Contractor Taylor | Coordinates | Project Gilt Edge - sulfide | Hole No. BED-02

Drill Type Portadrill | Casing Depth 400' | State S.D. | Sheet 7 of 12

Hole Size 8" | Bearing | Inclination | Date Started 12-10-87 | Property USFS - Mann

Collar Elev. | Final Depth 400' | Date Completed | Hole Surveyed

DISTANCE (feet)	GRAPHIC LOGS: ALTERATION (1 Weak, 2 Moderate, 3 Strong)	TOTAL % SULFIDES (vol %)	ROCK TYPE & STRUCTURE	DOWN HOLE LOCATION: DISTANCE DOWN HOLE (feet)	ELEVATION	GEOLOGIC NOTES: ROCK TYPE	DESCRIPTION: MINERALOGY, ALTERATION, TEXTURES, GRAIN SIZE, FRAGMENT SIZE	MINERALIZATION: DISTRIBUTION (Massive, Disseminated, Veinlill, Replacement)	TYPE
210						Sandstone	same as above	no visible sulfide	
215						Sandstone	same as above, mostly grn-gray		
220						Sandstone	calcareous, gray, fg., (poss. sdy limeste) some red-brn sdy? limestone		
225						Sandstone	red-brn, calc. cement (vy. calc.) f.g., alteration?, fe ox stained		
230						Sandstone	as above		
235						Sandstone	gray, vfg 2% dk. grains silica cement, sl. calc., some fe ox. stain		
240						Sandstone	as above		
245									

DRILL CUTTING LOG

Logged by: Y. Curtis

Contractor: Taylor
Drill Type: Portadrill
Hole Size: 8"
Collar Elev.:
Coordinates:
Casing Depth: 400'
Bearing: Inclination:
Final Depth: 400'
Project: Gilt Edge - sulfide
State: S.D.
Date Started: 12-10-87
Date Completed:
Hole No.: BED-02
Sheet 8 of 12
Property: USFS - Hann
Hole Surveyed:

DISTANCE (feet)	GRAPHIC LOGS: ALTERATION (1 Weak, 2 Moderate, 3 Strong)	TOTAL SULFIDES (vol %)	ROCK TYPE & STRUCTURE	DOWN HOLE LOCATION: DISTANCE DOWN HOLE (feet)	ELEVATION	ROCK TYPE	GEOLOGIC NOTES: DESCRIPTION (MINERALOGY, ALTERATION, TEXTURES, GRAIN SIZE, FRAGMENT SIZE)	MINERALIZATION: DISTRIBUTION (Massive, Disseminated, Veinlill, Replacement) / TYPE
245						Sandstone	reddish-brn, fg, sub ang. to sub rd, calc. cement, altered, Fe ox stain	no visible sulfide
250						Limestone	minor Hi gray - Fe ox stained.	
						Sandstone	Lt. gra-gra, vfg, sl. calc., hd.	
255						Siltstone	gra-gray, hd, massive, some Fe ox stain	
260						Siltstone & Sandstone	gra gray, calc. hd gra gray, vfg, calc. hd.	trace sulfide
265						Sandstone	gra gray, vfg, hd. calc. cement	trace sulfide
270						Sandstone	gray-gra to gra, vfg.-m.g., calc. 5% dark minerals	no visible sulfide
275						Sandstone	as above	trace sulfide -
280								

DRILL CUTTING LOG

Logged by: H. Curtis

Contractor Taylor | Coordinates | Project Gilt Edge - sulfide | Hole No. BED-02
Drill Type Portadrill | Casing Depth 400' | State S.D. | Sheet 9 of 12
Hole Size 8" | Bearing | Inclination | Date Started 12-10-87 | Property USFS - Mann
Collar Elev. | Final Depth 400' | Date Completed | Hole Surveyed

