lt. gray + white, crackled chert clasts (≤1/0")
Dacite + intrusive silica bx	36-80' Beige, silicic-altd dt. with ~10% white silici clasts (intrusive breccia) (≤1") excepting one large clast from 60-63' (white, crackled). Prominent foliation (~50° to CA) highlighted by alternating bands of pale + darker brown color hues lending the appearance of "petrified wood".
Silicic-altd diorite	
Chert clast	
Silicic-altd diorite	80-92' Dark red-brown, very ferruginous (hematitic) silica matrix with ~40% lt. gr. + wt clasts (1/4-4", x̄=2"). Few (≤2%) huge. Few healed fractures though clasts have "crackled" texture
Silica breccia	92-95' Red-br. + yell-br. slightly gritty, ferruginous, silicic-altd diorite wedge within chert sequence. Includes ~10% wt. + lt. gr. intrusive bx clasts of si (≤1") Fol. ~50° to CA
	95-102' Clast-supported bx of ~80% lt. gr. + wt. clasts (1/2-12", x̄=6") in dark red-brown, hematitic silica matrix.
	102-106' Same as above but only ~40% matrix-supp. clasts (1/4-1" x̄=1/2")
	106-109' Same but 60% clasts (1/4-6", x̄=2")
	109-110' Same but clast-supported, ~90% clasts (1-6" x̄=4")
	110-115' Same but matrix-supported, ~20% clasts (1/0"-2" x̄=1/2")
Silicic-altered diorite	115-135' Beige + pale purple silicic-altered diorite with crude foliation ~50° to core axis.
Massive si	135-137' "Massive" (hornfelsed) chert; beige with spots of iron stain (red hematitic) and ~20% silica clasts (1/4-3/4", x̄=1/2") of same beige color. No vugs. No fractures.
Silica breccia	137-142' Matrix-supported silica bx of ~50% tan + lt. gray clasts (1/0-2", x̄=1") in red-br. + yell-br. slightly vuggy (≤5%, ≤1") matrix
	142-143' Same except ~70% clasts (1/0-3" x̄=1")
	143-144' Same but clast-supported, ~80% clasts (1/0-4" x̄=1")
	144-146' Same but ~90% clasts (1/0-4", x̄=2").
	146-160' Matrix-supported si bx of ~50% lt. gr + wt. clasts (1/0-2", x̄=1") in red-brown, hematitic matrix.
	160-168' Clast-supported breccia of ~80% lt. gr. + wt clasts (1/4-6", x̄=3") in red-br. hem. matrix. "Chaotic bx" as far as obscured margins on clasts as result of SiO_2 flooding.
Massive + banded silica	168-190' Matrix-supported si. bx. with ~50% lt. gr. + wt. clasts (1/4-12", x̄=6") in red-br, yell-br, + tan banded matrix. Some massive zones. Clearly hornfelsed by diorite. Banding irregular but often 60°-70° to CA.
Silicic-altd diorite	190-195'+ (E.O.H.) Pink + beige, silicic-altd diorite with foliation 60°-70° to core axis.

Carole

Hole No. 809-4

U.V.X. Mine - 800 Level
809 DDS.

Collar location: Mine grid 11,790N 6,905E

Inclination: +23° at collar

Azimuth: 225° (S45°W) at collar

Length: 369 feet

Driller: Longyear Co. - Phoenix, AZ
Bert Hanson + Dennis Sager, drillers

Core recovery: ~100% in diorite, except where gougy
~90% in chert, except where shattered.

Dates: June 16 thru July 6, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ
Using Fire Assay, one assay ton, and AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig, NQ core from collar thru 269'; BQ from 269' thru 369' (E.O.H.)

Overall drilling rate 19.4 ft/shift (10-hr shifts, 2 shifts/day). All casing + steel removed from hole despite caving at ~160'.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology

Note: Sense-of-orientation indicators are few and erratic but crudely indicate bedding ~40° to core axis. Therefore true thicknesses ~64% of drill intercepts

NQ core; 1.875" diam.
Skeleton Box A
Skeleton box B
Skeleton box C
NQ Core
Box 1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
BQ core
1.43" diam.

0'-157' **Diorite**; variously altered as follows:

0'-7' Purple, white, + beige (blotchy color patches) foliated + banded (by color + composition/texture) silicic-altered diorite (kaolinized, silicified) Foliation + banding ~60° to core axis.

7'-67' Tan + beige, foliated + banded (30°-60° to CA) silicic alt'd dt with ~10% white + light gray silica clasts ≤2" diam. (most abundant from 35'-60'). Foliation + banding contorted around silica clasts, parallel to contacts.

67'-70' Purple + wt. blotchy, like 0'-7'

70'-82' Beige to red-brown argillic-alt'd diorite, with hematite ± qtz on fractures and as veins. "Gritty" or rough core surface. So-called "red blocky schist".

82'-117' Gray-green, fine to med. grained, propyllitically altered diorite with plagioclase grains + kaolin pseudomorphs clearly visible. ~2% carbonate (calcite ± dolomite ± siderite) veinlets with some accompanying red-br. hem.

117'-140' "Red blocky schist," same as 70'-82', plus ~2% malachite as fracture-filling veinlets + disseminated stain (permeating heavily alt'd, porous rock)

140'-155' Purple + wt. blotchy, silicic-alt'd dt like {0'-7' / 67'-70'}

155'-157' Red, yellow, beige, + brown, blotchy + banded, brecciated, intrusive contact zone dominated by intensely silicified diorite with some silica clasts. Later tectonically sheared and rendered gougy in part.

157'-369'+ **Chert** or silica, variously massive, banded, brecciated and ferruginous as follows:

157'-169' "Massive" silica, beige to red-brown, blotchy + mottled, with ~10% lt. gray si clasts ($\bar{x}$ = 1/8"). No vugs. Few healed frax.

169'-172' Clast-supported si bx of ~80% lt. gr. + wt. variously sized clasts (1/4"-6", $\bar{x}$ = 2") in tan + red tan matrix.

172'-176' Tan + beige "banded" si with ~40% lt. gr + wt. si clasts ($\bar{x}$ = 1/2"). Locally up to 20% kaolinitic matrix

176'-182' Light brown, limonitic (~20% Fe) si bx. with ~30% lt. gr. clasts ($\bar{x}$ = 1/2") Vugs ≤ 4%, ≤ 1/2"

182'-217' Light + dk brown, mottled, limonitic, chalky ironstone (~50% Fe) with ~10% lt. gr. + brown si clasts ($\bar{x}$ = 1/4"). ~20% vugs with very rough linings and black Fe coatings. Very broken, RQD ~ 0-10.

217'-223' Dark brown, limonitic ironstone (~50% Fe) with ~40% lt. gr. + lt. br. clasts ($\bar{x}$ = 1/2"). ~5% vugs.

223'-239' Dark brown, very ferruginous si bx with ~40% yellow brown + lt. gr. clasts (1/4"-2", $\bar{x}$ = 1/2"). Both lim. + hem., ~20% Fe. Cores as solid rock cylinder. ±10% vugs, ≤1" diam.

239'-256' Dark brown, very ferruginous si bx with ~50% yellow brown + lt. gr clasts (1/10-1", $\bar{x}$ = 1/4") and fewer vugs than above (≤5% vugs, ≤ 1/4").

256'-264' Clast-supported bx of ~90% white, lt. gray, + green-gray clasts (2"-10", $\bar{x}$ = 6") in yell-br. + red-br. matrix. Disseminated $CuCO_3$ lends all a green cast.

264'-269' Brown, limonitic si bx with ~50% lt. gray clasts, ($\bar{x}$ = 1") and up to 10% vug space in matrix only.

269'-277' Clast-supported bx of ~80% lt. gray. clasts (1/2"-8", $\bar{x}$ = 4") in dk. brown limonitic matrix with many silica-healed frax in clasts and ~5% vugs in matrix. Vugs lined with $CuCO_3$, Cu-hydroxides, and, most recently, drusy qtz xls.

277'-282' Dk. + lt. brown, + red brown, limonitic + hematitic vuggy (~10%, ≤2") and cupriferous (~5% Cu as malachite + hydroxides) si. bx. with ~30% gray + lt. + dk. brown clasts (1/10-3", $\bar{x}$ = 1")

282'-364' Dark + light brown ferruginous (with limonite + dark specular hematite) and cupriferous (malachite) silica breccia with ~40% gray, lt. gray, and white clasts (1/10"-4", $\bar{x}$ = 1"). Few (≤2%) vugs. 309'-312' is especially Cu-rich, virtually massive malachite. Increasing abundance of tectonic brecciation with depth in hole.

364'-369' Translucent to beige and white chert tectonically shattered to ≤1/2" angular clasts. Little Cu or Fe

Footage	Au (oz/t)	Ag (oz/t)	Au/Ag
160	.040	.64	
	.015	.63	
	.060	1.39	
	.030	2.18	
	.020	.87	
	.062	1.41	
	.027	2.15	
180	.020	1.36	
	.076	1.51	
	.264	1.54	
	.056	2.50	
	.083	1.25	
	.143	3.03	
	.180	1.30	
200	.156	1.74	
	.085	1.91	
	.079	2.22	
	.066	2.19	
	.060	2.24	
	.090	1.26	
	.034	1.27	
220	.029	1.39	
	.077	2.53	
	.042	2.25	
	.045	1.14	
	.051	2.04	
	.078	1.60	
	.074	1.35	
	.173	1.54	
	.108	1.81	
240	.381	1.46	.22/2.5
	.041	1.65	
	.034	3.17	
	.073	3.62	
	.070	3.68	
	.118	3.82	
	.080	3.37	
260	.066	3.35	
	.150	2.77	
	.113	1.90	
	.029	1.71	
	.052	3.77	
	.012	2.28	
280	.049	7.26	
	.312	2.26	
	.140	2.73	
	.160	3.71	
	.110	4.06	
	.171	.81	
300	.086	.67	
	.138	1.25	
	.048	2.58	
	.113	1.76	
	.978	1.97	
320	2.540	3.84	
	.570	1.87	
	.245	8.03	
	.079	2.14	
	.092	.67	
340	.078	3.50	
	.071	2.68	
	.050	1.06	
	.045	.41	
	.014	.32	
360	.258	1.57	
369	.098	.82	
E.O.H. 369'			

235'-242' = 7' (~5' true) at .24 Au 1.6 Ag

315'-330' = 15' (~10' true) at 1.1/4.1 Au/Ag

281'-330' = 49' (~31' true) at .43/2.7 Au/Ag

185'-330' = 145' (~93' true) at .22/2.5 Au/Ag

Silicic-altered diorite

Argillic-alt'd dt

Propyllitic-alt'd diorite

← ~2% CO_3 veinlets →

Argillic-alt'd diorite

Silicic-alt'd diorite

Massive si

si bx

Banded si

Ironstone

Vuggy

Very ferruginous silica breccia

Cupriferous + ferruginous silica breccia ("Unmined" silica ore)

Tectonically bx si

Hole No. 809-3

Collar location: U.V.X. Mine – 800 Level 809 D.D.S. Mine grid 11,790 N 6,905 E

Inclination: −5° at collar (−7° at 280' by camera)

Azimuth: 170° at collar

Length: 370 feet

Driller: Longyear Co., Phoenix, AZ — Bert Hansen + Dennis Sager, drillers

Core recovery: About 95% in diorite except where very gouge (i.e., ~50% 225'–279') ~80% but erratic in chert

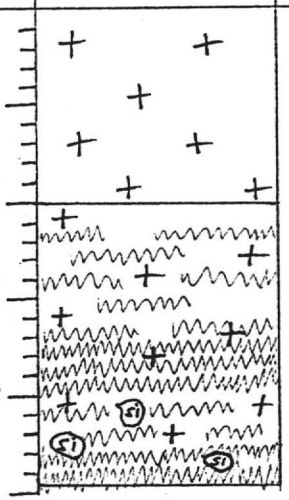
Dates: May 29 to June 16, 1987

Assayer: Iron King — Using Fir… and AA. …

Logger: Don …

Remarks: Drille… pneumatic rig. NQ… 345 ft. BQ from 345'–370' (E.O.H.). Overall drilling rate 15.4 ft/shift incl. moving (3 hr) + pump repairs (6 hr) for 10 hr. shifts, 2 shifts/day. 6.25 ft/shift for just the last 12 shifts in 2nd chert zone. All rods, casing, etc. removed from hole.

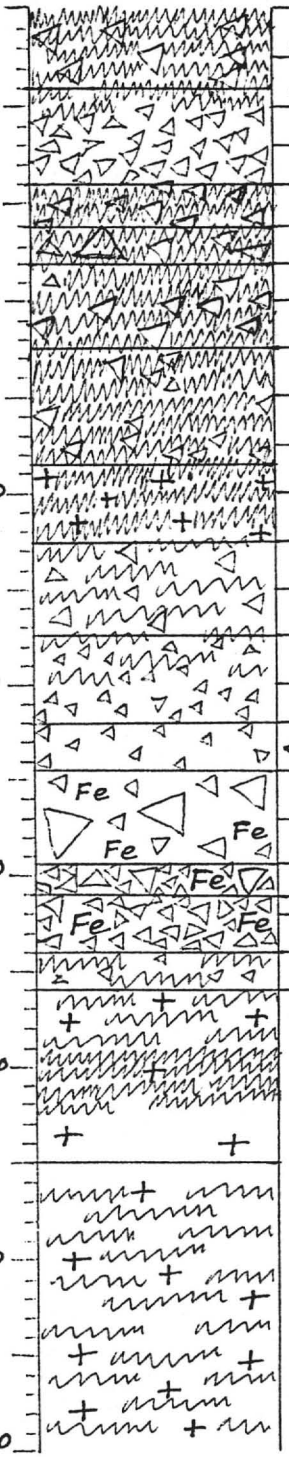
Page 1 of 4
Reproduceable set for Carole.

Core Size / RQD	Runs/recovery / Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ; 1.875" diameter 40 10 20 70 50 30 ϕ ϕ 10 ϕ	100 100 100 100 100 100 100 100 100 50 Skeleton Box A	20 40						Silicic-altered diorite	Note: Virtually no reliable sense-of-orientation indicators within chert. Best estimates are bedding ~35° to core axis. Therefore true thicknesses ~57% of drill intercepts. ϕ–20' Purple + white, blotchy, silicic-altered diorite. Foliation ~50° to core axis 20'–49' Beige + tan, banded and foliated (wavy foliation, $\bar{X}$ = 50° to CA) with increasing abundance of intrusive breccia fragments toward chert contact (49'). Clasts are milky white and light gray qtz. ≤ 2" dia.

NQ core

ϕ	80	Box 1
ϕ	40	
60	100	
20	95	2
ϕ	95	
ϕ	95	
ϕ	95	3
ϕ	95	
ϕ	95	4
ϕ	95	
10	95	5
20	95	
ϕ	95	6
ϕ	30	
20	60	
ϕ	95	7
60	100	
50	100	8
50	100	
20	90	
ϕ	20	9
50	100	
50	90	
50	100	
60	90	10
10	80	
20	95	
ϕ	95	
60	100	11
20	100	
10	100	
30	100	
10	100	
20	100	
10	100	

(Skeleton) Box



.068	.31		
.306	.61		
.177	.23		
.123	.38		
.016	.81		
.010	.50		
.024	.40		
.009	.56		
.007	.56		
.008	.50		
.008	.49		
.019	.19		
.028	.62	Sludge	
.017	.25	.043	.61
.009	.38		
.001	.38		
<.001	.37		
.001	.50		
.025	.75	.029	1.00
.113	1.65		
.125	1.46	.056	.86
.181	1.50		
.034	.73		

55'-68' = 13' (~7' true) at .21 Au, 0.4 Ag

Very ferruginous si
Saccharoidal si
Ferruginous si
Banded si
Massive si
Silicic-alt'd diorite
Massive si
Banded si
Hematitic si bx
Massive si
Silicic-alt'd diorite
Argillic-alt'd diorite (red blocky schist)

49'-58' Dark red-brown, very dense, ver ferruginous (~40% FeO) chert bx with ~40% lt. gray clasts ($\bar{X}$=1") 57'-58' includes dk purple + yellow-brown earthy stringers.

58'-68' Rusty red-orange saccharoidal textured but competent chert bx with ~60% matrix supported clasts, milky wt. to lt. gray ($\bar{X}$= ½")

68-72' Red-brown, very ferruginous si bx with ~60% lt. gr. + wt clasts ($\bar{X}$= 1"). "Crackled" clasts. ~30% FeO (matrix)

72'-76' Banded red-br + yellow-brown si with ~40% wt. + lt. gr. clasts (1/10"-6", $\bar{X}$=3"). Seemingly "injected" matrix with "flow banding" and oriented clasts. Banding ~10° to core axis.

76'-85' Massive, yell-br. + red-br, earthy looking, non-reflective with ~20% lt. gr. + wt clasts ($\bar{X}$= 1")

85'-97' Massive, biege + rusty brown, with ~30% wt, lt. gr. + red gray clasts ($\bar{X}$= ½").

97'-105' Biege + tan, massive, locally earthy, silicic-alt'd diorite. Some red-br. blotches. Banding (color) ~30° to C.A.

105'-115' Massive, red-br. + tan, blotchy + swirly, with ~10% lt gray clasts ($\bar{X}$=1")

115'-124' Massive, tan-brown + red br., hematitic (~10% FeO) with ~20% lt. gray clasts ($\bar{X}$= ¼").

124'-129' Banded, pale yellow-tan chert with ~10% lt. gray clasts ($\bar{X}$= ¼")

129'-139' Banded, red-br + yell-br., hematitic (≤20% FeO locally) with ~40% milky wt. + lt. gr. clasts (1/10"-6", $\bar{X}$= 1")

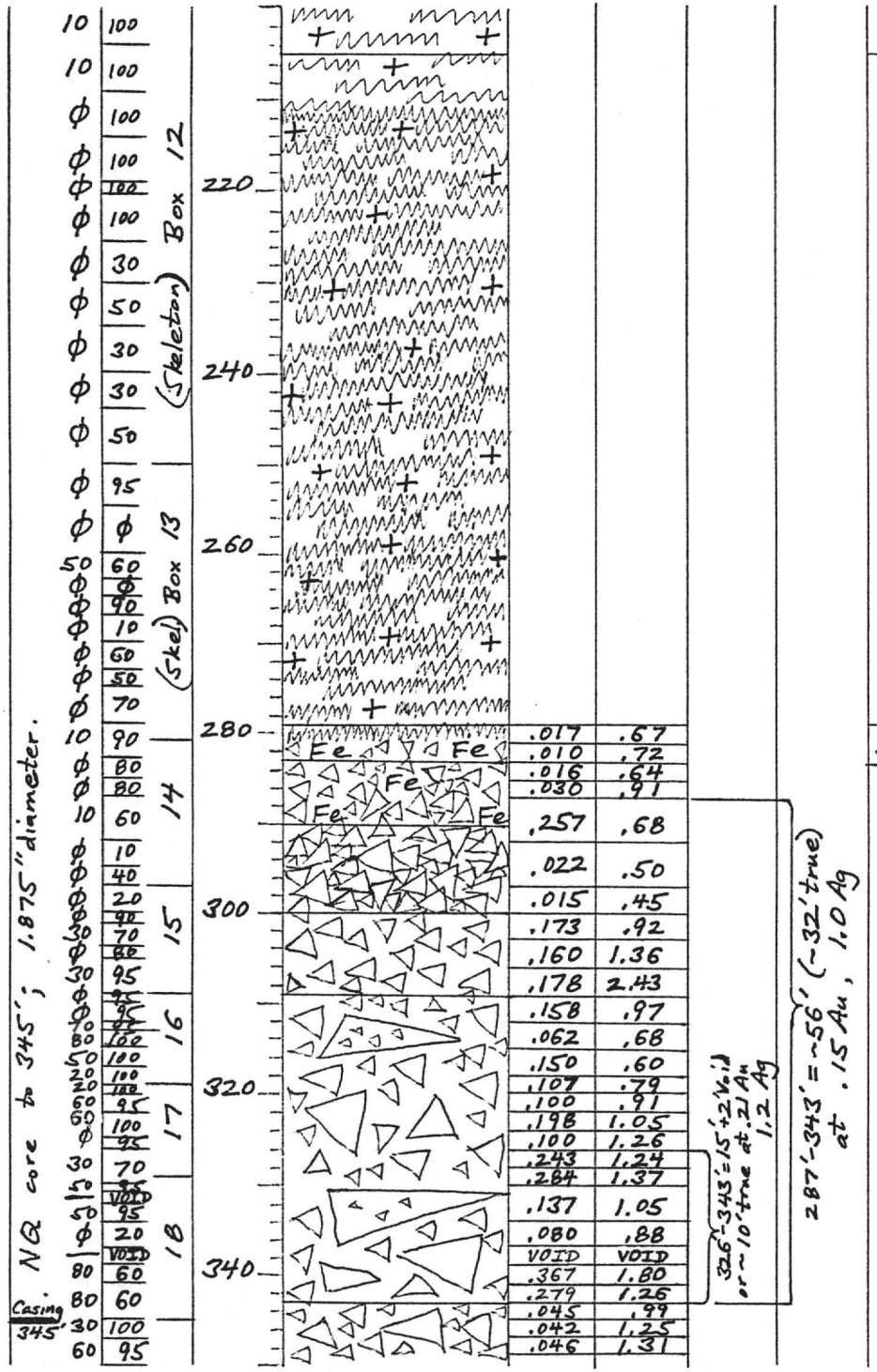
139"-142" Red-br hematitic matrix (~10% FeO) with ~70% wt. + lt. gr. rounded, assimilated, ghost-like clasts, some "crackled". Clasts 1/10"-3", $\bar{X}$= ½"

142'-148' Dark purple + red brown hematitic (~20% FeO) bx with ~60% lt. gray clasts ($\bar{X}$= ½").

148'-152' Massive, rusty br. + yell-br. with ~10% fine gray-brown clasts ($\bar{X}$= ¼").

152'-170' Tan-biege massive, silicic-alt'd diorite. Cores smooth. H~6.5

170'-205' Tan, massive, argillic-altered diorite with abundant (~10%) X-cutting non-oriented, hematite-filled fractures (≤¼" across) so-called red, blocky schist. Cores with rough surface. Soft (H~5.5) locally broken + even gougy.



205'-279' White, blotchy purple + white, or tan, silicic-altered diorite. Locally gaugy (230'-265').

Note. Last circulation ~300', never regained despite casing at 345'. While drilling uncased 300'-345', hole M-1 at Morgan DDS was discharging water and drill mud. Hole 809-3 crosses above M-1 at 300'.

279'-370' (E.O.H.) - Chert; variously massive, banded, ferruginous & brecciated as follows:

279'-283' Red-brown, massive & banded, ferruginous (up to 30% FeO) chert bx. with ~30% lt. gray clasts ($\bar{x}$ = ½")

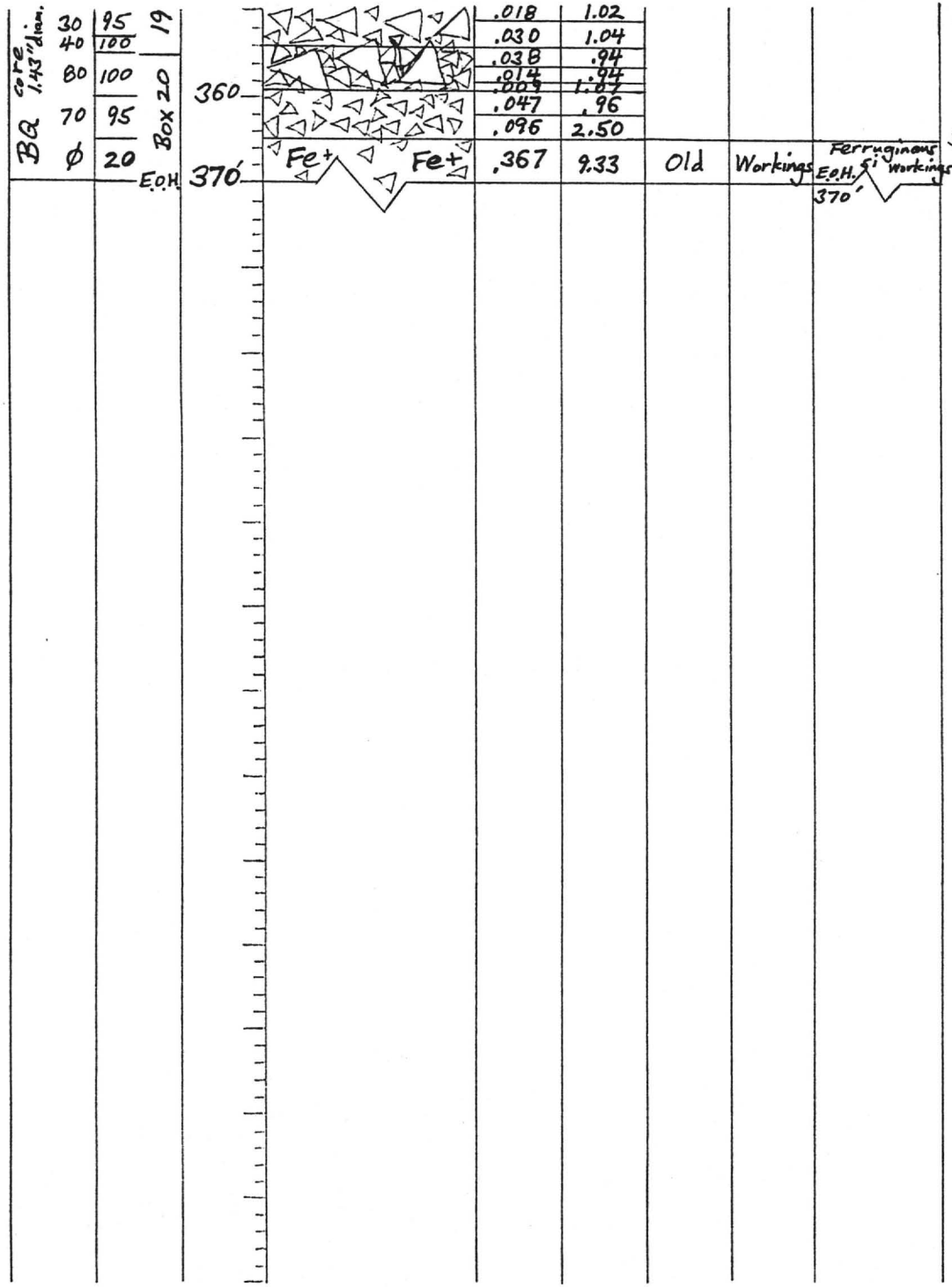
283'-290' Locally very ferruginous (up to 30% FeO) si. bx. Yellow-brown & red-br. matrix with ~60% milky wt & lt. gray clasts $\bar{x}$=1"; some banded clasts. Very hard.

290'-300' Clast-supported bx of ~90% milky white & tan clasts ($\bar{x}$=1") in a tan, banded matrix. Exceedingly hard! Two bits needed to drill 10 ft.

300'-309' Very heterogeneous breccia of multiple clast types in mixed matrix types. Matrix-supported but ~70% clasts ($\bar{x}$=1") of tan, lt. gray, yellow, white & red varieties in red-br, yell.-br, & gray matrix. Hard, broken drilling. Last circulation ~300'

309'-343' Coarse, heterogeneous bx of ~60% lt. gr., tan, yell. br. & red clasts ($\bar{x}$=1", but some clasts up to 10") in partly limonitic pale gray to yellow-gray matrix. Largest clasts (313'-314' and 332'-333') are tan, banded chert or else 2nd gen. massive tan si. bx with lt. gr. si clasts. Matrix slightly vuggy but solid, more limonitic 341'-343'

343'-354' "Ghost bx" with ~60% lt. gray clasts (¼"-6" $\bar{x}$ = ½") in yellow-gray, limonitic, & vuggy (≤10% voids, ≤ ¼") matrix.



354'-359' Clast-supported bx with ~80% tan, massive, 2nd generation bx (containing ~10% lt. grey clasts) as coarse (¼"-10", $\bar{x}$=3") clasts within red-brown hematitic matrix.

359'-365' Heterogeneous bx of ~60% lt. gr., yell. br., black, red, & tan 2nd gen. bx clasts ($\bar{x}$= ½") in red-br. matrix.

365'-370' Red-brown, very dense, very ferruginous (~50-60% FeO) chert with ~20% red-br., yell. br., & black ferruginous clasts ($\bar{x}$=1"). Some patches of yellow silica g-it & black specular hematite. All water pressure lost at 365', only partial core return and able to push rods sporadically indicating old stope fill(?) or cave(?)

Carole

Hole No. 809-2

Collar location: U.V.X. Mine – 800 Level, 809 RRS. Mine grid 11,790 N 6,905 E

Inclination: +23° at collar

Azimuth: 185° (S5°W) at collar

Length: 240 feet

Driller: Longyear Co. – Phoenix, AZ. Bert Hansen + Dennis Sager, drillers

Core recovery: Nearly 100% in diorite; 60-100% (x̄ = 95%) in chert

Dates: May 20 thru May 29, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ. Using fire assay, one assay ton, and A.A. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig, NQ core from collar thru 240' (E.O.H.) Overall drilling rate 18.5 ft/shift (10-hr. shifts, 2 shifts/day). All rods removed from hole, no casing or collar pipe used.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ – 1.875" diameter	30 100							Silicic alt'd diorite	ϕ-21' Purple, white, + biege, blotchy + banded, foliated, silicic altered diorite. Occassional (≤5%) milky white chert clasts (≤1") Foliation + zone shearing ~40° to core axis. Trace $CuCO_3$ on fractures.
	30 100								
	40 100								
	60 100								
	50 100								
	30 100	Box A							21'-24' Biege + red brown, blotchy + swirly patterned chert clasts
	60 100								
	30 100								24'-39' Biege + tan silicic altered diorite. Mod alt'd + beds foliated adjacent to larger chert clasts. Overall ~10% chert frags. as intrusive bx.
	60 100	Skeleton							
	90 100			<.001	.14			Massive chert	39'-48' — Milky white + tan massive chert clasts with stringers of silicic alt'd diorite thruout.
	90 100			<.001	<.01				
	50 100							Silicic altered diorite	48'-74' Same as 24'-39'; Biege + tan silicic altered diorite. 58'-60' is a single light gray + white, shattered chert clast.
	ϕ 60								
	ϕ 60			.001	.28				
	10 100								
	10 100								
	20 100	Box B							
	20 100								
	30 100	Skel. C							
	20 100								
	50 100								74'-77' Shear zone and diorite gouge
	10 100								77-91 Same as 48'-74' but fewer si clasts.
	10 100	Box 1							91'-98' Purple + biege, blotchy, silicic alt'd dt.
	10 100			.001	.68				98'-102' Pink, tan, + biege silicic alt'd dt + intrusive bx with ~20% lt. gray. chert clasts (≤½") and prominent foliation banding ~40° to CA.
	ϕ 100			.001	.42				
	ϕϕ 100	2		.002	.28				102'-216' Chert: variously banded + brecciated as follows:
	ϕ 100			.003	.25			Silicic alt'd + banded chert.	102'-111' Various 1'-3' thick beds of fairly massive and banded chert breccias with 30-60% clasts, (x̄ = ¼"-1"). Clasts generally light + dark gray. Matrix tan to red-brown. No vugs. Banding from 20° to 45° to core axis.
	20 95			.002	.16				
	ϕ 95			.001	<.01				111'-130' Matrix supported banded bx of ~10% yellow tan clasts (x̄ = ¼") in yellow tan (locally porous, 119-130) matrix with red-brown polka-dot FeO blotches.
	ϕ 60			<.001	.23				
	ϕϕ 60	3		.002	.28				130'-142' Matrix-supported bx of ~50% clasts (gray + yellow tan, x̄ = ½") in a red-brown to gray and tan slightly vuggy (≤3%, ≤½") matrix.
	ϕϕ 70			.001	.50				
	ϕϕ 95	4		.002	.42				142'-147' Clast supported bx of ~70% lt. + dk gray + white clasts (x̄ = 1") in translucent gray + red-gray slightly hematitic, slightly vuggy "ghost bx". Mottled appearance revealed intensely silicified bx. ~3% fine boxwork casts after some sulfide (py-?)
	30 95			.008	.55				
	10 95	5		.010	.71				
	10 100			.060	2.65				
	20 100	6		.025	2.03				
	20 80			.004	1.09				
	30 95	7		.002	.65				
	30 100			.063	2.05				147'-160' Purple gray + yellow brown massive to banded chert (banding ~30° to CA) with ~10% milky wt + gray clasts (x̄ = ¼")
	50 95		Fe $CuCO_3$ Fe Cu	.075	1.58				
	ϕ 95	8		.091	3.72				160'-161' Very ferruginous, brown, vuggy chert with much botryoidal $CuCO_3$ and black hematitic coatings. Poor coring.
	30 100			.077	.35				
	70 100			.047	1.60				161'-170' "Ghost bx" of ~50% translucent gray clasts (x̄ = 1") in similar translucent gray + red gray matrix. Clasts + qtz veinlets all have obscured margins.
	60 100	9		.130	.95				
	90 100			.313	.70				
	90 100	10		.448	1.60				170'-197' "Ghost bx" of ~90% translucent gray clasts (x̄ = 2") in similar translucent gray + red gray matrix. Clast supported. Abundant relict bx frags + x-cutting veinlets, all silica-flooded and obscured.
	90 100			.334	1.38				
	90 100			.537	1.75				
	50 100	11		.661	1.56				
	90 100			.326	2.08				
	90 100			.094	1.33				
	90 100			.135	1.51				
	90 100			.057	.66				197'-209' Matrix-supported bx with ~50% translucent + milky gray clasts (x̄ = 1") in chocolate brown + yellow brown, "frothy" very porous (vuggy) though low permeability chert. Vugs up to 15% and 2" dia, generally ~½".
	90 100			.042	.82				
	60 100	12		.089	.79				
	ϕ 95			.009	.48				
	ϕ 95	13		.018	.33				
	10 95								209-216 Clast-supported bx with ~90% gray + white clasts (x̄ = 6") in red-gray, hematitic matrix. No vugs. Might be considered massive to "crackled" + healed, hornfelsed edge of chert.
	20 95	14							
NQ thru end of hole	10 95	Box 15	E.O.H. 240'					Silicic alt'd diorite.	216-EOH — Silicic altered diorite. 216'-220' Biege + tan, foliated (~80° to CA) with several thin zones (~1") of abundant ~¼" chert clasts (intrusive bx). 220'-228' Purple + white, blotchy color pattern. 228'-240' (E.O.H.) Pink-biege + rusty biege.

Chert breccia + translucent gray "ghost breccia"

176'-194' = 18' (~13' true) at .44 Au, 1.5 Ag

173'-200' = 27' (~19' true) at .33 Au, 1.4 Ag

156'-209' = 53' (~37' true) at .21 Au, 1.4 Ag

Hole No. 809-1

Carole

Collar location: U.V.X. Mine - 800 Level, 809 D.D.S. Mine grid 11,790 N 6,905 E

Inclination: + 23° at collar

Azimuth: 205° (S25°W) at collar

Length: 336 feet

Driller: Longyear Co. - Phoenix, AZ. Bert Hansen + Dennis Sager, drillers.

Core recovery: ~95% in diorite, ~90% in chert

Dates: May 6 thru May 20, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using fire assay, one assay ton, and A.A. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core to 205 ft, NQ from 205' to 336' (EOH). Overall drilling rate 16.8 ft./shift (10 hr. shifts, 2 shifts/day). not including move to station.

All casing + steel removed from hole.

Core size: HQ core (2.5" diam) to 205 ft.; NQ (1.875" diam) to end of hole. (205' HQ / NQ)

Core box: Skeleton Box A, Skeleton Box B, Skeleton Box C, D, Skeleton Box E (Approx. 100% recovery in diorite thru 179'); Box 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

RQD (top to bottom): 10, 10, 10, 70, 70, 50, 90, 20, Ø, 80, Ø, Ø, Ø, Ø, Ø, Ø, Ø, Ø, 80, 50, 60, 10, 20, Ø, 20, 40, 20, 40, 40, Ø, 20, 20, 20, Ø, 60, 50, 30, 30, 20, 20, 20, 20, Ø, Ø, Ø, 50, 30, 60, 40, 80, 80, 80, 50, 30, 60, 20, 30, 70, 70, Ø, Ø, Ø, Ø, Ø, Ø, Ø, Ø, Ø, Ø, Ø, Ø, Ø, Ø, 30, 20, Ø, 50, 30, 60, 80, 30, 70

Runs/recovery (from 177'): 100, 100, 100, 95, 80, 95, 90, 100, 100, 100, 100, 100, 95, 100, 95, 95, 95, 100, 95, 10, 90, 95, 90, 50, 20, 60, 50, 95, 95, 95, 95, 95, 95, 95, 95, 95, 95, 95, 95, 95, 95, 100, 100, 100

Graphic log:

Footage: 20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300, 320, 336

Au (oz/t)	Ag (oz/t)
<.001	.57
<.001	.62
<.001	.78
<.001	.68
<.001	.64
.020	.51
.002	.54
.083	1.95
.215	1.92
.109	3.15
.100	2.52
.057	1.99
.229	.84
.184	.79
.324	.70
.128	.76
.032	1.26
.168	.69
.061	1.09
.095	1.20
.209	1.09
.202	1.62
.074	1.82
.040	1.55
.007	1.31
.006	.26
<.001	<.01
<.001	.19
.013	.76
.039	2.21
.042	2.72
.042	3.33
.078	2.98
.070	1.26
.083	2.88
.060	3.17

200-214' = 14' (~10' true) at .22 Au, .8 Ag

187'-234' = 47' (~33' true) at .15 Au, 1.4 Ag

Rock type: Silicic - altered diorite; Massive chert; Silicic alt'd diorite; Argillic alt'd diorite; Silicic altered diorite; Massive chert; Variously brecciated + silica-healed chert; Silicic alt'd + tectonically brecciated (gougy) diorite; Massive chert; Very ferruginous cherty ironstone ± CuS, $CuCO_3$ Vuggy; Old stope

Lithology

Note: Bedding very difficult to recognize in chert but crudely indicated ~45° to core axis. Therefore true thicknesses ~70% of drill intercepts

Ø-45' White to biege, very fine grained, massive to crudely foliated, kaolinitic and silicified diorite. So-called, silicic alteration zone. Foliation may be flow banding. Kaolin imparts a soapy feeling to core.

45'-59' Same as Ø-45' except for the inclusion of abundant golf-ball size clasts of milky white, shattered chert taken to be intrusive breccia.

59'-66' White to red, massive (hornfelsed?) but crackled chert actually composed of ~80% gray-white clasts ($\bar{X}$=2") in red-brown matrix.

66'-68' Silicic alt'd diorite wedge (like 45'-59')

68-74' Crackled chert (like 59'-66')

74'-95' Silicic alt'd diorite (like Ø-45')

95'-120' Argillic altered diorite. White to red-brown, hematite stained, fine grained, kaolinized diorite. Called "red blocky schist" on old (1920's) maps.

120'-179' Silicic altered diorite (like Ø-45', 74'-95')

179'-245' Chert, as detailed below:

179'-185' Massive chert; biege + red-brown, with ~10% light + dark gray clasts ($\bar{X}$ = 1/4"). ≤2% vugs.

185'-196' Clast supported bx of ~70% opaque + translucent, lt. gray clasts ($\bar{X}$=2") in gray + yellow brown (limonitic) vuggy (vugs ≤10%, ≤1") silica flooded matrix. ~5% vugs filled with yellow silica grit. Slightly saccharoidal texture but well indurated.

Note: Crude "bedding" + clast orientation ~45° to C.A.

196'-206' Clast-supported bx of ~70% milky white and gray clasts ($\bar{X}$ = 5") in red brown, hematitic matrix.

206'-210' Matrix-supported bx of ~50% wt. + gray clasts ($\bar{X}$ = 1") in red-gray + purple-gray chert matrix. Bx. frags are "ghost" like with assimilated margins and abundant x-cutting, silica healed fractures.

210'-229' Clast-supported bx of ~80% lt + dk gray clasts ($\bar{X}$ = 4") in red-brown hematitic chert matrix.

229'-235' Matrix-sup. bx of ~50% milky wt. + lt. gray clasts ($\bar{X}$=1") in yellow-brown, vuggy (≤10%, ≤1") abundantly fractured + healed matrix. Traces of malachite on frax.

235'-245' Clast-sup. bx of ~70% lt. + dk gray clasts ($\bar{X}$ = 3") in yell-br. + red-br. lim. + hem. matrix. Very crude banding ~60° to core axis.

245'-304' White to biege and light gray, intensely brecciated and gougy, fine grained, kaolinized, silicifed diorite. Silicic alteration zone of diorite between two zones of chert (above + below) with tectonic brecciation to very poor rock quality (RQD = Ø). Occassional white, crackled, chert clasts probably original intrusive bx. frags.

304'-336'+ — Massive + ferruginous chert ± base metals as detailed below.

304'-312' Massive chert of blotchy + swirly purple + white with ~20% lt. gray clasts ($\bar{X}$ = 1/2"). No vug. Few frx.

312'-317' Matrix supported bx of ~60% milky white + lt gray clasts ($\bar{X}$ = 1/2") in gray to lt. brown limonitic chert matrix. No vugs. Ferruginous, perhaps 10% Fe. ~3% narrow (≤1mm) stringers chalcocite + malachite.

317'-336' Very ferruginous (~50% Fe!) very dense ironstone with ~50% red-brown + brown ironstone clasts ($\bar{X}$=1") in red-br. hematitic, very vuggy (~20%, ≤1") matrix. Vugs lined with fine drusy qtz and ~2% botryoidal malachite.

Ended hole at 336' in old "silica ore" stope.

Carlo

Hole No. M-11

Collar location: U.V.X. Mine - 950 level Morgan D.D.S. Mine grid 11,565N 7,060E

Inclination: +25° at collar

Azimuth: 173° (S7°E) at collar

Length: 210 feet

Driller: Longyear Co., Phoenix, AZ Bert Hansen + Dennis Sager, drillers.

Core recovery: ~100% in diorite (0-152') ~80% in chert (152-210')

Dates: April 28 thru May 4, 1987

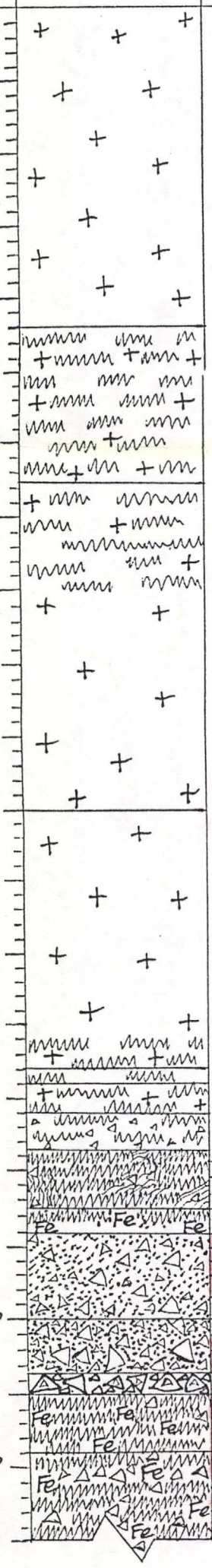
Assayer: Iron King Assay, Inc. - Humboldt, AZ Using fire assay, one assay ton and AA. followup for low grades.

Logger: Don White, geologist.

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core for entire hole. Overall drilling rate 23.3 ft/shift including moving on to hole. (10-hr. shifts, 2 shifts/day)

All drill rods, etc. removed from hole

Last hole from Morgan D.D.S.

Core size	Runs & recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
All NQ core, 1.875" diam.	Skeleton Box A Mostly 5-ft. runs with ~100% core recovery in diorite thru 152 ft.	0-152						≤4% CO_2 veinlets Massive diorite	0-44' Gray-green, massive, equigranular diorite. Kaolinite (pseudomorphing plagioclase + amphibole) chlorite, epidote, plagioclase, leucoxene, ± quartz, hematite, carbonate (calcite, dolomite) veinlets. Clear plutonic relict textures despite clay alt'n + veining. Propylitic alteration with CO_2 veinlets.
								Massive diorite	44'-65' Same as 0-44 but lacking the carbonates; no veinlets or disseminated CO_3.
								Altered diorite "Red blocky schist"	65-110' Gray-green (with red-brown overprint) hematite-veined massive diorite. Kaolinite-sericite-chlorite ± quartz, leucoxene, feldspar (relict plag.) with prominent red-brown hematite veinlets in all orientations. Trace azurite + malachite. Argillic alt'n zone. Old-timers "red blocky schist".
								Heavily clay-alt'd diorite	110'-152' Beige + tan, bleached + intensely clay-alt'd diorite. Kaolinite-quartz ± sericite, chlorite, & hem. traces. Silicic alteration zone of diorite; few relict plutonic textures preserved.
	Box 1 2 3 4 5 6	0-210	Core: .006/.89; .013/2.01; .034/3.79; .126/8.22; .386/7.98; .458/7.98; .310/12.85; .050/4.20; .081/4.08; .186/4.89; .240/7.91; .057/5.53; .290/5.33; .208/10.80; .284/4.12; .476/9.44; .411/7.28					"Massive" chert; "Banded" chert; Ferruginous chert; Silica grit; "Banded" chert breccia; Ferruginous chert	Note: 146-148' Clast of chert, beige/tan, massive, with abundant very tiny (≤1/16") vugs. Intrusive bx frag.(?)
NQ thru E.O.H.			Sludge: .228/9.80; .376/4.65; .050/3.08						152-210+ Chert; variously massive, banded, ferruginous, and "gritty" as follows:
EOH 210'									150'-157' Red-gray, massive chert with ~30% lt. gray + tan clasts (x̄=1/4")
									157-165 Tan-beige, banded chert with ~30% lt. gray + translucent clasts (x̄=1/2"). No vugs or porosity. Exceedingly hard drilling.
									165'-168' Dark red-brown + black, very dense, strongly hematitic chert. Mostly tight with conchoidal frax. but locally gritty + porous.
									168'-180' Mustard yellow, limonitic, silica grit. Very porous and friable. Contains ~30% heterogeneous (gray, red, yellow, tan) 1/16"-2" (x̄=1/2) clasts. Bedding (?) ~45° to core axis.
									180'-187' Yellow and red-brown friable + porous silica grit with ~50% 1/16"-3" (x̄=1") multi-colored clasts.
									187'-190' Tan and tan-gray chert breccia with ~70% 1/4"-6" (x̄=2") tan, lt. gray, translucent gray, + blood red clasts. Many clasts are 2nd generation bx. Possible silica sinter on frax ⊥ CA.
									190'-198' Yellowish chocolate brown, massive, vuggy (~20%) very ferruginous chert with vugs lined by clear, drusy qtz.
									198'-210'+ (EOH) Dark brown and black, vuggy (with drusy qtz. linings) very ferruginous chert with ~40% brown, similar composition clasts (x̄=1").

168'-177' = 9' (~6' true) + flux quality at .32 oz/t Au, 9.7 oz/t Ag + possibly more since sludge assays higher than core 175-190+

Overall intercept 168-210+ (EOH) = 42'+ (29'+ true thickness) at .26 oz/t Au, 7.3 oz/t Ag (+ perhaps better if 175-191' core assays are higher like shafts)

190'-210'+ = 20'+ (14'+ true) .33 Au 7.4 Ag (Not "flux" for high Fe)

Corde

Hole No. M-10

Collar location: U.V.X. Mine - 950 level Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: + 23° at collar

Azimuth: S 17°E (163°) at collar

Length: 278 feet

Driller: Longyear Co. - Phoenix, AZ Bert Hasen & Dennis Sager, drillers.

Core recovery: ~98% thruout; all in diorite

Dates: April 22-28, 1987

Assayer: No assays performed

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. Overall drilling rate 34.75 ft/shift; 10-hr shifts, 2 shifts/day. All drilled NQ. Hole deflected from ≤ 30° intercept to parallel to chert contact and was aborted by geologist. All casing & rods removed from hole.

Core size	Runs & recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
									Note: Hole drilled very oblique to strike (~30° to alt'n zones at collar) and deflected by harder rock closer to chert. Hole ended nearly parallel to strike.
NQ core, 1.875" diam from collar thru E.O.H.	Skeleton box A; Skeleton box B	20, 40, 60						1-2% CO_3 veinlets Massive diorite	∅ - 65' Gray-green, massive, equigranular diorite with ~1-2% carbonate veinlets; generally calcite ± siderite with some quartz and hematite.
	Skeleton box B; Skeleton box C	80, 100, 120						Massive diorite	65'-120' Massive diorite, as above, without carbonate veinlets. Feldspars intact or clearly recognizeable as pseudomorphs. Core surface generally smooth, solid.
	Skeleton box C; Skeleton box D	140, 160, 180, 200						Clay-alt'd diorite with hematite "Red blocky schist"	120'-205' "Red blocky schist" of 1920's. Massive diorite with brick red cast from abundant hematite-lined fractures. Feldspars quite alt'd and crumbly. Cores rough and pitted. Note - 120'-135' Trace to 2% fracture-controlled azurite. Secondary only.
NQ thru E.O.H.	Skeleton box E; Skeleton box F	220, 240, 260, 278 E.O.H.						Heavily clay-alt'd, bleached diorite	205'-278'+ (E.O.H.) Biege and tan, extremely clay-alt'd, bleached, massive to crudely foliated diorite. No remaining feldspars, only clay pseudomorphs. Cores smooth and soapy feeling. Note - 160-278'+ Scattered chert clasts, tan to biege, (½"-3", $\bar{x}$=1") as inclusions (intrusive bx -?) within diorite. This is generally taken as indicative of proximity (≤ 10 ft) of chert contact. Hole intentionally aborted at 278' because of deflection by soft/hard lithology zones so that hole collared at ~30° to alt'n zones is now nearly parallel to strike/dip of diorite/chert contact.
E.O.H., 278'		278 E.O.H.							

Carole

Hole No. M-9

Collar location: U.V.X Mine - 950 Level Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +20° at collar

Azimuth: S 15° W (195°) at collar

Length: 183 feet

Driller: Longyear Co. - Phoenix, AZ Bert Hansen + Dennis Sager, drillers

Core recovery: ~100% in diorite (0-83') ~95% in chert (83'-183')

Dates: April 14-22, 1987

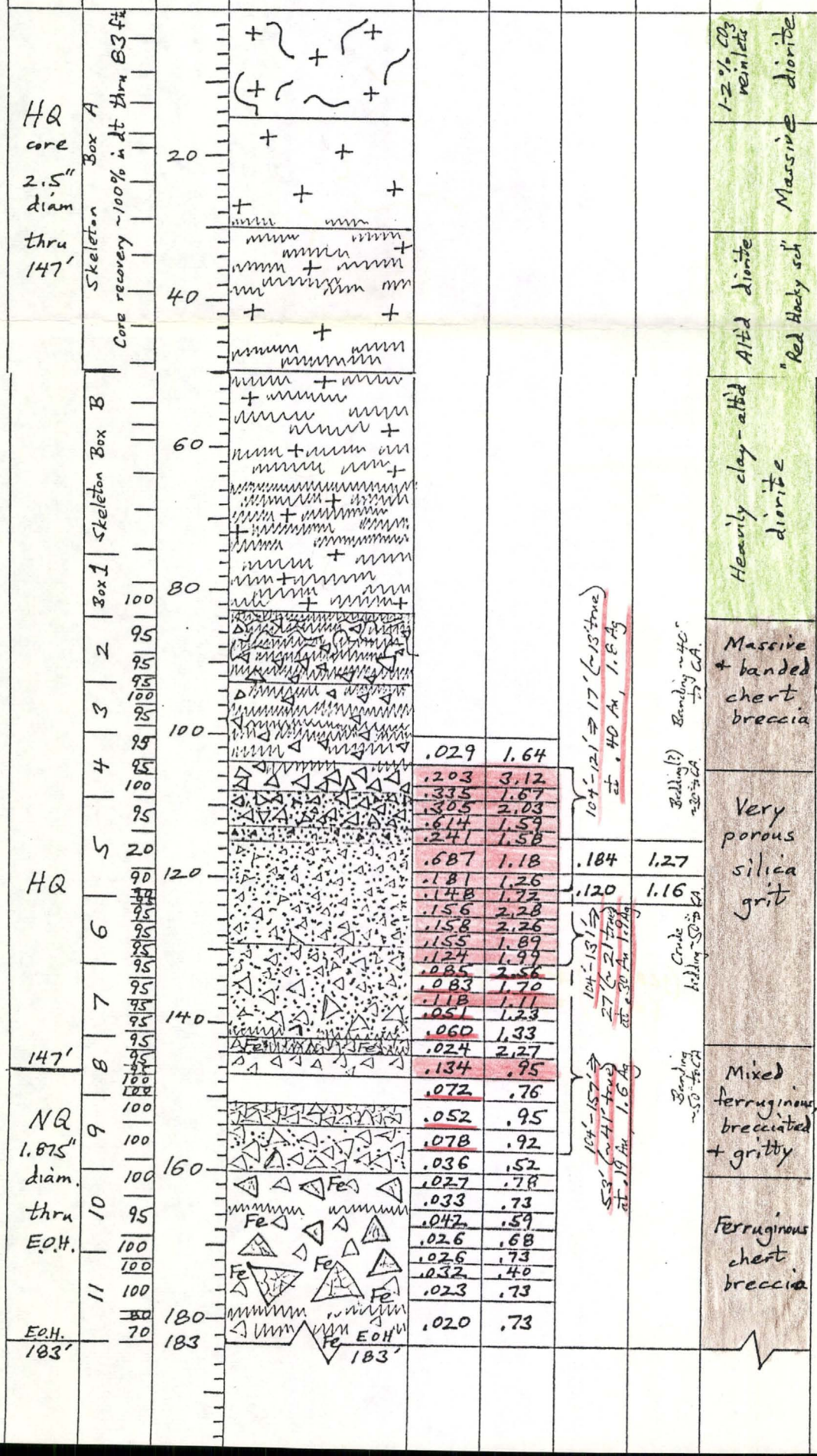
Assayer: Iron King Assay, Inc. - Humboldt, AZ Using fire assay, one assay ton. + AA. followup as appropriate.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. Overall drilling rate ~18.3 ft/shift for 10-hr. shifts, 2 shifts/day.

HQ core to 147 ft. NQ from 147 to 183' (EOH).

All casing + rods removed from hole.



Note: Bedding (?) ~50° to core axis. Therefore true thicknesses are ~77% of drill intercepts.

Lithology

0'-15' Gray green equigranular, massive diorite with 1-2% CO_3 veinlets, generally calcite and siderite, with some quartz and hematite.

15'-30' Same massive diorite, without CO_3 veinlets. Feldspars intact or clearly recognizable as pseudomorphs.

30'-50' Massive diorite with brick red cast from abundant hematite-lined fractures. Feldspars quite altd and crumbly. Cores rough and pitted. So called "red Rocky schist."

50'-83' Extremely clay-altered diorite. Beige and tan, bleached, massive to crudely foliated with no remaining feldspars, only clay pseudomorphs. Cores smooth + soapy feeling

83'-183'+ (EOH) Chert; variously massive, banded, gritty, brecciated, + ferruginous, as follows:

83'-93' Tan brown matrix with ~30% gray, wh, + translucent clasts ($\bar{x}$ = ½"). Greatly contorted flow banding + to more lt. contrast. Larger clasts toward base (93').

93'-104' Tan and purple-white, blotchy matrix with ~30% milky white clasts ($\bar{x}$ = ½"). No vugs, few healed fracs.

104'-108' Yellow-brown to white limonitic matrix with ~50% gray and yellow brown clasts ($\bar{x}$ = 1"). Locally porous + gritty. Some clear 2nd generation breccias.

108'-113' Yellow-brown to white, very friable + very porous, saccharoidal silica grit with ~60% matrix-supported gray-brown + white clasts ($\bar{x}$ = 1").

113'-115' Yellow grit with ~30% fine ($\bar{x}$ = ⅛") light gray clasts

115'-129' Yellow-tan, porous, saccharoidal silica grit with ~30% lt. gray clasts ($\bar{x}$ = ½")

129'-142' Yellow, porous silica grit as above [illegible] lt. gray clasts & larger dimension (to 3

142'-144' Dark red-gray, very dense, very ferru[illegible] clast-supported bx & ~90% red-gray clas[illegible] very hematitic matrix.

144'-147' "Yellow chert bx with ~30% lt. gray

147'-151' Lt. gray, translucent quartz [illegible] may be a single 4-foot [illegible] composition as clasts above

151'-154' Clast-supported bx of ~70% [illegible] clasts ($\bar{x}$ = 1") in lt. gr. + red-brown slightly waxy matrix

154'-160' Yellow to red-brown, locally porous, generally saccharoidal silica grit and bx with ~50% lt. gray, white, + tan clasts ($\bar{x}$ = 2").

160'-183'+ (EOH) Red-brown, very ferruginous (locally up to ~30% Fe) chert bx with ~50% tan + beige clasts (⅛" - 6", $\bar{x}$ = 3"). Most clasts "crackled"; broken in jigsaw puzzle pattern + healed with red-brown hematitic chert.

Corvale

Hole No. M-8

Collar location: U.VX Mine - 950 level Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +40° at collar

Azimuth: S30°W (210°) at collar

Length: 187 feet

Driller: Longyear Co. - Phoenix, AZ. Bert Hansen + Dennis Sager, drillers.

Core recovery: ~100% in diorite (0-74'); ~95% in chert (74-187+)

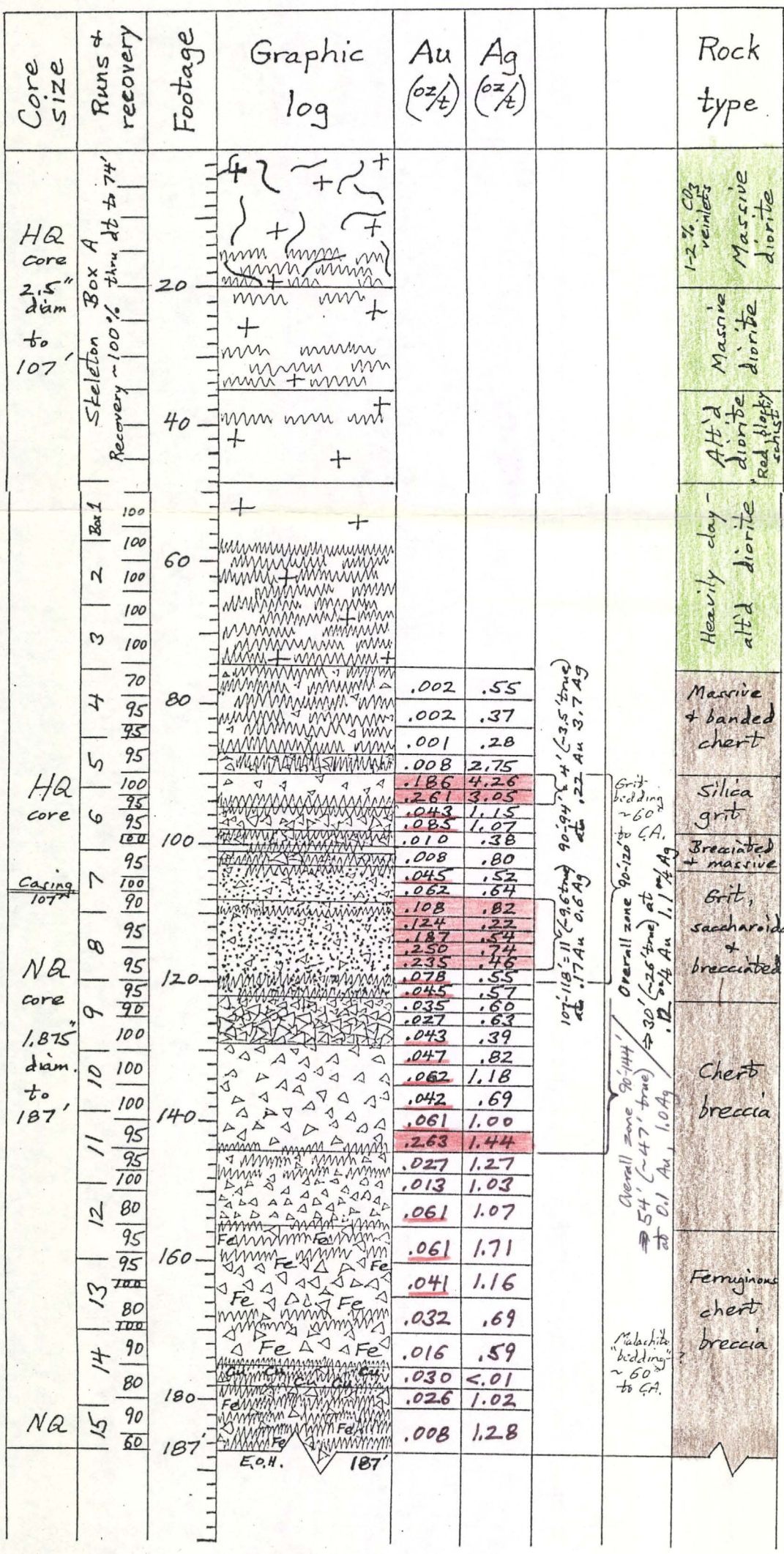
Dates: April 7 thru 14, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using fire assay, one assay ton. + AA followup as appropriate.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. Overall drilling rate 18.7 ft/shift for 10-hr. shifts, 2 shifts/day. HQ core to 107 ft. NQ from 107'-187 ft.

All casing + rods removed from hole.



Footage	Au (oz/t)	Ag (oz/t)
60	.002	.55
80	.002	.37
	.001	.28
	.008	2.75
	.186	4.26
	.261	3.05
	.043	1.15
	.085	1.07
100	.010	.38
	.008	.80
	.045	.52
	.062	.64
	.108	.82
	.124	.22
	.187	.54
	.250	.74
	.235	.46
120	.078	.55
	.045	.57
	.035	.60
	.027	.63
	.043	.39
	.047	.82
	.062	1.18
	.042	.69
140	.061	1.00
	.263	1.44
	.027	1.27
	.013	1.03
	.061	1.07
	.061	1.71
160	.041	1.16
	.032	.69
	.016	.59
	.030	<.01
180	.026	1.02
187'	.008	1.28

0-20' Gray-green, massive, equigranular diorite with ~1-2% carbonate veinlets, generally calcite ± siderite with some gtz. + hem.

20-35' Same massive diorite, without CO_3 veinlets. Feldspars intact or clearly recognizeable as pseudomorphs. Core surface is smooth, solid.

35-48' Massive diorite with brick red cast from abundant hematite-lined fractures. Feldspars quite alt'd and crumbly. Core surface is rough and pitted. So called "red, blocky schist".

48-74' Extremely clay-altered diorite. Dike and tan bleached, massive to crudely foliated with no remaining feldspar, only clay pseudomorphs. Cores smooth + soapy feeling.

74-187+ (E.O.H.) Chert, variously massive, banded, brecciated, and ferruginous as follows:

74-87' Massive, purple-gray with some white redox blotches and ≤ 10% milky white bleb-like clasts ($\bar{x}$ = 1/4")

87-90' Coloration presumably from trace hematite. Massive + banded purple-gray + yellow tan with ~20% lt. gray + wt. clasts ($\bar{x}$ = 1/4"). No open space.

90-95' Mustard yellow silica grit (porous, very fine ss size) with ~10% milky wt. + gray clasts ($\bar{x}$ = 1/4") Clasts exhibit 2nd generation brx in frags up to 2" max.

95-98' Yellow grit matrix with ~60% clasts (1/10-3" $\bar{x}$ = 1") of very heterogeneous color (gray, lt. gray, white, translucent).

98-100' Tan matrix with ~90% gray clast-supp. frags ($\bar{x}$ = 2")

100-101' Same as 74-87'

101-103' Same as 98-100'

103-122' Clean white (103-108') to limonitic (mustard) yellow (108-122') saccharoidal textured silica grit with ~20% lt. gray, white, + translucent clasts. Very porous like fine gr. ss.

122-129' Light red and yellow matrix with 70-80% lt. gray + tan clasts supported brx frags grading from 4" at base to 1/10" at top. Vuggy.

129-144' Yellow-brown + red-brown, matrix supported brx with ~50% lt. gray + yellow-brown clasts ($\bar{x}$ = 1")

144-155' Red-brown matrix-supported brx with ~60% light gray and red clasts ($\bar{x}$ = 1/4").

155-175' Red-brown, very ferruginous (~10% Fe-?) matrix supported brx with ~50% gray clasts ($\bar{x}$ = 1")

175-178' Massive + banded, lime green, copper carbonate (malachite) with ~10% lt. gray + red-brown ferruginous chert clasts ($\bar{x}$ = 1/4"). Setting + conformable banding (~60° to core axis) suggests primary (hypogene oxide) deposition.

178-187+ Red-brown, very ferruginous (~6% Fe-?) matrix-supported brx with ~40% lt. gray + tan clasts ($\bar{x}$ = 1")

Last 10' of core tectonicly brecciated indicating proximity to sheared contact with diorite, probably at ≤ 200'.

Cerde

Hole No. M-7

Collar location: U.V.X. Mine – 950 level Morgan RDS. Minegrid 11,565 N 7,060 E

Inclination: +25° at collar

Azimuth: S 60° W (240°) at collar

Length: 129 feet

Driller: Longyear Co. – Phoenix, AZ
Burt Hansen + Dennis Sager, drillers.

Core recovery: ~100% in dt (ϕ–84')
~87% in chert + fault gouge (84'–129')

Dates: March 31 thru April 7, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ
Using Fire Assay, one assay ton. + A.A. followup as appropriate.

Logger: Don White, geologist.

Remarks: Drilled with Longyear 34 pneumatic rig. HQ core to 125', NQ 125'–129' (E.O.H.) Overall drilling rate 12.9 ft/shift for 10-hr. shifts, 2 shifts/day.

All casing + steel removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type
HQ core 2.5" diam. thru 125'	Box A: Skeleton ~100% core recovery in dt thru 84'	20						CO3 veinlets; Massive diorite
		40						Alt'd diorite; "Red Blocky schist"
	Box B: 1	60						Heavily clay-altd diorite
	2	80						
	3			.009	.61			Banded chert
	4	100		.003	.65			
	5			<.001	.24			
HQ 125'	6	120		<.001	.26			
NQ	7			<.001	.29			
	8	129'	E.O.H.	<.001	<.01			Fault gouge
				<.001	.10			
				<.001	.15			129' EOH

Box 1: 100 100 100 100 100 100 100 100
Box 2: 100 100
Box 3: 90 50 95
Box 4: 100 95 100
Box 5: 100 50 80
Box 6: 95 90
Box 7: 100
Box 8: 100 90

Note: Bedding probably ~60° to core axis. Therefore intercept thicknesses must be multiplied by .67 for true thicknesses.

Lithology

ϕ–10' Gray-green, med. grained, massive, equigranular diorite with 1–2% carbonate veinlets ≤ ¼" thick. Veinlets mostly calcite ± siderite ± qtz/hem.

10'–35' Same dt as ϕ–10' but without CO_3

35'–49' Diorite with abundant hematite-lined fractures. Drills red and clayey. Feldspars mostly replaced by clays. Core surface is rough, pitted, incompetent. So-called "red blocky schist" of Fearing + Ransome, etc.

49'–84' Biege + tan, heavily bleached and clay-altered diorite. Medium grained, massive to crudely banded (flow banding near intrusive contact + chilled margin–?) with feldspars completely destroyed and replaced by clays. H ~ 6.5. Cores smooth + soapy feeling

84'–113' Chert, variously massive, banded, and brecciated as follows:

84'–85' Red-brown silica grit at contact. Fine-grained, porous.

85–94' Tan-brown and purple (rippled and mottled) massive chert with crude banding ~45° to core axis. No vugs or fractures. Very hard.

94'–113' Yellow-tan banded chert with some red-purple bands and blotches and ~30% milky white + translucent gray clasts (x = ½").

113'–129'+ Verde fault gouge as follows:

113–120 Tan-biege, bleached + clay-altd diorite with 10–30% tan chert clasts as bx frags.

120–122 Gray-green diorite gouge.

122–125 Same as 120–122 plus ~5% azurite (supergene)

125–129 Blue-green, very clayey diorite gouge (plugs bit!)

Conde

Hole No. M-6

Collar location: U.V.X. Mine - 950-level Morgan D.D.S. Mine grid: 11,565 N 7,060 E

Inclination: +30° at collar

Azimuth: 178° (S 2° E) at collar

Length: 195 feet

Driller: Longyear Co. - Phoenix, AZ
Burt Hansen + Dennis Sager, drillers.

Core recovery: Generally 100% in dt (0-133')
~90% in massive + banded chert (133'-143')
~25% in gritty, auriferous chert (143-E.O.H.)

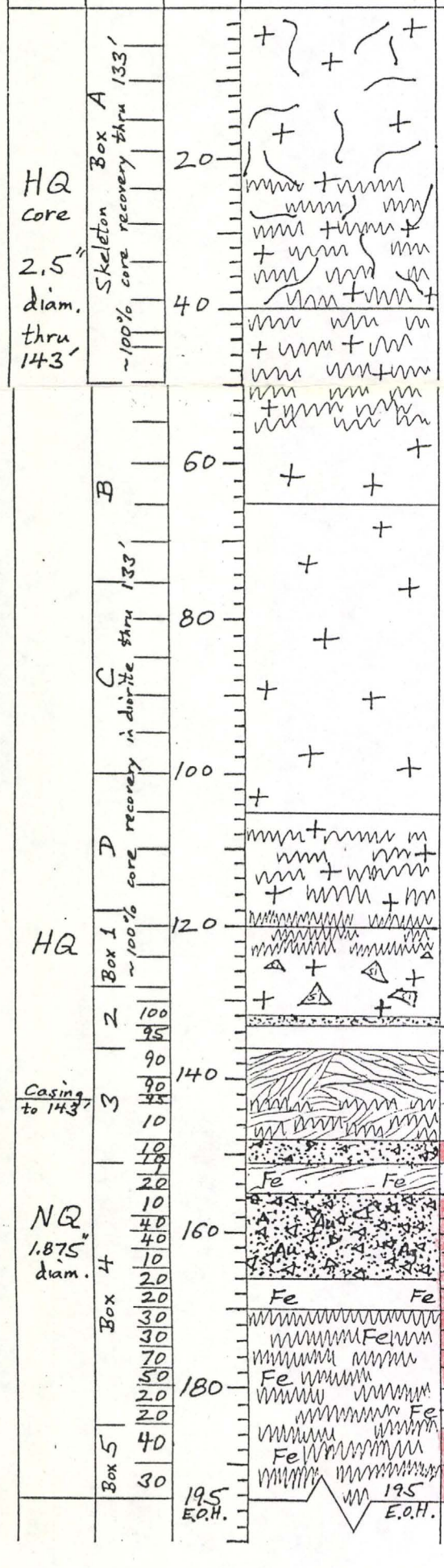
Dates: March 24 thru 31, 1987

Assayer: Iron King Assay, Inc. Humboldt, AZ
Using Fire assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core thru 143 feet. NQ core 143'-195' (E.O.H.)
Overall drilling rate 17.7 ft./shift for 10-hour shifts, 2 shifts/day, including moving, setup, pulling casing, etc. All casing + other steel removed from hole.
Circulation lost ~90% from 185'-195' (E.O.H.) which was likely in caved 903-int. level stope.

Note: Bedding ~45° to core axis. Therefore true thicknesses are ~70% of drill intercepts.



Au (oz/t)	Ag (oz/t)	Au (oz/t)	Ag (oz/t)
.003	.23		
.001	.31		
.004	.34		
.003	.31	.002	.19
.002	.73	.097	2.49
.222	9.18	.238	9.41
.060	18.46	.067	7.53
.133	12.14	.335	10.54
.446	5.84	.430	7.69
.804	5.64	.285	6.27
.346	9.00	.199	5.14
.215	3.95	.116	3.23
.180	2.03	.250	6.05
.682	5.92	.528	5.16
.287	5.33	.332	4.03
.255	4.22	.304	4.12
.103	3.71	.223	3.61
.080	2.20	.153	2.16
.080	2.04	.101	1.55
.152	3.60	.176	2.41
.307	7.16	.105	3.21

Rock type:
- ≤2% Carbonates — Massive diorite
- Massive diorite
- Altered diorite ("Red blocky schist")
- Heavily alt'd + bleached diorite
- Heavily alt'd diorite with intrusive bx frags
- Silica-rich zone
- Massive chert
- Yellow, banded chert
- Red + yellow gritty chert
- Red-brown very ferruginous chert

Lithology

Ø-40' Gray-green, massive, equigranular diorite ~1-2% carbonate veinlets, generally calcite, ± siderite, ± qtz, and hem. Feldspars intact or recognizeable as pseudomorphs. No apparent foliation or preferred veinlet orientation. Veinlets mostly ≤ 1/4". Core is smooth surfaced.

40'-65' Similar to Ø-40' but without veinlets and feldspars are more clay-alt'd.

65'-105' Similar to above except for increased clay alteration of feldspars, more abundant hematite-filled fractures and hem. stain, and less competency to core.

105'-120' Extremely altered diorite. Beige to tan, massive to crudely foliated, bleached and totally clay altered. Relict feldspars barely recognizable.

120'-128' Same as 105'-120' but including several intrusive bx chert clasts (notably at 127', 129?) Milky white, fractured chert frags in tan and pale gray banded, bleached alt'd matrix.

128'-132' Purple + white, blotchy, heavily alt'd diorite.

132'-133' Red-brown, gritty "contact chert". Like fine grained sandstone.

133'-136' Gray, massive (hornfelsed-?) chert

136'-139' Yellow-tan, banded, with ~20% lt. gray clasts (x̄ = 1")

139'-140' Brown mud, apparently in place; significance unknown

140'-148' Yellow-tan banded si with ~30% milky wt + gray clasts (x̄ = 2")

148'-151' Red brown + tan silica grit, saccharoidal texture with ~10% lt. gray clasts (x̄ = 1/4"). Porous.

151'-155' Red, massive + banded hematitic ironstone with microcrystalline qtz-lined fractures. Very dense

155'-166' Red-brown + lt. gray silica grit. Saccharoidal with ~40% heterogeneous clasts (tan, gray, milky wt, red-br, x̄ = 1/2"). Porous. Fine gr. sand size particles.

166'-170' Brown ironstone. Very dense, vuggy.

170'-195'+ Gray brown to black, very dense, vuggy ironstone, ~20% vugs ≤ 1". Cavities lined with yellow, crusty + powdery looking mineral displaying micro-botryoidal form.

195' (158'-177') ⇒ ~14' true at .40 Au, 5.2 Ag

47'+ (148'-195'+) ⇒ ~33'+ true at .26 Au, 6.7 Ag including last 10' into caved stope.

Note: Lost most (~90%) circulation at 185', probably in caved stope above 903-int level.

Verde

Hole No. M-5

Collar location: U.V.X. Mine – 950-level Morgan D.D.S. Mine grid. 11,565 N 7,060 E

Inclination: +10° at collar

Azimuth: 178° (S2°E) at collar

Length: 198 feet

Driller: Longyear Company – Phoenix, AZ
Burt Hansen & Dennis Sager, drillers.

Core recovery: ~100% thru 177' (mid-13's)
~45% in chert 177–198 (E.O.H.)
~66% in chert overall (164–198)

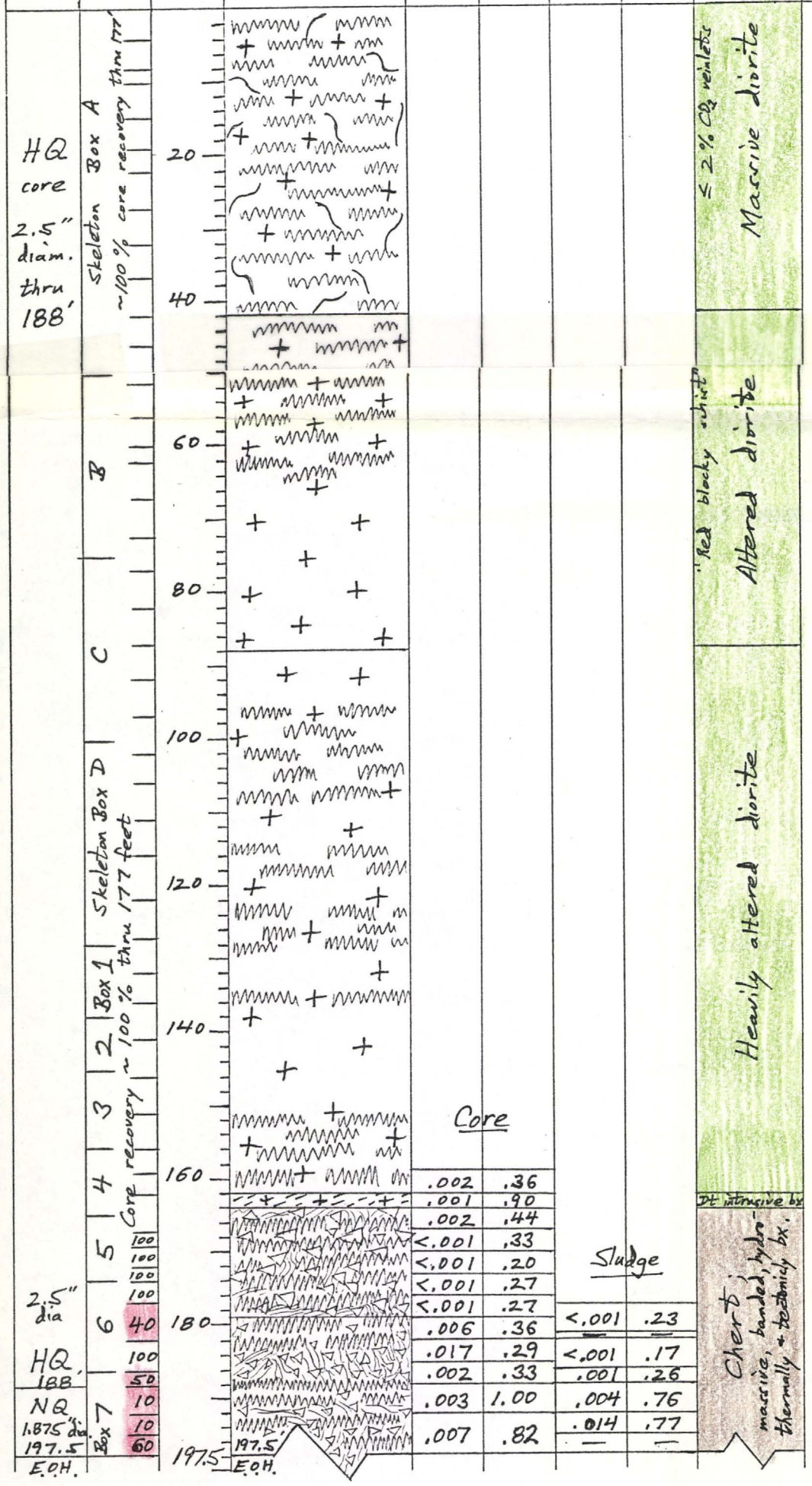
Dates: March 12–23, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ
Using fire assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core thru 188 ft. NQ core 188'–198' (E.O.H.).
Overall drilling rate = 15.2 ft/shift for 13 shifts (mostly 10-hr. shifts, 2 shifts/day)
Hole terminated slightly short of Verde fault (~5 ft.–?) in very hard, shattered chert.

All rods & casing removed from hole.



Ø–42' Gray-green, massive, equigranular diorite. ~1–2% carbonate veinlets, generally calcite ± siderite ± quartz and hematite. No foliation or clearly preferred veinlet orientation. Veinlets generally ≤ 2 mm thick.

42'–88' "Red blocky schist". Altered and hematite-stained diorite. Similar to above but feldspars pseudomorphed by clay minerals and randomly oriented fractures filled with red hematite. Trace native copper and up to 3% locally.

88'–162' Heavily clay-altered and bleached diorite. Plutonic texture almost completely masked. Beige to pale gray color. Soapy feeling. Some foliation either from metamorphism of pluton + its alteration products or from marginal flow-banding. H ~ 6.5 Cores smooth

162'–164' Extremely altered, fluxed, + flow-banded diorite with intrusive breccia incorporating chert wall fragments. Yellow and red-brown diorite with ~50% lt. gray chert clasts (x̄ = 1/4")

164'–198' Chert

164'–179' Tan-brown to dark gray banded cherts with ~70% gray clasts (x̄ = 1") Trace–2% vugs (≤ 1/4") and locally abundant healed frax.

179–197.5+ Tan-brown to dark gray flow-banded (?) cherts with ~50% milky white, tan, light gray (translucent) and some blood red clasts (x̄ = 1/2") ≤10% vugs (≤ 1/10") and hydrothermal fractures injected and healed with silica.

Hole ended in tectonically shattered chert near (≤5'–?) fault

Candle

Hole No. M-4

Collar location: U.V.X. Mine-950 Level Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +50° at collar ~+48° at 290' by acid etch.

Azimuth: 178° (S2°E) at collar

Length: 295 feet

Driller: Longyear Co. – Phoenix, AZ
Burt Hansen + Dennis Sager, drillers

Core recovery: ~100% in dt thru 100',
~95% in si, 100'–223',
~80% in si, 229'–280'
∴ ~90% in chert overall

Dates: Feb. 26 through March 12, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ
Using fire assay, one assay ton and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core to 153', NQ from 153' to 223'. Hit void at 223'–229'; cased across it with 10' BQ rod set 1.5' into far wall. BQ core from 229 thru 295' E.O.H.

All casing + rods pulled; no steel left in hole. Overall drilling rate 15.5 ft/shift 2 shifts of 10 hr. each per day.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type
HQ core, 2.5" diam. thru 153'	Box 1 100	0						~2% Carbonates Massive diorite
	Box 2 100							
	Box 3 100							
	4 100	20						
	5 100	40						No CO3 Massive diorite
	6 100							
	7 100	60						
	8 100							Altered diorite ("Red blocky schist")
	9 100	80						
	10 100			Core		Sludge		Heavily clay altered + bleached diorite
	11 ~95	100		<.001	.30			
	~95			.004	.28			Massive + banded chert
	~95		Fe	.015	.96			
	~95		Fe Fe Fe	.090	11.64	.020	1.08	Iron-stone
	12 ~95			.123	4.00			
	~95			.074	1.39	.018	.78	Chert breccia
	~95			.301	2.52	.101	1.71	
	13 ~95	120		.221	5.50			
	~95		Fe Fe	.123	1.97	.068	1.19	
	~95		Fe Fe	.181	1.81			
	~95		Fe	.081	1.58	.055	1.21	107'–130' = 23' (~12' true) at .14 Au, 3.4 Ag Chert, breccia, iron-stone
	14 ~95		Fe	.037	1.69	.055	1.43	
	~95			.032	1.66			
	15 ~95	140		.045	2.28	.031	1.52	
	~95			.078	2.36	.053	1.72	
HQ core	16 ~95			.080	1.97	.050	1.25	
Casing	~95			.037	1.64			
	17 ~95			.059	1.12			
NQ core	160			.033	.89			
1.875" diam.	18 100			.020	.84			
	100			.043	.60			
	19 100			.037	1.22			
	100			.062	1.84			
	100	180		.055	1.78			
	20 100			.029	2.34			
	100			.374	1.45			190'–203' = 13' (~7' true) at .29 Au, 2.1 Ag
	21 100			.253	2.83			
	80	200		.206	1.94			
	95			.050	.96			Brecciated chert
	22 95		Cu	.032	.60			
	100			.035	1.41			
NQ core	23 100		Cu	.038	.75			
	100	220	Cu	.059	1.41			
Void	100	VOID	800-level workings	Old Workings				
	24 50		Fe	.080	.79			
BQ core	80	240		.035	.52			
	95			.026	.51			
1.43" diam thru E.O.H.	25 95		Fe	.017	.65			
	80			.012	.61			
	95		Fe	.011	.19	.020	.50	Ferruginous (hematitic) chert breccia
	20	260		.001	.18			
	26 70			.001	.26	.012	<.01	
	100			.007	.17			
	95		Fe Fe	.009	.69	.008	.76	
	27 80			.005	.47			
	95	280		.002	.12			
	Box 28 95							Heavily alt'd + bleached diorite
	95							
295' E.O.H.	29 100	295 E.O.H.						

★ Note: Hole intercepts bedding of cherts at ~30° to core axis. Therefore true thicknesses only about 50% of drill hole intercepts.

Lithology

0'–30' Gray-green, massive, equigranular diorite. ~1–2% carbonate veinlets, generally calcite ± siderite ± quartz and hematite. No apparent foliation or preferred veinlet orientation. Feldspars pseudomorphed but recognizeable.

30'–57' Same diorite but no CO_3 veinlets.

57'–83' Altered diorite or "red blocky schist" of old terminology. "Grotty" coring as result of clay alteration and disintegration of feldspar pseudomorphs. Much red hematite on abundant fractures. Trace native Cu.

83'–100' Extremely altered diorite; now biege-color, massive to crudely foliated (flow foliation near chilled margin?). "Soapy" feeling, smooth coring surface. 95'–100' incorporates some chert clasts as intrusive breccia.

100'–280' — Chert — variously banded, brecciated, ferruginous, and auriferous as follows:

100'–104' – Massive and banded red-br. + yel-br with ~10% lt. gray clasts ($\bar{x}$ = ½").

104'–107' – Dense, ferruginous, red + yellow chert with ~40% large, angular clasts ($\bar{x}$ = 1")

107'–109' – Red, very iron-rich (FeO ~50%) with ~20% gray, yellow, + red clasts ($\bar{x}$ = ½")

109'–120' – Porous, red + yellow matrix supported chert bx with ~60% lt. gray, rubrounded clasts ($\bar{x}$ = 1") Rounding by assimilation or tumbling (?)

120'–135' – Red-brown + yellow, very iron rich (~50% FeO) with ~30% gray + red-br. clasts ($\bar{x}$ = 1"). Abundant fractures with ragged black FeO coatings. ~10% vugs.

135'–150' – Red-br. + Yel.-br. matrix with ~40% gray, red-br. + yel. br clasts ($\bar{x}$ = 2") exhibiting 2nd generation breccia textures, hydro-frax + flow bx. ~15% vugs lined with trace malachite.

150'–154' – Clast-supported bx with ~70% milky white + banded yel-br. clasts ($\bar{x}$ = 3") in red-br + yel-br. matrix

154'–190' – Yellow-brown matrix-supported bx with ~30% white + brown clasts ($\bar{x}$ = ½"). Tr. malachite on fractures

190'–206' – Yellow-brown matrix-supported chert bx with ~30% white + brown clasts ($\bar{x}$ = 1") and trace malachite on fractures. ~5% vugs and open fractures.

206'–223' – Yellow brown matrix-supported bx with ~30% white + brown clasts ($\bar{x}$ = 1"). About 5% fractures + vugs. Most filled with copper oxides. Rock ~5% malachite, ~1% azurite, and ~1% soft, pale blue-green, crumbly, hydrous CuO mineral. Banding of matrix ~30° to core axis. Therefore true thickness of units ~50% of drill intercept thickness.

229'–259' – Clast-supported bx with ~80% white and gray clasts ($\bar{x}$ = 1") in red-brown to black, hematite facies chert. Very ferruginous, hydrothermally fractured + tightly SiO_2 + FeO – healed. Fe occurs locally as fg. + massive specular hematite, elsewhere as earthy hematite.

259'–264' – ~90% red-brown translucent quartz. Either one large clast (~5ft) or else a massive qtz vein. Other 10% is tan, translucent qtz.

264'–267' – Tan, banded, blotchy, + swirly patterned marble-like chert. Tight, no vugs, ~10% gray clasts ($\bar{x}$ = ¼")

267'–280' – Red-brown, hematitic, matrix-supported bx of ~50% red-gray clasts ($\bar{x}$ = ½"). Tectonically brecciated, as well as primary syn-depositional volcaniclastic bx.

280'–284' Diorite wall rock, tan + biege, bleached, heavily clay alt'd. Includes ~50% chert bx clasts as intrusive wall rock breccia.

284'–295' Diorite; heavily clay-altered. Plagioclase pseudomorphs still recognizeable. Smooth core surface but so crumbly it disintegrates upon touching. Broken by proximity to Verde fault and constriction in tight fold here. Fractures lined with bright green, botryoidal malachite.

Carole

Hole No. M-3

Collar location: U.V.X. Mine - 950 Level Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +20° at collar

Azimuth: 178° (S2°E) at collar

Length: 233 feet

Driller: Longyear Co. - Phoenix, AZ
Burt Hansen + Dennis Sager, drillers

Core recovery: Generally ~100% in dt (0-131')
~90% in massive/banded si (131'-146')
Only ~50% in Au-rich si grit (146'-185')
~70% in Fe-rich chert bx (185'-233')

Dates: Feb. 17 thru Feb. 26, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ
Using fire assay, one assay ton, and A.A. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core to 145'; NQ from 145'-233' (E.O.H.) Overall drilling rate 16.6 feet per shift (10 hr. shifts, 2 shifts/day) including moving, setup, pulling casing, etc. Hole aborted by drillers at void where tools (core barrel, one rod, bit, etc) lost in void (233'-240') when driller spun rods in void + failed to set casing shoe. All casing + other steel removed.

Note: Bedding ~45° to core axis. Therefore true thicknesses are ~70% of drill intercepts.

Core size	Runs + recovery	Footage	Graphic log	Core Au (oz/t)	Core Ag (oz/t)	Sludge Au	Sludge Ag	Rock type	Lithology
HQ core 2.5" diam. thru 145'	Box 1	0-20						≤2% Carbonates Massive diorite (subvolcanic intrusion)	0-45' Gray green, massive, equigranular diorite. ~1-2% carbonate veinlets, generally calcite ± siderite, ± quartz and hematite. No foliation in rock. No preferred orientation (?) to veinlets. Veinlets generally ≤2 mm thick. Core surface is smooth. Feldspars intact or recognizeable as pseudomorphs.
	Box 2	20-40							
	Box 3								
	4								
	5								
	6	60-80						Altered diorite	45'-80' Similar but feldspars disintegrated and clay alteration not very competent. Result is a "gritty" core surface. Much red hematite on randomly oriented fractures. Trace to 1% native Cu with FeO in fracs.
	7	80-100							
	8								
	9	100-120						Heavily clay-altered diorite	80'-131' Extremely altered diorite. Now biege colored, massive to crudely foliated (flow-foliation?) bleached, and clay-altered. Soapy feeling. Cores smooth and intact where not too broken. Several shattered chert clasts are caught up in wall rock at 129'-131'. This is taken to be intrusive breccia. Diorite-chert contact is ~45% to core axis.
	10								
	11								
	12								
	13								
HQ	14	120-140		<.001	.34	<.001	.22	Chert, banded & massive	131'-233'+ Chert; variously massive, banded, brecciated, saccharoidal, hematitic, etc.
	15			<.001	.26	<.001	.17		131'-135' Massive, purple brown chert with ≤5% lt. gray clasts (x̄ = 1/8")
				<.001	.25	<.001	.12		135'-146' Banded (~45° to core axis) tan-brown chert with ~40% lt. gray clasts (x̄ = 1/2").
				.005	.29	.003	.28		
Casing 145'				.004	.80	.003	.25		
				.005	.53	.061	.76		
NQ core 1.875" diam. thru 233' (E.O.H.)	16	140-160		.066	3.74	.059	3.55	Chert grit, Matrix-supported bx with silica grit predominating	146'-149' Silty, varicolored (purple, red, yellow) containing ~20% porous clasts (x̄ = 1/8")
				.161	11.55	.815	7.86		149'-153' Yellow + tan, silty to sugary, with ~30% clasts (x̄ = 1/4").
				1.216	6.26				153'-156' Saccharoidal, porous, with swirly colored bands and ~50% clasts (x̄ = 1")
	17			.447	58.72	.997	40.26		156'-171' Silica grit; very fine grained. Tan color with delicate and subtle color banding ~45° to core axis. Only ~2% gray & tan clasts (x̄ = 1/16"). Very porous & crumbly. Hydraulics away ahead of drill water yielding poor core return.
				1.045	53.89				
				1.541	65.11				
				.916	35.42	.631	35.48		
				1.113	31.86	.726	28.66		
				1.379	34.23	.955	35.80		
				.839	56.16				
				.321	15.95	.571	41.11		
	18	180-200		.134	3.76	.174	7.64	Chert breccia	171'-185' Silica grit, tan to mustard yellow, with 10-20% white to gray + yellow clasts (x̄ = 1/4"). Very porous.
				.045	1.11	.236	22.80		
				.110	1.88	.182	4.26		
				.065	1.90				
	19			.094	5.48	.109	3.66		185'-188' Clast-supported bx (~80% lt. gray clasts x̄ = 3") in yellow, limonitic matrix
				.157	4.66	.127	5.50		188'-198' Matrix-supported bx with ~50% gray + [illegible] matrix.
				.062	2.92	.119	5.37		
	20	200-220		.249	2.91				
				.509	11.16	.117	4.41		198'-204' Mustard yellow silica grit with ~30% lt. gray clasts (x̄ = 1/2") Porous.
				.029	1.03			Chert, brecciated + hematitic	
				.190	1.99	.102	2.00		204'-216' Red-brown, hematite-rich, dense, iron-stone (~60% FeO-?) Non-magnetic, ~10% lt. gray to white clasts (x̄ = 1/4")
				.093	2.83				
				.103	2.70	.087	3.54		
NQ	21	220-240		.122	3.51	.128	4.31		216'-221' Clast-supported ironstone bx with ~70% red-br. clasts (x̄ = 1/2") in ~40% FeO matrix.
				.099	5.34	.053	3.59		
				.052	1.36	.089	3.56		221'-233' Same as 216-221 but matrix-supported (~30% clasts, x̄ = 1/4")
	22			.033	1.35				
	Void	240	Void - old workings 903 Int. level -?					Void	233'-240' Void - probably silica ore (Cu-Au) stopes at the 903 intermediate level unless hole drifted laterally into the 903-950 raise or other workings.

34' (151'-185') at .88 oz/t Au, 32.5 oz/t Ag [~24' true]

58' (146'-204') at .57 Au, 20.5 Ag [~40' true]

80' (146'-226') at .44 Au, 15.8 Ag [~56' true]

To replace M-3 log with error on calculated gold intercept

DCW

To replace M-3 log with error on calculated gold intercept

DCW

Reproducible — Disregard if old —

Hole No. M-3

Collar location: U.V.X. Mine - 950 Level Morgan D.D.S. Mine grid 11,565N 7,060E

Inclination: +20° at collar

Azimuth: 178° (S2°E) at collar

Length: 233 feet

Driller: Longyear Co. - Phoenix, AZ Burt Hansen + Dennis Sager, drillers

Core recovery: Generally ~100% in dt (0-131')
~90% in massive/banded si (131'-146')
Only ~50% in Au-rich si grit (146'-185')
~70% in Fe-rich chert bx (185'-233')

Dates: Feb. 17 thru Feb. 26, 1987

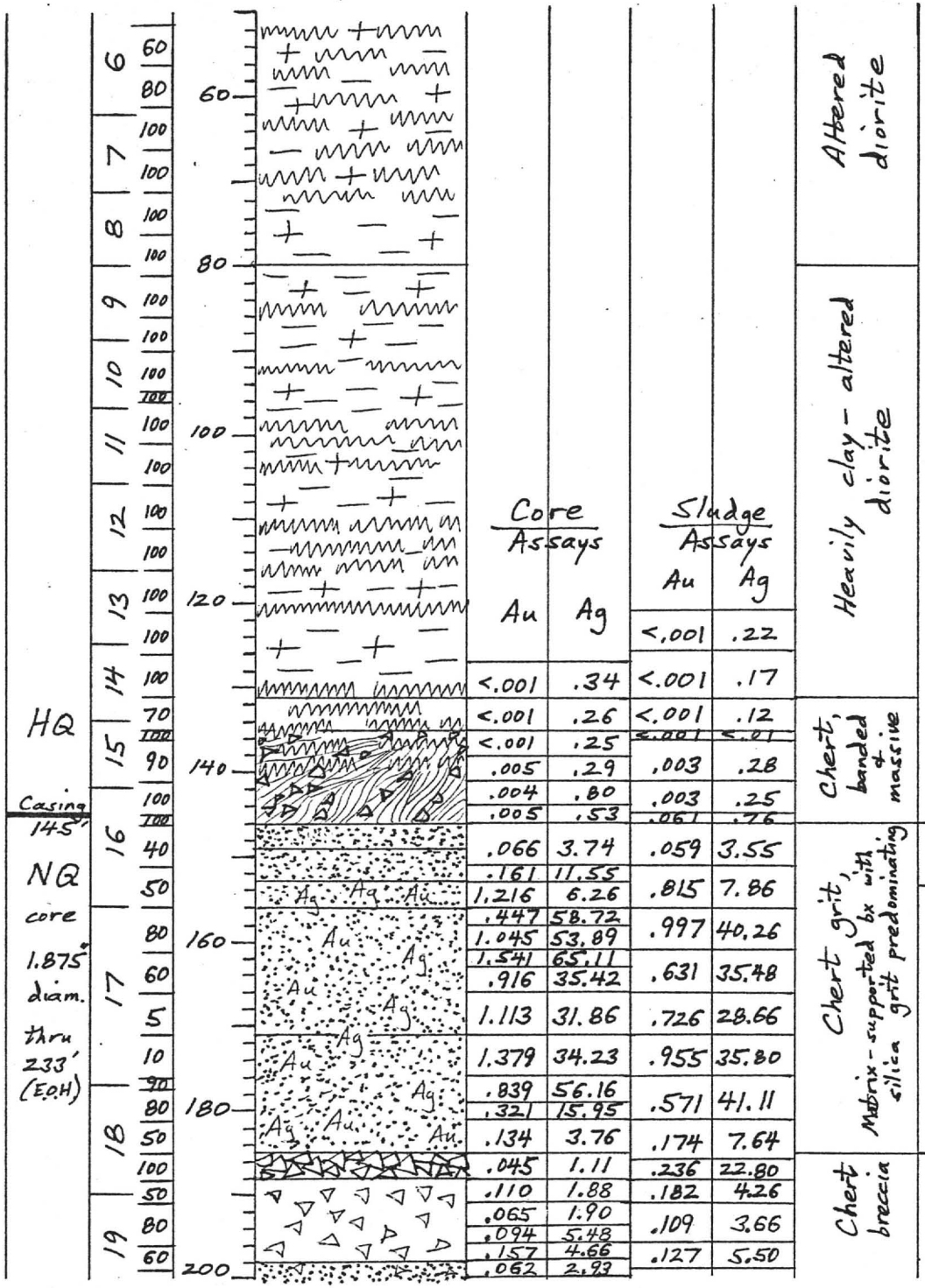
Assayer: Iron King Assay, Inc. - Humboldt, AZ
Using fire assay, one assay ton, and A.A. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core to 145'; NQ from 145'-233' (EOH.) Overall drilling rate 16.6 feet per shift (10 hr. shifts, 2 shifts/day) including moving, setup, pulling casing, etc. Hole aborted by drillers at void where tools (core barrel, one rod, bit, etc) lost in void (233'-240') when driller spun rods in void + failed to set casing shoe. All casing + other steel removed.

Core size	Runs + recovery	Footage	Graphic log	Core Au (oz/t)	Core Ag (oz/t)	Sludge Au	Sludge Ag	Rock type	Lithology
HQ core 2.5" diam. thru 145'	Box 1: 20, 100 / Box 2: 100, 100 / Box 3: 100, 100 / 4: 100, 100 / 5: 100, 100	20 / 40						≤2% Carbonates Massive diorite (subvolcanic intrusion)	Note: Bedding ~45° to core axis. Therefore true thicknesses are ~70% of drill intercepts.

Ø-45' Gray green, massive, equigranular diorite. ~1-2% carbonate veinlets, generally calcite ± siderite, ± quartz and hematite. No foliation in rock. No preferred orientation (?) to veinlets. Veinlets generally ≤2mm thick. Core surface is smooth. Feldspars intact or recognizeable as pseudomorphs.



Core Assays Au	Core Assays Ag	Sludge Assays Au	Sludge Assays Ag
		<.001	.22
<.001	.34	<.001	.17
<.001	.26	<.001	.12
<.001	.25	<.001	<.01
.005	.29	.003	.28
.004	.80	.003	.25
.005	.53	.061	.76
.066	3.74	.059	3.55
.161	11.55		
1.216	6.26	.815	7.86
.447	58.72		
1.045	53.89	.997	40.26
1.541	65.11		
.916	35.42	.631	35.48
1.113	31.86	.726	28.66
1.379	34.23	.955	35.80
.839	56.16		
.321	15.95	.571	41.11
.134	3.76	.174	7.64
.045	1.11	.236	22.80
.110	1.88	.182	4.26
.065	1.90		
.094	5.48	.109	3.66
.157	4.66		
.062	2.93	.127	5.50

45'-80' Similar but feldspars disintegrated and clay alteration not very competent. Result is a "grabby" core surface. Much red hematite on randomly oriented fractures. Trace to 1% native Cu with FeO in frax.

80'-131' Extremely altered diorite. Now biege colored, massive to crudely foliated (flow-foliation?) bleached, and clay-altered. Soapy feeling. Cores smooth and intact where not too broken. Several shattered chert clasts are caught up in wall rock at 129'-131'. This is taken to be intrusive breccia. Diorite-chert contact is ~45% to core axis.

131'-233'+ Chert; variously massive, banded, brecciated, saccharoidal, hematitic, etc.

131'-135' Massive, purple brown chert with ≤5% lt. gray clasts ($\bar{x}$ = 1/8")

135'-146' Banded (~45° to core axis) tan-brown chert with ~40% lt. gray clasts ($\bar{x}$ = 1/2").

146'-149' Silty, varicolored (purple, red, yellow) containing ~20% porous clasts ($\bar{x}$ = 1/8")

149'-153' Yellow + tan, silty to sugary, with ~30% clasts ($\bar{x}$ = 1/4").

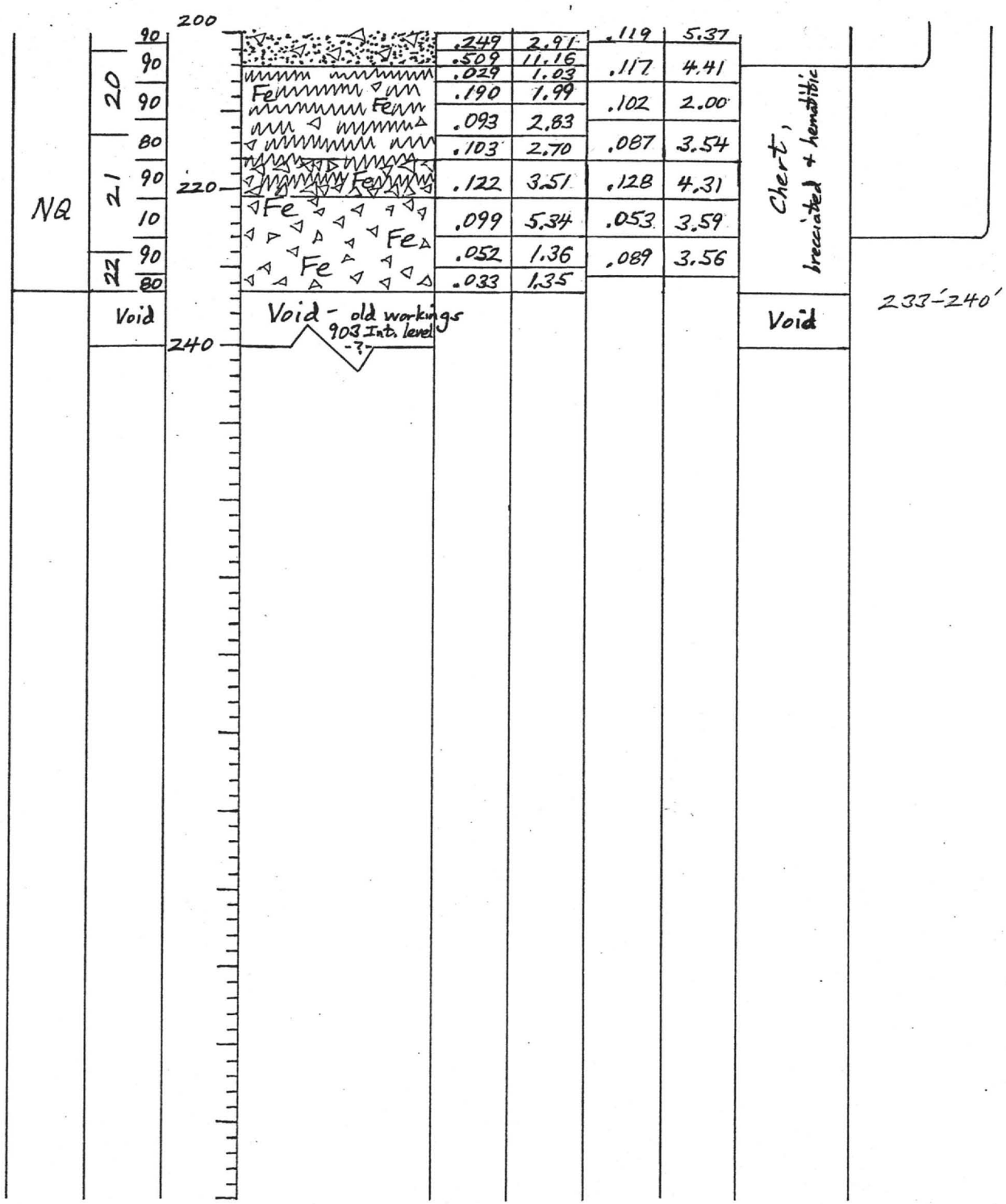
153'-156' Saccharoidal, porous, with swirly colored bands and ~50% clasts ($\bar{x}$ = 1")

156'-171' Silica grit; very fine grained. Tan color with delicate and subtle color banding ~45° to core axis. Only ~2% gray & tan clasts ($\bar{x}$ = 1/16"). Very porous & crumbly. Hydraulics away ahead of drill water yielding poor core return.

171'-185' Silica grit, tan to mustard yellow, with 10-20% white to gray & yellow clasts ($\bar{x}$ = 1/4"). Very porous.

185'-188' Clast-supported (~80% lt. gray clasts $\bar{x}_i$ = .3") in yellow limonitic matrix

188'-198' Matrix-supported bx with ~50% gray & red-gray clasts ($\bar{x}$ = 1/2") in red-br. & yel. br matrix.



198'-204' Mustard yellow silica grit with ~30% lt. gray clasts ($\bar{x}$ = ½") Porous.

204'-216' Red-brown, hematite-rich, dense, iron-stone (~60% Fe_2O_3?) Non-magnetic. ~10% lt. gray to white clasts ($\bar{x}$ = ¼")

216'-221' Clast-supported ironstone bx with ~70% red-br. clasts ($\bar{x}$ = ½") in ~40% FeO matrix.

221'-233' Same as 216-221 but matrix-supported (~30% clasts, $\bar{x}$ = ¼")

233'-240' Void - probably silica ore (Cu-Au) stopes at the 903 intermediate level unless hole drifted laterally into the 903-950 raise or other workings.

CA 0'8

Hole No. M-2

Collar location: U.V.X. Mine – 950-level Morgan D.D.S. Mine grid 11,565N 7,060E

Inclination: +60° at collar ~+60° at 220' by acid etch test

Azimuth: 240° (S 60° W) at collar

Length: 226 feet

Driller: Longyear Co., Phoenix, AZ Burt Hansen + Dennis Sager, drillers

Core recovery: Ø-76' in dt = 95%; 76'-174' in chert bx = 84%; 174-226 in chert+dt = 95%; Overall 90%

Dates: Feb. 9 thru Feb. 16, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ Using Fire Assay, one assay ton + A.A. followup for low grades.

Logger: Don White, geologist, C.P.G.

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core from collar thru 226' T.D. Overall drilling rate of 19 ft/10 hour shift

All rods and steel removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ core 1.875" dia.	Box 1 100	Ø						Massive diorite (subvolcanic intrusive)	Ø-21' Gray green, med. grained, massive diorite. No clear foliation or mineral alignment. Feldspars intact. Some hematite-lined frax. ~2% quartz-calcite-siderite-hematite filled fractures. Most are non-oriented veinlets ≤ 3 mm. Those with quartz ≤ 1cm.
	Box 1 100								
	Box 2 100								
	Box 2 80	20							
	Box 3 100								
	Box 3 90								21'-31' same, but no veinlets or carbonates
	4 100							Altered diorite	31'-52' Still diorite but very clay altered and hematitic. Core is ragged and incompetent, particularly in water. Pink red hematite stain pervasive. No carbonates.
	4 50	40							
	5 100								
	6 100							Heavily clay-altered diorite	52'-76' Diorite still but now beige to pink-tan colored, perhaps crudely foliated (intrusive flow foliation or chilled margin phenomenon). Completely clay-altered. H~6.5 Soapy, slick feeling but competent core where not too fractured.
	6 100	60							
	7 100								
	8 100			.002	.32				
	8 90			.001	.66			Chert bx	76'-85' Chert breccia; Clast supported with ~90% lt. gray clasts in red-brown hematitic chert matrix. Clasts are "crackled" or shattered and silica healed. H~8.5
	8 90	80		.001	.23				
	9 75			<.001	.40			dt gouge	85'-87' Gouge derived from clay altered diorite
	9 90			<.001	.34			Heavily clay-altered diorite	87'-109' Heavily clay-alt'd diorite, same as 52'-76'
	10 60								Broken + shattered core continuous from 74' thru 175'
	10 75	100							
	10 50			<.001	.19				
	11 70			<.001	.27				109'-205' Chert; variously massive, banded, or brecciated/clastic as follows:
	11 90			.001	.27			Chert; massive, banded + brecciated ± Au	109'-122' Tan, beige, + pale purple, massive to banded but "crackled" and silica healed cherts.
	11 80			.096	.49				122'-126' Matrix-supported bx with ~50% lt. gray clasts ($\bar{x}$ = ½")
	12 90	120		.066	1.11				126'-127' Matrix = hem. + lim. matrix, in yellow and red, blotchy + swirly
	12 100			.103	1.54				127'-142' single large quartz porphyry clast(?) with ~¼" phenos.
	12 90			.234	1.51				Iron-stone; ~5% milky gray chert clasts floating in mustard yellow to dark red brown, massive, cherty to earthy hematite; ~60% FeO.
	13 80			.140	1.53			Chert-iron facies with bx ± Au	142'-156' Similar to above ironstone but chert clasts up to 20% of volume, FeO ~30%. Very earthy to gouge matrix.
	13 90			.055	1.35				156'-162' Matrix-supported bx with ~50% gray clasts ($\bar{x}$ = ½") in limonitic chert matrix with traces of $CuCO_3$
	14 90	140		.055	2.24				162'-171' Massive pink-brown cherts. Little banding
	14 90			.047	1.05				171-174' Light yellow, limonitic(?) faintly banded chert
	15 95			.014	1.71				174'-181' Matrix-supported bx with lt. gray clasts (~30%, $\bar{x}$ = 2") in pink, purple, + yellow banded chert matrix
	15 95			.036	2.31				181'-190' Matrix-supported bx with ~30% beige + tan clasts ($\bar{x}$ = 2") in a chocolate brown + yellow mottled (contorted banding-?) mixed hem. + lim. chert matrix
	15 130			.045	2.94				190'-198' Clast-supported bx with ~70% gray clasts ($\bar{x}$ = 1") in hem. + lim. matrix similar to 181'-190'.
	16 90	160		.009	.96			Chert; variously massive, banded, and brecciated	198'-202' Cherty gouge; ~50% gray + tan chert frags. ($\bar{x}$ = 2") in red (hematitic) clayey + silica grit matrix. Looks more tectonic than volcaniclastic.
	16 70			.004	.84				
	17 90			.007	.82				202'-205' Clast-supported bx with ~90% gray clasts ($\bar{x}$ = 1") in yellow-brown, limonitic chert matrix. Many quartz-healed fractures.
	17 90			.001	.58				
	17 70			.002	.80				205'-221' Diorite gouge with ~40% clasts, of which ~half are diorite, half gray chert ($\bar{x}$ = 1") Gouge is gray-green with much red hematite stain and clay on core surface.
	18 100	180		.002	.80				
	18 100			.001	.70				
	19 100			.001	.73				221'-226' Diorite gouge and breccia only. No chert.
	19 100			.014	.53				
	20 90			.013	1.84				
	20 100	200		.059	1.60				
	20 80			.040	.68				
	21 80			.006	.88			Diorite gouge with ~20% chert clasts	
NQ core to 226'	22 90			.001	.31				
	22 100			.013	.42				
	22 100			.008	.84				
	Box 23 100	220							
	Box 23 80	226	EOH 226'					Diorite gouge	
E.P.H.									

12'@.16 Au 1.5 Ag

32'@.10 Au 1.4 Ag

Hole No. M-1

Collar location: UVX Mine - 950 Level Morgan D.D.S. Mine grid 11,565N 7,060E

Inclination: +42° at collar ~+45° at 250' by acid etch test.

Azimuth: 240° (S 60° W) at collar

Length: 262 feet

Driller: Longyear Co. - Phoenix, AZ Burt Hansen + Dennis Sager, drillers

Core recovery: 0-114' = 100% 165'-200' = 100% 114'-165' = 81% 200'-262' = 79% Overall average 0-262' = 91%

Dates: Jan. 9 thru Feb. 5, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ Using Fire assay, one assay ton + A.A. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. HQ core to 136', NQ from 136 to 262 (E.O.H.) Overall drilling rate of 10.5 ft/shift (10 hr. shifts) not counting 3 days mobilization and 2 days down time (air motor replacement). All casing + steel removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ 2.5" diam.	Box 1 Box 2 Box 3 4 5 6 Runs Core recovery 100% thru 114'	20 40						Massive diorite (subvolcanic intrusion)	0-40' Gray green, medium grained, massive diorite. No clear foliation or metamorphic mineral alignment. Feldspars intact. Some red-brown hematite-lined fractures (≤2mm) Traces of calcite and siderite ± quartz as thin (≤2mm) white and tan veinlets up to 2% of rock. No preferred orientation. Core surface smooth.
								Alt'd diorite	40'-50' Similar but feldspars clay altered. Core is ragged and incompetent. Disintegrates rapidly in water. No carbonates
	~100% thru 114 ft.	60		.001	.35			Heavily clay-alt'd diorite	50'-70' Beige and flesh-colored, medium grained, massive to crudely foliated, completely clay-altered diorite. H~6.5. Slick, soapy feeling. Cores smooth + intact. Much broken core 63'-71'
	7 8 9 10 11 12 13 14 15 16	80 100 120 140		.002 .002 .001 .001 .003 .001 .003 .002 .002 .002 .001 <.001 <.001 .001 .005 .001 .002 .002 .018 .461 .357 .064 .106 .193 .143 .090 .032 .070 .026 .050 .072 .109 .086 .121/Sludge .555 .399 .170	.59 .88 1.06 .83 .44 .46 .38 .44 .34 .25 .27 .26 .23 .40 .43 .34 .47 .38 .61 3.44 1.94 .71 .96 1.12 .27 .63 .55 .58 .45 .67 1.16 1.63 1.34 2.02/Sludge 1.55 1.38 2.18	16' .24 Au 1.5 Ag 19' .05 Au .7 Ag 15' .26 Au 1.6 Ag	122'-176' = 54 ft at .16 oz/t Au, 1.1 oz/t Ag	Chert Banded + massive Very broken core 116'-136' Auriferous chert Brecciated, limonitic, often sugary	70'-247' Chert, variously massive, banded, brecciated, as follows: 70'-83' Tan and brown, ribboned/banded chert with ≤5% lt. gray clasts ≤ 1/4". Banding ~70° to core axis 83'-99' Tan banded chert (very hard drilling - H~8.5) with about 20% matrix-supported, angular, lt. gray quartz or chert clasts 1/4"-2", x̄ = 1" 99'-115' Tan- and brown banded chert with ~5% clasts. Clasts are 1/4"-1", x̄ = 1/2", gray + brown, rounded + elongate 115'-118' Clast-supported chert breccia (~60% gray + red clasts, (1/4"-3", x̄ = 2") in tan chert matrix 118'-122' Beige, massive to ribboned chert. 122'-128' Matrix-supported, limonitic chert bx with ~20% (1/16"-1/2", x̄ = 1/4") yellow, red, gray + brown clasts in a loose, porous, yellow-brown, limonitic chert matrix. Banding ~60° to core axis. 128'-129' Single quartz porphy. clast (?) Tan with lt. gray 1/16"-1/4" phenos. 129'-136' Clast-supported bx, ~60% gray + tan, clasts (x̄ = 1/8") sugary yellow-tan, limonitic chert matrix. ~10% vugs 136'-138' Matrix-supported bx w/ ~10% gray clasts (x̄ = 1/2") in yellow-brown matrix. Banding ~45° to CA. 138'-152' Clast-supported bx ~80% gray, tan, + red clasts (x̄ = 1") in pale red-brown hematitic matrix. Some qtz. clasts 152-167' Matrix-sup. bx. ~30% very lt. gray 1/4"-3" (x̄ = 1") clasts in a white to yellow + red very sugary silica grit matrix 167-173 Matrix-supported bx with ~30% lt. gray 1/4"-2" (x̄ = 1/2") translucent clasts in yellow-brown sugary matrix. 173-176 Same as 167-173 but ~60% clasts (still matrix-supported)
HQ to 136'									
NQ 1.875" diam.	17 18 19 20 21 22	160 180 200		.072 .109 .086 .121/Sludge .555 .399 .170 .009 .020 .008 .026 .040 .043 .037 .037	1.16 1.63 1.34 2.02/Sludge 1.55 1.38 2.18 0.79 .57 .57 .82 .73 .81 .56 1.01				176-187 ~50% clasts (x̄ = 1/4") in hematitic matrix 187-196 ~60% clasts (x̄ = 1/2") in hematitic matrix 196-203 ~30% clasts (x̄ = 1/2") in hematitic matrix } Matrix supported breccias
	23 24 25 26 27	220 240 260		.053 .026 .008 .016 .003 .002 .003 .006 .006 .009 .006 Nil .015 Nil Nil	.67 .69 .85 1.18 .71 .77 .92 .94 .70 .62 .55 .55 .54 .09 .08			Broken core 208'-217' Chert Brecciated, hematitic 219'-230' 238'-240' 245'-247' H.W. Verde fault "Blue diorite" fault gouge	203'-215' ~80% clasts (x̄ = 2") in red-gray hematitic matrix Clast supported, Locally banded + massive, 215'-224' ~10% clasts (x̄ = 1") in purple-gray hematitic matrix. Porous, gritty-looking matrix 224-230' ~50% clasts (x̄ = 1/2") in red-gray hem. matrix 230'-238' ~50% clasts x̄ = 1/2" in hem. matrix (same as 224'-230') but very dense; likely ~40% FeO 238'-247' Clast-supported coarse bx (x̄ = 1") with ~80% gray + red gray clasts in red-gray, hem. matrix } Matrix supported breccias
NQ to 262'	Box 28	E.O.H. 262'							247' Very sharp fault contact 247'-262'+ Blue-green, clayey, wet, crushed diorite fault gouge. Trace to 5% calcite, some quartz veinlets. Largest dt. bx. frag ≤ 1".
E.O.H.									

Hole No. 902-1

Collar location: U.V.X. Mine - 950 Level 902 D.D.S. ~4,180' Elev. Mine grid 11,405 N; 7,215 E

Inclination: +40° at collar

Azimuth: 175° (S 5° E) at collar.

Length: 230 feet

Driller: Longyear Co., Phoenix, AZ Bert Hansen & Dennis Sager, drillers

Core recovery: ~90% in diorite (0-65') ~95% avg. in chert

Dates: October 9 thru 21, 1987

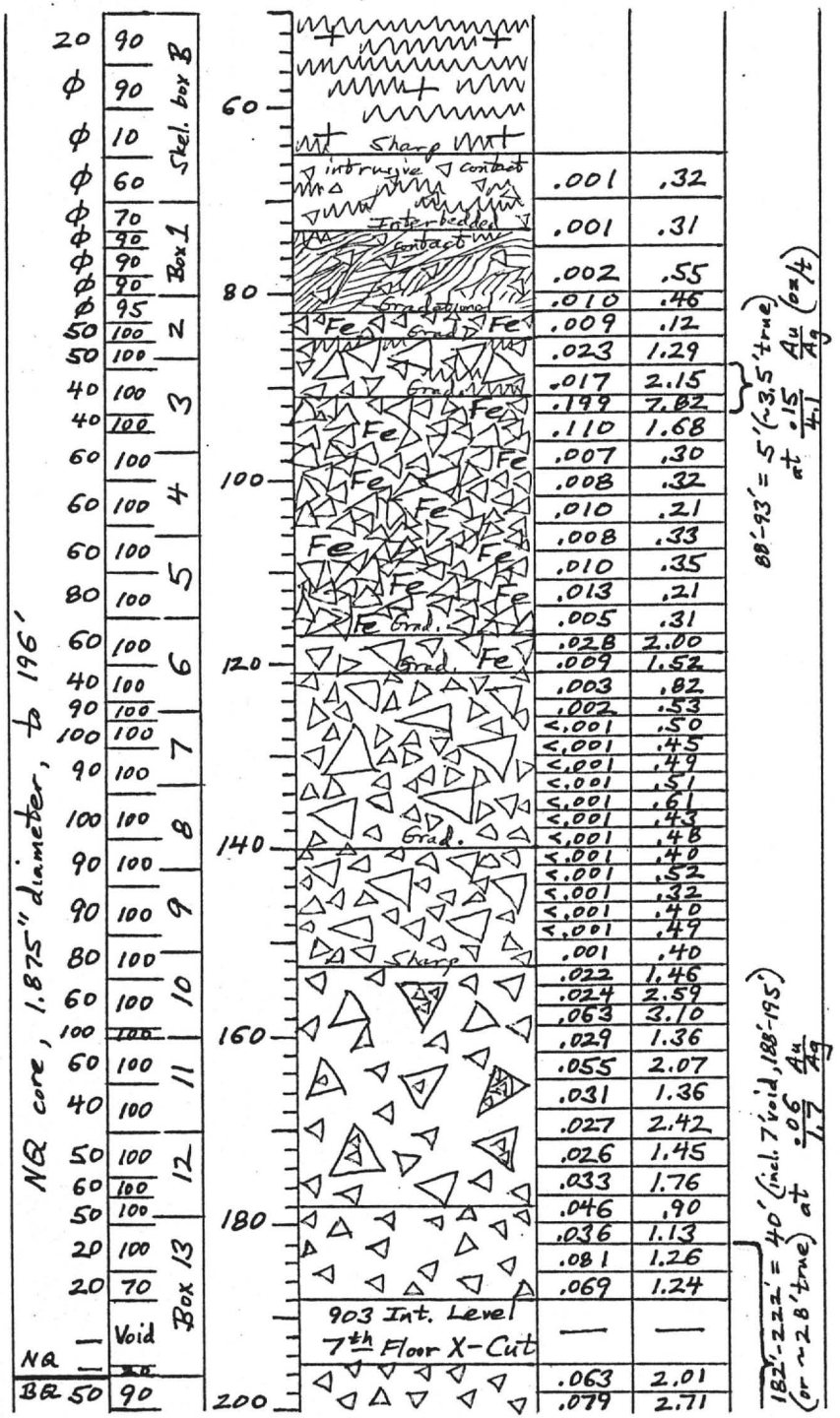
Assayer: Iron King Assay, Inc. - Humboldt, AZ Using fire assay, one assay ton and AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. NQ core thru 196' (one foot into far side of 188'-195'). BQ core from 196' thru E.O.H., 230' at stope. Overall drilling rate 13.5 ft/shift (10-hr. shifts, 2 shifts/day) not incl move from 809 DDS.

All casing & steel removed from hole.

Core Size RQD	Runs/recovery Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ core Skeleton box A ϕ 10 10 10 ϕ ϕ 10 ϕ ϕ ϕ	10 80 90 90 90 80 90 100 90 90	20 40	Gradational contact	Carole's reproduceable copy				Argillic-altered diorite (Red, blocky schist)	Note: Few reliable sense-of-orientation indicators but bedding to core axis ≈ estimated at 45°. Hence multiply drill intercepts by .70 for true thicknesses. ϕ-65' = Diorite, as follows: ϕ-40' Red-gray, fine grained, crudely foliated, argillic-altered diorite with red hematite filling abundant anastomosing fractures. So-called "red, blocky schist". 40'-65' Silvery gray (with pale purple tints), very fine grained, foliated (~45° to core axis) silicic-altered diorite.



Silicified diorite

Massive + banded (hornfelsed) silica

Very ferruginous silica breccia

Gray + red silica breccia

Vuggy, limonitic silica breccia

old Workings

65'-230+ Chert or silica, variously massive, banded, brecciated, and ferruginous, as follows:

65'-82' Purple gray, massive and tan/biege, banded (both hornfelsed) silica breccias with ~40% lt. gr. + gray silica clasts (1/10"-1/2", $\bar{x}$=1/4") Massive dominant 65'-73', banded dominant 73'-82' No vugs, virtually no Fe, clasts obscured.

82'-85' Dark red'-brown + black, very dense, hematitic si bx with ~40% Fe and clasts of same color, composition; ~60% clasts (1/10"-1", $\bar{x}$=1/2"). Some vugs.

85'-91' Gray + brown silica with ~60% gray, red, + tan clasts (1/10"-6", $\bar{x}$=2").

91'-117' Clast-supported Fe-rich si-bx with ~80% dark gray to charcoal black clasts (1/10"-1", $\bar{x}$=1/2") in lt. gr. to black, exceedingly dense, very ferruginous matrix of same composition as clasts. Overall perhaps 50% Fe! Very "crackly"; shatters into so many pea-size, angular, shards when split, etc.

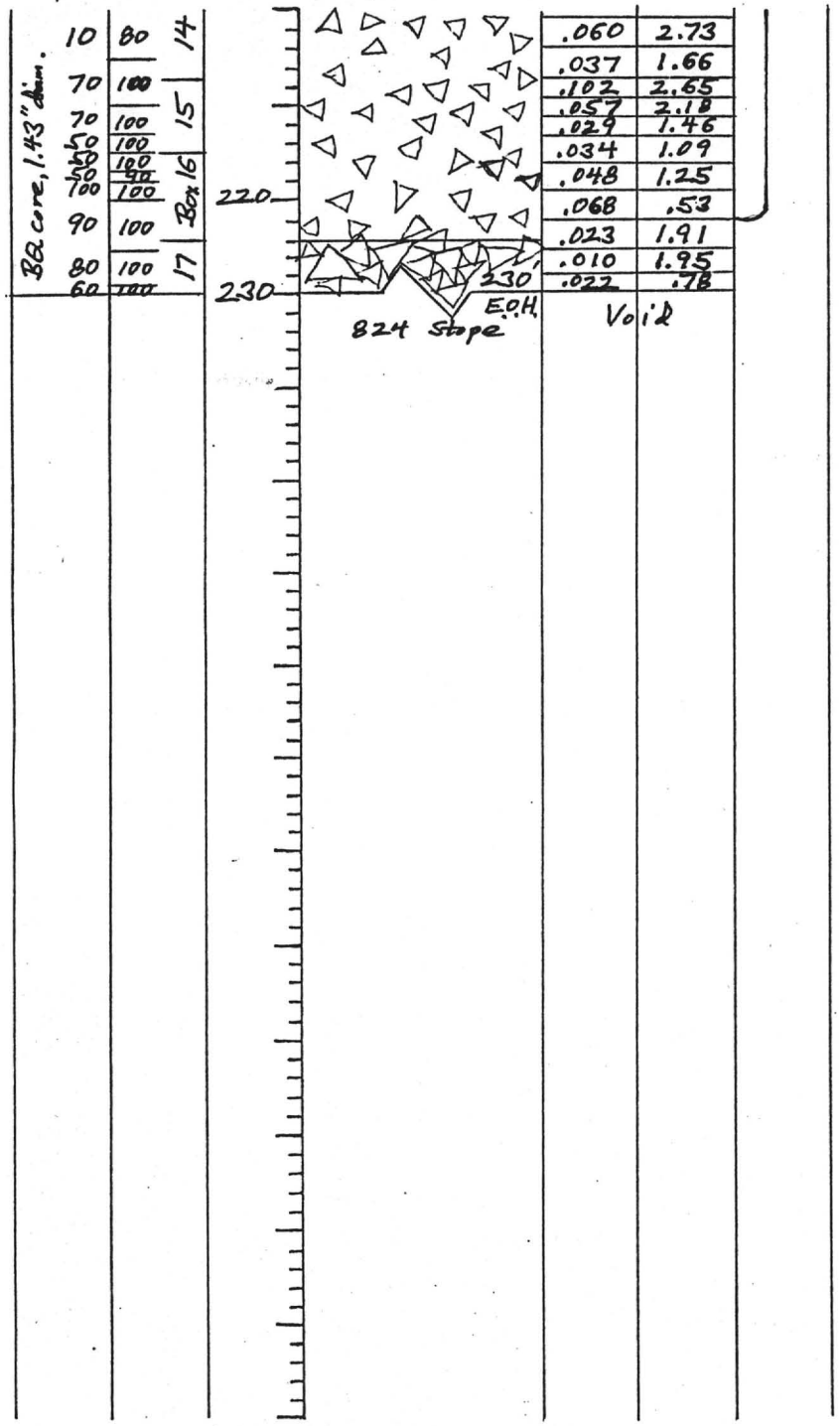
117'-121' Yellow brown, limonitic silica bx with ~40% gray clasts (1/10"-2", $\bar{x}$=1/2"). Fe ~15%.

121'-140' Gray si. bx. with ~60% lt. gr. + blood red clasts (Gray clasts small, 1/10"-1", $\bar{x}$=1/4"; red clasts large, 2"-6", $\bar{x}$=4"), both with abundant silica-healed fractures of several generations.

140'-153' Very similar to 121'-140' except that the matrix has an incipient tan/biege banding as though slightly hornfelsed.

153'-178' Yellow brown + brown, limonitic, vuggy (~5%, ≤1") matrix silica with ~50% lt. gr., tan banded, + red-brown silica clasts (1/10"-4", $\bar{x}$=1"). Clear display of 2nd + 3rd generation hydrothermal breccias by inclusion of bx clasts within clasts!

[188'-195'] Void - 7th Floor above 903 Int. level. X-Cut, bridged by casing.



Vuggy, limonitic silica breccia

Gray si bx

824 Stope

178'-224' (except void, as noted, 188'-195') Dark brown & brown, limonitic (5-15% Fe) vuggy (~5% ≤ 1") matrix with ~30% dk. br. & yellow-brown similarly limonitic clasts (1/10"-1", $\bar{x}$ = 1/2"). Vugs lined with microxln qtz + yellow limonitic/jarositic crusts.

224'-230' Clast-supported si bx of ~90% lt., gr. & wh. crackled & healed clasts (1/4"-8", $\bar{x}$ = 4") in red-br. silica-hematite matrix.

230'+ Old gob-filled or caved stope at or slightly above 800 sill level. 824 stope.

Hole No. 809-8

Collar location: U.V.X. Mine - 800 Level 809 D.D.S. Mine grid 11,790 N 6,905 E

Inclination: + 33° at collar

Azimuth: 185° (S 5° W) at collar

Length: 235 feet

Driller: Longyear Co. - Phoenix, AZ Bert Hansen & Dennis Sager, drillers

Core recovery: ~90% in diorite ~95% in chert

Dates: Sept. 22 thru 30, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ Using fire assay, one assay ton, & AA. followup for low grades.

Logger: Don White, geologist.

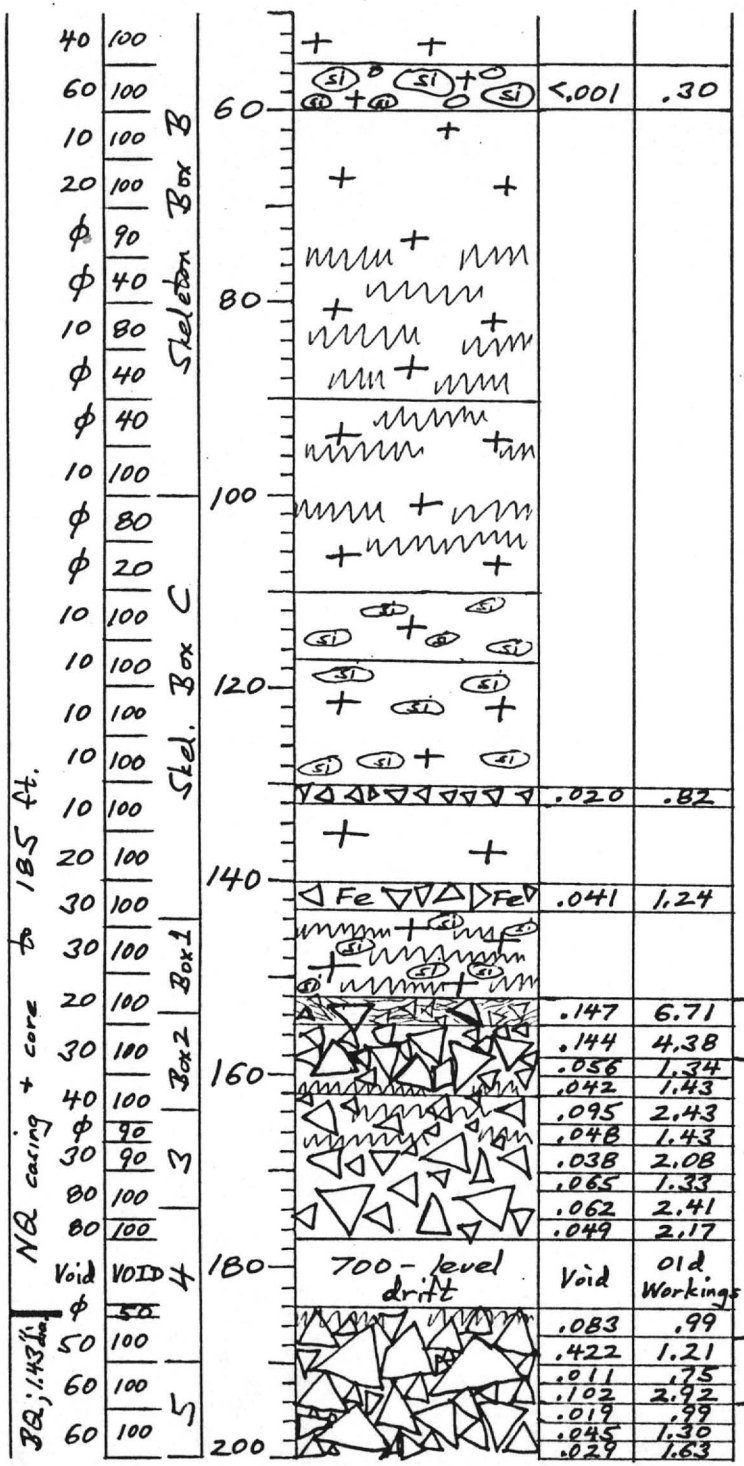
Remarks: Drilled with Longyear 34 pneumatic rig. NQ core to 177 ft. at which point 7' void (177'-184') bridged with casing set to 185'. BQ core from 185' - E.O.H. Overall drilling rate 21.4 ft/shift (not including 2½ shifts equipment repair) 10 hr shifts 2 shifts/day.

All casing + rods removed from hole.

Core Size	RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ; 1.875" diameter	ϕ	70	Skeleton Box A		+ +					Silicic-altered diorite	ϕ'-152' Diorite, silicic-altered and incl. chert clasts as noted:
	20	50									
	ϕ	80			+						ϕ'-30' Purple + white, blotchy, well foliated, silicic-alt'd diorite
	30	100									
	40	100			+ +						30'-90' Biege + tan, prominently banded, foliated, silicic-alt'd dt with an intrusive bx zone of ~50% silica clasts ≤3", white + lt. gray, 55'-60'. Banding 40°-60° to core axis.
	40	100		20	+						
	60	100			+ +						
	60	100			+						
	80	100									
	60	100		40	+ +						
	60	100									
	80	100			+ +						

Note: Bedding difficult to recognize in chert, but crudely indicated ~45° to core axis. Therefore true thicknesses ~70% of drill intercepts

Cordes reproduceable



Silicic-altered diorite

Silicic-altered diorite ± silica clasts

Banded si. bx.

Silica breccia

700-level Drift

Translucent gray si. bx.

90'-110' Same as ϕ-30' (silicic-alt'd dt).

110'-117' Blue-gray silicic-alt'd diorite with green-gray ripples + bands and ~20% biege + red-brown silica clasts (≤ 1").

117'-130' Biege + tan, foliated + banded, silicic alt'd dt with ~20% lt. gr. + wt. silica clasts (≤ 2") clearly occurring as intrusive breccia.

130'-132' Red-brown, hematitic, silica breccia

132'-140' Biege + red-gray silicic-alt'd dt with much contorted banding (flow-banding?)

140'-143' Light gray + brown-gray, very dense, very ferruginous silica breccia with some x-cutting veinlets or filled fractures with $CaCO_3$ ≤ ¼" thick.

143'-152' Red-gray, granular looking silicic-alt'd dt with crude banding ~50° to C.A., ~10% biege + wt si clasts ≤ 1"

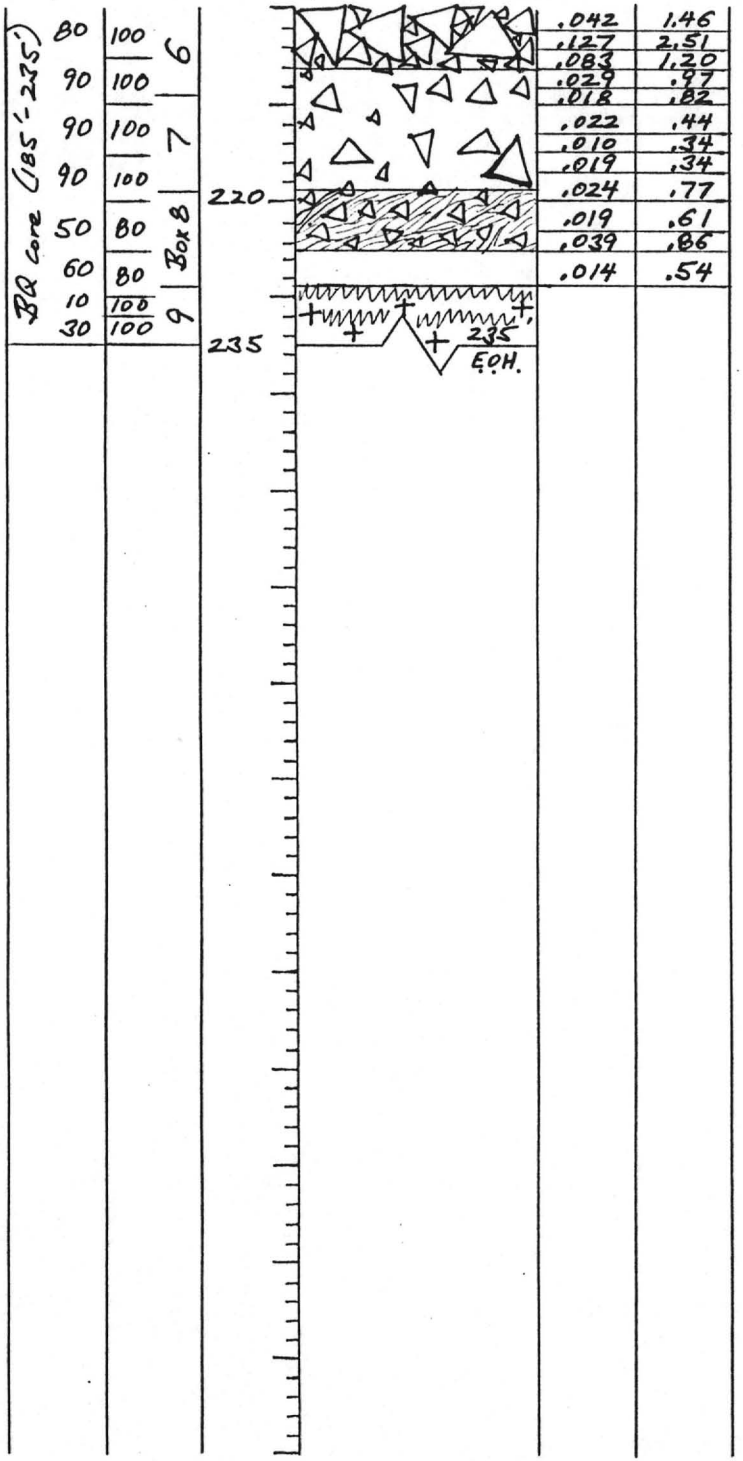
152'-229' Chert — variously banded, brecciated, as follows:

152'-155' Matrix-supported bx of ~60% wt. + lt. gr. clasts (1/10"-4", $\bar{x}$=2") in yell-br. + red-br. hematitic, banded silica matrix.

155'-162' Clast-supported bx of ~90% large wt. + lt. gr. clasts (1"-12", $\bar{x}$=6") in yell-br. + red br. si. matrix. Abundant si-healed frax. ≤ 2% vugs, ≤ ½" each. Tr. disseminated $CuCO_3$ throughout.

162'-177' Matrix-supp. bx of ~60% lt. gr. clasts (¼"-6" $\bar{x}$=2") in yell-br. + dk. br. limonitic, vuggy matrix. Matrix has disseminated fine voids (≤ 5%, ≤ ½"). Clasts have many si-healed frax.

177'-184' Void — Probable 700-level drift intersected nearly perpendicular by drill hole.



184'-206' Clast-supported silica breccia with ~90% very large, homogeneous, light, translucent gray clasts (1"-15", $\bar{x}$=8") in yellow-brown, limonitic silica matrix. Matrix is micro-vuggy. Clasts are frax. & silica-healed throughout. Looks just like 809-2 Au-zone.

206'-219' ~20% lt. gr. clasts (1/16"-4", $\bar{x}$=1") in vuggy (≤7%, ≤1") yell. br. limonitic si matrix. Micro-xln qtz & trace botryoidal $CuCO_3$ lining some vugs.

219'-225' ~20% lt. gr. si clasts (1/16"-2", $\bar{x}$=1/2") in yell. br. & dk. br. & beige, banded & hornfelsed si matrix.

225'-229' One large lt. gr. si clast (?). ≤2% voids. Many si-healed frax.

229'-235+'(E.O.H.) Beige, foliated (~60° to core axis) silicic-alt'd diorite. Very fine grained, with red-brown, hematitic speckles. Some ≤1/4" thick massive $CuCO_3$-filled frax, just like in si-bx, suggesting supergene &/or assimilated/remobilized history.

Hole No. 809-9

Collar location: UVX Mine - 800 Level 809 D.D.S. Mine grid 11,790 N 6,905 E

Inclination: -5° at collar

Azimuth: 150° (S 30° E) at collar

Length: 187 feet

Driller: Longyear Co. - Phoenix, AZ
Burt Hansen + Dennis Sager, drillers

Core recovery: ~100% ϕ-123', and 153' to 187' (diorite and hard chert)
~40% 123-153' (silica grit).

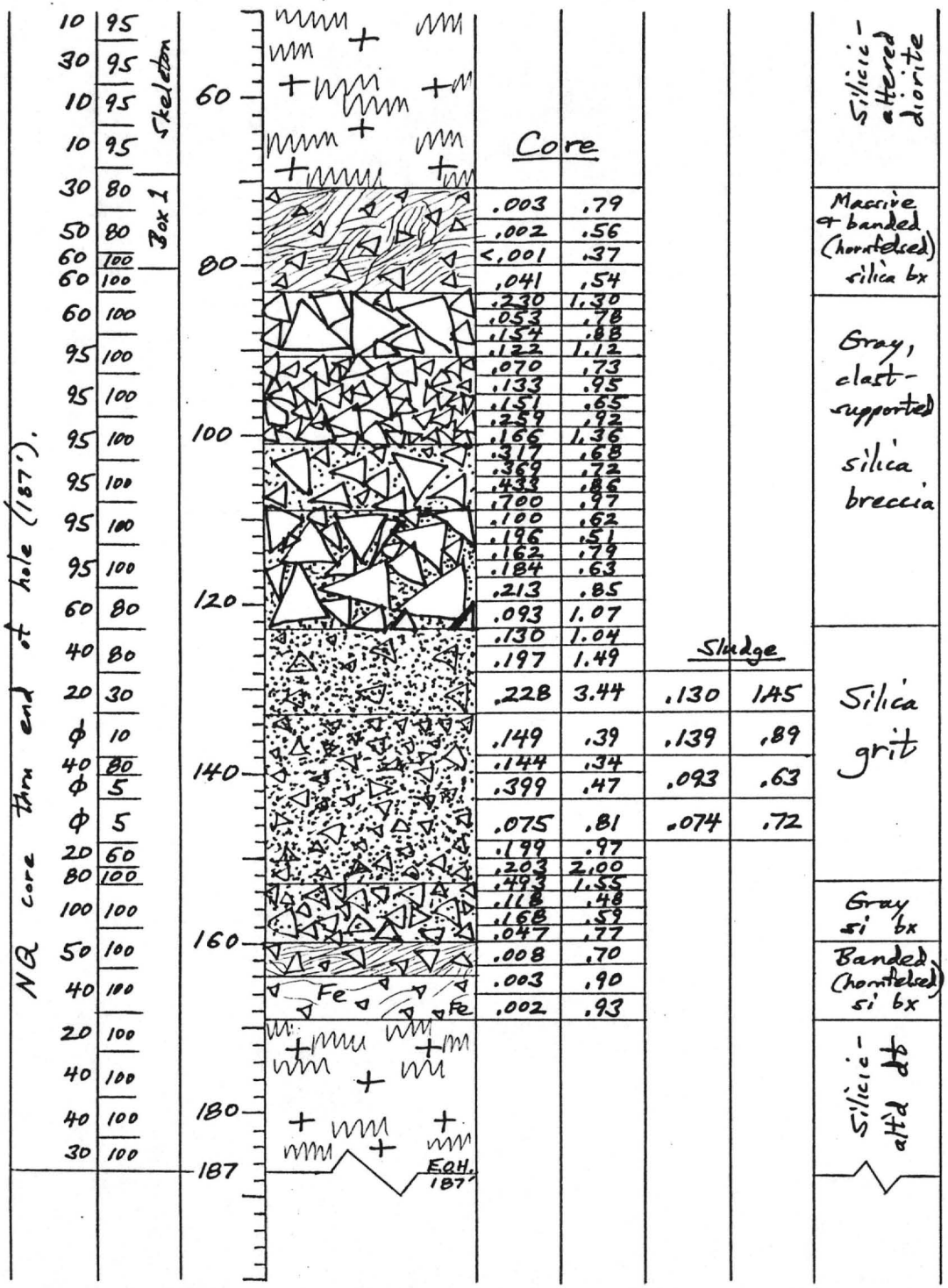
Dates: Sept. 30 thru Oct. 6, 1987

Assayer: Iron King Assay, Inc - Humboldt, AZ
Using fire assay, one assay ton and AA following for low grades.

Logger: Don White, geologist.

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core thru end of hole (187'). Overall drilling rate 20.8 ft/shift (10 hr. shifts; 2 shifts/day). All steel removed from hole.

Core Size RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ Core; 1.875" diameter 30	10	Box A								Note: Bedding ~45° to core axis as indicated by diorite foliation + banding in hornfelsed silica. So true thicknesses are ~70% of drill intercepts.
30	95									
30	95									
60	95									
40	95		20							
30	95	Skeleton								
40	95									
50	95									
50	95	Box B	40						Silicic-altered diorite	ϕ'-71' Diorite - silicic-altered, as follows:
10	95									ϕ-50' Purple + white, blotchy, well foliated, sil-altd dk. Foliation nearly parallels core axis (ϕ-20°)



50'-71' Both purple + white (blotchy patterned) and tan/beige banded, foliated sil-alt'd dt. Banding 10° to 35° to CA from 50'-68'. Banding 35-80° to CA. from 68'-71'.

71'-169' Chert; variously hornfelsed, brecciated, and mineralized, as follows:

71'-83' Massive + banded, hornfelsed, red-brown, yell.-br. + tan chert with ~40% lt. gr. + wt. clasts (1/10-2", $\bar{x}$ = 1/2"). Banding ~ 45° to core axis.

83'-91' Light gray + white, clast-supported silica breccia of ~90% clasts (1/2"-14", $\bar{x}$ = 6") in red-br. hematitic silica matrix. Abundant silica-healed frax. 3" vug at 89.5'

91'-101' Clast-sup. si bx of ~ 80% lt. gr. + wt clasts (1/10"-2", $\bar{x}$ = 1") in red br. hem. SiO_2 matrix. Many healed fractures.

101'-109' Matrix-sup. si bx of ~ 70% lt. gr. + wt clasts (1/10"-6", $\bar{x}$ = 3") in pale red-br/tan saccharoidal silica matrix. Good display of at least 3 generations of silica-healed frax, accompanied by intrusive bx & hydro-fracturing.

109'-123' Clast-sup. si bx of ~80% lt. gr., wt. + tan clasts (1/10-4", $\bar{x}$ = 2") in pink-tan saccharoidal silica matrix. Grades continuously to silica grit by 123'.

123'-133' Pinkish-tan fine grained silica grit (friable, highly porous) with ~40% tan, gray, lt. gr., + wt. grit clasts (≤2", $\bar{x}$ = 1/2")

133'-153' Yellow-tan silica grit (fine grained, friable, porous) with ~50% very heterogeneous clasts (≤1"; $\bar{x}$ = 1/2") from yellow-tan grit clasts thru hard, gray, lt. gr. + tan silica clasts. Slightly limonitic/goethitic.

153'-160' Matrix-sup si bx of ~ 80% lt. gray + tan clasts (1/10"-3", $\bar{x}$ = 1") in purple-gray (hematitic-?) matrix. Both clasts + matrix are saccharoidal textured

160'-164' Beige-tan banded (hornfelsed) si bx with ~ 30% clasts (1/4"-2" $\bar{x}$ = 1/2") from lt. gr. to tan.

164'-169' Beige-tan, massive & banded (hornfelsed) + ferruginous silica bx with ~ 30% gray clasts (1/10"-1/2", $\bar{x}$ = 1/4")

169'-187'+(E.O.H.) Diorite; light, silvery gray, silicified, sericitized, silicic-altered diorite with generally massive character but some relict foliation ~45° to CA. No sign of increasing or decreasing intensity of alteration from 169'-187'.

Hole No. 809-7

Collar location: U.V.X. Mine - 800 Level, 809 D.D.S. Mine grid 11,790 N 6,905 S

Inclination: +16° at collar

Azimuth: 225° (S45°W) at collar

Length: 335 feet

Driller: Longyear Co. - Phoenix, AZ. Bert Hanson & Dennis Sager, drillers

Core recovery: Avg. ~95% in diorite, ϕ-234'. Avg ~90% in silica, 234'-335'

Dates: July 27 thru Aug. 6, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using fire assay, one assay ton, and AA. followup for low grades.

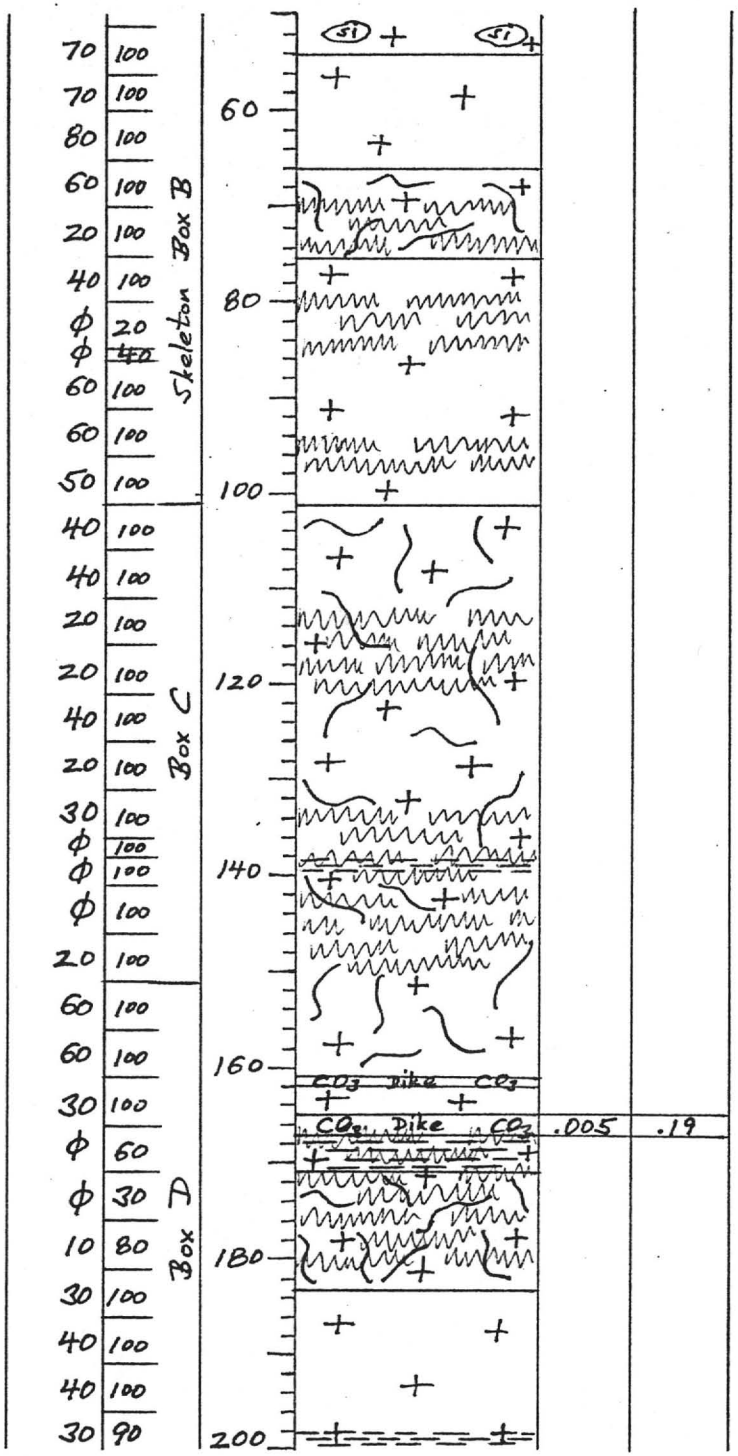
Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core from collar thru 335 ft (E.O.H.) Overall drilling rate 19.7 ft/shift (10-hr. shifts; 2 shifts/day). All casing and steel removed from hole.

Core Size / RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ core; 1.875" diameter		Skeleton Box A							silicic-alt'd diorite	ϕ'-234' = Diorite; variously altered as follows:
20	80									ϕ-6' Purple + white, blotchy, silicic-alt'd dt.
20	100									6'-16' Biege, foliated + banded (~45° to core axis) silicic-alt'd dt.
20	100									
30	100		20						silicic-alt'd diorite with intrus. bx of silica	16'-54' Same as 6'-16' but containing 5-20% pale gray + milky white silica clasts (intrusive bx)
40	100									
40	100									
40	100									
40	100		40							
50	100									
60	100									

Note: Sense-of-orientation indicators are few and erratic but crudely indicate bedding ~45% to core axis; therefore true thicknesses ~70% of drill intercepts.

Carole's reproduceable copy



Argillic-Silicic alt'd diorite

Argillic alt'd diorite

Propylitically alt'd diorite

Argillic - altered diorite

CO_3 Dike

Clay gouge

Argillic alt'd diorite

54'-66' Beige + light gray, banded + foliated silicic-alt'd dt.

66'-75' Beige to red-brown argillic-altered diorite with hematite-lined fractures. "Grotty" rough coring. So-called "red-blocky schist".

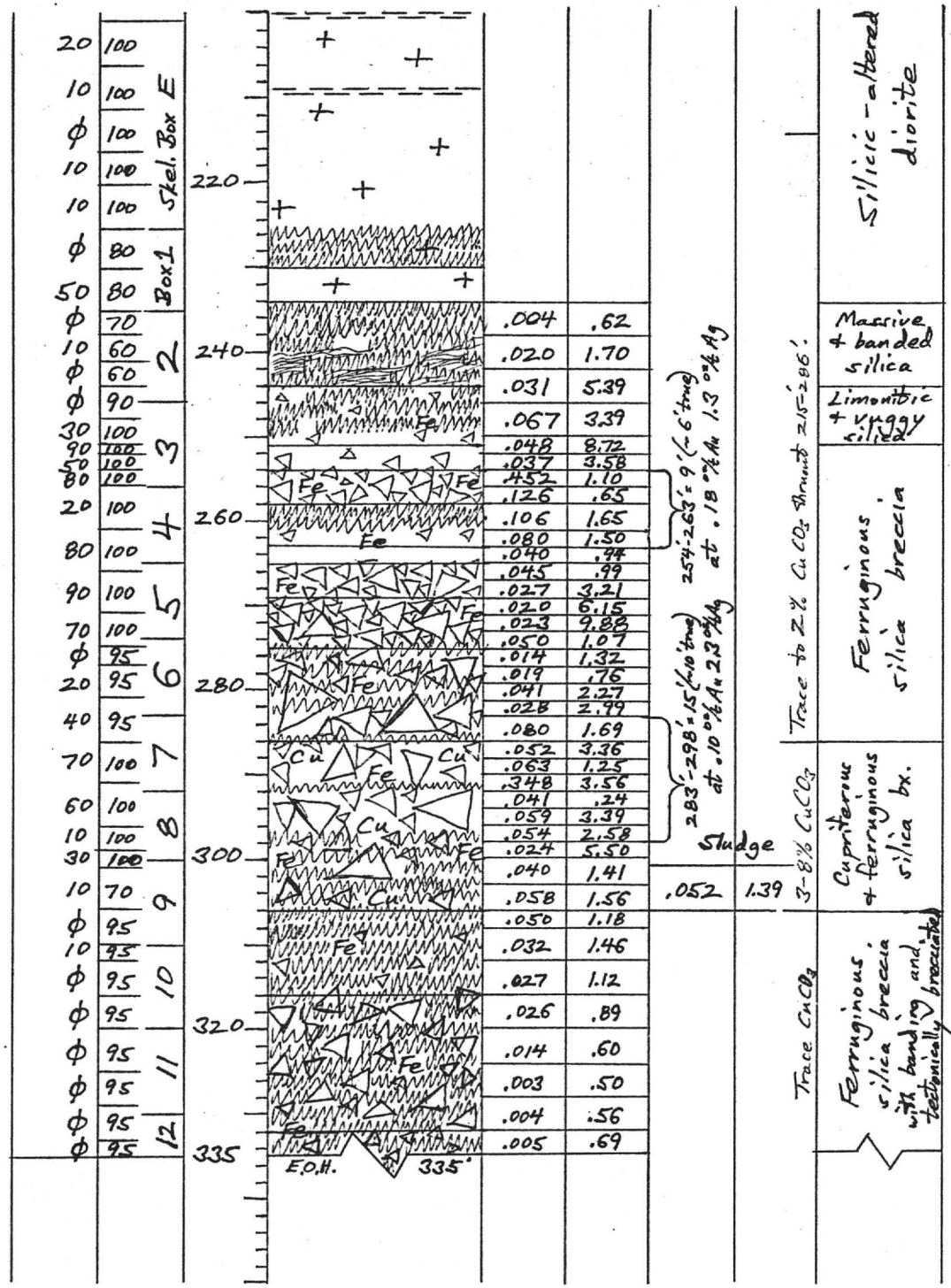
75'-101' Gray-green, fine to med. grained, massive propylitically altered diorite with clearly visible feldspar phenocrysts (relicts, usually pseudomorphed by clays, kaolin + sericite, etc.).

101'-165' Argillic-alt'd dt (red blocky sch.) like 66'-75'
[138'-140' is red, clayey, gouge]

161'-162' and 165'-167' } Black and white carbonatite dikes.
Black, subangular breccia fragments of unknown composition (perhaps chloritic) up to 50% ($\bar{x}$ = 30%) (1/10" - 1/4", $\bar{x}$ = 1/8") in white calcite matrix (matrix supported). ~5% white calcite as clean x-cutting veinlets ≤ 1/4" thick. No impregnation or dissemination of CO_3 in wall rock. Sharp contacts with no visible altn.

167'-171' Red, clayey gouge

171'-183' Argillic alt'd dt (red blocky sch) as above



183'-230' Purplish gray, "smooth-coring" massive to crudely foliated (~50° to C.A.) silicic-altered diorite.

[198'-201' and 209'-210' are red, clayey gouge zones]

230'-234' Beige and tan, massive, intensely silicified diorite with small (1/10"-1/2", $\bar{x}$=1/4") red-br. blotchy spots and some red-br. hematite-lined fractures. ~1% $CuCO_3$ on frax.

234-335+ Silica; variously massive, banded, ferruginous, cupriferous, auriferous, brecciated as follows:

234'-244' Tan + brown, massive + banded silica (honeycombed) with ~60% dark brown matrix supported clasts (1/4-2", $\bar{x}$=1")

244'-251' Yellow-brown, limonitic, and vuggy (≤10%, 1/10-1", $\bar{x}$=1/4") si with ~20% lt.gr. si clasts (1/10-1/2" $\bar{x}$=1/4")

251'-254' Dark red-br hematitic si bx with ~20% lt. gr. clasts (1/10"-2", $\bar{x}$=1"). ≤2% vugs (≤1/4") Few silica-healed fractures.

254'-258' Same (as 251'-254') but 50% clasts (1/4"-4", $\bar{x}$=2")

258'-263' Same but some limonite in matrix, ~10% clasts (1/10"-2", $\bar{x}$=1/2")

263'-265' Clast-supported si bx of 95% lt.gr. large clasts (3"-10", $\bar{x}$=6") with red-br. hem. matrix. Many si-healed frax.

265'-269' Red-br + yell-br. hem. & lim. matrix with ~50% lt. gr. clasts (1/10"-4", $\bar{x}$=1"). Vugs ≤5% ≤1/2". Some si-healed frax.

269'-275' Red-br hem si matrix with ~70% lt. gr. si clasts (1/10"-4", $\bar{x}$=2")

275'-286' Red-br. hem. si. matrix with ~70% very large clasts (1/2"-12"; $\bar{x}$=4") of lt.+dk. gray si. ≤1% vugs. Many si-healed fractures

286'-306' Brown and red-brown, hematitic silica matrix with ~60% lt.+dk. gray + green-gray silica clasts (1/10"-6"; $\bar{x}$=2") ≤1% vugs, ≤1/4". Some silica-healed frax. ~4% Cu as $CuCO_3$ in patches and as veinlets. Correlates with auriferous "silica ore" intercept up-dip in 809-4

306'-316' Dark red-br. hematitic silica matrix with ~20% gray + brown-gray clasts (1/10"-1"; $\bar{x}$=1/2"). Few (≤1%) vugs. Few silica-healed frax. Some incipient banding of matrix.

316'-332' Same as 306-316 except ~60% lt.+dk.gr. clasts (1/4"-4"; $\bar{x}$=2") and more banding of matrix.

332'-335'+ Same but ~40% gray clasts (1/10"-1/2"; $\bar{x}$=1/4")

Hole No. 809-6

Collar location: Mine grid 11,790 N 6,905 E (U.V.X. Mine – 800 Level, 809 D.D.S.)

Inclination: +23° at collar

Azimuth: 218° (S38°W) at collar

Length: 339 feet

Driller: Bert Hanson + Dennis Sager, drillers (Longyear Co. – Phoenix, AZ)

Core recovery: ~100% in diorite ϕ–149′; ~83% in chert 149′–339′

Dates: July 10 thru 24, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ. Using fire assay, one assay ton and A.A. followup for low grades

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core from collar thru 191′. NQ core from 191′–339′ (E.O.H.)

Overall drilling rate 16.1 ft./shift using 10-hr. shifts, 2 shifts/day.

All casing + steel removed from hole.

Core Size	RQD	Runs/recovery	Core boxes	Footage	Au (oz/t)	Ag (oz/t)			Rock type
HQ core (2.5" diam.)	20	~100	skeleton Box A						Silicic-altered diorite
	50	100							
	40	100							
	50	100							
	ϕ	100		20					
	30	100							Silicic-altered diorite with intrusive si bx
	ϕ	100							
	40	100							
	20	100		40					
	20	100							
	ϕ	100							

Graphic log

Carole's reproduceable

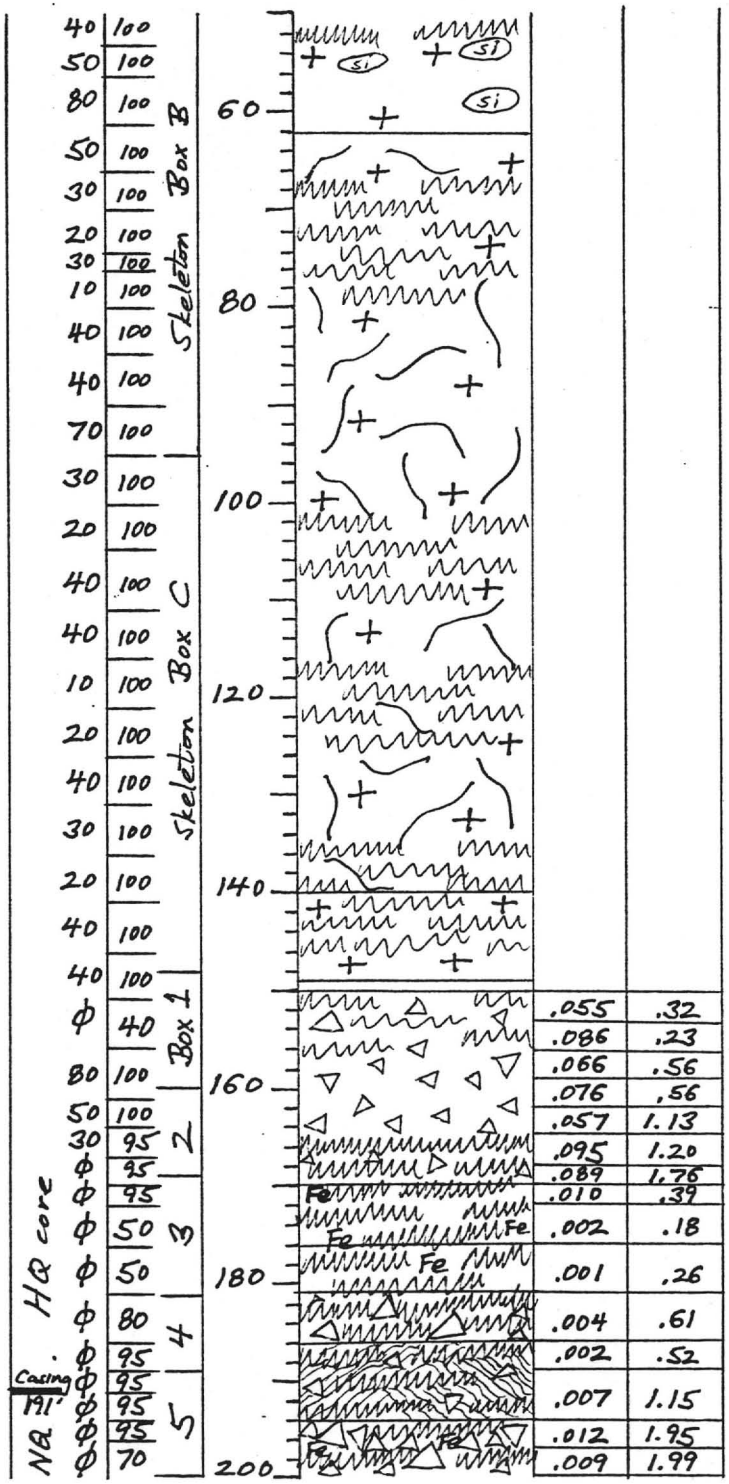
Lithology

Note: Bedding probably ~45° to core axis. Therefore true thicknesses ~70% of drill intercepts.

ϕ–149′ Diorite – variously altered as follows:

ϕ–23′ Blotchy purple, white, + bège, silicic alt'd dt with foliation ~50° to core axis.

23′–62′ Bège, prominently banded (petrified wood-like) silicic alt'd dt with clasts of white + lt. gray chert as intrusive bx. frags, ≤ 6" dia, ≤30% of core. Margins of bx frags appear melted and obscured as though partially assimilated by the plutonic dt. Clasts generally elongate and conformable with diorite banding.



.055	.32
.086	.23
.066	.56
.076	.56
.057	1.13
.095	1.20
.089	1.76
.010	.39
.002	.18
.001	.26
.004	.61
.002	.52
.007	1.15
.012	1.95
.009	1.99

(Red, blocky, schist)

Argillic-altered diorite

Silicic-altered diorite

Massive si

Limonitic, vuggy, silica breccia

Massive hematitic silica.

Massive + banded silica

Silica breccia

62'-140' Biege + red-brown, fine to med. grained, argillic alt'd diorite with anastomosing network of red-brown, hematite-filled fractures. Core surface is rough and crumbly. No clear foliation or banding.

140'-149' Pale purple + white (tan + biege) silicic alt'd dt.

149' - Sharp intrusive contact

149'-339'+ Chert; variously massive, banded, ferruginous, cupriferous, auriferous, brecciated, ... as follows.

149'-150' Biege, massive, exceedingly hard, hornfelsed chert.

150'-170' Light + dark brown, frothy-textured (~20% pore space, ≤1" vugs) silica breccia with much Fe (limonite), trace $CuCO_3$ throughout, and clasts composing ~30% (1/10-1", $\bar{x}$ = 1/2") lt. gray in color

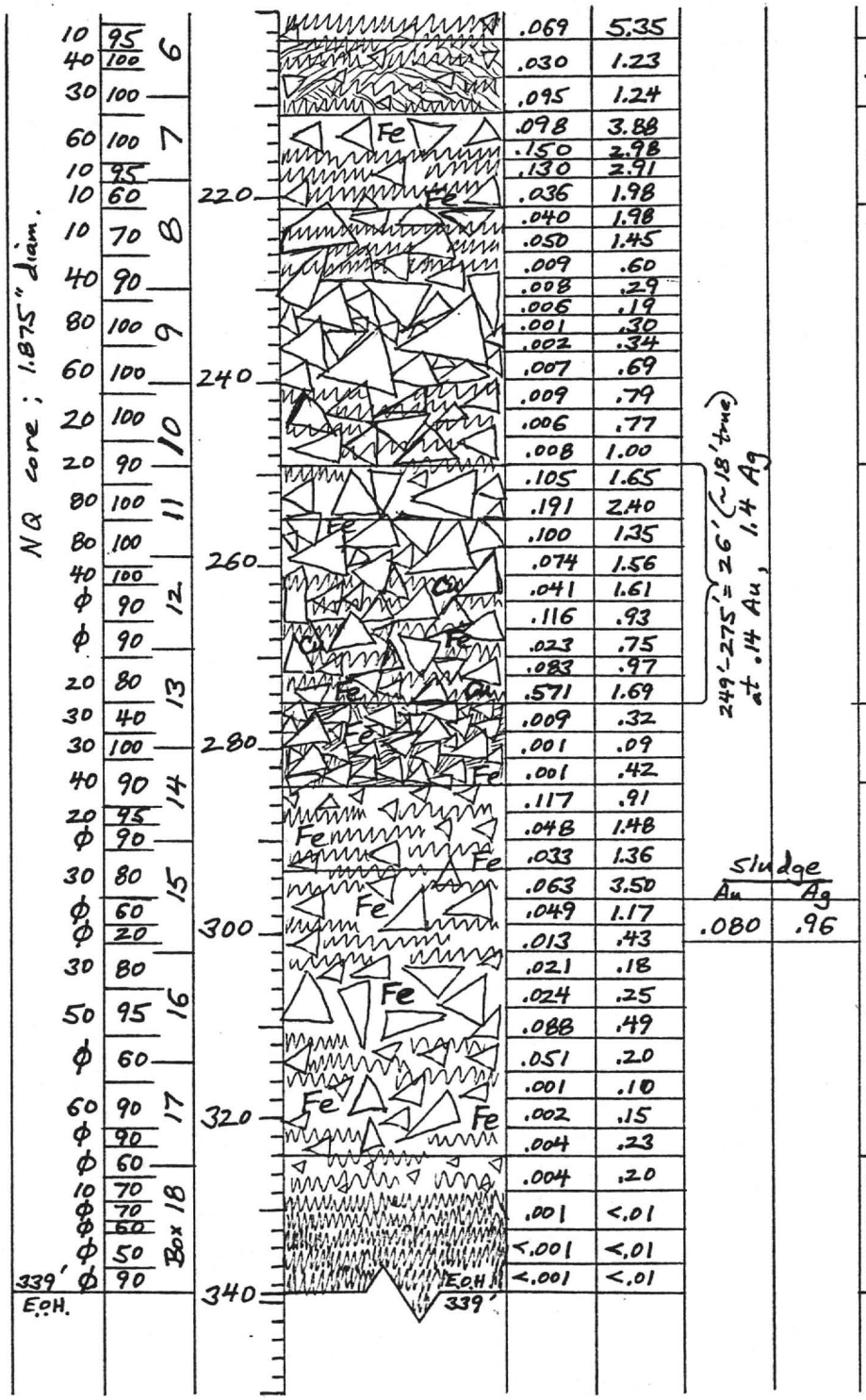
170'-176' Red-brown, very hematitic, very dense, massive SiO_2 solid

176'-181' Red-brown, very hematitic, loose + porous SiO_2 mud + grit. Appears to be a primary or alt'n texture, not tectonic

181'-186' Brown + red-br. si. bx. with ~30% dk. gr. clasts (1/2"-2", $\bar{x}$=1")

186'-194' Biege + tan, massive + banded chert matrix with ~20% lt. gray clasts (1/4"-2", $\bar{x}$=1") No vugs or porosity.

194'-203' Brown, very ferruginous (lim. + hem.) si bx with ~50% lt. + dk. gray + dk. brown clasts (1/10"-3", $\bar{x}$=1"). ~2% vugs (≤1/4")



10	95	6	.069	5.35	
40	100		.030	1.23	Massive + banded silica
30	100		.095	1.24	
60	100	7	.098	3.88	
10	95		.150	2.98	Very ferruginous si. bx.
10	60		.130	2.91	
10	70	8	.036	1.98	
40	90		.040	1.98	
80	100	9	.050	1.45	
60	100		.009	.60	
20	100	10	.008	.29	
20	90		.006	.19	
80	100	11	.001	.30	Clean, coarse silica breccia
80	100		.002	.34	
40	100		.007	.69	
ϕ	90	12	.009	.79	
ϕ	90		.006	.77	
20	80	13	.008	1.00	
30	40		.105	1.65	
30	100		.191	2.40	
40	90	14	.100	1.35	
20	95		.074	1.56	
ϕ	90		.041	1.61	Ferruginous, cupriferous silica breccia
30	80	15	.116	.93	
ϕ	60		.023	.75	
ϕ	20		.083	.97	
30	80		.571	1.69	
50	95	16	.009	.32	
ϕ	60		.001	.09	Ferruginous si. bx with banded matrix
60	90	17	.001	.42	
ϕ	90		.117	.91	
ϕ	60		.048	1.48	
10	70	18	.033	1.36	
ϕ	70		.063	3.50	
ϕ	60		.049	1.17	
ϕ	50		.013	.43	
ϕ	90		.021	.18	
			.024	.25	
			.088	.49	
			.051	.20	
			.001	.10	
			.002	.15	Ferruginous silica breccia
			.004	.23	
			.004	.20	
			.001	<.01	
			<.001	<.01	
			<.001	<.01	

203'-211' Tan + biege, massive + banded silica with ~20% lt. + dk. gray si clasts (1/10"-1", $\bar{x}$ = 1/2"). ≤2% vugs (≤1/10")

211'-221' Dk. red-br. + yel-br., very ferruginous (lim. + hem.) vuggy (≤5% ≤ 1/2") si bx with ~30% lt. gr. clasts (1/4"-6", $\bar{x}$ = 1")

221'-249' Clast-supported breccia of ~90% lt. gray to milky white remarkably coarse clasts (1/4"-10", $\bar{x}$ = 5") with a red-brown, slightly hematitic matrix. Vugs ≤3%, ≤1/2". Many silica-healed fractures.

249'-255' Red-br + yel-br. very ferruginous (locally ~40% Fe) si. bx with ~40% coarse gray + br. clasts (1/4"-6", $\bar{x}$ = 1")

255'-275' Clast-supported si bx of ~80% lt. + dk gr., greenish-gray + brown clasts (1/4"-10", $\bar{x}$ = 4") in dark red-br., locally very hematitic matrix. Also locally very cupriferous. ~3-5% $CuCO_3$ overall. Vugs ≤3%, ≤1".

275'-284' Clast-supported si bx of 80% lt. + dk gray clasts (1/10"-3", $\bar{x}$ = 1") in red-br. hematitic + locally tan, banded si matrix. Few (≤1%) vugs. Locally gouge (tectonic). Tr-2% $CuCO_3$

284'-293' Red-br + yel-br., very ferruginous (both hem. + lim.) si. bx with ~40% lt. gr. clasts (1/10"-2", $\bar{x}$ = 1") and ~3% vugs (≤1/2"). Tr-2% $CuCO_3$

293'-324' Red-brown, hematitic si bx with ~60% lt. + dk gr. clasts (1/10"-6", $\bar{x}$ = 1/2"). Tr-2% $CuCO_3$. ≤1% vugs.

324'-339' Pale opaque gray massive to banded, hematitic chert with no significant Fe or Cu. No vugs. Only ~10% relict fine clasts (gray, 1/10"-1/2", $\bar{x}$ = 1/4"). Intensely tectonically shattered from 1/2" to fine sand size angular grains.

Massive + banded + tectonically shattered silica.

Hole No. 809-4

Collar location: U.V.X. Mine - 800 Level 809 DDS. Mine grid 11,790N 6,905E

Inclination: +23° at collar

Azimuth: 225° (S45°W) at collar

Length: 369 feet

Driller: Longyear Co. - Phoenix, AZ Bert Hanson + Dennis Sager, drillers

Core recovery: ~100% in diorite, except where gougy ~90% in chert, except where shattered.

Dates: June 16 thru July 6, 1987

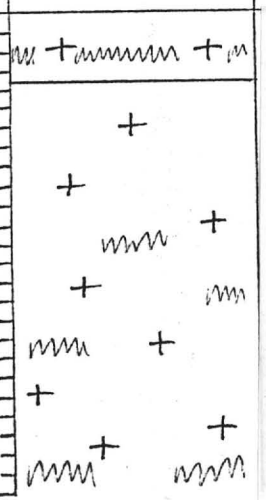
Assayer: Iron King Assay, Inc. - Humboldt, AZ Using Fire Assay, one assay ton, and AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig, NQ core, from collar thru 269'; BQ from 269' thru 369' (E.O.H.)

Overall drilling rate 19.4 ft/shift (10-hr shifts, 2 shifts/day). All casing + steel removed from hole despite caving at ~160'.

Core Size	RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ core; 1.875" diam.	20	100	Skeleton Box A							altered diorite	
	30	100									
	40	100									
	50	100		20							
	30	100									
	30	100									
	40	100									
	20	100		40							
	40	100									
	20	100									



Carole's reproduceables

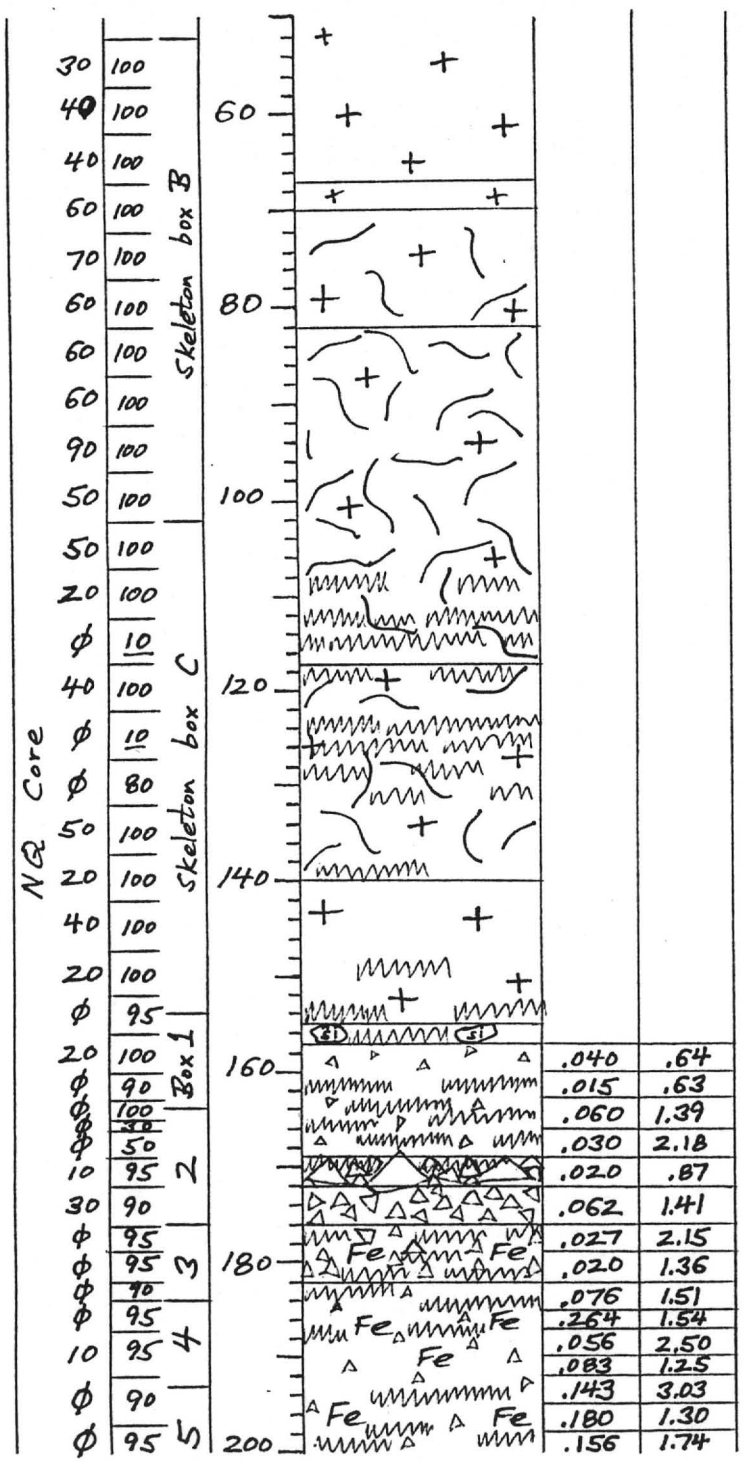
809-4+5

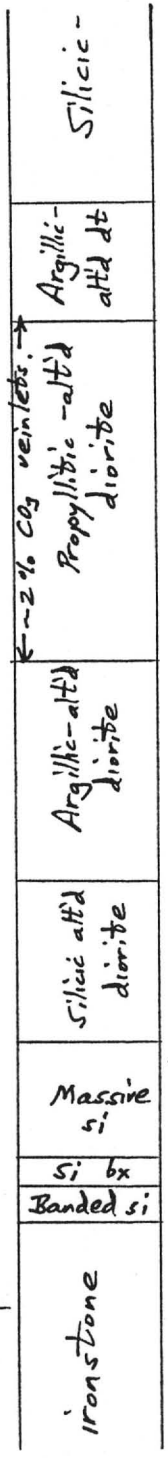
Note: Sense-of-orientation indicators are few and erratic but crudely indicate bedding ~40° to core axis. Therefore true thicknesses ~64% of drill intercepts

Ø'-157' Diorite; variously altered as follows:

Ø-7' Purple, white, + biege (blotchy color patches) foliated + banded (by color + composition/texture) silicic-altered diorite (kaolinized, silicified) Foliation + banding ~60° to core axis.

7'-67' Tan + biege, foliated + banded (30°-60° to CA) silicic alt'd dt with ~10% white + light gray silica clasts ≤2" diam. (most abundant from 35'-60'). Foliation + banding contorted around silica clasts, parallel to contacts.





67'-70' Purple + wt. blotchy, like 0'-7'

70'-82' Biege to red-brown argillic-altʼd diorite, with hematite ± qtz on fractures and as veins. "Gritty" or rough core surface. Geo-called "red blocky schist".

82'-117' Gray-green, fine to med. grained, propyllitically altered diorite with plagioclase grains + kaolin pseudomorphs clearly visible. ~2% carbonate (calcite ± dolomite ± siderite) veinlets with some accompanying red-br. hem.

117'-140' "Red blocky schist," same as 70'-82', plus ~2% malachite as fracture-filling veinlets + disseminated stain (permeating heavily altʼd, porous rock)

140'-155' Purple + wt, blotchy, silicic-altʼd dt like {0'-7' / 67'-70'}

155'-157' Red, yellow, biege, + brown, blotchy + banded, brecciated, intrusive contact zone dominated by intensely silicified diorite with some silica clasts. Later tectonically sheared and rendered grugy in part.

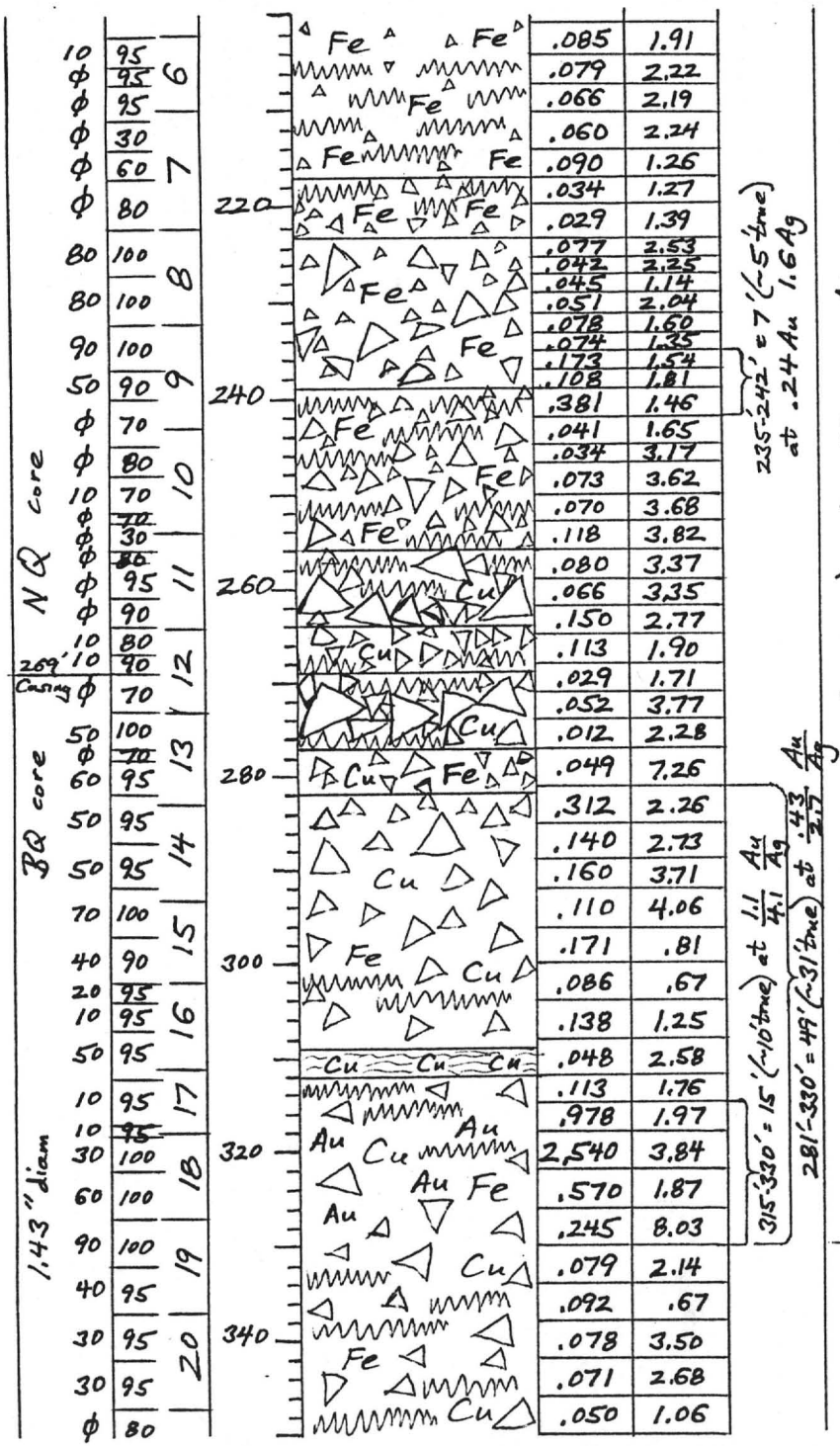
157'-369'+ Chert or silica, variously massive, banded, brecciated and ferruginous as follows:

157'-169' "Massive" silica, biege to red-brown, blotchy + mottled, with ~10% lt. gray si clasts ($\bar{x}$ = 1/16"). No vugs. Few healed frax.

169'-172' Clast-supported si bx at ~80% lt. gr. + wt. variously sized clasts (1/4"-6", $\bar{x}$=2") in tan + red tan matrix.

172'-176' Tan + biege "banded" si with ~40% lt. gr + wt. si clasts ($\bar{x}$=1/2"). Locally up to 20% isometric casts ≤2mm (after sulfides-?).

176'-162' Light brown, limonitic (~20% Fe) si bx. with ~30% lt. gr. clasts ($\bar{x}$ = 1/2") Vugs ≤ 4%, ≤ 1/2"



182'-217' Light + dark brown, mottled, limonitic, cherty ironstone (~50% Fe) with ~10% lt.gr. + brown si clasts ($\bar{x}$ = ¼"). ~20% vugs with very rough linings and black Fe coatings. Very broken, RQD ~ 0-10.

217'-223' Dark brown, limonitic ironstone (~50% Fe) with ~40% lt.gr. + lt.br. clasts ($\bar{x}$ = ½"). ~5% vugs.

223'-239' Dark brown, very ferruginous si bx with ~40% yellow-brown + lt.gr. clasts (¼-2", $\bar{x}$ = ½"). Both lim. + hem., ~20% Fe. Cores as solid rock cylinder. ≤10% vugs, ≤1" diam.

239'-256' Dark brown, very ferruginous si bx with ~50% yellow brown + lt.gr clasts (1/10-1", $\bar{x}$ = ¼") and fewer vugs than above (≤5% vugs, ≤ ¼").

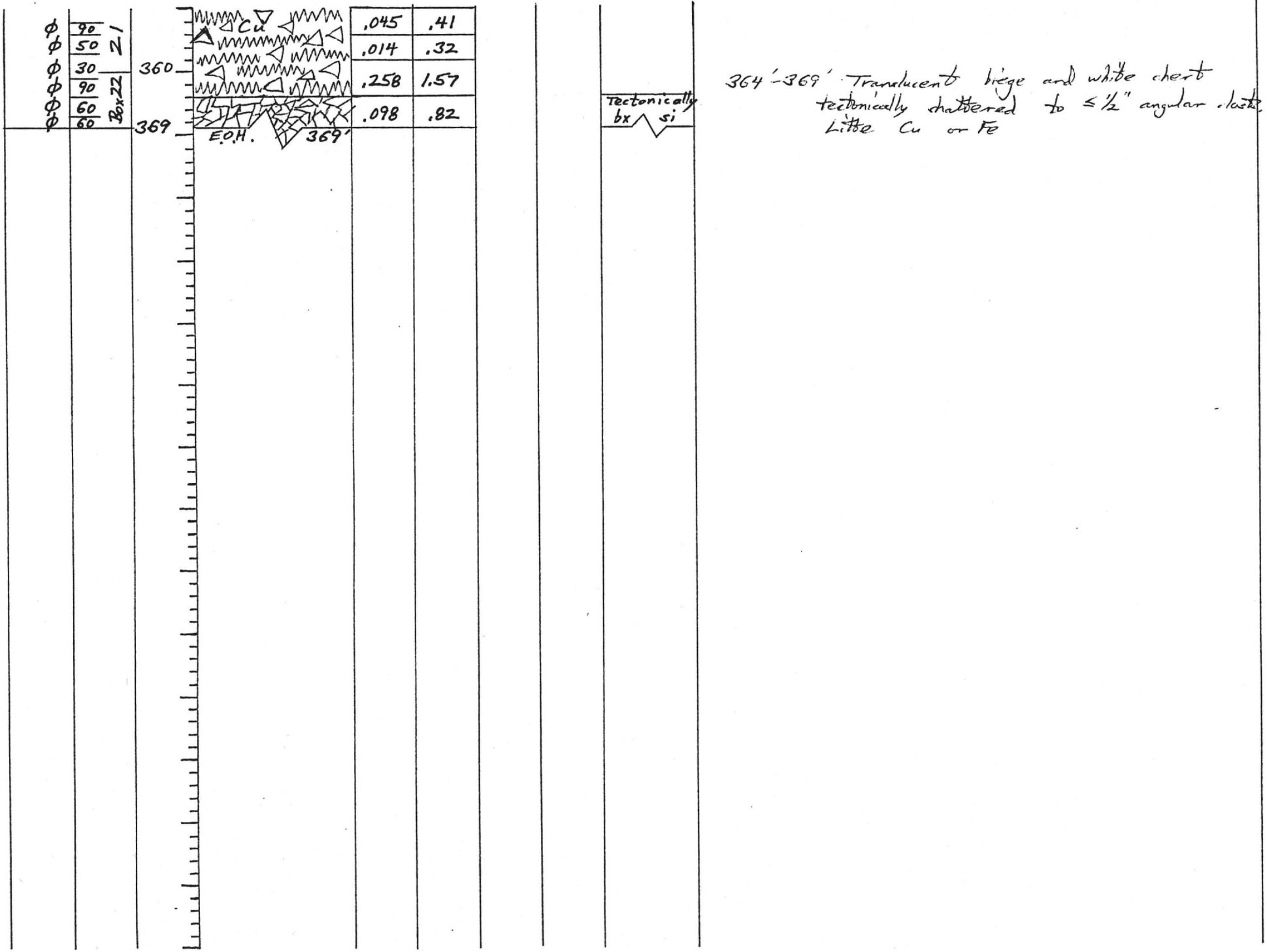
256'-264' Clast-supported bx of ~90% white, lt.gray, + green-gray clasts (2"-10", $\bar{x}$ = 6") in yell-br. + red-br matrix. Disseminated $CuCO_3$ lends all a green cast.

264'-269' Brown, limonitic si bx with ~50% lt.gray clasts, ($\bar{x}$ = 1") and up to 10% vug space in matrix only.

269'-277' Clast-supported bx of ~80% lt.gray. clasts (½"-8", $\bar{x}$ = 4") in dk. brown limonitic matrix with many silica-healed frax in clasts and ~5% vugs in matrix. Vugs lined with $CuCO_3$, Cu-hydroxides, and, most recently, druzy qtz xls.

277'-282' Dk. + lt. brown, + red brown, limonitic + hematitic vuggy (~10%, ≤2") and cupriferous (~5% Cu as malachite + hydroxides) si. bx. with ~30% gray + lt. + dk. brown clasts (1/10-3", $\bar{x}$ = 1")

282'-364' Dark + light brown ferruginous (both limonite + dark specular hematite) and cupriferous (malachite) silica breccia with ~40% gray, lt. gray, and white clasts (1/10"-4", $\bar{x}$ = 1"). Few (≤2%) vugs. 309'-312' is especially Cu-rich, virtually massive malachite. Increasing abundance of tectonic brecciation with depth in hole.



364'-369' Translucent beige and white chert tectonically shattered to ≤ ½" angular clasts. Little Cu or Fe

Hole No. 809-5

U.V.X. Mine - 800 Level
809 D.D.S.

Collar location: Mine grid 11,790 N 6,905 E

Inclination: +12° at collar

Azimuth: 185° (S5°W) at collar

Length: 195 feet

Longyear Co. - Phoenix, AZ

Driller: Bert Hanson + Dennis Sager, drillers

Core recovery: ~95% overall

Dates: July 6 thru July 10, 1987

Iron King Assay, Inc. - Humboldt, AZ

Assayer: Using fire assay, one assay ton and AA. followup for low grades

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core from collar thru 195 ft, end of hole. Overall drilling rate ~24.0 ft/shift (10-hr. shifts, 2 shifts/day)

All steel removed from hole.

NQ Core; 1.875" diameter. skeleton Box A

Core Size RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)	Rock type
20	80						
20	80						
50	100						
50	100						
60	100						
Φ	60		20				silicic-altd diorite
Φ	20						
20	90				.003	.36	diorite + intrusive silica bx
10	90						
Φ	50		40				silicic-altd diorite
Φ	80						
Φ	95						

Note: Bedding ~55° to core axis. Therefore true thicknesses ~82% of drill intercepts.

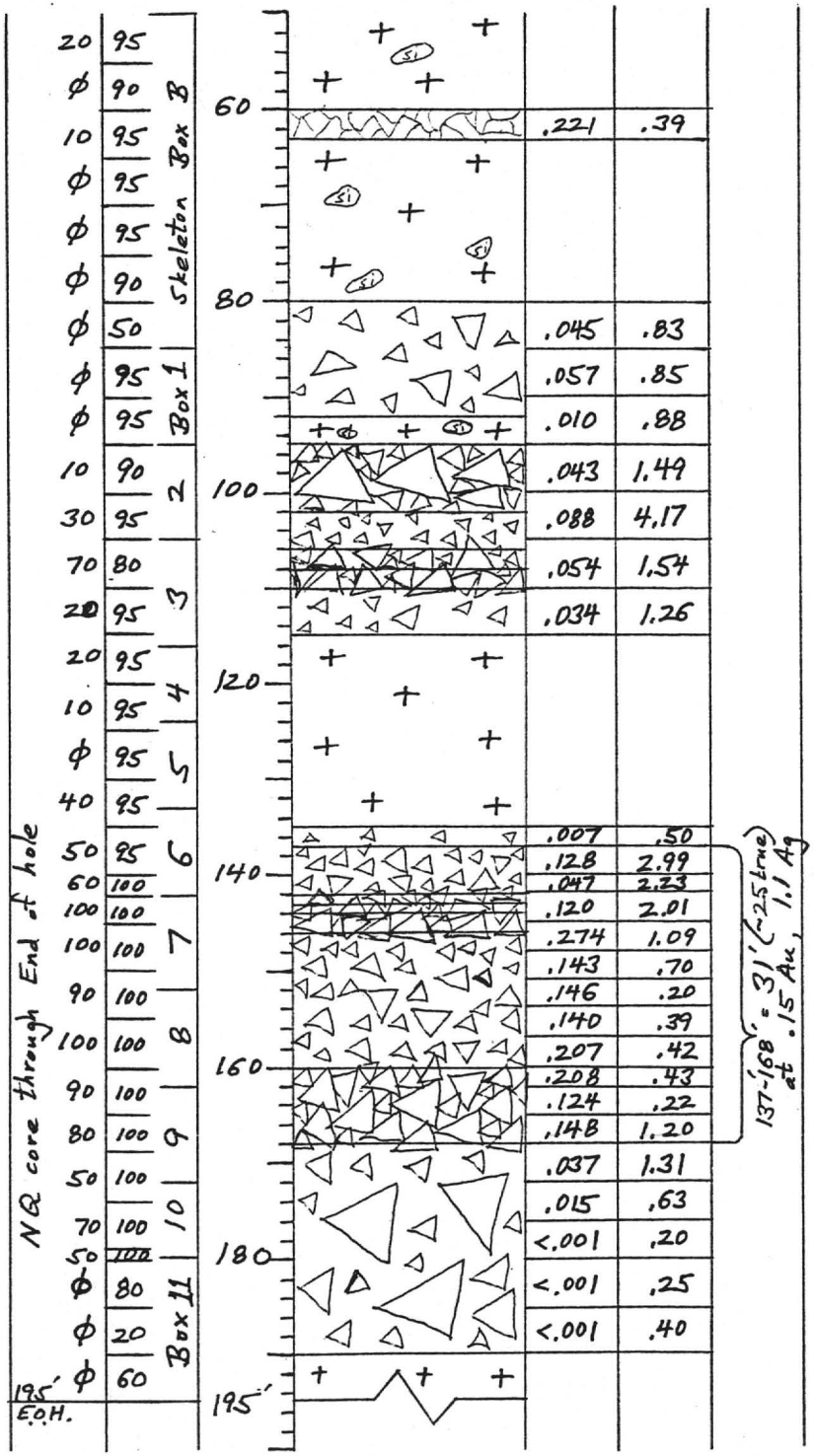
Lithology

Ø-15' Purple + white, blotchy, silicic-altered diorite with prominent foliation ~45° to core axis (CA.)

15-24' Beige, foliated, silicic-altd dt. with pale purple + dt. blotches and hints of remnant assimilated si clasts

24-36' Beige + tan, foliated, silicic-altd dt with ~50% lt. gray + white, crackled chert clasts (≤1/0")

36-60' Beige, silicic-altd dt. with ~10% white silica clasts (intrusive breccia) (≤1") excepting one large clast from 60-63' (white, crackled). Prominent foliation (~50° to CA) highlighted by alternating bands of pale + darker brown



color hues lending the appearance of "petrified wood".

80'-92' Dark red-brown, very ferruginous (hematitic) silica matrix with ~40% lt. gr. + wh clasts (1/4-4", $\bar{x}$=2"). Few (≤2%) vugs. Few healed fractures though clasts have "crackled" texture

92'-95' Red-br. + yell.-br. slightly gritty, ferruginous, silicic-alt'd diorite wedge within chert sequence. Includes ~10% wh. + lt. gr. intrusive bx clasts of si (≤1") Fol. ~50° to CA

95'-102' Clast-supported bx of ~80% lt. gr. + wh. clasts (1/2-12", $\bar{x}$=6") in dark red-brown, hematitic silica matrix.

102'-106' Same as above but only ~40% matrix-sup. clasts (1/4-1", $\bar{x}$=1/2")

106'-108' Same but 60% clasts (1/4"-6", $\bar{x}$=2")

108'-110' Same but clast-supported, ~90% clasts (1"-6" $\bar{x}$=4")

110'-115' Same but matrix-supported, ~20% clasts (1/10"-2" $\bar{x}$=1/2")

115'-135' Beige + pale purple silicic-altered diorite with crude foliation ~50° to core axis.

135'-137' "Massive" (hornfelsed) chert; beige with spots of iron stain (red hematitic) and ~20% silica clasts (1/4"-3/4", $\bar{x}$=1/2") of same beige color. No vugs. No fractures.

137'-142' Matrix-supported silica bx of ~50% tan + lt. grey clasts (1/10"-2", $\bar{x}$=1"); in red-br. + yell-br, slightly vuggy (≤5% ≤1") matrix

142'-143' Same except ~70% clasts (1/10"-3", $\bar{x}$=1")

143'-144' Same but clast-supported, ~80% clasts (1/10-4" $\bar{x}$=1")

144'-146' Same but ~90% clasts (1/10"-4", $\bar{x}$=2").

146'-160' Matrix-supported si bx of ~50% lt. gr + wh. clasts (1/10-2", $\bar{x}$=1") in red-brown, hematitic matrix.

160'-168' Clast-supported breccia of ~80% lt. gr. + wh clasts (1/4"-6", $\bar{x}$=3") in red-br. hem. matrix. "Chert bx" as far as obscured margins on clasts as result of SiO_2 flooding.

168'-190' Matrix-supported si. bx. with ~50% lt. gr. + wh. clasts (1/4-12", $\bar{x}$=6") in red-br, yell-br, + tan banded matrix. Some massive zones. Clearly hornfelsed by diorite. Banding irregular but often 60°-70° to CA.

190'-195'+ (E.O.H.) Pink + beige, silicic-alt'd diorite with foliation 60°-70° to core axis.

Reproduceable

Hole No. 809-2

Collar location: U.V.X. Mine – 800 Level 809 DDS. Mine grid 11,790 N 6,905 E

Inclination: +23° at collar

Azimuth: 185° (S5°W) at collar

Length: 240 feet

Driller: Longyear Co. – Phoenix, AZ Bert Hansen + Dennis Sager, drillers

Core recovery: Nearly 100% in diorite 60-100% (X≈95%) in chert

Dates: May 20 thru May 29, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ Using fire assay, one assay ton, and AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig, NQ core from collar thru 240' (E.O.H.) Overall drilling rate 18.5 ft/shift (10-hr. shifts 2 shifts/day). All rods removed from hole, no casing or collar pipe used.

Core Size	RQD	Runs/recovery	Core boxes	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ – 1.875" diameter	30	100	Skeleton Box A							Silicic alt'd diorite	
	30	100									
	40	100									
	60	100									
	50	100		20							
	30	100									
	60	100									
	30	100									
	60	100									
	90	100		40		<.001	.14			Massive chert	
	90	100				<.001	<.01				

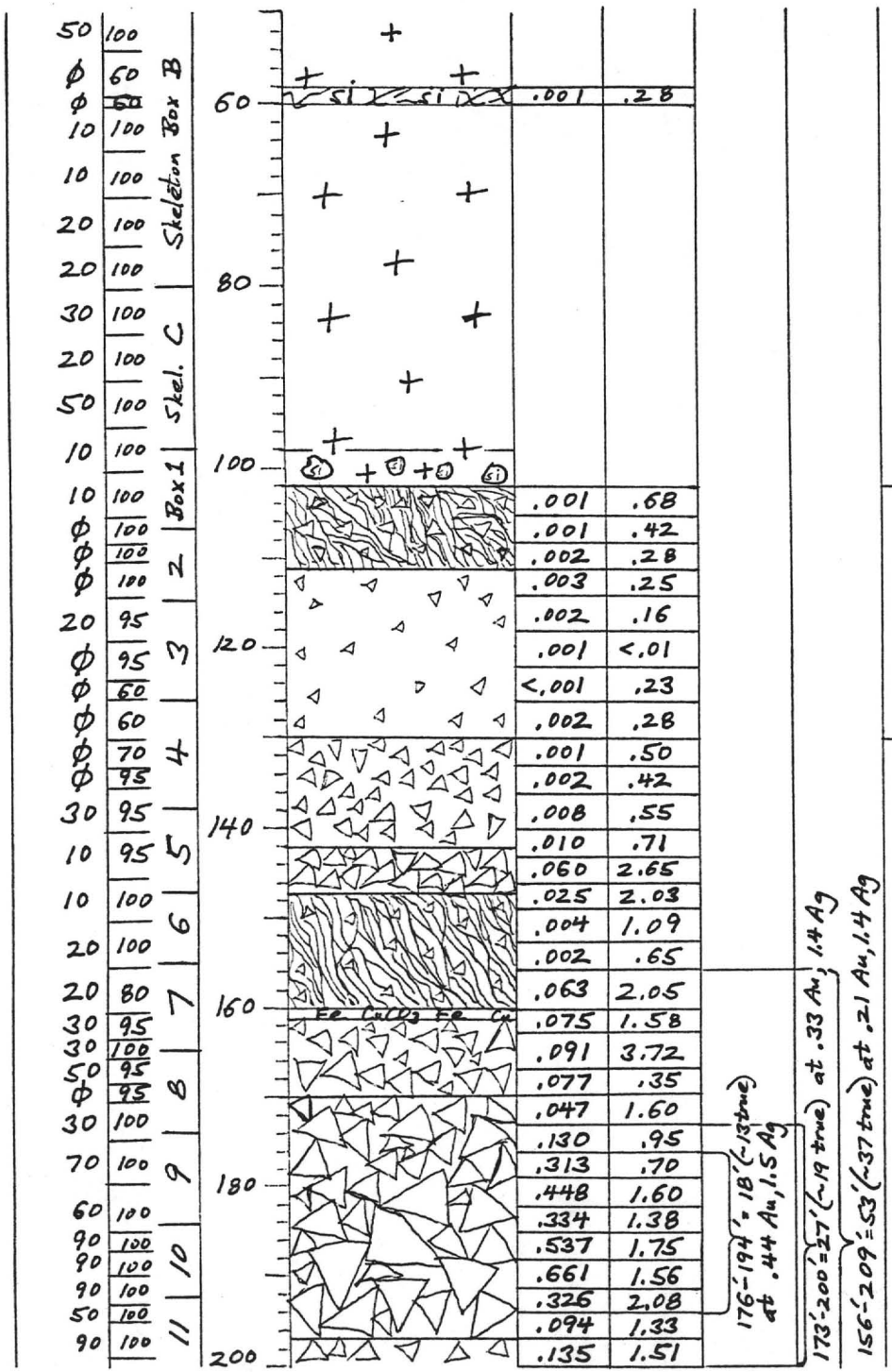
Note: Bedding very difficult to recognize in chert, but crudely indicated ~45° to core axis. Therefore true thicknesses ~70% of drill intercepts

Ø-21' Purple, white, + biege, blotchy + banded, foliated, silicic altered diorite. Occassional (≤5%) milky white chert clasts (≤1") Foliation + some shearing ~40° to core axis. Trace $CuCO_3$ on fractures.

21'-24' Biege + red brown, blotchy + swirly patterned chert clast

2 '39' Biege + tan silicic altered diorite. Most alt'd + best foliated adjacent to larger chert clasts. Overall ~10% chert frags. as intrusive bx.

39'-48' — Milky white + tan massive chert clasts with stringers of silicic alt'd diorite thruout.



Silicic altered diorite

Massive + banded chert.

Chert breccia + translucent gray "ghost breccia"

48'-74' Same as 24-39; Beige + tan silicic altered diorite. 58'-60' is a single light gray + white, shattered chert clast.

74'-77' Shear zone and diorite gouge

77-91 Same as 48'-74' but fewer si clasts.

91'-98' Purple + beige, blotchy, silicic alt'd dk.

98'-102' Pink, tan, + beige silicic alt'd dk + intrusive bx with ~20% lt. gray. chert clasts (≤ ½") and prominent foliation banding ~40° to CA.

102'-216' Chert; variously banded + brecciated as follows:

102'-111' Various 1'-3' thick beds of fairly massive and banded chert breccias with 30-60% clasts, ($\bar{x}$ = ¼"-1"). Clasts generally light + dark gray. Matrix tan to red-brown. No vugs. Banding from 20° to 45° to core axis.

111'-130' Matrix supported banded bx of ~10% yellow tan clasts ($\bar{x}$ = ¼") in yellow tan (locally porous, 119-130) matrix with red-brown polka-dot FeO blotches.

130'-142' Matrix-supported bx of ~50% clasts (gray + yellow tan, $\bar{x}$ = ½") in a red-brown to gray and tan slightly vuggy (≤ 3%, ≤ ½") matrix.

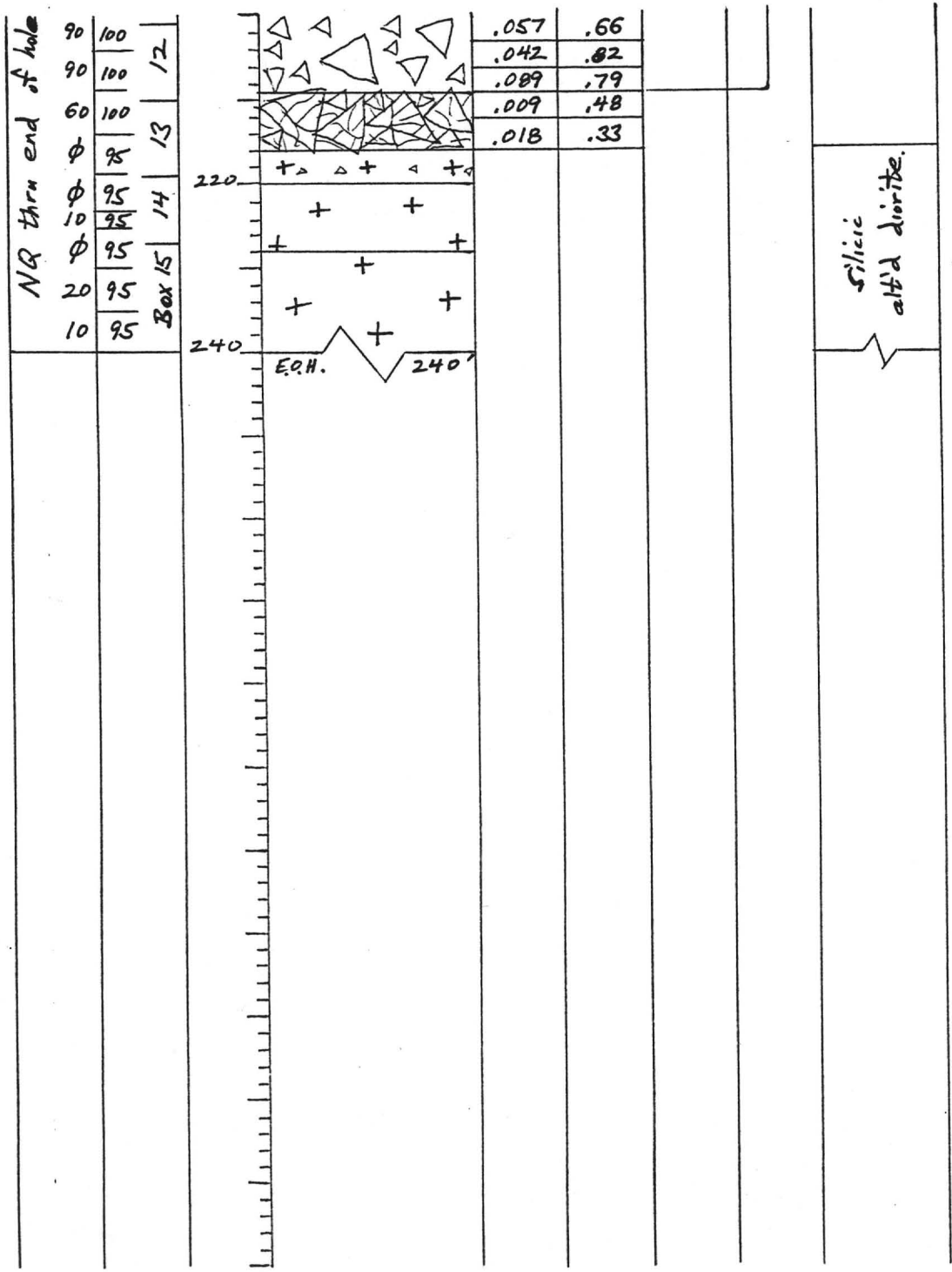
142'-147' Clast supported bx of ~70% lt. + dk gray + white clasts ($\bar{x}$ = 1") in translucent gray + red-gray slightly hematitic, slightly vuggy "ghost bx". Mottled appearance revealed intensely silicified bx. ~3% fine boxwork casts after some rutile (py-?)

147'-160' Purple gray + yellow brown massive to banded chert (banding ~30° to CA) with ~10% milky qtz + gray clasts ($\bar{x}$ = ¼")

160'-161' Very ferruginous, brown, vuggy chert with much botryoidal $CuCO_3$ and black hematitic coatings. Poor coring.

161'-170' "Ghost bx" of ~50% translucent gray clasts ($\bar{x}$ = 1") in similar translucent gray + red gray matrix. Clasts + qtz veinlets all have obscured margins.

170'-197' "Ghost bx" of ~80% translucent gray clasts ($\bar{x}$ = 2") in similar translucent gray + red gray matrix. Clast supported. Abundant relict bx fragments + x-cutting veinlets, all silica-flooded and obscured.



197'-209' Matrix-supported bx with ~50% translucent + milky gray clasts ($\bar{x}$=1") in chocolate brown + yellow brown, "frothy," very porous (vuggy) though low permeability chert. Vugs up to 15% and 2" dia, generally ~¼".

209-216 Clast-supported bx with ~90% gray + white clasts ($\bar{x}$=6") in red-gray, hematitic matrix. No vugs. Might be considered massive to "crackled" + healed, hornfelsed edge of chert.

216-EOH — Silicic altered diorite.

216'-220' Beige + tan, foliated (~80° to CA) with several thin zones (~1") of abundant ~¼" chert clasts (intrusive bx).

220'-228' Purple + white, blotchy color pattern.

228'-240' (EOH) Pink-beige + rusty beige.

Hole No. 809-1

U.V.X. Mine - 800 Level
809 D.D.S.

Collar location: Mine grid 11,790 N 6,905 E

Inclination: +23° at collar

Azimuth: 205° (S25°W) at collar

Length: 336 feet

Driller: Longyear Co. - Phoenix, AZ
Bert Hansen + Dennis Sager, drillers.

Core recovery: ~95% in diorite
~90% in chert

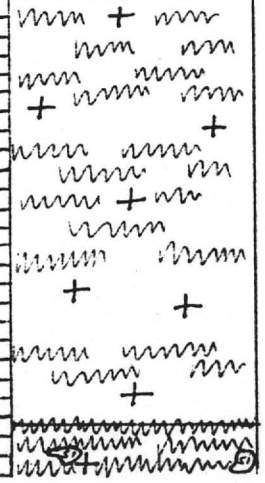
Dates: May 6 thru May 20, 1987

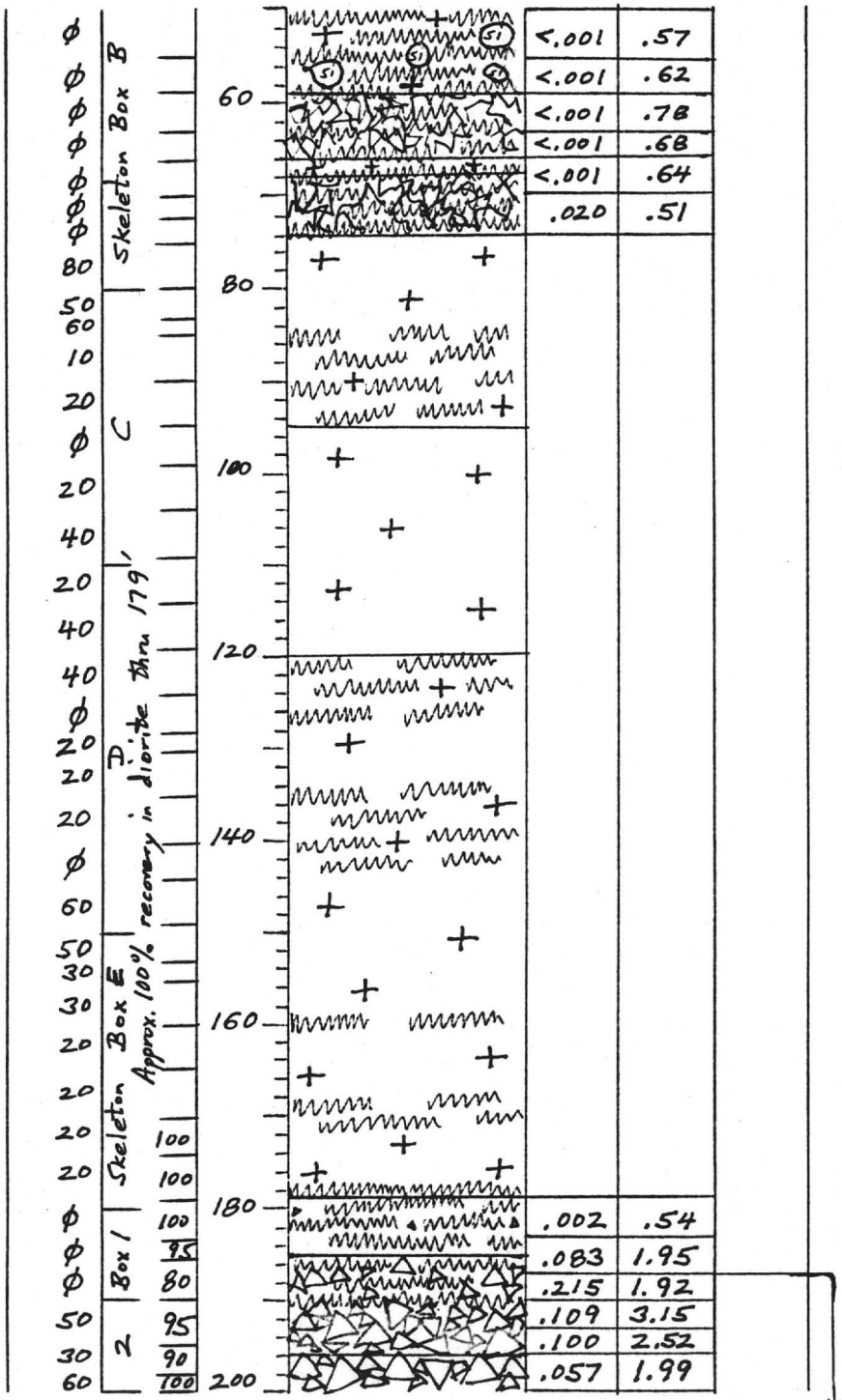
Assayer: Iron King Assay, Inc. - Humboldt, AZ
Using fire assay, one assay ton, and AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core to 205 ft., NQ from 205' to 336' (E.O.H.) Overall drilling rate 16.8 ft./shift (10 hr. shifts, 2 shifts/day). not including move to station.

All casing + steel removed from hole.

Core size	RQD	Core box Runs/recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ core (2.5" diam) to 205 ft.	10 10 10 70 70 50 90 20 80 Ø	Skeleton Box A Approx. 100% recovery in ft thru 179'	20 40						Silicic - altered diorite	Note: Bedding very difficult to recognize in chert but crudely indicated ~45° to core axis. Therefore true thicknesses ~70° of drill intercepts Ø-45' White to biege, very fine grained, massive to crudely foliated, kaolinitic and silicified diorite. So-called, silicic alteration zone. Foliation may be flow banding. Kaolin imparts a soapy feeling to core. 45'-59' Same as Ø-45' except for the inclusion of abundant golf-ball size clasts of milky white, shattered chert taken to be intrusive breccia.



Massive chert

Silicic altd diorite

Argillic altd diorite

Silicic altered diorite

Massive chert

59'-66' White to red, massive (horntelsed?) but crackled chert actually composed of ~80% gray-white clasts ($\bar{x}$=2") in red-brown matrix.

66'-68' Silicic altd diorite wedge (like 45'-59')

68'-74' Crackled chert (like 59'-66')

74'-95' Silicic altd diorite (like 0'-45')

95'-120' Argillic altered diorite. White to red-brown, hematite stained, fine grained kaolinized diorite. Called "red blocky schist" on old (1920's) maps.

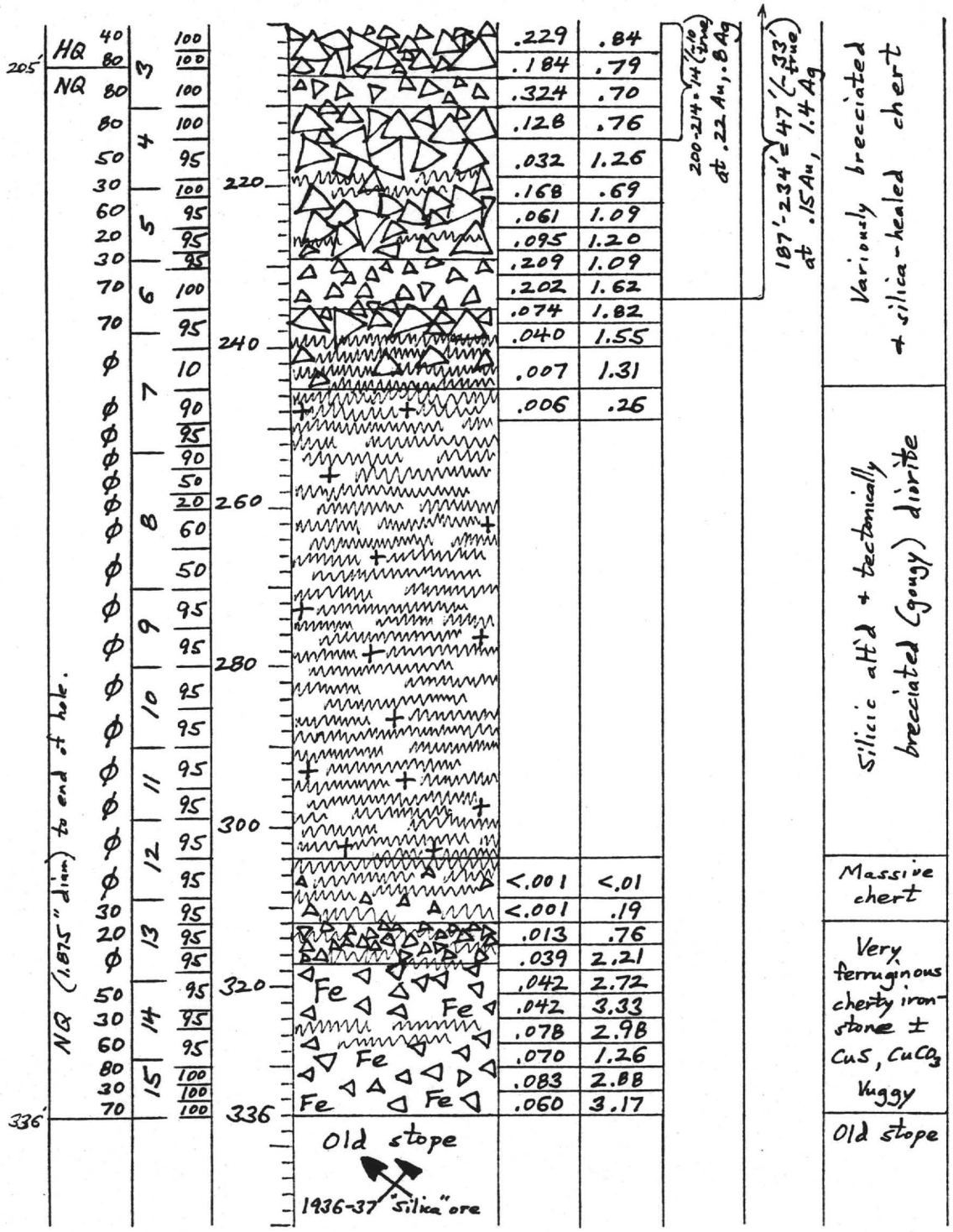
120'-179' Silicic altered diorite (like 0'-45', 74'-95')

179'-245' Chert, as detailed below:

179'-185' Massive chert; beige + red-brown, with ~10% light + dark gray clasts ($\bar{x}$ = 1/4"). ≤2% vugs.

185'-196' Clast supported bx of ~70% opaque + translucent lt. gray clasts ($\bar{x}$=2") in gray + yellow brown (limonitic) vuggy (vugs ≤10%, ≤1") silica flooded matrix. ~5% vugs filled with yellow silica grit. Slightly saccharoidal texture but well indurated.

Note Crude "bedding" + clast orientation ~45° to C.A.



Variously brecciated + silica-healed chert

Silicic alt'd + tectonically brecciated (gougy) diorite

Massive chert

Very ferruginous cherty iron-stone ± CuS, $CuCO_3$ Vuggy

Old stope

196'-206' Clast-supported bx of ~70% milky white and gray clasts ($\bar{x}$ = 3") in red brown, hematitic matrix.

206'-210' Matrix-supported bx of ~50% wt. + gray clasts ($\bar{x}$ = 1") in red-gray + purple-gray chert matrix. Bx. frags are "ghost"-like with assimilated margins and abundant x-cutting, silica healed fractures.

210'-224' Clast-supported bx of ~80% dk gray clasts ($\bar{x}$ = 4") in red-brown hematitic chert matrix.

229'-235' Matrix-sup. bx of ~50% milky wt. + lt. gray clasts ($\bar{x}$ = 1") in yellow-brown, vuggy (≤10%, ≤1") abundantly fractured + healed matrix. Traces of malachite on frax.

235'-245' Clast-sup bx of ~70% lt. + dk gray clasts ($\bar{x}$ = 3") in yell-br. + red-br. lim. + hem. matrix. Very crude banding ~ 60° to core axis.

245'-304' White to biege and light gray, intensely brecciated and gougy, fine grained, kaolinized, silicified diorite. Silicic alteration zone of diorite between two zones of chert (above + below) with tectonic brecciation to very poor rock quality (RQD = Ø). Occasional white, crackled, chert clasts probably original intrusive bx. frags.

304'-336'+ — Massive + ferruginous chert ± base metals as detailed below.

304'-312' Massive chert of blotchy + swirly purple + white with ~20% lt. gray clasts ($\bar{x}$ = ½"). No vug. Fe-frax.

312'-317' Matrix supported bx of ~60% milky white + lt gray clasts ($\bar{x}$ = ½") in gray to lt. brown limonitic chert matrix. No vugs. Ferruginous, perhaps 10% Fe. ~3% narrow (≤1mm) stringers chalcocite + malachite.

317'-336' Very ferruginous (~50% Fe!) very dense iron-stone with ~50% red-brown + brown ironstone clasts ($\bar{x}$ = 1") in red-br. hematitic, very vuggy (~20%, ≤1") matrix. Vugs lined with fine drusy qtz and ~2% botryoidal malachite.

Ended hole at 336' in old "silica ore" stope.

Hole No. M-11

Collar location: U.V.X. Mine - 950 level Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +25° at collar

Azimuth: 173° (57°E) at collar

Length: 210 feet

Driller: Longyear Co., Phoenix, AZ Bert Hansen + Dennis Sager, drillers.

Core recovery: ~100% in diorite (0-152') ~80% in chert (152-210')

Dates: April 28 thru May 4, 1987

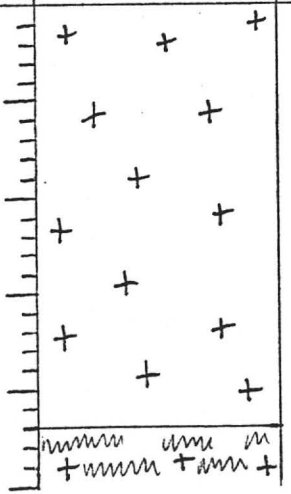
Assayer: Iron King Assay, Inc. - Humboldt, AZ Using fire assay, one assay ton and AA. followup for low grades.

Logger: Don White, geologist.

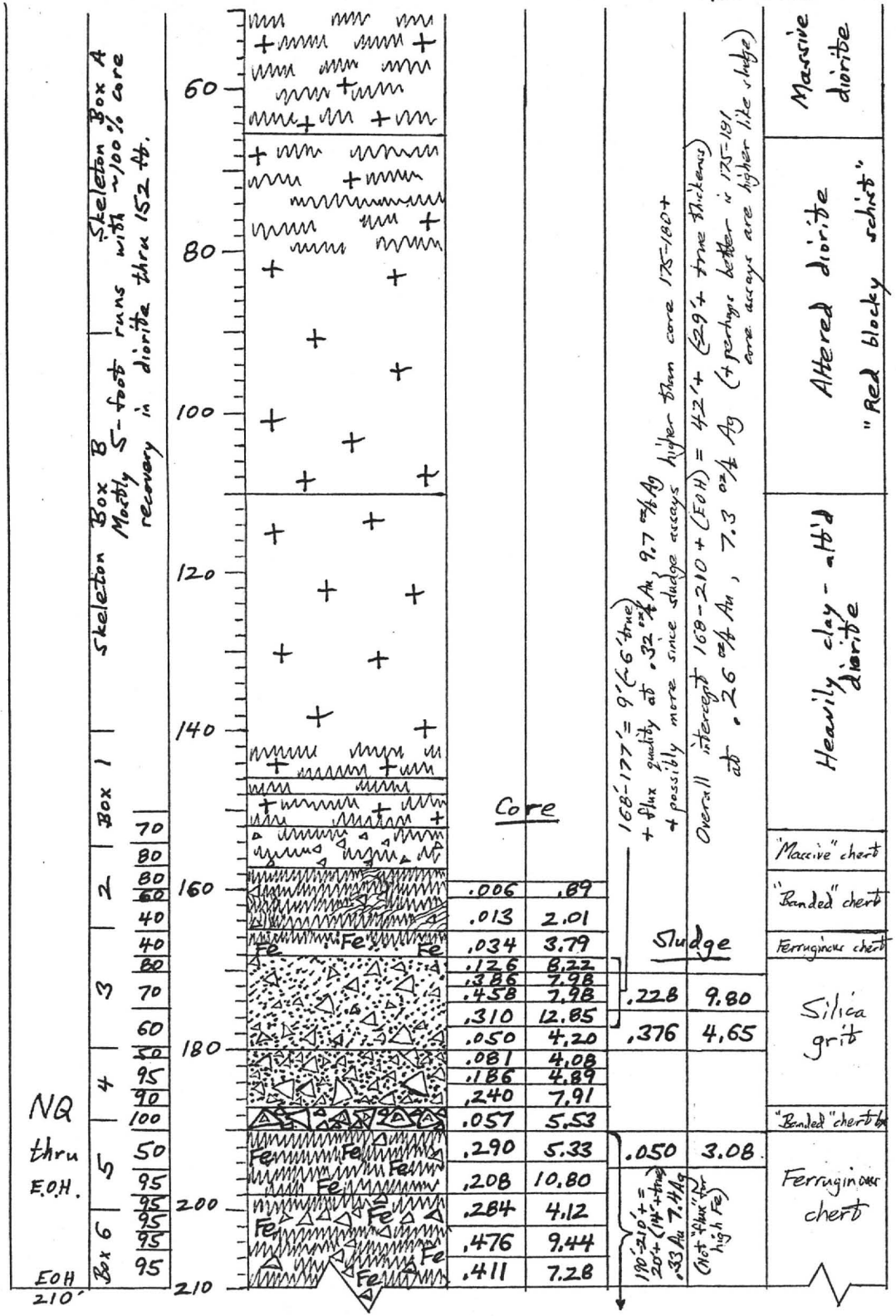
Remarks: Drilled with Longyear 34, pneumatic rig. NQ core for entire hole. Overall drilling rate 23.3 ft/shift including moving on to hole. (10-hr. shifts, 2 shifts/day)

All drill rods, etc. removed from hole

Last hole from Morgan D.D.S.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
All NQ core, 1.875" diam.	Mostly 5-ft. runs with ~100% recovery in dt.	20 40						≤ 4% CO_3 veinlets Massive diorite	Note: Bedding (?) in silica grit ~45° to core axis. Therefore true thicknesses ~70% of drill intercepts. 0-44' Gray-green, massive, equigranular diorite. Kaolinite (pseudomorphing plagioclase + amphibole) chlorite, epidote, plagioclase, leucoxene, ± quartz, hematite, carbonate (calcite, dolomite) veinlets. Clear plutonic relict textures despite clay alt'n + veining. Propylitic alteration with CO_3 veinlets.

U.P.X. D.D.H. M-11 p. 2 of 2



44'-65' Same as Ø-44 but lacking the carbonates; no veinlets or disseminated CO_3.

65'-110' Gray-green (with red-brown overprint) hematite-veined massive diorite. Kaolinite-sericite-chlorite ± quartz, leucoxene, feldspar (relict plag.) with prominent red-brown hematite veinlets in all orientations. Trace azurite + malachite. Argillic alt'n zone. Old-timer's "red blocky schist".

110'-152' Biege + tan, bleached + intensely clay-alt'd diorite. Kaolinite-quartz ± sericite, chlorite, + hem. traces. Silicic alteration zone of diorite; few relict plutonic textures preserved.

Note: 146'-148' Clast of chert, biege/tan, massive, with abundant very tiny (≤ 1/10") vugs. Intrusive bx frag.(?)

152'-210'+ Chert; variously massive, banded, ferruginous, and "gritty" as follows:

150'-157' Red-gray, massive chert with ~30% lt. gray + tan clasts ($\bar{x}$ = 1/4")

157-165 Tan-biege, banded chert with ~30% lt. gray + translucent clasts ($\bar{x}$ = 1/2"). No vugs or porosity. Exceedingly hard drilling.

165'-168' Dark red-brown + black, very dense, strongly hematitic chert. Mostly tight with conchoidal frax. but locally gritty + porous.

168'-180' Mustard yellow, limonitic, silica grit. Very porous and friable. Contains ~30% heterogeneous (gray, red, yellow, tan) 1/10"-2" ($\bar{x}$ = 1/2) clasts. Bedding (?) ~ 45° to core axis.

180'-187' Yellow and red-brown friable + porous silica grit with ~50% 1/10"-3" ($\bar{x}$ = 1") multi-colored clasts.

187'-190' Tan and tan-gray chert breccia with ~70% 1/4"-6" ($\bar{x}$ = 2") tan, lt. gray, translucent gray, + blood red clasts. Many clasts are 2nd generation bx. Possible silica sinter on frax ∥ CA.

190'-198' Yellowish chocolate brown, massive, vuggy (~20%) very ferruginous chert with vugs lined by clear, drusy qtz.

198'-210'+ (EOH) Dark brown and black, vuggy (with drusy qtz. linings) very ferruginous chert with ~40% brown, similar composition clasts ($\bar{x}$ = 1").

Hole No. M-9

Collar location: U.V.X. Mine - 950 Level, Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +20° at collar

Azimuth: S 15° W (195°) at collar

Length: 183 feet

Driller: Longyear Co. - Phoenix, AZ; Bert Hansen + Dennis Sager, drillers

Core recovery: ~100% in diorite (0-83'); ~95% in chert (83'-183')

Dates: April 14-22, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using fire assay, one assay ton. + A.A. followup as appropriate.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. Overall drilling rate ~18.3 ft/shift for 10-hr. shifts, 2 shifts/day.

HQ core to 147 ft. NQ from 147 to 183' (EOH).

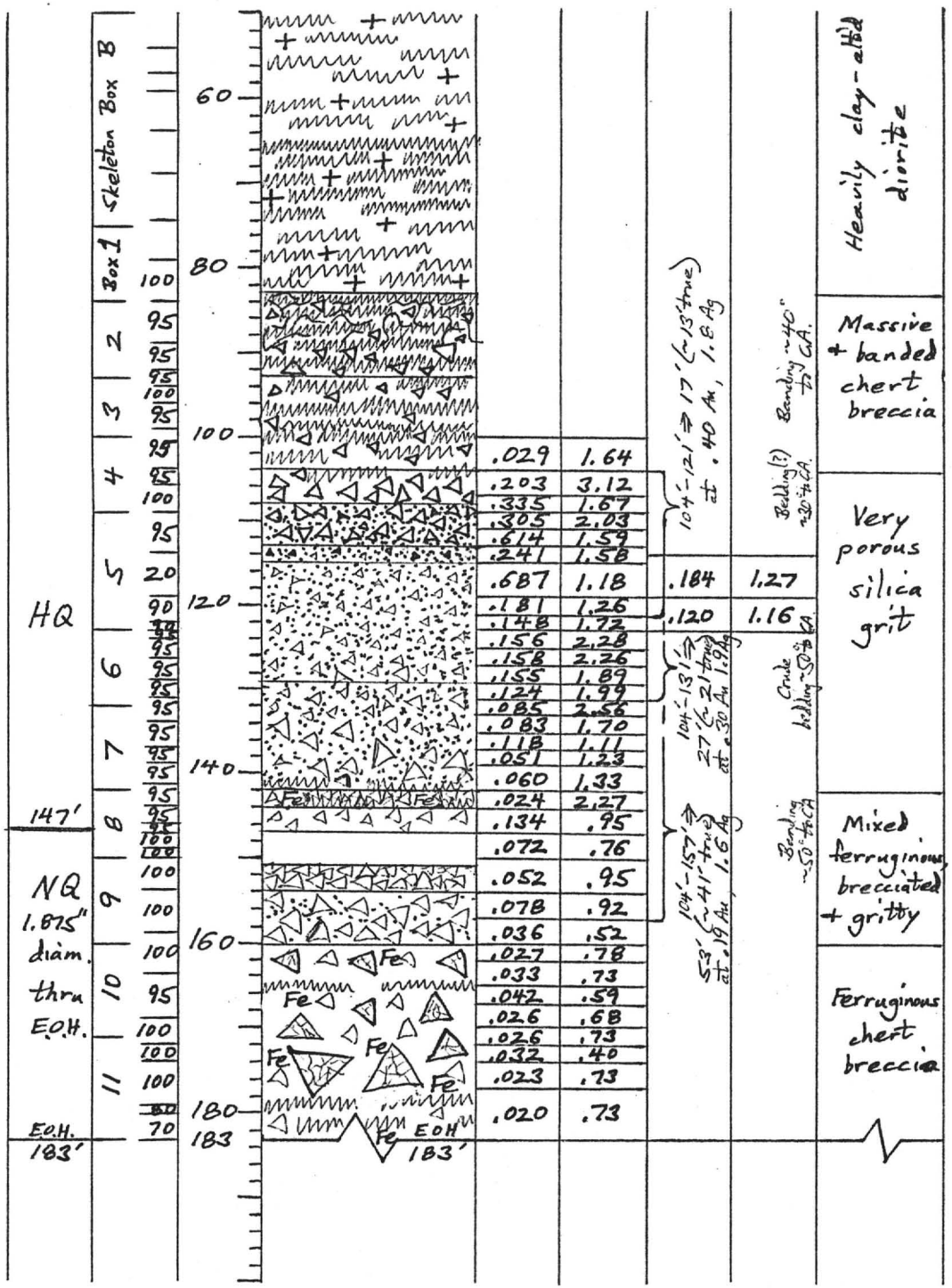
All casing + rods removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ core 2.5" diam thru 147'	Box A: Skeleton. Core recovery ~100% in dt thru 83 ft	20; 40						1-2% CO_3 veinlets diorite; Massive diorite; Altd diorite "Red Blocky sch"	Note: Bedding (?) ~50° to core axis. Therefore true thicknesses are ~77% of drill intercepts.

0-15' Gray green equigranular, massive diorite with 1-2% CO_3 veinlets, generally calcite and siderite, with some quartz and hematite.

15'-30' Same massive diorite, without CO_3 veinlets. Feldspars intact or clearly recognizeable as pseudomorphs.

30'-50' Massive diorite with brick red cast from abundant hematite-lined fractures. Feldspars quite altd and crumbly. Cores rough and pitted. So called "red blocky schist".



50'-83' Extremely clay-altered diorite. Beige and tan, bleached, massive to crudely foliated with no remaining feldspars, only clay pseudomorphs. Cores smooth + soapy feeling

83'-183'+ (E.O.H.) Chert; variously massive, banded, gritty, brecciated, + ferruginous, as follows:

83'-93' Tan brown matrix with ~30% gray, wt., + translucent clasts ($\bar{x}$ = ½"). Grossly contorted flow banding + bx near dt contact. Larger clasts toward base (93').

93'-104' Tan and purple-white, blotchy matrix with ~30% milky white clasts ($\bar{x}$ = ½"). No vugs, few healed frax.

104'-108' Yellow-brown to white limonitic matrix with ~50% gray and yellow brown clasts ($\bar{x}$ = 1"). Locally porous + gritty. Some clear 2nd generation breccias.

108'-113' Yellow-brown to white, very friable + very porous, saccharoidal silica grit with ~60% matrix-supported gray-brown + white clasts ($\bar{x}$ = 1").

113'-115' Yellow grit with ~30% fine ($\bar{x}$ = ⅛") light gray clasts

115'-129' Yellow-tan, porous, saccharoidal silica grit with ~30% lt. gray clasts ($\bar{x}$ = ½")

129'-142' Yellow, porous silica grit as above but with ~30% lt. gray clasts of larger dimension (⅛"-3", $\bar{x}$ = 1").

142'-144' Dark red-gray, very dense, very ferruginous, clast-supported bx of ~80% red-gray clasts $\bar{x}$ = ½" in very hematitic matrix.

144'-147' Yellow chert bx with ~30% lt. gray clasts ($\bar{x}$ = 1")

147'-151' Lt. gray, translucent quartz or chert; massive, may be a single 4-foot clast. Same composition as clasts above.

151'-154' Clast-supported bx of ~70% tan, lt. gray, white, + banded clasts ($\bar{x}$ = 1") in lt. gr. + red-brown slightly vuggy matrix

154'-160' Yellow to red-brown, locally porous, generally saccharoidal silica grit and bx with ~50% lt. gray, white, + tan clasts ($\bar{x}$ = 2").

160'-183'+ (E.O.H.) Red-brown, very ferruginous (locally up to ~30% Fe) chert bx with ~50% tan + biege clasts (⅛"-6", $\bar{x}$ = 3"). Most clasts "crackled"; broken in jigsaw puzzle pattern + healed with red-brown hematitic chert.

Hole No. M-8

Collar location: U.V.X. Mine - 950 level Morgan, D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +40° at collar

Azimuth: S30°W (210°) at collar

Length: 187 feet

Driller: Longyear Co. - Phoenix, AZ Bert Hansen + Dennis Sager, drillers.

Core recovery:

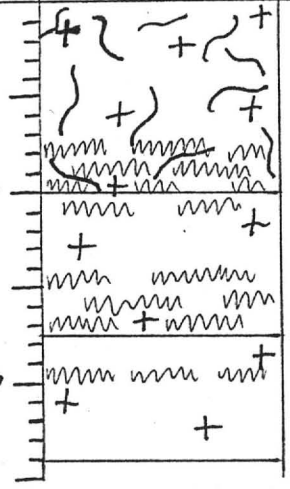
Dates: April 7 thru 14, 1987

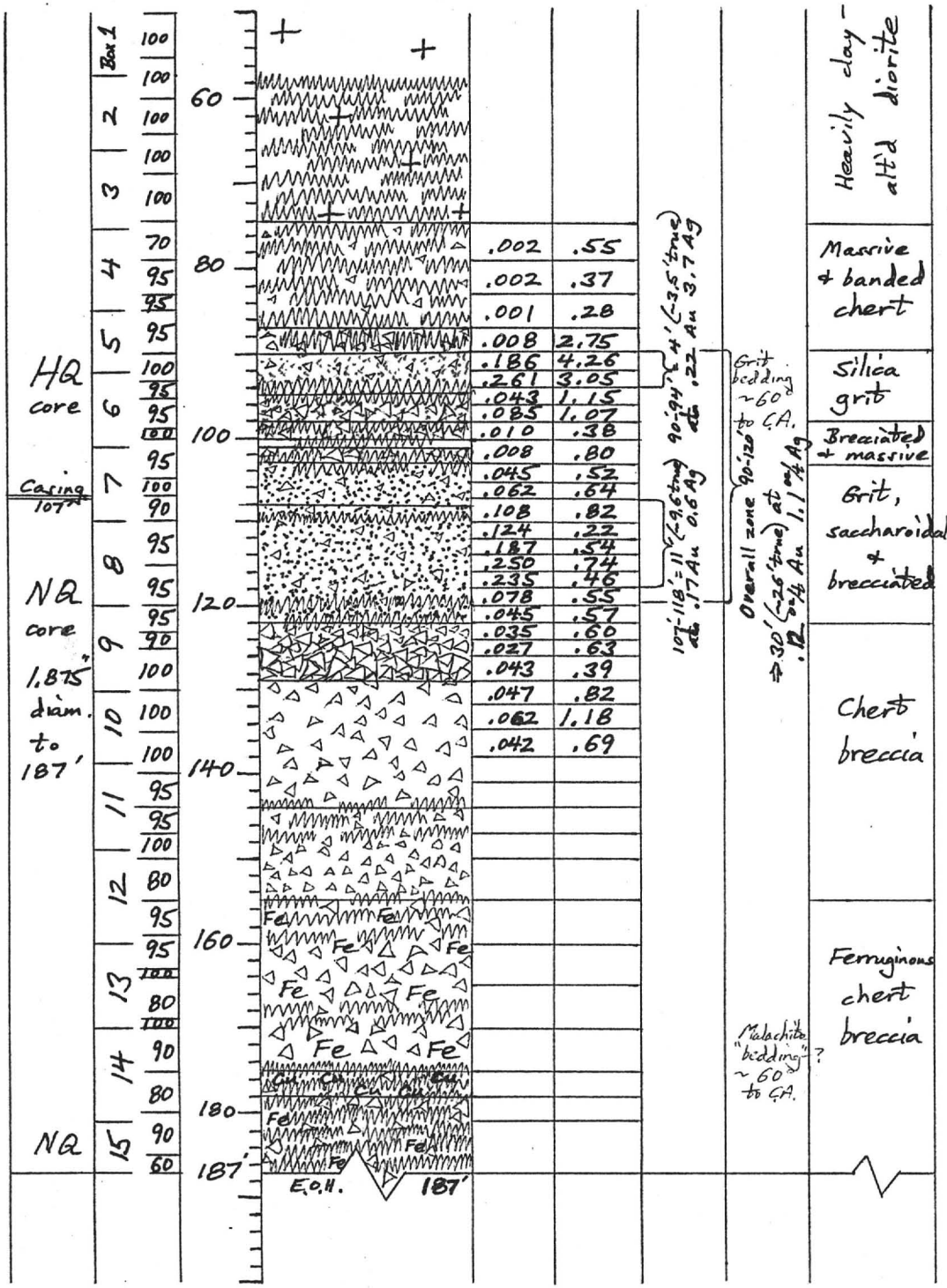
Assayer: Iron King Assay, Inc. - Humboldt, AZ Using fire assay, one assay ton. + AA followup as appropriate.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. Overall drilling rate 18.7 ft/shift for 10-hr. shifts, 2 shifts/day. HQ core to 107 ft. NQ from 107'-187 ft.

All casing + rods removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ core 2.5" diam to 107'	Skeleton Box A Recovery ~100% thru dt to 74'	20						1-2% CO_3 veinlets Massive diorite	Note: Bedding ~60° to core axis. Therefore true thicknesses ~87% of drill intercepts.
								Massive diorite	0'-20' Gray-green, massive, equigranular diorite with ~1-2% carbonate veinlets, generally calcite ± siderite with some qtz. + hem.
		40						Alt'd diorite 'Red, blocky schist'	20'-35' Same massive diorite, without CO_3 veinlets. Feldspars intact or clearly recognizable as pseudomorphs. Core surface is smooth, solid.
									35'-48' Massive diorite with brick red cast from abundant hematite-lined fractures. Feldspars quite alt'd and crumbly. Core surface is rough and pitted. So called "red, blocky schist".



48'-74' Extremely clay-altered diorite. Beige and tan bleached, massive to crudely foliated with no remaining feldspars, only clay pseudomorphs. Cores smooth + soapy feeling.

74'-187'± (E.O.H.) Chert, variously massive, banded, brecciated, and ferruginous as follows:

74'-87' Massive, purple-gray with some white redox blotches and ≤ 10% milky white bleb-like clasts ($\bar{x}$ = ¼")

87'-90' Coloration presumably from trace hematite. Massive + banded purple-gray + yellow tan with ~20% lt. gray + wt. clasts ($\bar{x}$ = ½"). No open space.

90'-95' Mustard yellow silica grit (porous, very fine ss size) with ~10% milky wt. + gray clasts ($\bar{x}$ = ¼") Clasts exhibit 3rd generation bx. in frags. up to 2" max.

95'-98' Yellow grit matrix bx with ~60% clasts (⅛"-3" $\bar{x}$ = 1") of very heterogeneous color (gray, lt. gray, white, translucent).

98'-100' Tan matrix with ~90% gray clasts up. frags. ($\bar{x}$ = 2")

100'-101' Same as 74'-87'

101'-103' Same as 98'-100'

103'-122' Clean white (103-108') to limonitic (mustard) yellow (108-122') saccharoidal textured silica grit with ~20% lt. gray, white, & translucent clasts. Very porous like fine gr. ss.

122'-129' Light red and yellow matrix with 70-80% lt. gray & tan clast supported bx frags grading from 4" at base to ⅛" at top. Vuggy.

129'-144' Yellow-brown + red-brown, matrix supported bx with ~50% lt. gray + yellow-brown clasts ($\bar{x}$ = 1")

144'-155' Red-brown matrix-supported bx with ~60% light gray and red clasts ($\bar{x}$ = ¼").

155'-175' Red-brown, very ferruginous (~10% Fe-?) matrix supported bx with ~50% gray clasts ($\bar{x}$ = 1")

175'-178' Massive + banded lime green, copper carbonate (malachite) with ~10% lt. gray + red-brown ferruginous chert clasts ($\bar{x}$ = ½"). Setting + conformable banding (~60° to core axis) suggest primary (hypogene oxide) deposition.

178'-187'+ Red-brown, very ferruginous (~ 6% Fe-?) matrix-supported bx with ~40% lt. gray + tan clasts ($\bar{x}$ = 1")

Last 10' of core tectonically brecciated indicating proximity to sheared contact with diorite, probably at ≤ 200'.

Hole No. M-10

Collar location: U.V.X. Mine - 950 level Morgan Mine D.D.S. grid 11,565 N 7,060 E

Inclination: +23° at collar

Azimuth: S 17° E (163°) at collar

Length: 278 feet

Driller: Longyear Co. - Phoenix, AZ Bart Hasen & Dennis Sager, drillers.

Core recovery: ~98% thruout; all in diorite

Dates: April 22-28, 1987

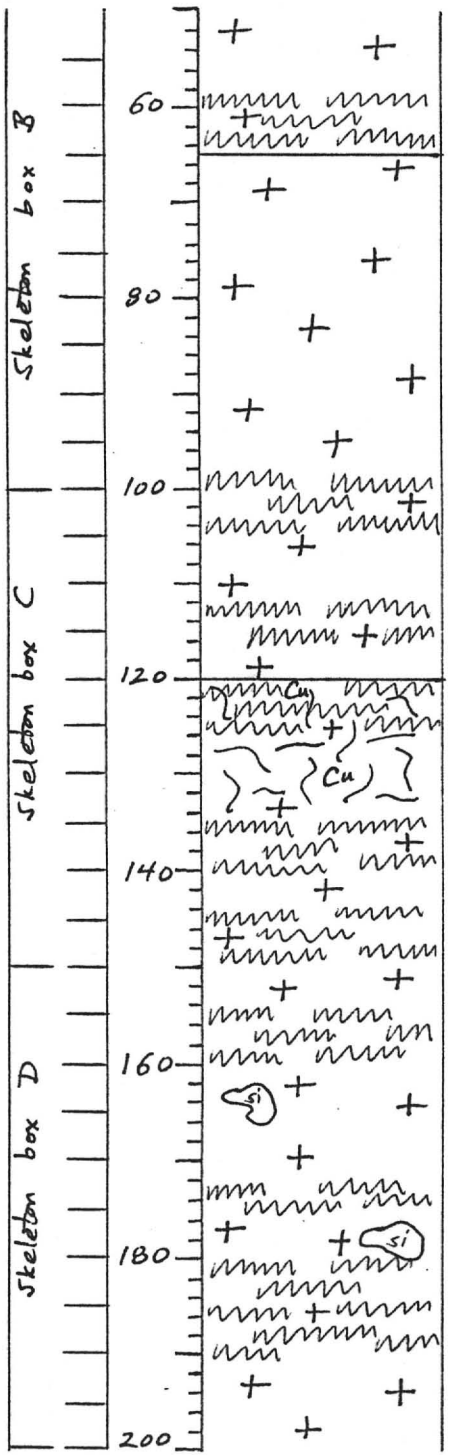
Assayer: No assays performed

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. Overall drilling rate 34.75 ft/shift; 10-hr shifts, 2 shifts/day. All drilled NQ. Hole deflected from ≤30° intercept to parallel to chert contact and was aborted by geologist. All casing & rods removed from hole.

Core size	Runs & recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ core, 1.875" diam from collar thru E.O.H.	Skeleton box A	20, 40						1-2% CO_3 veinlets; Massive diorite	Note: Hole drilled very oblique to strike (~30° to attn zones at collar) and deflected by harder rock closer to chert. Hole ended nearly parallel to strike.

0-65' Gray-green, massive, equigranular diorite with ~1-2% carbonate veinlets; generally calcite ± siderite with some quartz and hematite.



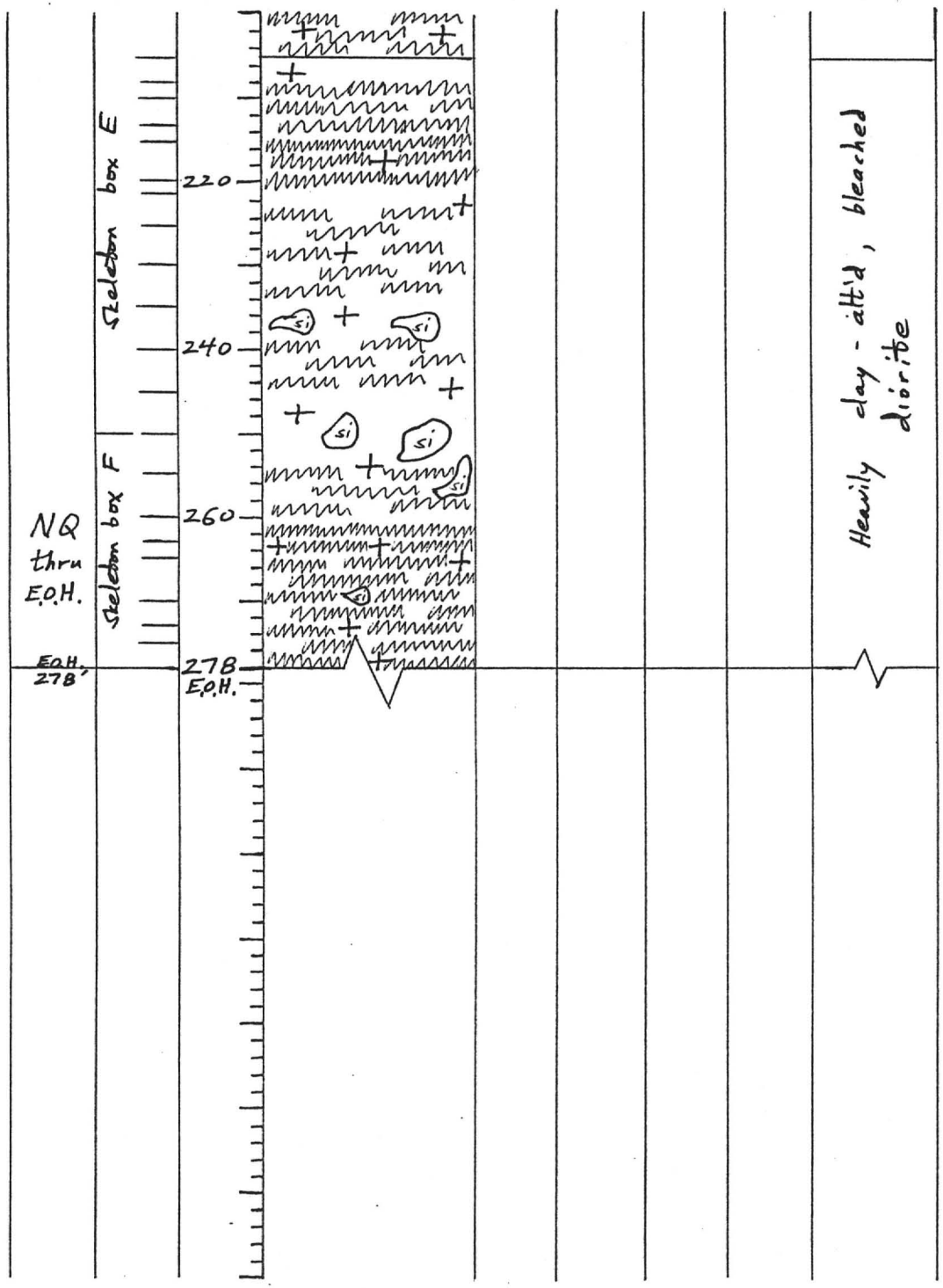
Massive diorite

Clay - altd diorite with hematite "Red blocky schist"

65'-120' Massive diorite, as above, without carbonate veinlets. Feldspars intact or clearly recognizeable as pseudomorphs. Core surface generally smooth, solid.

120'-205' "Red blocky schist" of 1920's. Massive diorite with brick red cast from abundant hematite-lined fractures. Feldspars quite altd and crumbly. Cores rough and pitted.

Note - 120'-135' Trace to 2% fracture-controlled azurite. Secondary only.



205'-278'+ (E.O.H.) Biege and tan, extremely clay-alt'd, bleached, massive to crudely foliated diorite. No remaining feldspars, only clay pseudomorphs. Cores smooth and soapy feeling.

Note - 160-278'+ Scattered chert clasts, tan to biege, (½"-3", $\bar{x}$ = 1") as inclusions (intrusive bx -?) within diorite. This is generally taken as indicative of proximity (≤ 10 ft) of chert contact.

Hole intentionally aborted at 278' because of deflection by soft/hard lithology zones so that hole collared at ~30° to alt'n zones is now nearly parallel to strike/dip of diorite/chert contact.

Carole's reproduceables

Hole No. M-6

Collar location: U.V.X. Mine - 950-level Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +30° at collar

Azimuth: 178° (S 2° E) at collar

Length: 195 feet

Driller: Longyear Co. - Phoenix, AZ
Burt Hansen + Dennis Sager, drillers.

Core recovery: Generally 100% in dt (Ø-133')
~90% in massive + banded chert (133'-143')
~25% in gritty, auriferous chert (143'-E.O.H.)

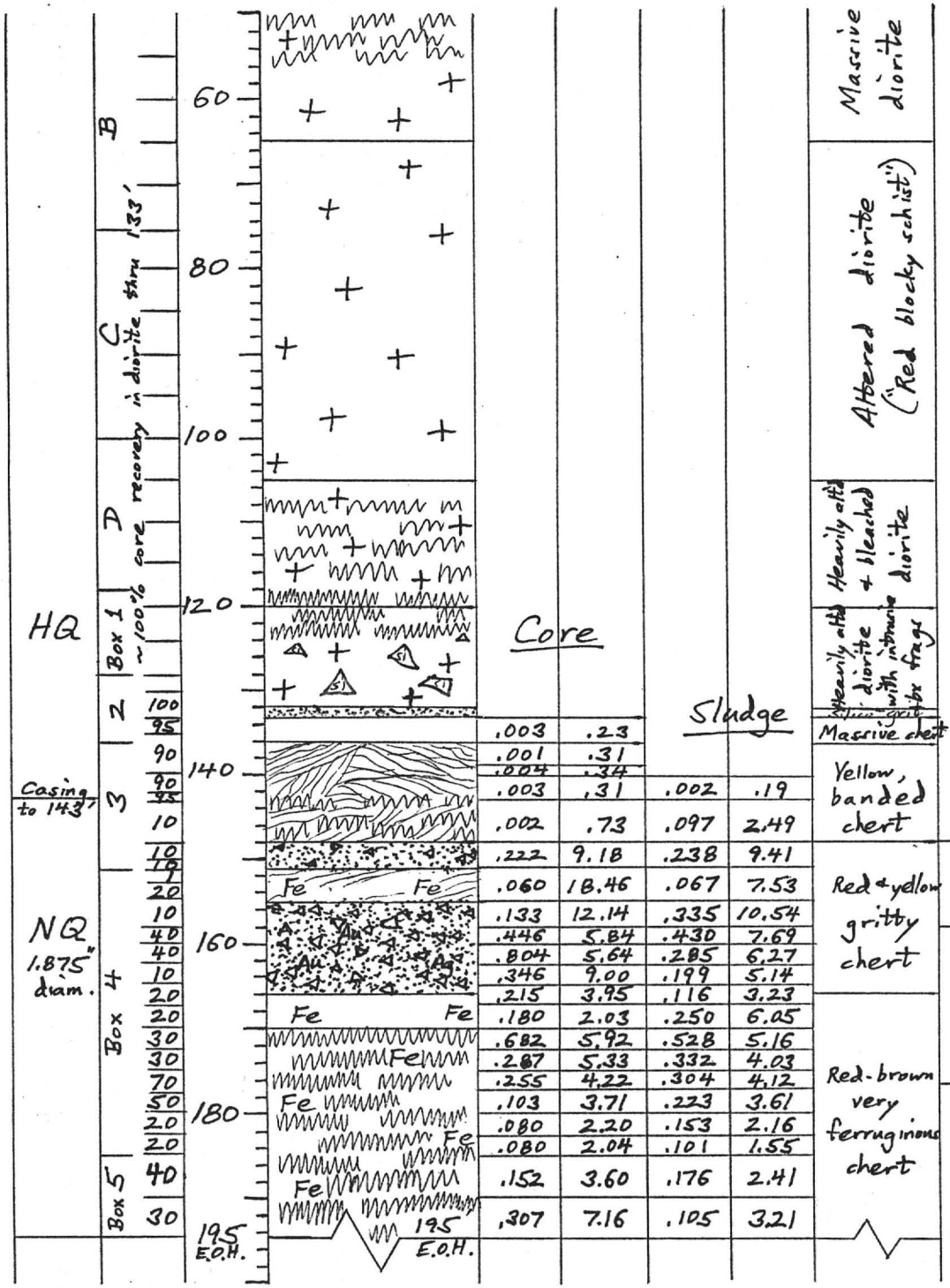
Dates: March 24 thru 31, 1987

Assayer: Iron King Assay, Inc. Humboldt, AZ
Using Fire assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core thru 143 feet. NQ core 143'-195' (E.O.H.)
Overall drilling rate 17.7 ft./shift for 10-hour shifts, 2 shifts/day, including moving, setup, pulling casing, etc. All casing + other steel removed from hole.
Circulation lost ~90% from 185'-195' (E.O.H.) which was likely in caved 903-int. level stope.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ core 2.5" diam. thru 143'	Box A Skeleton ~100% core recovery thru 133'	20 40						≤2% Carbonates Massive diorite	Note: Bedding ~45° to core axis. Therefore true thicknesses are ~70% of drill intercepts. Ø-40' Gray-green, massive, equigranular diorite, ~1-2% carbonate veinlets, generally calcite, ± siderite, ± qtz, and hem. Feldspars intact or recognizeable as pseudomorphs. No apparent foliation or preferred veinlet orientation. Veinlets mostly ≤ 1/4". Core is smooth surfaced. 40'-65' Similar to Ø-40' but without veinlets and feldspars are more clay-alt'd.



65-105' Similar to above except for increased clay alteration of feldspars, more abundant hematite-filled fractures and hem. stain, and less competency to core.

105-120' Extremely altered diorite. Beige to tan, massive to crudely foliated, bleached and totally clay altered. Relict feldspars barely recognizable.

120-128' Same as 105-120' but including several intrusive bx chert clasts (notably at 127', 129') Milky white, fractured chert frags in tan and pale gray banded, bleached alt'd matrix.

128-132' Purple + white, blotchy, heavily alt'd diorite.

132'-133' Red-brown, gritty "contact chert" Like fine grained sandstone.

133'-136' Gray, massive (hematite-?) chert

136'-139' Yellow-tan, banded, with ~20% lt. gray clasts ($\bar{x}$=1")

139'-140' Brown mud, apparently in place; significance unknown

140'-148' Yellow-tan banded si with ~30% milky wt + gray clasts ($\bar{x}$=2")

148-151' Red brown + tan silica grit. Saccharoidal texture with ~10% lt. gray clasts ($\bar{x}$=1/4"). Porous.

151'-155' Red, massive + banded hematitic ironstone with microcrystalline qtz-lined fractures. Very dense

155'-166' Red-brown + lt. gray silica grit. Saccharoidal with ~40% heterogeneous clasts (tan, gray, milky wt, red-br, $\bar{x}$=1/2"). Porous. Fine gr. sand size particles.

166'-170' Brown ironstone. Very dense, vuggy.

170'-195'+ Gray brown to black, very dense, vuggy ironstone, ~20% vugs ≤ 1". Cavities lined with yellow, crusty + powdery looking mineral displaying micro-botryoidal form.

19.5' (158'-177.5') ⇒ ~14' true at .40 Au, 5.2 Ag

47'+ (148'-195'+) ⇒ ~33'+ true at .26 Au, 6.7 Ag including last 10' into caved stope.

Note: Lost most (~90%) circulation at 185', probably in caved stope above 903-int level.

Hole No. M-7

Collar location: U.V.X. Mine – 950 level Morgan PDS. Minegrid 11,565 N 7,060 E

Inclination: +25° at collar

Azimuth: S 60° W (240°) at collar

Length: 129 feet

Driller: Longyear Co. – Phoenix, AZ
Burt Hansen + Dennis Sager, drillers.

Core recovery: ~100% in dt (0–84')
~87% in chert + fault gouge (84–129')

Dates: March 31 thru April 7, 1987

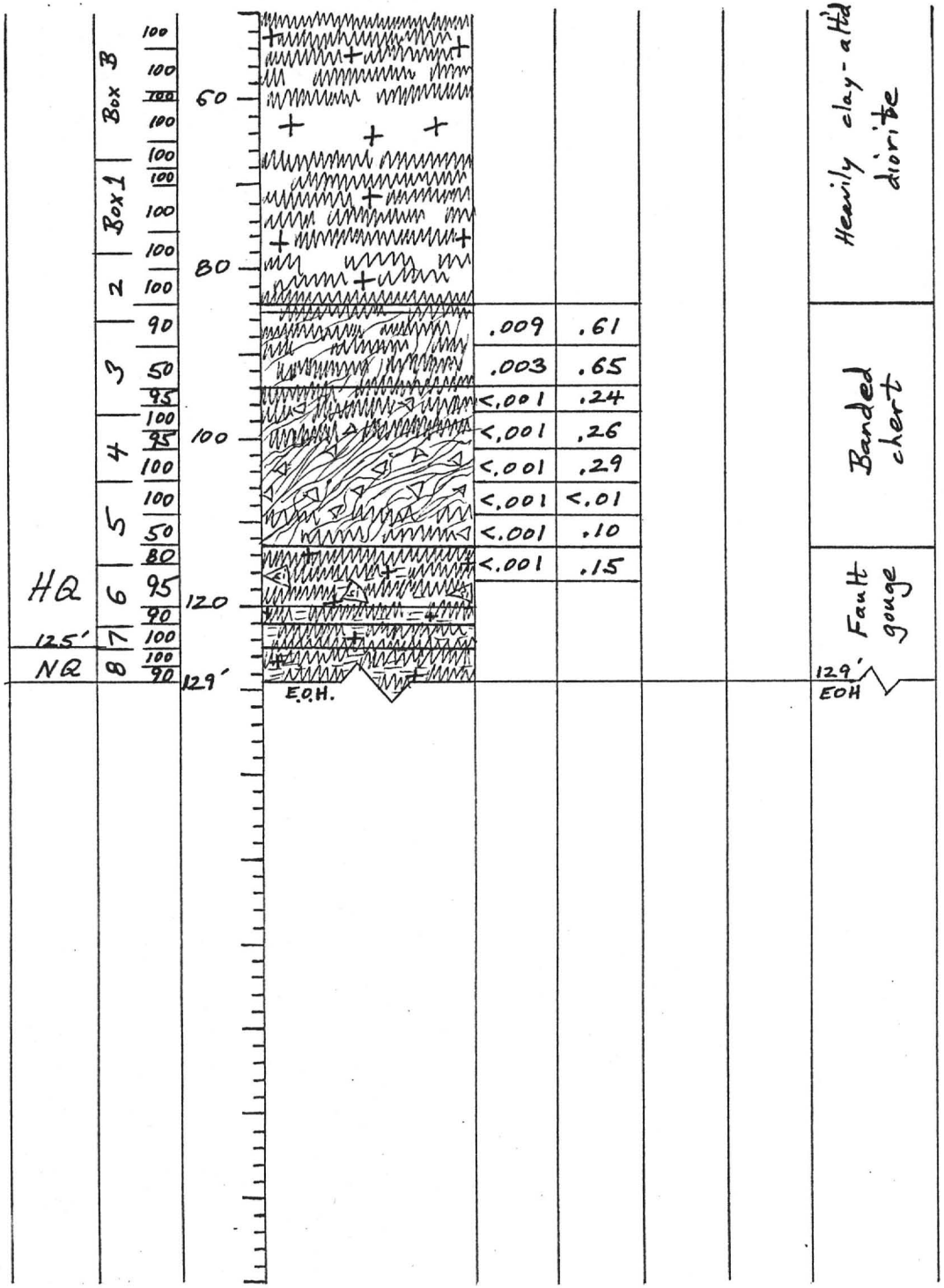
Assayer: Iron King Assay, Inc. – Humboldt, AZ
Using Fire Assay, one assay ton.
+ A.A. followup as appropriate.

Logger: Don White, geologist.

Remarks: Drilled with Longyear 34 pneumatic rig. HQ core to 125', NQ 125'–129' (E.O.H.) Overall drilling rate 12.9 ft/shift for 10-hr. shifts, 2 shifts/day.

All casing + steel removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ core 2.5" diam. thru 125'	Box A Skelton ~100% core recovery in dt thru 84'	20, 40						CO3 veinlets; Massive diorite; Alt'd diorite; "Red blocky schist"	Note: Bedding probably ~60° to core axis. Therefore intercept thicknesses must be multiplied by .67 for true thicknesses. 0'–10' Gray-green, med. grained, massive, equigranular diorite with 1–2% carbonate veinlets ≤ ¼" thick. Veinlets mostly calcite ± siderite ± qtz/hem. 10'–35' Same dt as 0'–10' but without CO_3 35'–49' Diorite with abundant hematite-lined fractures. Drills red and clayey. Feldspars mostly replaced by clays. Core surface is rough, pitted, incompetent. So-called "red blocky schist" of Fearing + Ransome, etc.



49'–84' Beige + tan, heavily bleached and clay-altered diorite. Medium grained, massive to crudely banded (flow banding near intrusive contact + chilled margin-?) with feldspars completely destroyed and replaced by clays. H~6.5. Core smooth + waxy feeling

84–113' Chert, variously massive, banded, and brecciated as follows:

84'-85' Red-brown silica grit at contact. Fine-grained, porous.

85–94' Tan-brown and purple (rippled and mottled) massive chert with crude banding ~45° to core axis. No vugs or fractures. Very hard.

94'-113' Yellow-tan banded chert with some red-purple bands and blotches and ~30% milky white + translucent gray clasts (x̄ = ½").

113'–129'+ Verde fault gouge as follows:

113–120 Tan-beige, bleached + clay-altd diorite with 10–30% tan chert clasts as bx frags.

120–122 Gray-green diorite gouge.

122–125 same as 120–122 plus ~5% azurite (supergene)

125–129 Blue-green, very clayey diorite gouge (rollers bit.)

Hole No. M-4

Collar location: U.V.X. Mine-950 Level Morgan D.D.S. Mine grid 11,565 N 7,060 E

Inclination: +50° at collar ~+48° at 290' by acid etch.

Azimuth: 178° (S2°E) at collar

Length: 295 feet

Driller: Longyear Co. – Phoenix, AZ Burt Hansen + Dennis Sager, drillers

Core recovery: ~100% in dt thru 100', ~95% in si, 100'–223', ~80% in si, 229'–280', ∴ ~90% in cherts overall

Dates: Feb. 26 through March 12, 1987

Assayer: Iron King Assay, Inc. – Humboldt, AZ Using fire assay, one assay ton and AA followup for low grades.

Logger: Don White, geologist

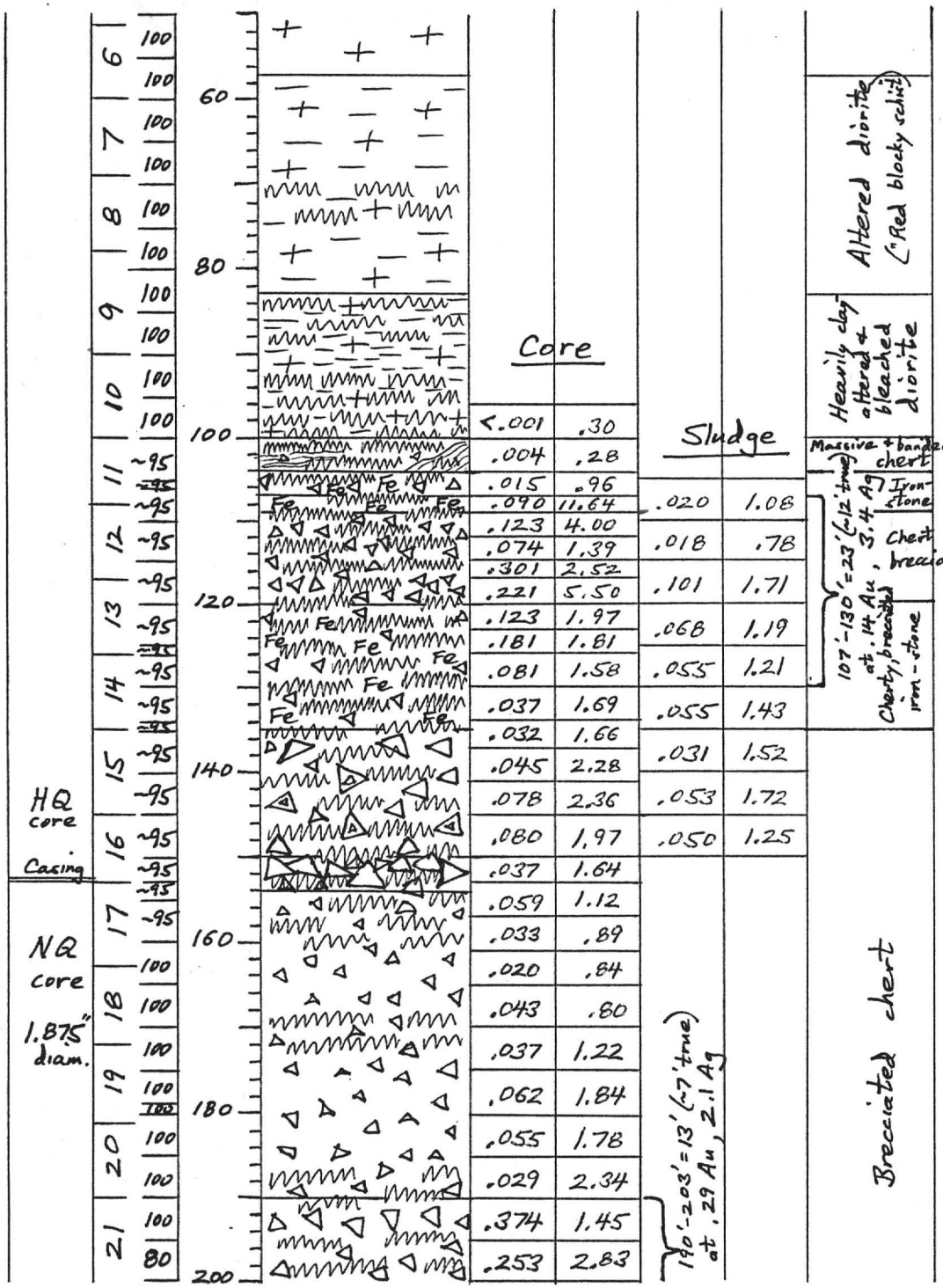
Remarks: Drilled with Longyear 34, pneumatic rig. HQ core to 153', NQ from 153' to 223'. Hit void at 223'–229'; cased across it with 10' BQ rod set 1.5' into far wall. BQ core from 229 thru 295' EOH.

All casing + rods pulled; no steel left in hole. Overall drilling rate 15.5 ft/shift. 2 shifts of 10 hr. each per day.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ core, 2.5" diam. thru 153'	Box 1, Box 2, Box 3, 4, 5 — 100	20, 40						<2% Carbonates Massive diorite; No CO_3 Massive diorite	★ Note: Hole intercepts bedding of cherts at ~30° to core axis. Therefore true thicknesses only about 50% of drill hole intercepts.

0–30' Gray-green, massive, equigranular diorite. ~1–2% carbonate veinlets, generally calcite ± siderite ± quartz and hematite. No apparent foliation or preferred veinlet orientation. Feldspars pseudomorphed but recognizeable.

30'–57' Same diorite but no CO_3 veinlets.



57'-83' Altered diorite or "red blocky schist" of old terminology. "Gritty" coring as result of clay alteration and disintegration of feldspar pseudomorphs. Much red hematite on abundant fractures. Trace native Cu.

83'-100' Extremely altered diorite; now beige-color, massive to crudely foliated (flow foliation near chilled margin?). "Soapy" feeling, smooth coring surface. 95'-100' incorporates some chert clasts as intrusive breccia.

100'-280' — Chert — variously banded, brecciated, ferruginous, and auriferous as follows:

100'-104' — Massive and banded red-br. + yel-br with ~10% lt. gray clasts ($\bar{x}$ = 1/8").

104'-107' — Dense, ferruginous, red + yellow chert with ~40% large, angular clasts ($\bar{x}$=1")

107'-109' — Red, very iron-rich (FeO ~50%) with ~20% gray, yellow, + red clasts ($\bar{x}$ = 1/2")

109'-120' — Porous, red + yellow matrix supported chert bx with ~60% lt. gray, subrounded clasts ($\bar{x}$=1") Rounding by assimilation or tumbling (?)

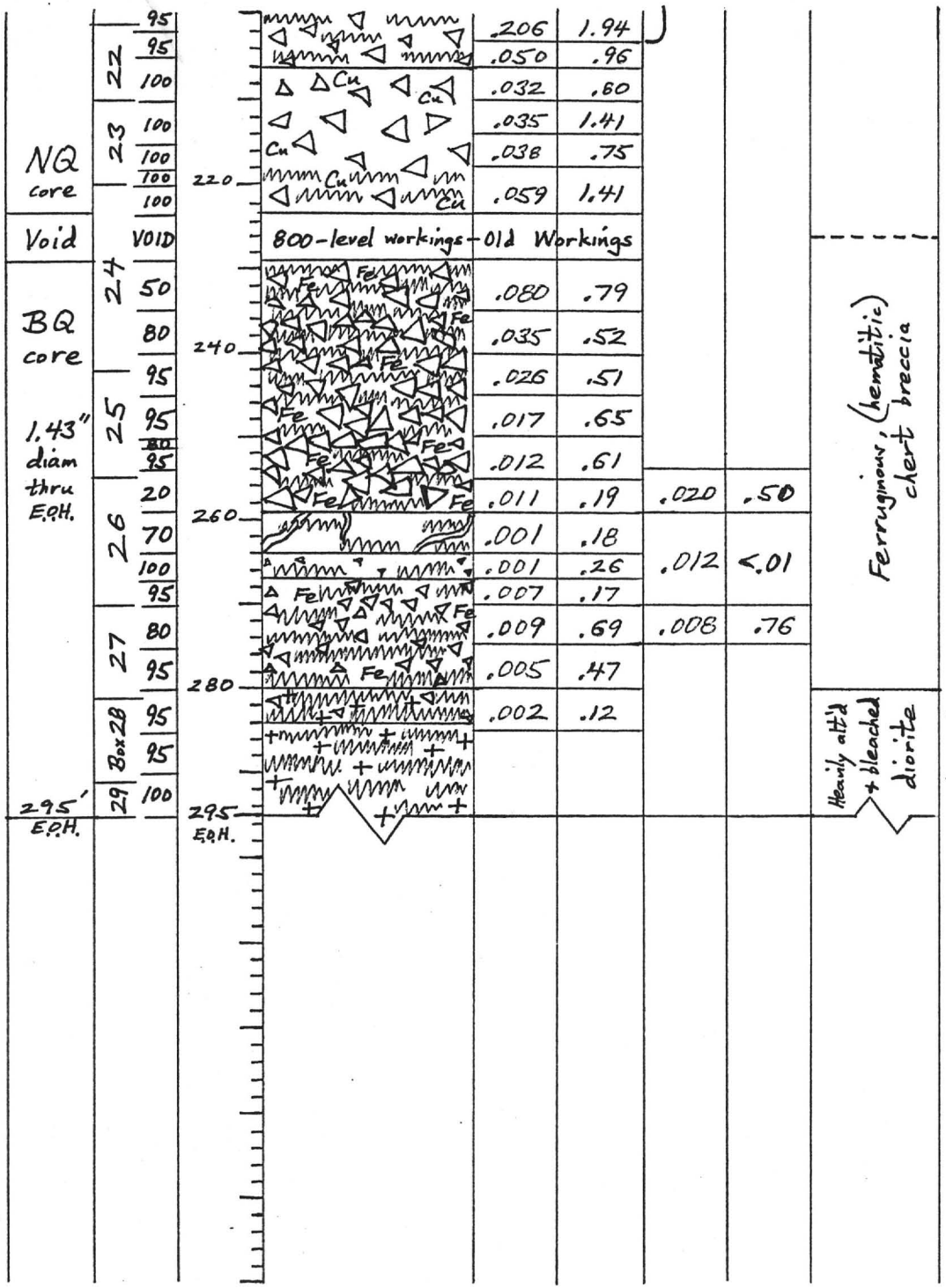
120'-135' — Red-brown + yellow, very iron rich (~50% FeO) with ~30% gray + red-br. clasts ($\bar{x}$=1"). Abundant fractures with ragged black FeO coatings. ~10% vugs.

135'-150' — Red-br. + Yel.-br. matrix with ~40% gray, red-br. + yel. br clasts ($\bar{x}$=2") exhibiting 2nd generation breccia textures, hydro-frax + flow bx. ~15% vugs lined with trace malachite.

150'-154' — Clast-supported bx with ~70% milky white + banded yell-br. clasts ($\bar{x}$=3") in red-br + yel-br. matrix

154'-190' — Yellow-brown matrix-supported bx with ~30% white + brown clasts ($\bar{x}$= 1/2"). Tr. malachite on fractures

190'-206' — Yellow-brown matrix-supported chert bx with ~30% white + brown clasts ($\bar{x}$= 1") and trace malachite on fractures. ~5% vugs and open fractures.



206'-223' — Yellow brown matrix-supported bx with ~30% white + brown clasts ($\bar{x}$=1"). About 5% fractures + vugs. Most filled with copper oxides. Rock ~5% malachite, ~1% azurite, and ~1% soft, pale blue-green, crumbly, hydrous CuO mineral. Banding at matrix ~30° to core axis. Therefore true thickness of units ~50% of drill intercept thickness.

229'-259' — Clast-supported bx with ~80% white and gray clasts ($\bar{x}$=1") in red-brown to black, hematitic facies chert. Very ferruginous, hydrothermally fractured + tightly SiO_2+FeO - healed. Fe occurs locally as fg. + massive specular hematite, elsewhere as earthy hematite.

259'-264' — ~90% red-brown translucent quartz. Either one large clast (~5ft) or else a massive qtz vein. Other 10% is tan, translucent qtz.

264'-267' — Tan, banded, blotchy, + swirly patterned marble-like chert. Tight, no vugs. ~10% gray clasts ($\bar{x}$=¼")

267'-280' — Red-brown, hematitic matrix-supported bx of ~50% red-gray clasts ($\bar{x}$=½"). Tectonically brecciated, as well as primary syn-depositional volcaniclastic bx.

280'-284' Diorite wall rock, tan + beige, bleached, heavily clay alt'd. Includes ~50% chert bx clasts as intrusive wall rock breccia.

284'-295' Diorite; heavily clay-altered. Plagioclase pseudomorphs still recognizeable. Smooth core surface but so crumbly it disintegrates upon touching. Broken by proximity to Verde fault and constriction in tight fold nose. Fractures lined with bright green, botryoidal malachite.

Hole No. M-5

Collar location: U.V.X. Mine – 950-level Morgan D.P.S. Mine grid. 11,565 N 7,060 E

Inclination: +10° at collar

Azimuth: 178° (S2°E) at collar

Length: 198 feet

Driller: Longyear Company – Phoenix, AZ
Burt Hansen & Dennis Sager, drillers.

Core recovery: ~100% thru 177' (incl. 13' si)
~45% in chert 177–198 (E.O.H.)
~66% in chert overall (164–198)

Dates: March 12–23, 1987

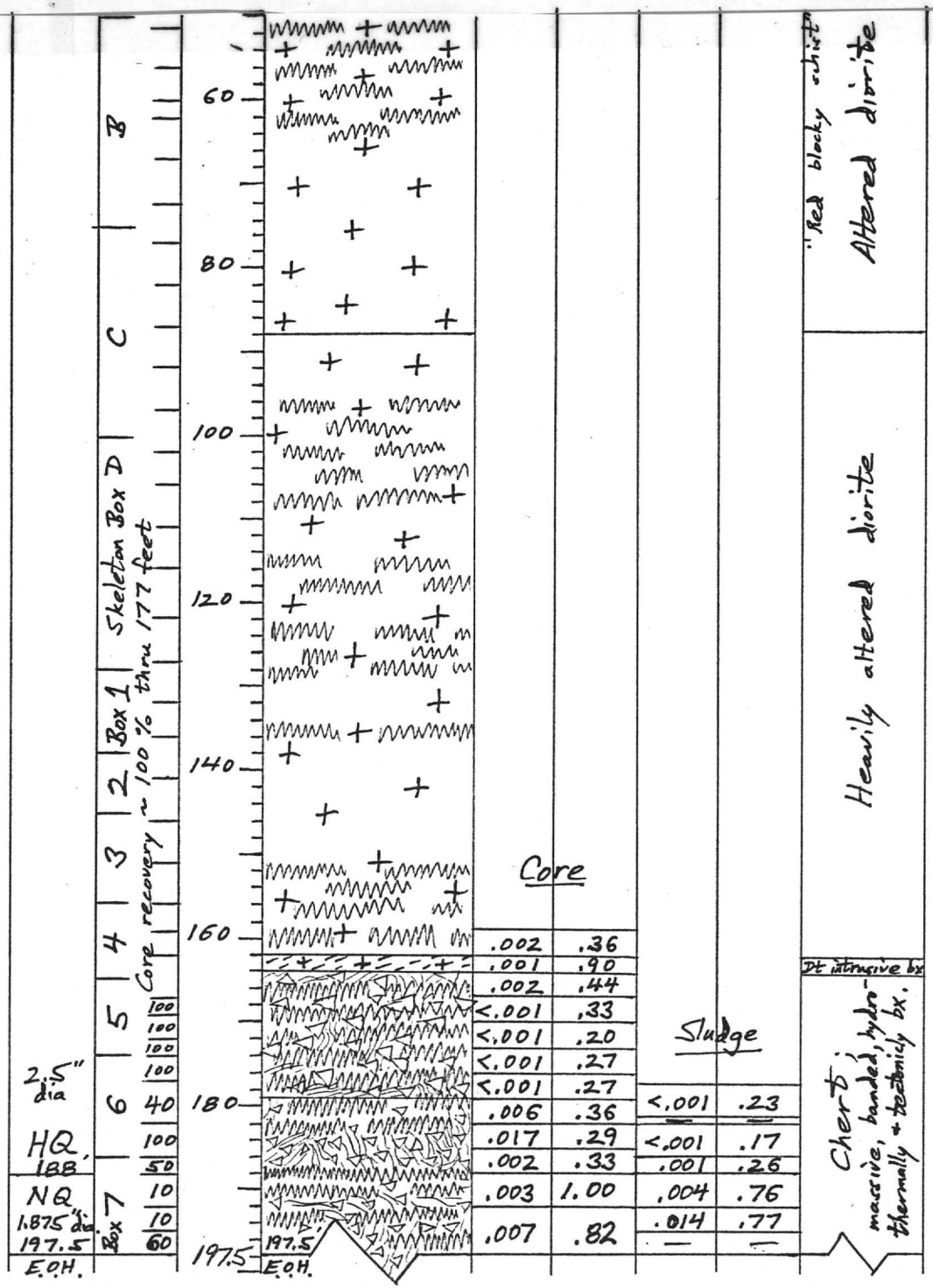
Assayer: Iron King Assay, Inc. – Humboldt, AZ
Using fire assay, one assay ton, and AA followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core thru 188 ft. NQ core 188 – 198' (E.O.H.).
Overall drilling rate = 15.2 ft/shift for 13 shifts (mostly 10-hr. shifts, 2 shifts/day)
Hole terminated slightly short of Verde fault (~5 ft.–?) in very hard, shattered chert.

All rods & casing removed from hole.

Core size	Runs & recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ core 2.5" diam. thru 188'	Skeleton Box A ~100% core recovery thru 177'	20 40						≤ 2% CO₂ veinlets Massive diorite	Note: Bedding (?) ~45° to core axis (as crudely indicated by erratically oriented chert banding). Therefore true thicknesses ~70% of drill intercepts 0–42' Gray-green, massive, equigranular diorite. ~1–2% carbonate veinlets generally calcite ± siderite ± quartz and hematite. No foliation or clearly preferred veinlet orientation. Veinlets generally ≤ 2 mm thick.



42'-88' "Red blocky schist". Altered and hematite-stained diorite. Similar to above but feldspars pseudomorphed by clay minerals and randomly oriented fractures filled with red hematite. Trace native copper and up to 3% locally.

88'-162' Heavily clay-altered and bleached diorite. Plutonic texture almost completely masked. Beige to pale gray color. Soapy feeling. Some foliation either from metamorphism of pluton + its alteration products or from marginal flow-banding. H ~ 6.5 Cores smooth

162'-164' Extremely altered, fluxed, + flow-banded diorite with intrusive breccia incorporating chert wall fragments. Yellow and red-brown diorite with ~50% lt. gray chert clasts ($\bar{x}$ = 1/4")

164'-198' Cherts

164'-179' Tan-brown to dark gray banded cherts with ~70% gray clasts ($\bar{x}$ = 1") Trace-2% vugs (≤1/4") and locally abundant healed frax.

179-197.5+ Tan-brown to dark gray flow-banded (?) cherts with ~50% milky white, tan, light gray (translucent) and some local red clasts ($\bar{x}$ = 1/2") ≤10% vugs (≤1/10") and hydrothermal fractures (injected and healed with silica.

Hole ended in tectonically shattered chert near (≤5'?) fault

Hole No. M-1

Collar location: UVX Mine - 950 Level, Morgan D.D.S. Mine grid 11,565N 7,060E

Inclination: +42° at collar ~+45° at 250' by acid etch test.

Azimuth: 240° (S 60° W) at collar

Length: 262 feet

Driller: Longyear Co. - Phoenix, AZ. Burt Hansen + Dennis Sager, drillers

Core recovery: ϕ-114' = 100% 165'-200' = 100%
114'-165' = 81% 200'-262' = 79%
Overall average ϕ-262' = 91%

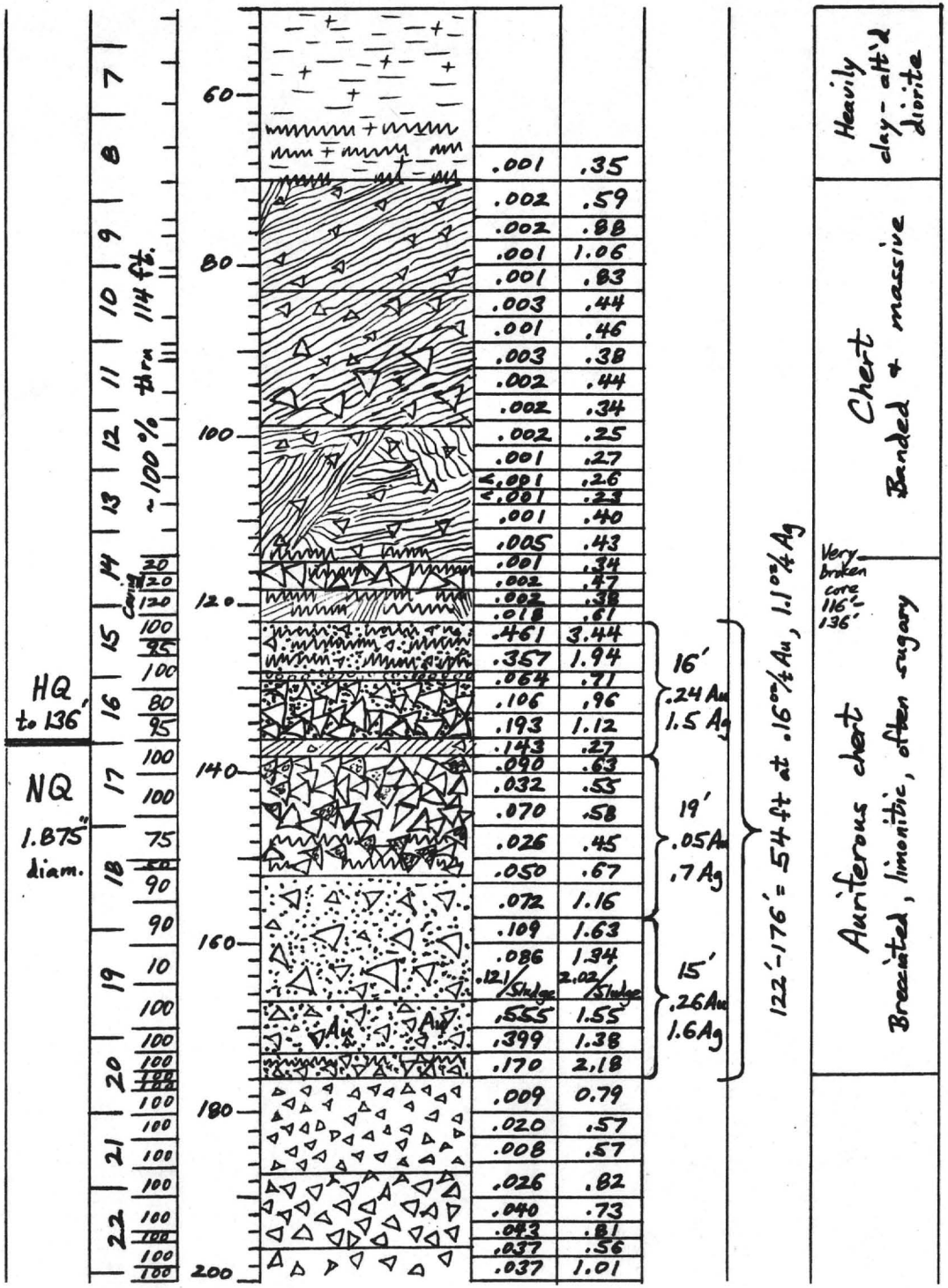
Dates: Jan. 9 thru Feb. 5, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using Fire assay, one assay ton + AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. HQ core to 136', NQ from 136 to 262 (E.O.H.) Overall drilling rate of 10.5 ft/shift (10 hr. shifts) not counting 3 days mobilization and 2 days down time (air motor replacement). All casing + steel removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ 2.5" diam.	Box 1 Box 2 Box 3 4 5 6 Runs. Core recovery 100% thru 114'	20 40						Massive diorite (subvolcanic intrusion)	ϕ-40' Gray green, medium grained, massive diorite. No clear foliation or metamorphic mineral alignment. Feldspars intact. Some red-brown hematite-lined fractures (≤2mm) Traces of calcite and siderite ± quartz as thin (≤2mm) white and tan veinlets up to 2% of rock. No preferred orientation. Core surface smooth.
								Altd diorite	40'-50' Similar but feldspars clay altered. Core is ragged and incompetent. Disintegrates rapidly in water. No carbonates



50'-70' Beige and flesh-colored, medium grained, massive to crudely foliated, completely clay-altered diorite. H ~ 6.5. Slick, soapy feeling. Cores smooth + intact. Much broken core 63'-71'

70'-247' **Chert**, variously massive, banded, brecciated, as follows:

70'-83' Tan and brown, ribboned/banded chert with ≤ 5% lt. gray clasts ≤ 1/4". Banding ~ 70° to core axis

83'-99' Tan banded chert (very hard drilling - H ~ 8.5) with about 20% matrix-supported, angular, lt. gray quartz or chert clasts 1/4"-2", $\bar{x}$ = 1"

99'-115' Tan- and brown banded chert with ~5% clasts. Clasts are 1/4"-1", $\bar{x}$ = 1/2", gray + brown, rounded + elongate

115'-118' Clast-supported chert breccia (~60% gray + red clasts, (1/4"-3", $\bar{x}$ = 2") in tan chert matrix

118'-122' Beige, massive to ribboned chert.

122'-128' Matrix-supported, limonitic chert bx with ~20% (1/10"-1/2", $\bar{x}$ = 1/4") yellow, red, gray + brown clasts in a loose, porous, yellow-brown, limonitic chert matrix. Banding ~ 60° to core axis.

128'-129' Single quartz porphy. clast (?) Tan with lt. gray 1/10"-1/4" phenos. (5%)

129'-136' Clast-supported bx, ~60% gray + tan clasts in sugary yellow-tan, limonitic chert matrix. ~10% vugs

136'-138' Matrix-supported bx w/ ~10% gray clasts ($\bar{x}$ = 1/2") in yellow-brown matrix. Banding ~ 45° to CA.

138'-152' Clast-supported bx ~20% gray, tan, + red clasts ($\bar{x}$ = 1") in pale red-brown hematitic matrix. Some qtz. porph. clasts

152-167' Matrix-sup. bx. ~30% very lt. gray 1/4"-3" ($\bar{x}$ = 1") clasts in a white to yellow + red very sugary silica grit matrix

167-173 Matrix-supported bx with ~30% lt. gray 1/4"-2" ($\bar{x}$ = 1/2") translucent clasts in yellow-brown sugary matrix.

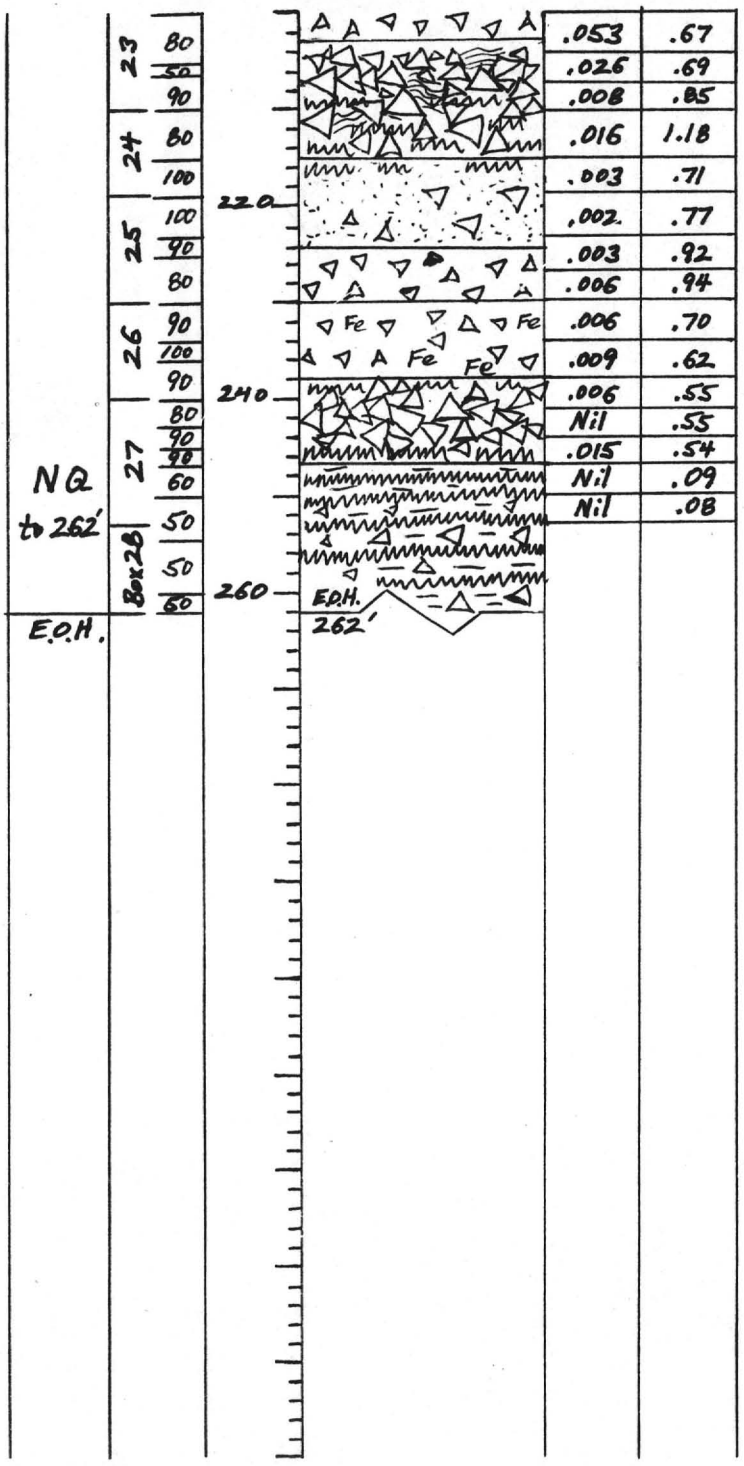
173-176 Same as 167-173 but ~ 60% clasts (still matrix supported)

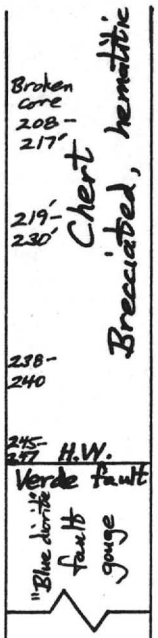
176-187 ~50% clasts ($\bar{x}$ = 1/4") in hematitic matrix

187-196 ~60% clasts ($\bar{x}$ = 1/2") in hematitic matrix

196-203 ~30% clasts ($\bar{x}$ = 1/2") in hematitic matrix

Matrix supported breccias





203'-215' ~80% clasts ($\bar{x}$ = 2") in red-gray hematitic matrix. Clast supported, locally banded & massive.

215'-224' ~10% clasts ($\bar{x}$ = 1") in purple-gray hematitic matrix. Porous, gritty-looking matrix

224-230' ~50% clasts ($\bar{x}$ = ½") in red-gray hem. matrix

230'-238' ~50% clasts $\bar{x}$ = ½" in hem. matrix (same as 224'-230') but very dense; likely ~40% FeO

Matrix supported breccias

238'-247' Clast-supported coarse bx ($\bar{x}$ = 1") with ~80% gray + red gray clasts in red-gray, hem. matrix

247' Very sharp fault contact

247'-262'+ Blue-green, clayey, wet, crushed diorite fault gouge. Trace to 5% calcite, some quartz veinlets. Largest lt. bx. frag ≤ 1".

Hole No. M-3

Collar location: U.V.X. Mine - 950 Level Morgan D.D.S. Mine grid 11,565N 7060E

Inclination: +20° at collar

Azimuth: 178° (S2°E) at collar

Length: 233 feet

Driller: Longyear Co. - Phoenix, AZ Burt Hansen + Dennis Sager, drillers

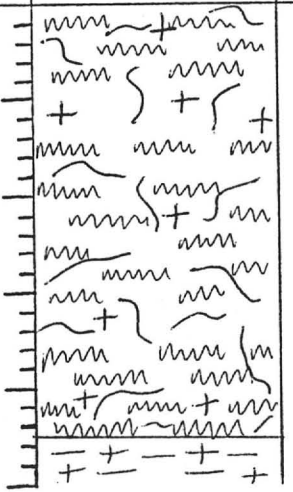
Core recovery: Generally ~100% in dt (0-131')
~90% in massive/banded si (131-146')
Only ~50% in Au-rich si grit (146-185')
~70% in Fe-rich chert bx (185-233')

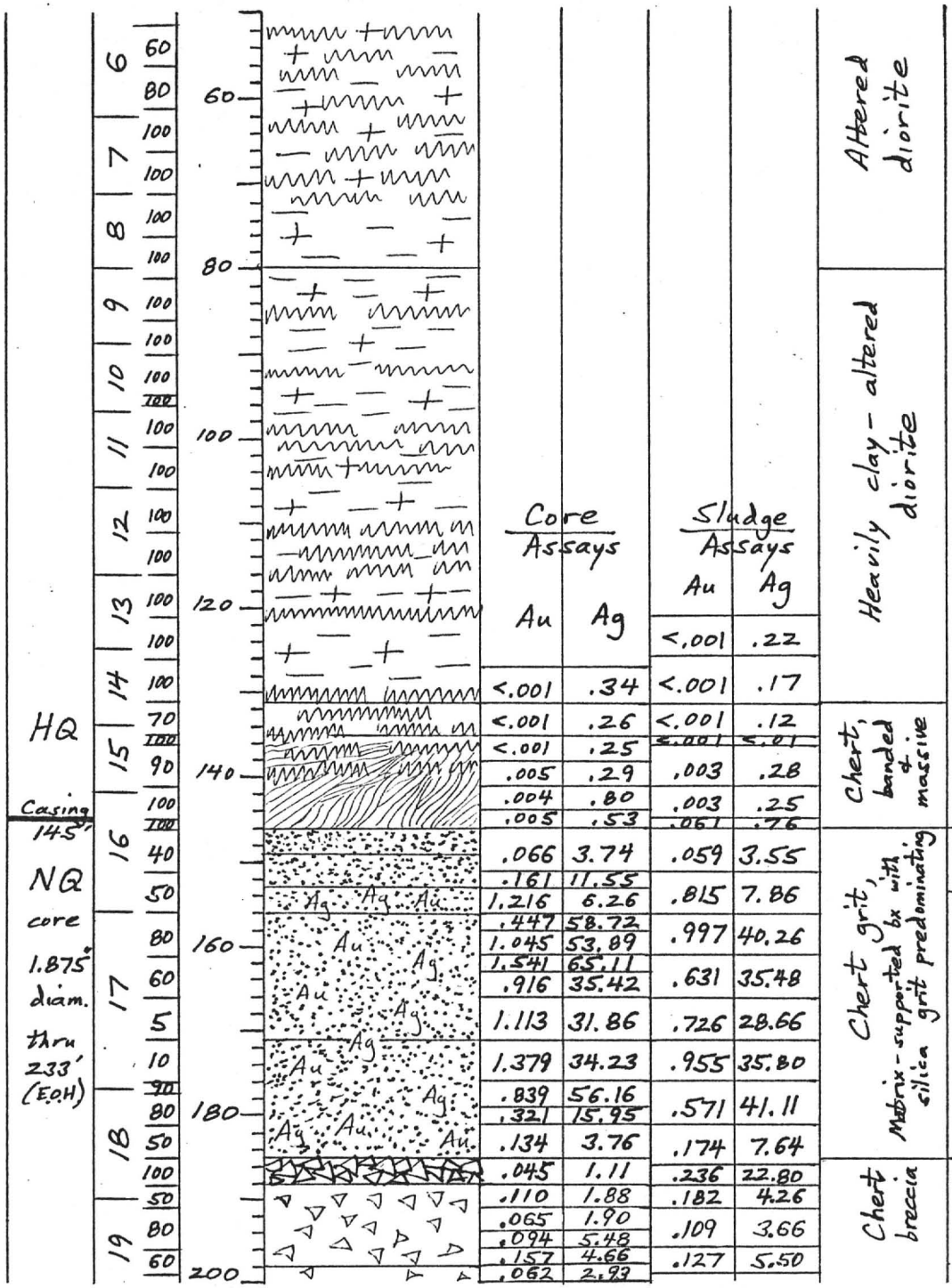
Dates: Feb. 17 thru Feb. 26, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ Using fire assay, one assay ton, and A.A. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34, pneumatic rig. HQ core to 145'; NQ from 145'-233' (EOH.) Overall drilling rate 16.6 feet per shift (10 hr. shifts, 2 shifts/day) including moving, setup, pulling casing, etc. Hole aborted by drillers at void where tools (core barrel, one rod, bit, etc) lost in void (233'-240') when driller spun rods in void + failed to set casing shoe. All casing + other steel removed.

Core size	Runs & recovery	Footage	Graphic log	Core Au (oz/t)	Core Ag (oz/t)	Sludge Au	Sludge Ag	Rock type	Lithology
HQ core 2.5" diam. thru 145'	Box 1: 20, 100 / Box 2: 100, 100 / Box 3: 100, 100 / 4: 100, 100 / 5: 100, 100	20 / 40						≤2% Carbonates Massive diorite (subvolcanic intrusion)	0-45' Gray green, massive, equigranular diorite. ~1-2% carbonate veinlets generally calcite ± siderite, ± quartz and hematite. No foliation in rock. No preferred orientation (?) to veinlets. Veinlets generally ≤2 mm thick. Core surface is smooth. Feldspars intact or recognizeable as pseudomorphs.



Core Assays Au	Core Assays Ag	Sludge Assays Au	Sludge Assays Ag
		<.001	.22
<.001	.34	<.001	.17
<.001	.26	<.001	.12
<.001	.25	<.001	<.01
.005	.29	.003	.28
.004	.80	.003	.25
.005	.53	.061	.76
.066	3.74	.059	3.55
.161	11.55		
1.216	6.26	.815	7.86
.447	58.72		
1.045	53.89	.997	40.26
1.541	65.11		
.916	35.42	.631	35.48
1.113	31.86	.726	28.66
1.379	34.23	.955	35.80
.839	56.16		
.321	15.95	.571	41.11
.134	3.76	.174	7.64
.045	1.11	.236	22.80
.110	1.88	.182	4.26
.065	1.90		
.094	5.48	.109	3.66
.157	4.66		
.062	2.93	.127	5.50

45'-80' Similar but feldspars disintegrated and clay alteration not very competent. Result is a "gritty" core surface. Much red hematite on randomly oriented fractures. Trace to 1% native Cu with FeO in frax.

80'-131' Extremely altered diorite. Now beige colored, massive to crudely foliated (flow-foliation?) bleached, and clay-altered. Soapy feeling. Cores smooth and intact where not too broken. Several shattered chert clasts are caught up in wall rock at 129'-131'. This is taken to be intrusive breccia. Diorite-chert contact is ~45% to core axis.

131'-233'+ Chert; variously massive, banded, brecciated, saccharoidal, hematitic, etc.

131'-135' Massive, purple brown chert with ≤5% lt. gray clasts ($\bar{x}$ = 1/8")

135'-146' Banded (~45° to core axis) tan-brown chert with ~40% lt. gray clasts ($\bar{x}$ = 1/2").

146'-149' Silty, varicolored (purple, red, yellow) containing ~20% porous clasts ($\bar{x}$ = 1/8")

149'-153' Yellow + tan, silty to sugary, with ~30% clasts ($\bar{x}$ = 1/4").

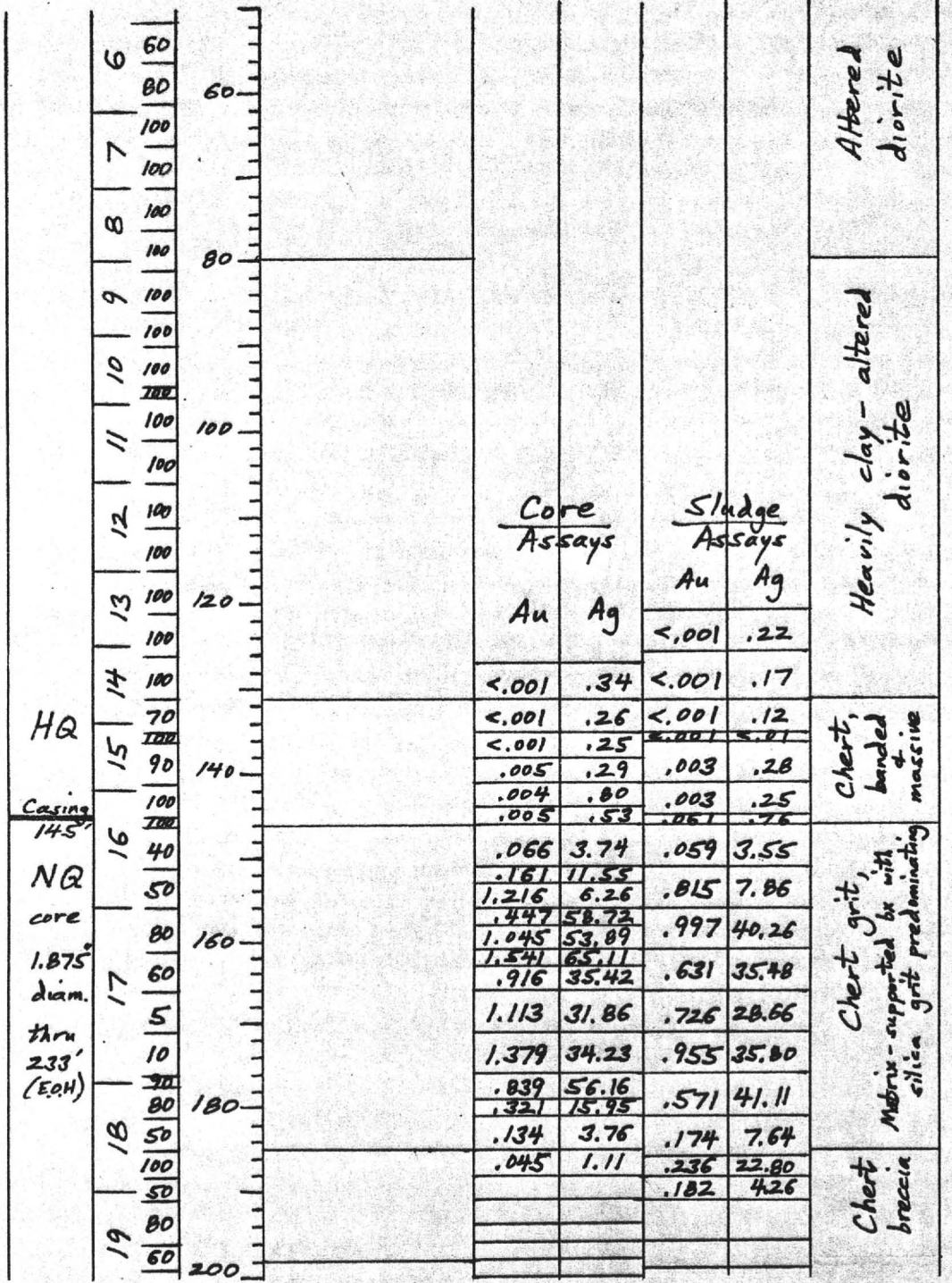
153'-156' Saccharoidal, porous, with swirly colored bands and ~50% clasts ($\bar{x}$ = 1")

156'-171' Silica grit; very fine grained. Tan color with delicate and subtle color banding ~45° to core axis. Only ~2% gray & tan clasts ($\bar{x}$ = 1/16"). Very porous & crumbly. Hydraulics away ahead of drill water yielding poor core return.

171'-185' Silica grit, tan to mustard yellow, with 10-20% white to gray + yellow clasts ($\bar{x}$ = 1/4"). Very porous.

185'-188' Clast-supported bx (~80% lt. gray clasts $\bar{x}$ = 3") in yellow, limonitic matrix

188'-198' Matrix-supported bx, with ~50% gray + red-gray clasts ($\bar{x}$ = 1/2") in red-brn + yel. br matrix.


HQ
Casing 145'
NQ core 1.875" diam. thru 233' (E.O.H)
Core Assays
Au Ag
Sludge Assays
Au Ag
Altered diorite
Heavily clay - altered diorite
Chert, banded & massive
Chert grit, Matrix - supported by with silica grit predominating
Chert breccia
<.001 .34 <.001 .17
<.001 .26 <.001 .12
<.001 .25
.005 .29 .003 .28
.004 .80 .003 .25
.005 .53
.066 3.74 .059 3.55
.161 11.55
1.216 6.26 .815 7.86
.447 58.72
1.045 53.89 .997 40.26
1.541 65.11
.916 35.42 .631 35.48
1.113 31.86 .726 28.66
1.379 34.23 .955 35.80
.839 56.16
.321 15.95 .571 41.11
.134 3.76 .174 7.64
.045 1.11 .236 22.80
.182 426

CA 0'B

U.V.X. D.D.H.

M-2

NQ core - 1.875" diameter - Ø-226' (E.O.H.)

Box	Footage	Core Box Recovery	Graphic Log	Gold (oz/t)	Silver (oz/t)	Clast (C) or matrix (M) support	Clast %	Clast size	Clast color	Matrix color	Matrix composition	Vugs	Healed fractures	Remarks
Box 8	70	100		.002	.32									H~6.5
Box 9	80	90		.001	.66	C	90%	½"-6" $\bar{X}$=3"	Light gray + milky white	Red-brown	H	≤2% ≤½" (clits)	Many	H~8.5 "Crackled" clasts
	90	75		.001	.23									
				<.001	.40	Clayey diorite-derived gouge.								Diorite gouge
Box 10	100	90		<.001	.34	Heavily clay-altered diorite						Ø		Purple + white, blotchy, fluxed + argillized diorite. H~6.5
		60												
		75												
		50												
				<.001	.19									
Box 11	110	70		<.001	.27	All M	Ø	—	—	Tan, biege, + pale purple	—	Ø	Many	"Crackled", banded, + massive
		90		.001	.27									
		80		.096	.49									
Box 12	120	90		.066	1.11	M	50	¼-1 $\bar{X}$=½	Lt gray translucent	Blotchy yell. + red.	L + H	≤2% ≤¼"	Few	small, rounded "clasts" may really be qtz phenocrysts
		100		.103	1.54	~50% qtz. phenos. in yellow-stained matrix, ~¼" phenos.								Quartz porphyry (cleo.-?)
		90		.234	1.51									
Box 13	130	80												
		90		.140	1.53	M	5	¼-1 $\bar{X}$=½	Milky gray	Mustard yellow to dark red-brown	H + L	≤10% ≤¼"	Ø	Up to ~60% FeO Ironstone! Massive + cherty to earthy, swirled + blotched hem. + lim.
Box 14	140	90		.055	1.35									
		90		.055	2.24									
Box 15	150	95		.047	1.05	M	20	¼-2 $\bar{X}$=1	Gray	Yellow + red-brown	H + L	≤2% ≤1/10"	Few	~30% FeO Gougy, earth-looking matrix
		95		.014	1.71									
		100		.036	2.31									
Box 16	160	90		.045	2.94	M	50	1/10-2 $\bar{X}$=½	Gray, translucent	Yellow + brown	L	≤10% ≤1"	Some	Tracer of $CuCO_3$
		70		.009	.96									
Box 17	170	90		.004	.84	M	Ø	—	—	Pink-brown	L-?	≤5% ≤½"	Few	Massive
		90		.007	.82									
		70		.001	.58	M	Ø	—	—	Lt. yellow brown	L	Ø	Ø	Faintly banded
Box 18	180	100		.002	.80	M	30 (?)	1"-4" (?) May not be clasts	Lt. gray translucent	Pink, purple + yellow bands	H + L	≤1% ≤½"	Few	
		100		.002	.80									
Box 19	190	100		.001	.70	M	30	¼-4 $\bar{X}$=2	Biège + tan	Chocolate brown + yellow	H + L	≤5% ≤1" (slits)	Some	Mottled (contorted banding)
		100		.001	.73									
Box 20		100		.014	.53	C	70	¼-2 $\bar{X}$=1	Gray	Choc. brown + yellow	H + L	≤5% ≤1"	Some	Mottled (distorted banding)
		90		.013	1.84									
		100		.059	1.60									
Box 21	200	80		.040	.68	"M"	50	1/10-4 $\bar{X}$=2	Gray + tan	Red clay etc. (dt)	dt gouge	Ø	—	Chert clasts in diorite gouge zone
		80		.006	.88	C	90	¼-2 $\bar{X}$=1	Gray	Yellow brown	L	Ø	Many	
Box 22	210	90		.001	.31	"M"	40	1/10-6 $\bar{X}$=1	Gray-green (dt) + gray (si)	Red-brown	dt, + si gouge	Ø	Some	~60% dt (clay) gouge with ~40% "clasts" (tectonic breccia frags) of which ~½ dt, ~½ chert.
		100		.013	.42									
Box 23	220	100		.008	.84									
		80				"M"	50	1/10-2 $\bar{X}$=½	Gray-green (dt)	Light gray	dt gouge	Ø	—	Diorite derived gouge + breccia; no chert
	226		226' E.O.H.											

Hole No. M-1

Collar location: Mine grid 11,565N 7,060E (UVX Mine - 950 Level, Morgan D.D.S.)

Inclination: +42° at collar (~+45° at 250' by acid etch test.)

Azimuth: 240° (S 60° W) at collar

Length: 262 feet

Driller: Longyear Co. - Phoenix, AZ. Burt Hansen + Dennis Sager, drillers

Core recovery: 0-114' = 100%; 114'-165' = 81%; 165'-200' = 100%; 200'-262' = 79%; overall average 0-262' = 91%

Dates: Jan. 9 thru Feb. 5, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using Fire assay, one assay ton + AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. HQ core to 136', NQ from 136 to 262 (E.O.H.) Overall drilling rate of 10.5 ft/shift (10 hr. shifts) not counting 3 days mobilization and 2 days down time (air meter replacement). All casing + steel removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ 2.5" diam.	Runs: Box 1, Box 2, Box 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 — Core recovery 100% thru 114'; ~100% thru 114 ft.	0-136'						Massive diorite (subvolcanic intrusion)	0-40' Gray green, medium grained, massive diorite. No clear foliation or metamorphic mineral alignment. Feldspars intact. Some red-brown hematite-lined fractures (≤2 mm). Traces of calcite and siderite ± quartz as thin (≤2 mm) white and tan veinlets up to 2% of rock. No preferred orientation. Core surface smooth.
								Alt'd diorite	40'-50' Similar but feldspars clay altered. Core is ragged and incompetent. Disintegrates rapidly in water. No carbonates
								Heavily clay-alt'd diorite	50'-70' Beige and flesh-colored, medium grained, massive to crudely foliated, completely clay-altered diorite. H ~ 6.5. Slick, soapy feeling. Cores smooth + intact. Much broken core 63'-71'
				.001	.35			Chert Banded + massive	70'-247' Chert, variously massive, banded, brecciated, as follows:
				.002	.59				70'-83' Tan and brown, ribboned/banded chert with ≤5% lt. gray clasts ≤ 1/4". Banding ~70° to core axis
				.002	.88				83'-99' Tan, banded chert (very hard drilling - H ~ 8.5) with about 20% matrix-supported, angular, lt. gray quartz or chert clasts 1/4"-2", x̄ = 1"
				.001	1.06				99'-115' Tan- and brown banded chert with ~5% clasts. Clasts are 1/4"-1", x̄ = 1/2", gray + brown, rounded + elongate
				.001	.83				115'-118' Clast-supported chert breccia (~60% gray + red clasts, (1/4"-3", x̄ = 2") in tan chert matrix
				.003	.44				118'-122' Beige, massive to ribboned cherts.
				.001	.46				122'-128' Matrix-supported, limonitic chert bx with ~20% (1/10"-1/2", x̄ = 1/4") yellow, red, gray + brown clasts in a loose, porous, yellow-brown, limonitic chert matrix. Banding ~ 60° to core axis.
				.003	.38				128'-129' Single quartz porphyry clast(?) Tan with lt. gray 1/10"-1/4" phenos.
				.002	.44				129'-136' Clast-supported bx, ~60% gray + tan clasts (x̄=1/2") in sugary yellow-tan, limonitic chert matrix. ~10% vugs
				.002	.34				136'-138' Matrix-supported bx w/ ~10% gray clasts (x̄ = 1/2") in yellow-brown matrix. Banding ~ 45° to CA.
				.002	.25				138'-152' Clast-supported bx, ~80% gray, tan, + red clasts (x̄ = 1") in pale red-brown hematitic matrix. Some g.p. clasts
				.001	.27				152-167' Matrix-sup. bx. ~30% very lt. gray 1/4"-3" (x̄ = 1") clasts in a white to yellow + red very sugary silica grit matrix
				<.001	.26				167-173 Matrix-supported bx with ~30% lt. gray 1/4"-2" (x̄ = 1/2") translucent clasts in yellow-brown sugary matrix.
				<.001	.23				173-176 Same as 167-173 but ~ 60% clasts (still matrix supported)
				.001	.40				176-187 ~50% clasts (x̄ = 1/4") in hematitic matrix (Matrix supported breccias)
				.005	.43				187-196 ~60% clasts (x̄ = 1/2") in hematitic matrix (Matrix supported breccias)
				.001	.34				196-203 ~30% clasts (x̄ = 1/2") in hematitic matrix (Matrix supported breccias)
				.002	.47				203'-215' ~80% clasts (x̄ = 2") in red-gray hematitic matrix. Clast supported. Locally banded + massive.
				.002	.38				215'-224' ~10% clasts (x̄ = 1") in purple-gray hematitic matrix. Porous, gritty-looking matrix (Matrix supported breccias)
				.018	.61				224-230' ~50% clasts (x̄ = 1/2") in red-gray hem. matrix (Matrix supported breccias)
				.461	3.44			Very broken core 116'-136'	230'-238' ~50% clasts x̄ = 1/2" in hem. matrix (same as 224'-230') but very dense; likely ~40% FeO
				.357	1.94	16'	.24 Au, 1.5 Ag		238'-247' Clast-supported coarse bx (x̄ = 1") with ~80% gray + red gray clasts in red-gray, hem. matrix
				.064	.71				247' Very sharp fault contact
				.106	.96				247'-262'+ Blue-green, clayey, wet, crushed diorite fault gouge. Trace to 5% calcite, some quartz veinlets. Largest dt. bx. frag ≤ 1".
				.193	1.12				
				.143	.27				
				.090	.63				
				.032	.55				
				.070	.58	19'	.05 Au, .7 Ag		
				.026	.45				
				.050	.67				
				.072	1.16				
				.109	1.63				
				.086	1.34	15'	.26 Au, 1.6 Ag		
				.121/Sludge	2.02/Sludge				
				.555	1.55				
				.399	1.38				
				.170	2.18				
				.009	0.79				
				.020	.57				
				.008	.57				
				.026	.82				
				.040	.73				
				.043	.81				
				.037	.56				
				.037	1.01				
NQ 1.875" diam.	Box 23, 24, 25, 26, 27, Box 28	136-262'						Chert Brecciated, hematitic	
				.053	.67			Broken core 208-217'	
				.026	.69				
				.008	.85				
				.016	1.18				
				.003	.71				
				.002	.77				
				.003	.92			219-230'	
				.006	.94				
				.006	.70				
				.009	.62				
				.006	.55			238-240	
				Nil	.55				
				.015	.54				
				Nil	.09			245-247 H.W. Verde fault	
				Nil	.08			"Blue diorite" fault gouge	
E.O.H.		E.O.H. 262'							

Hole No. M-2

Collar location: U.V.X. Mine – 950-level Morgan D.D.S. Mine grid 11,565N 7,060E

Inclination: +60° at collar ~+60° at 220' by acid etch test

Azimuth: 240° (S 60° W) at collar

Length: 226 feet

Driller: Longyear Co., Phoenix, AZ Burt Hansen + Dennis Sager, drillers

Core recovery: 0-76' in dt = 95%; 76'-174' in chert bx = 84%; 174-226 in chert + dt = 95%; overall 90%

Dates: Feb. 9 thru Feb. 16, 1987

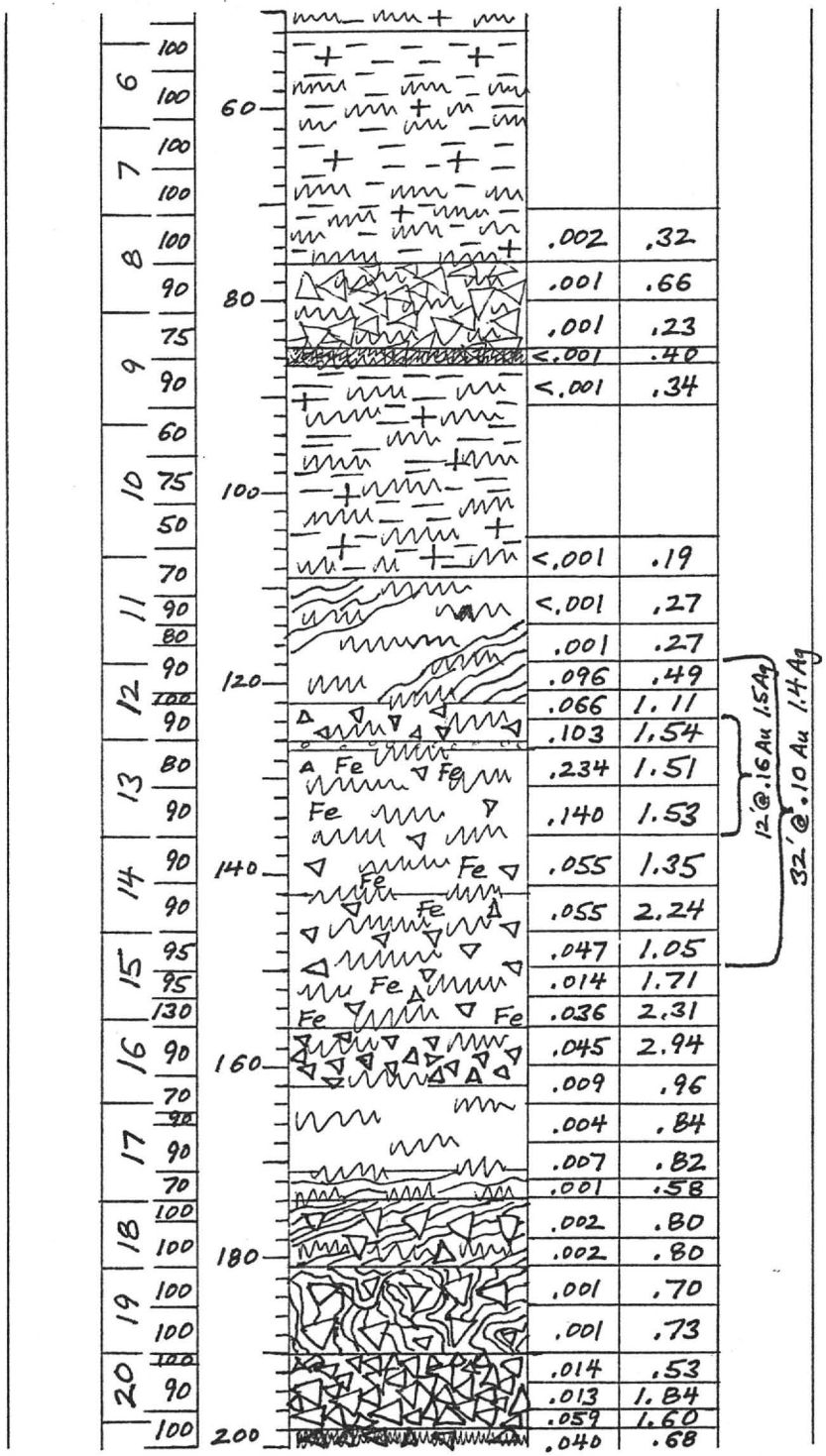
Assayer: Iron King Assay, Inc. – Humboldt, AZ Using Fire Assay, one assay ton + A.A. followup for low grades.

Logger: Don White, geologist, C.P.G.

Remarks: Drilled with Longyear 34, pneumatic rig. NQ core from collar thru 226' T.D. Overall drilling rate of 19 ft/10 hour shift

All rods and steel removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
NQ core 1.875" dia.	Box 1: 100, 100; Box 2: 100, 100, 80; Box 3: 100, 90; 4: 100, 50, 100; 5: 100	20; 40						Massive diorite (subvolcanic intrusive); Altered diorite	Ø-21' Gray green, med. grained, massive diorite. No clear foliation or mineral alignment. Feldspars intact. Some hematite-lined frax. ~2% quartz-calcite-siderite-hematite filled fractures. Most are non-oriented veinlets ≤ 3 mm. Those with quartz ≤ 1cm. 21'-31' Same, but no veinlets or carbonates 31'-52' Still diorite but very clay altered and hematitic. Core is ragged and incompetent, particularly in water. Pink red hematite stain pervasive. No carbonates.



6	100		
7	100		
	100		
8	100	.002	.32
	90	.001	.66
	75	.001	.23
9	90	<.001	.40
	60	<.001	.34
10	75		
	50		
	70	<.001	.19
11	90	<.001	.27
	80	.001	.27
	90	.096	.49
12	100	.066	1.11
	90	.103	1.54
	80	.234	1.51
13	90	.140	1.53
	90	.055	1.35
14	90	.055	2.24
	95	.047	1.05
15	95	.014	1.71
	130	.036	2.31
16	90	.045	2.94
	70	.009	.96
17	90	.004	.84
	90	.007	.82
	70	.001	.58
18	100	.002	.80
	100	.002	.80
19	100	.001	.70
	100	.001	.73
20	100	.014	.53
	90	.013	1.84
	100	.059	1.60
		.040	.68

Heavily clay-altered diorite

Chert bx

ft gouge

Heavily clay-altered diorite

Chert; massive, banded + brecciated ± Au

Chert-iron facies with bx ± Au

Chert; Variously massive, banded, and brecciated

52'-76' Diorite still but now beige to pink-tan colored, perhaps crudely foliated (intrusive flow foliation or chilled margin phenomenon). Completely clay-altered. H~6,5 Soapy, slick feeling but competent core where not too fractured.

76'-85' Chert breccia; Clast supported with ~90% lt. gray clasts in red-brown hematitic chert matrix. Clasts are "crackled" or shattered and silica healed. H~8.5

85'-87' Gouge derived from clay altered diorite

87'-109' Heavily clay-alt'd diorite, same as 52'-76'

Broken + shattered core continuous from 74' thru 175'

109'-205' Chert; variously massive, banded, or brecciated/clastic as follows:

109'-122' Tan, beige, + pale purple, massive to banded but "crackled" and silica healed chert,

122'-126' Matrix-supported bx with ~50% lt. gray clasts ($\bar{x}$ = ½") in yellow and red, blotchy + swirly ham. + lim. matrix.

126'-127' Single large quartz porphyry clast (?) with ~¼" phenos.

127'-142' Iron-stone; ~5% milky gray chert clasts floating in mustard yellow to dark red brown, massive, cherty to earthy hematite; ~60% FeO

142'-156' Similar to above ironstone but chert clasts up to 20% of volume, FeO ~30%. Very earthy to gouge matrix.

156'-162' Matrix-supported bx with ~50% gray clasts ($\bar{x}$ = 1½") in limonitic chert matrix with traces of $CuCl_2$

162'-171' Massive pink-brown cherts. Little banding

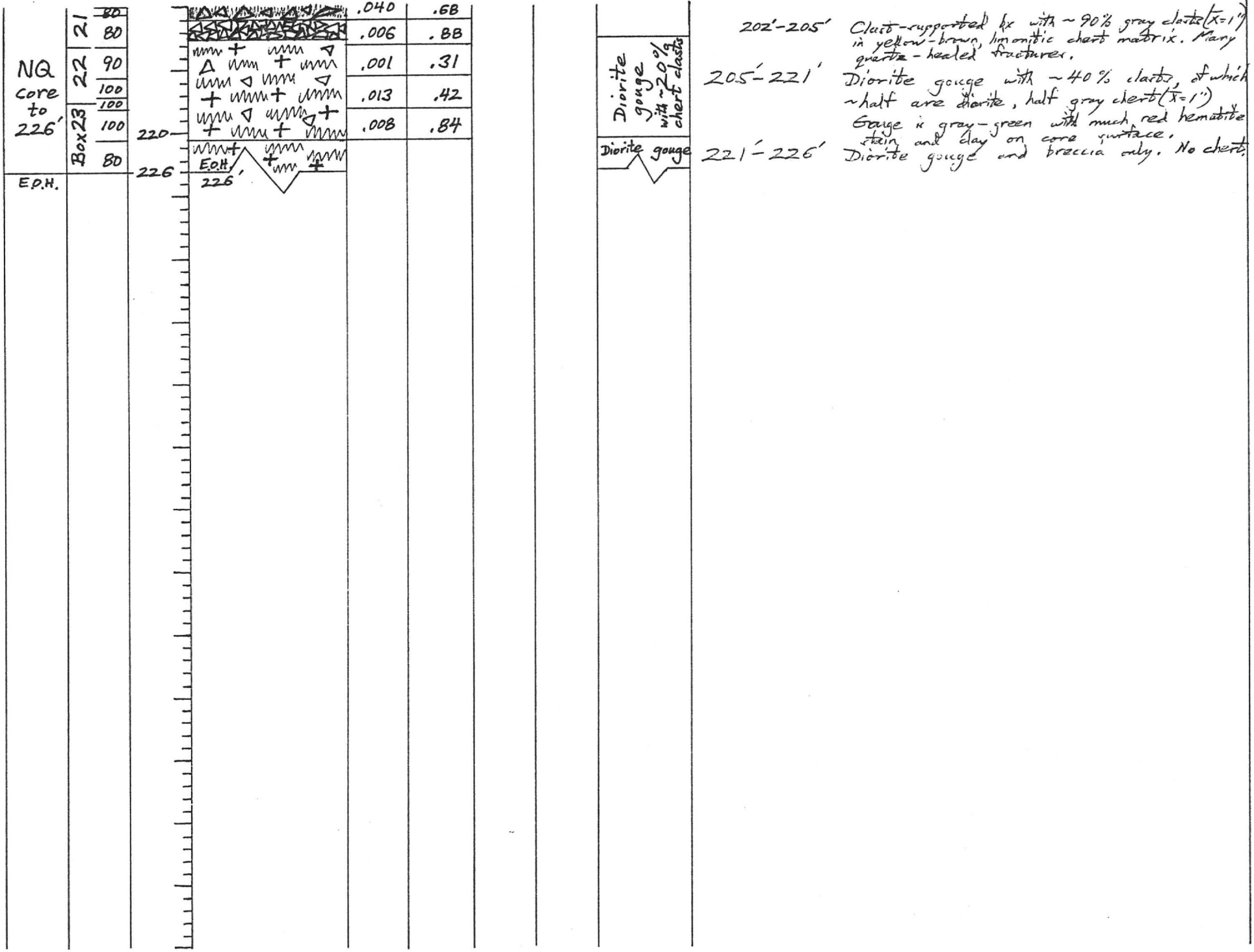
171-174' Light yellow, limonitic(?) faintly banded cherts

174'-181' Matrix-supported bx with lt. gray clasts (~30%, $\bar{x}$ = 2") in pink, purple, + yellow banded chert matrix

181'-190' Matrix-supported bx with ~30% beige + tan clasts ($\bar{x}$ = 2") in a chocolate brown + yellow mottled (contorted banding?) mixed hem. + lim. chert matrix

190'-198' Clast-supported bx with ~70% gray clasts ($\bar{x}$ = 1") in hem. + lim. matrix similar to 181'-190'.

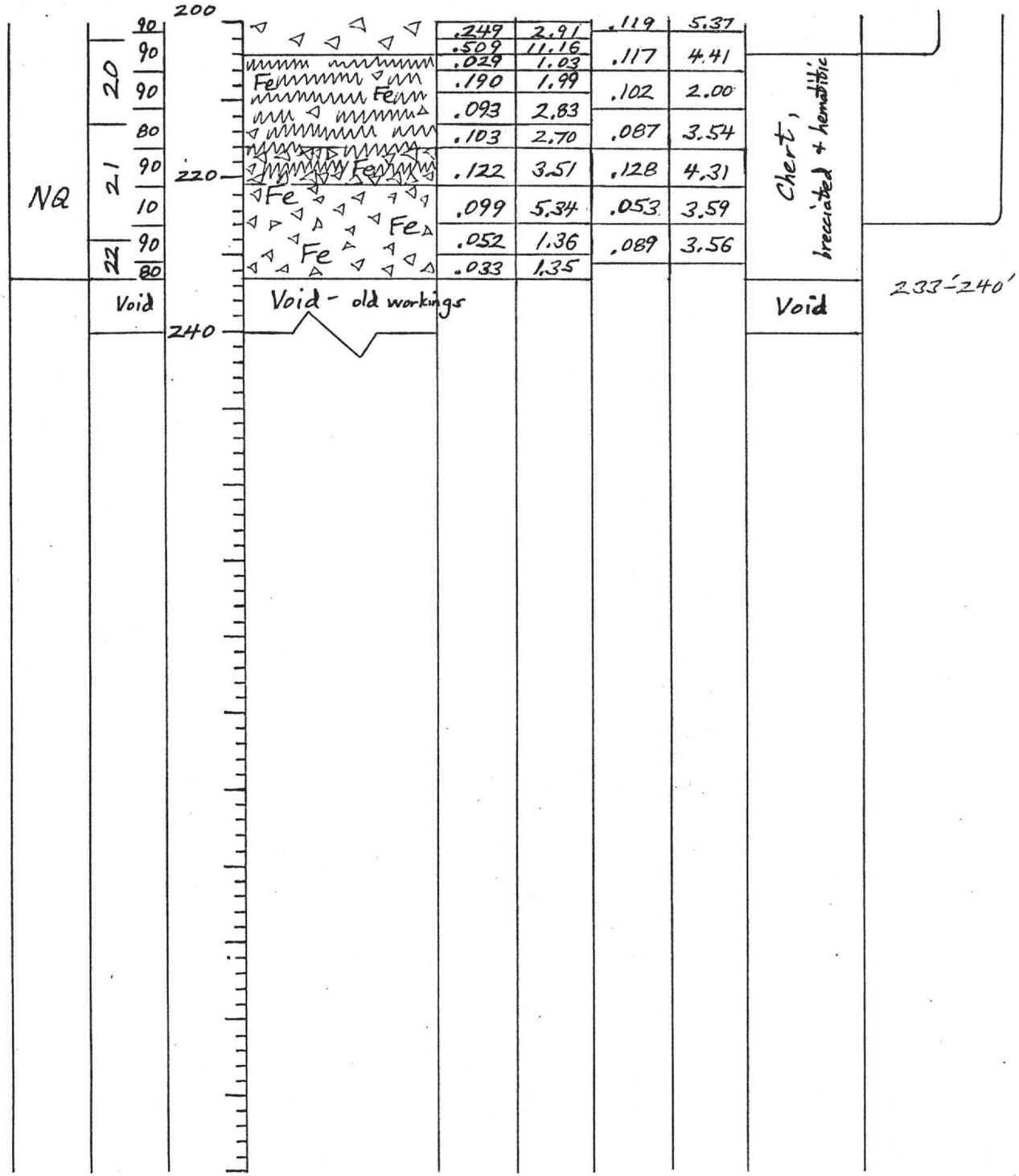
198'-202' Cherty gouge; ~50% gray + tan chert frags. ($\bar{x}$ = 2") in red (hematitic) clayey + silica grit matrix. Looks more tectonic than volcaniclastic.



202'-205' Clast-supported bx with ~90% gray clasts ($\bar{x}$=1") in yellow-brown, limonitic chert matrix. Many quartz-healed fractures.

205'-221' Diorite gouge with ~40% clasts, of which ~half are diorite, half gray chert ($\bar{x}$=1") Gouge is gray-green with much red hematite stain and clay on core surface.

221'-226' Diorite gouge and breccia only. No chert.



198'-204' Mustard yellow silica grit with ~30% lt. gray clasts ($\bar{x}$ = ½") Porous.

204'-216' Red-brown, hematite-rich, dense, iron-stone (~60% FeO-?) Non-magnetic, ~10% lt. gray to white clasts ($\bar{x}$ = ¼")

216'-221' Chert-cemented ironstone bx with ~70% red-br. clasts ($\bar{x}$ = ½") in ~40% FeO matrix.

221'-233' Same as 216-221 but matrix-supported (~30% clasts, $\bar{x}$ = ¼")

233'-240' Void - probably silica ore (Cu-Au) stopes at the 903 intermediate level unless hole drifted laterally into the 903-950 raise or other workings.

Hole No. M-1

Collar location: UVX Mine - 950 Level, Morgan D.D.S. Mine grid 11,565N 7,060E

Inclination: +42° at collar ~+45° at 250' by acid etch test.

Azimuth: 240° (S 60° W) at collar

Length: 262 feet

Driller: Longyear Co. - Phoenix, AZ. Burt Hansen + Dennis Sager, drillers

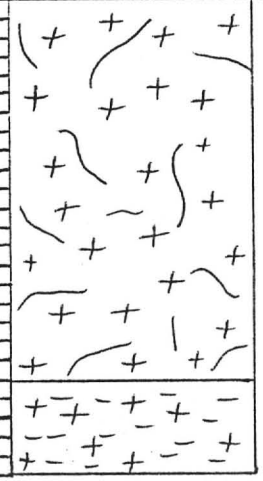
Core recovery: 0-114' = 100% 165'-200' = 100% 114'-165' = 81% 200'-262' = 79% ~90% in Au-rich zone (122'-176')

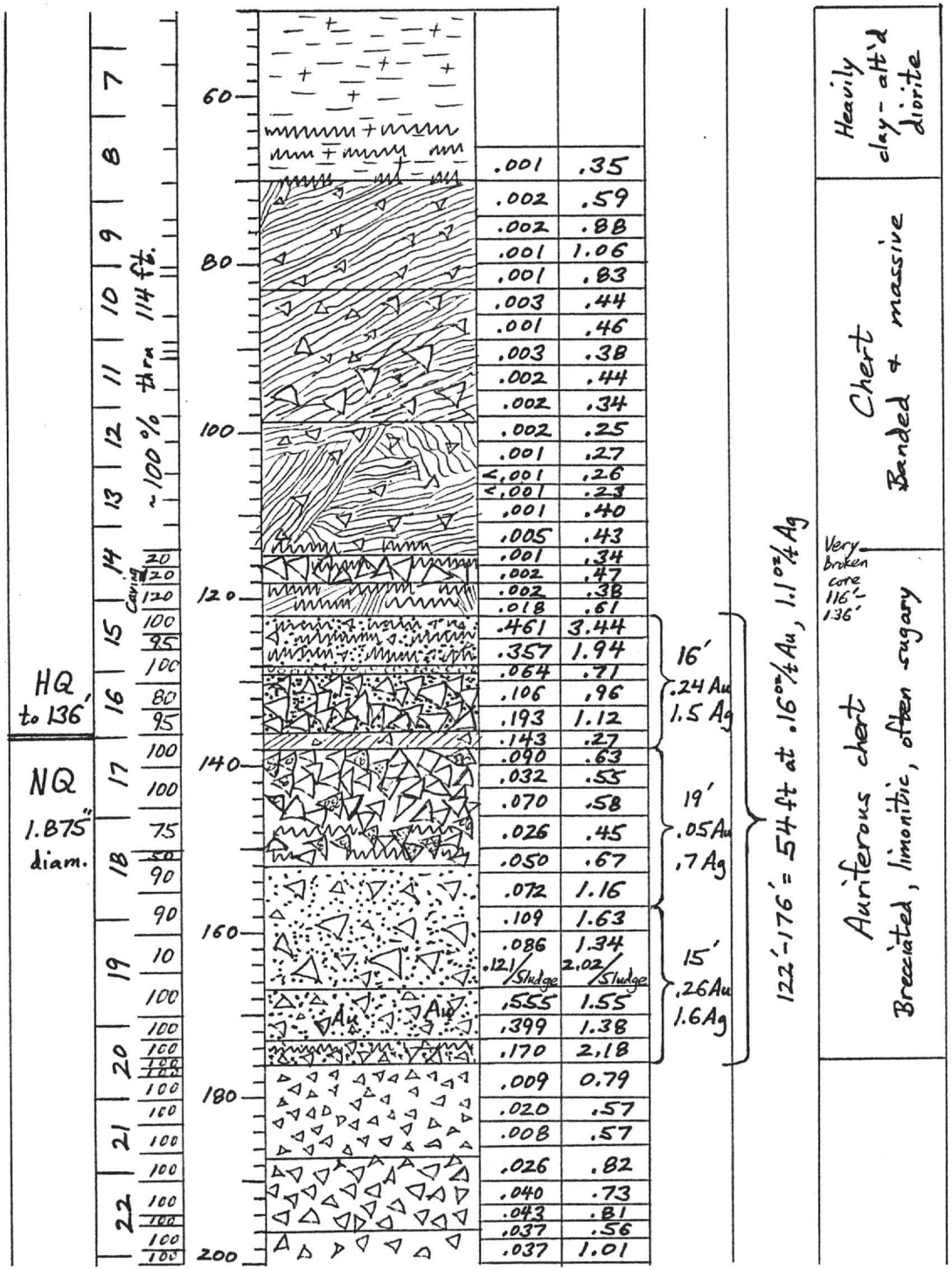
Dates: Jan. 9 thru Feb. 5, 1987

Assayer: Iron King Assay, Inc. - Humboldt, AZ. Using Fire assay, one assay ton + AA. followup for low grades.

Logger: Don White, geologist

Remarks: Drilled with Longyear 34 pneumatic rig. HQ core to 136', NQ from 136 to 262 (E.O.H.) Overall drilling rate of 10.5 ft/shift (10 hr. shifts) not counting 3 days mobilization and 2 days down time (air motor replacement). All casing + steel removed from hole.

Core size	Runs + recovery	Footage	Graphic log	Au (oz/t)	Ag (oz/t)			Rock type	Lithology
HQ 2.5" diam.	Box 1 / Box 2 / Box 3 / 4 / 5 / 6 — Runs; Core recovery 100% thru 114'	20; 40						Massive diorite (subvolcanic intrusion); Altd diorite	0-40' Gray green, medium grained, massive diorite. No clear foliation or metamorphic mineral alignment. Feldspars intact. Some red-brown hematite-lined fractures (≤2mm) Traces of calcite and siderite ± quartz as thin (≤2mm) white and tan veinlets up to 2% of rock. No preferred orientation. Core surface smooth. 40'-50' Similar but feldspars clay altered. Core is ragged and incompetent. Disintegrates rapidly in water. No carbonates



50'-70' Beige and flesh-colored, medium grained, massive to crudely foliated, completely clay-altered diorite. H ~ 6.5. Slick, soapy feeling. Cores smooth + intact. Much broken core 63'-71'

70'-247' **Chert**, variously massive, banded, brecciated, as follows:

70'-83' Tan and brown, ribboned/banded chert with ≤ 5% Ht. gray clasts ≤ ¼". Banding ~ 70° to core axis

83'-99' Tan banded chert (very hard drilling - H ~ 8.5) with about 20% matrix-supported, angular, Ht. gray quartz or chert clasts ¼"-2", $\bar{x}$ = 1"

99'-115' Tan and brown banded chert with ~5% clasts. Clasts are ¼"-1", $\bar{x}$ = ½", gray + brown, rounded + elongate

115'-118' Clast-supported chert breccia (~60% gray + red clasts, (¼"-3", $\bar{x}$ = 2") in tan chert matrix

118'-122' Beige, massive to ribboned chert.

122'-128' Matrix-supported, limonitic chert bx with ~20% (⅛"-½", $\bar{x}$ = ¼") yellow, red, gray + brown clasts in a loose, porous, yellow-brown, limonitic chert matrix. Banding ~ 60° to core axis.

128'-129' Single quartz porphy. clast (?) Tan with Ht. gray ⅛"-¼" phenos. ($\bar{x}$ = ¼")

129'-136' Clast-supported bx, ~60% gray + tan clasts in sugary yellow-tan, limonitic chert matrix. ~10% vugs

136'-138' Matrix-supported bx w/ ~10% gray clasts ($\bar{x}$ = ½") in yellow-brown matrix. Banding ~ 45° to CA.

138'-152' Clast-supported bx, ~60% gray, tan, + red clasts ($\bar{x}$ = 1") in pale red-brown hematitic matrix. Some g.p. clasts

152-167' Matrix-sup. bx. ~30% very Ht. gray ¼"-3" ($\bar{x}$ = 1") clasts in a white to yellow + red very sugary silica grit matrix

167-173 Matrix-supported bx with ~30% Ht. gray ¼"-2" ($\bar{x}$ = ½") translucent clasts in yellow-brown sugary matrix.

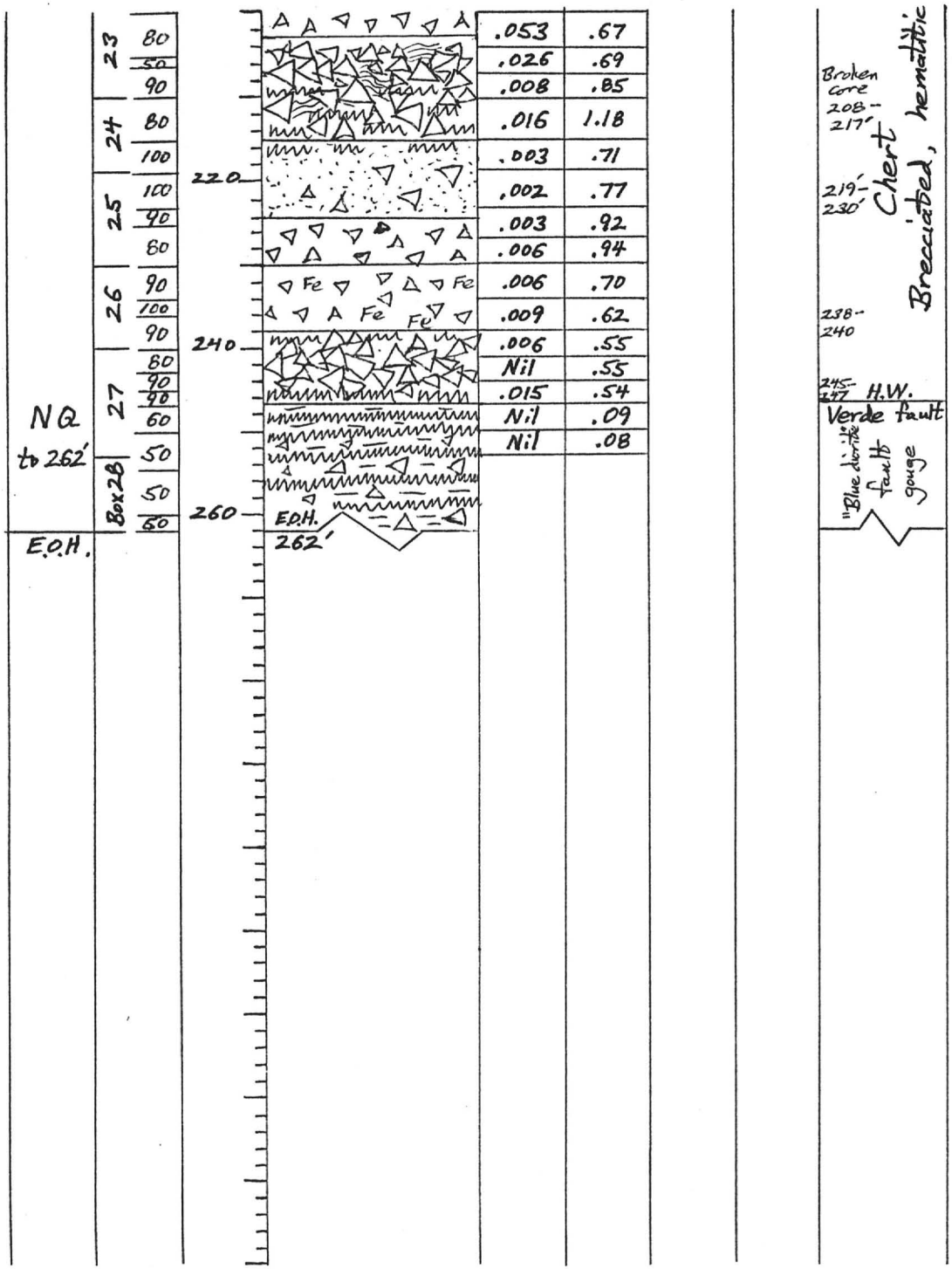
173-176 Same as 167-173 but ~ 60% clasts (still matrix supported)

Matrix supported breccias:

176-187 ~50% clasts ($\bar{x}$ = ¼") in hematitic matrix

187-196 ~60% clasts ($\bar{x}$ = ½") in hematitic matrix

196-203 ~30% clasts ($\bar{x}$ = ½") in hematitic matrix



203'-215' ~80% clasts ($\bar{x}$ = 2") in red-gray hematitic matrix. Clast supported. Locally banded & massive.

215'-224' ~10% clasts ($\bar{x}$ = 1") in purple-gray hematitic matrix. Porous, gritty-looking matrix

224-230' ~50% clasts ($\bar{x}$ = ½") in red-gray hem. matrix

230'-238' ~50% clasts $\bar{x}$ = ½" in hem. matrix (same as 224'-230') but very dense; likely ~40% FeO

Matrix supported breccias

238'-247' Clast-supported coarse bx ($\bar{x}$ = 1") with ~80% gray + red gray clasts in red-gray, hem. matrix

247' Very sharp fault contact

247'-262'+ Blue-green, clayey, wet, crushed diorite fault gouge. Trace to 5% calcite, some quartz veinlets. Largest dt. bx. frag ≤ 1".

U.V.X. DDH

M-1

HQ Core - 2.5" dia. - to 136'
NQ Core - 1.875" dia. - 136'-262'
~100% core recovery ϕ-111'

Box	Core Box Recovery	Footage	Graphic Log	Gold (oz/t)	Silver (oz/t)	Clast(c) or matrix(m) support	Clast %	Clast size	Clast color	Matrix color	Matrix composition	Vugs	Healed fractures	Remarks
Box 8		60												
		70		.001	.35									
Box 9				.002	.59									
				.002	.88	M	5	1/10"-1 1/2" x̄ = 1/4"	Light gray	Tan + flesh	H + L	ϕ	Few	Ribboned chert. Banding ~70° to CA.
Box 10		80		.001	1.06									
		83		.001	.83									
Box 11				.003	.44									
				.001	.46									
		90		.003	.38	M	20	1/4-2 x̄ = 1"	Light gray	Tan	L	ϕ	Few	
				.002	.44									
				.002	.34									
Box 12		99		.002	.25									
		100		.001	.27									Rounded + elongate clasts.
	~100% core			<.001	.26	M	5	1/4-1 x̄ = 1/2	Gray + brown	Tan + brown	L + H	ϕ	Few	
Box 13				<.001	.23									
		110		.001	.40									
				.005	.43									
Box 14		100		.001	.34									Some "jigsaw puzzled" edges of clasts with matrix "injected" into frax.
		20 115		.002	.47	C	60	1/4-3 x̄ = 2	Lt. gray Dk. gray Red.	Tan	L	ϕ	Few	
		118		.002	.38	M	ϕ	—	—	Biége	—	~2% ≤ 1/2"	Few	Massive to ribboned.
		120		.018	.61									
Box 15		122		.461	3.44	M	20	1/10-1/2	Yellow, red, gray brown	Golden yellow brown	L	≤5% ≤1/2"	ϕ	Banding ~60° to CA.
		95		.357	1.94									
		128 129		.064	.71	C	100	—	—	Tan	—	ϕ	ϕ	
Box 16		130		.106	.96	C	60	1/4-2 x̄ = 1	Lt. gray + tan	Yellow-tan sugary	L	≤10% ≤1"	Few (in clasts)	qp clasts with lt. gray 1/10"-1/4" phenocrysts of clear gray qtz with rounded edges. Sugary to silty si grit matrix
		80		.193	1.12									
HQ / NQ		95 136		.143	.27	M	10	1/4-1 x̄ = 1/2	Lt. gray Red gray	Yellow-brown	L	ϕ	ϕ	Banding ~45° to CA.
		138		.090	.63									
		140		.032	.55									Some larger, subrounded clasts at base. More yellow + red clasts at top. Some qp clasts.
Box 17		100		.070	.58	C	80	1/4-2 x̄ = 1	Lt. gray, tan, yellow-brown, & red.	Pale red-brown	H	≤10% ≤1"	Few (in clasts)	
				.026	.45									
		150		.050	.67									
Box 18		50 152		.072	1.16									
		90		.109	1.63	M	30	1/4-3 x̄ = 1	Lt. gray	White to yellow + red	H + L	≤2% ≤1/2"	Few	Very sugary texture, (visual + tactile)
		160		.086 (Sludge .121)	1.34 (Sludge 2.02)									
Box 19		10												
		167		.555	1.55	M	30	1/4-2 x̄ = 1/2"	Lt. gray	Yellow-brown + tan	L	≤2% ≤1/4"	Few	Sugary textured
		100 170		.399	1.38									
Box 20		100 100 100 100 173		.170	2.18	M	60	1/4-2 x̄ = 1/2	Lt. gray red-br. dk. brn.	Yellow-brown	L	≤5% ≤1"	Few	
		176		.009	.79									
		100 180		.020	.57	M	50	1/10-2 x̄ = 1/4"	Mostly lt. gray Some gray-brown + red	Red-gray	H	≤2% ≤1/2"	Few	
Box 21		100		.008	.57									
		187		.026	.82									
		100 190		.040	.73	M	60	1/4-4 x̄ = 1/2	Lt gray + gray	Red-gray	H	≤5% ≤1"	Few	Large, translucent clasts at base (192'-196')
Box 22		100		.043	.81									
		100 196		.037	.56									
		100		.037	1.01	M	30	1/4-1 x̄ = 1/2	Gray	Dark red-brown	H	≤5% ≤1" (slits)	Few	Notably dense as result of high FeO
		200		.053	.67									
Box 23		80 203		.026	.69									
		50		.008	.85	C	80	1/4-6 x̄ = 2	Gray	Red-gray	H	≤2% ≤1" (slits)	Few	Locally banded & massive
		90 210		.016	1.18									
Box 24		80 215												
		100		.003	.71									
		220		.002	.77	M	10	1/2-2 x̄ = 1	Light gray	Purple gray	H(?)	ϕ	ϕ	Porous + permeable (adsorbs water) + gritty looking
Box 25		100		.003	.92									
		90 224		.006	.94	M	50	1/4-2 x̄ = 1/2	Lt. gray to white	Red-gray	H	≤2% ≤1/4"	Few (in clasts)	
		80 230		.006	.70									
Box 26		90 100		.009	.62	M	50	1/4-2 x̄ = 1/2	Lt. gray	Red + red-gray	H	≤2% ≤1/4"	Few (in clasts)	Very dense + hematitic ~40% FeO
		90 238		.006	.55									
		240 80		<.001	.55	C	80	1/10-3 x̄ = 1	Gray + red gray	Red-gray	H	≤2% ≤1/4"	Few (in clasts)	Basal foot weathered against Verde Fault (HW)
Box 27		90		.015	.54									
		90 247		<.001	.09									
		60 250		<.001	.08									Blue-green, wet, clayey fault gouge derived from "blue diorite"
Box 28		50 50 260												
		60 262	262' EOH											262' = End of hole
				.003	.71	M	10	1/2-2 x̄ = 1	Light gray	Purple gray	H(?)	ϕ	ϕ	Porous + permeable (adsorbs water) + gritty looking
Box 25		100 220		.002	.77									
		100 90 224		.003	.92	M	50	1/4-2 x̄ = 1/2	Lt. gray to white	Red-gray	H	≤2% ≤1/4"	Few (in clasts)	
		80 230		.006	.94									
Box 26		90 100		.006	.70	M	50	1/4-2 x̄ = 1/2	Lt. gray	Red + red-gray	H	≤2% ≤1/4"	Few (in clasts)	Very dense + hematitic ~40% FeO
		90 238		.009	.62									
		240 80		.006	.55									Basal foot weathered against Verde Fault (HW)
Box 27		90		<.001	.55	C	80	1/10-3 x̄ = 1	Gray + red gray	Red-gray	H	≤2% ≤1/4"	Few (in clasts)	
		90 247		.015	.54									
		60 250		<.001	.09									Blue-green, wet, clayey fault gouge derived from "blue diorite"
Box 28		50 50 260		<.001	.08									
		60 262	262' EOH											262' = End of hole