Distance (feet)	Graphic Logs: Alteration (1 Weak, 2 Moderate, 3 Strong)	Total Sulfides (vol %)	Rock Type & Structure	Down Hole Location: Distance Down Hole (feet)	Elevation	Rock Type	Description: Mineralogy, Alteration, Textures, Grain Size, Fragment Size	Mineralization: Distribution (Massive, Disseminated, Veintill, Replacement)	Type
280						Sandstone	Lt. brn gry to grn gry, vfg, hd, silica cement	no visible sulfide	
285						Sandstone	as above - 80-90%		
						Shale	silty, lt. grn-gry, poorly fissile		
290						Porphyry?	dk. gry-green, vfg groundmass w/ 3-4% mafics sl. calcar.?	trace sulfide	
295						Porphyry?	same as above, sl. calcar?	no trace sulfides	
300						Limestone?	dk. gry-grn, clastic vfg., 1-2% dk. grains, slight banding or bedding in some larger fragments		
						Shale	dk gry-grn, poor to mod. fissil., sl. calcar., silty looking		
305						Limestone and shale	as above		
310						Sandstone	dk gry-grn, vfg, very calc.		
315									

DRILL CUTTING LOG

Logged by: Gary Curtis

Contractor: Taylor | Coordinates: | Project: Gilt Edge - Sulfide | Hole No.: BED-02

Drill Type: Portadrill | Casing Depth: 400' | State: S.D. | Sheet 10 of 12

Hole Size: 8" | Bearing: | Inclination: | Date Started: 12-10-87 | Property: USFS - Mann

Collar Elev.: | Final Depth: 400' | Date Completed: | Hole Surveyed:

DISTANCE (feet)	GRAPHIC LOGS: ALTERATION (1 Weak, 2 Moderate, 3 Strong)	TOTAL SULFIDES (vol %)	ROCK TYPE & STRUCTURE	DOWN HOLE LOCATION: DISTANCE DOWN HOLE (feet)	ELEVATION	ROCK TYPE	GEOLOGIC NOTES: DESCRIPTION (MINERALOGY, ALTERATION, TEXTURES, GRAIN SIZE, FRAGMENT SIZE)	MINERALIZATION: DISTRIBUTION (Massive, Disseminated, Veinlill, Replacement) / TYPE
315						Siltstone	Gry, Sdy, sl. calcar. w/ occas. veins of calcite (up to .5-.75 cm)	no visible sulfides
320						Siltstone, Sandstone, Shale	Same as above; gry to grn-gry, vfg, calcareous; grn-gry, silty, poor fissility	no visible sulfides
325						Sandstone, Shale, Siltstone	Same as above; " " "; " " "	no visible sulfides
330						Sandstone	Gry to grn-gry, vfg, calcareous	no visible sulfides
335						Clastic limestone	dk grn-gry, wh. to lt. gry phenocrysts set in lt gry to dk grn-gry groundmass, 10-12% mafics(?) includ. slender laths	no significant - visible sulfide; hornblende
						Clastic limestone	Same as above (note - this resembles dk-grn-gry porphyry but is vy calcareous)	
340						Clas. limestone	as above, smaller vfg to f.g. grain size	no visible sulfides
345						Shale	dk, grn-gry, sl. contact metam., calcareous poorly fissile	
350						Shale	dk grn-gry, non-calcar to calcareous possibly sl. silty	no visible sulfide

DRILL CUTTING LOG

Glenn Curtiss

Contractor Taylor | Coordinates | Project Gilt Edge - Sulfide | Hole No. BED-02

Drill Type Portadrill - air hammer | Casing Depth 400' | State S.D. | Sheet 11 of 12

Hole Size 8" | Bearing | Inclination | Date Started 12-10-87 | Property USFS - Hank

Collar Elev. | Final Depth 400' | Date Completed | Hole Surveyed

DISTANCE (feet)	GRAPHIC LOGS: ALTERATION (1 Weak, 2 Moderate, 3 Strong)	TOTAL SULFIDES (vol %)	ROCK TYPE & STRUCTURE	DOWN HOLE LOCATION: DISTANCE DOWN HOLE (feet)	ELEVATION	ROCK TYPE	DESCRIPTION: MINERALOGY, ALTERATION, TEXTURES, GRAIN SIZE, FRAGMENT SIZE	MINERALIZATION: DISTRIBUTION (Massive, Disseminated, Veinfill, Replacement)	TYPE
350						Sandstone	dk grn-gry, vfg, some freq. sl. calcar	no sulfides	
355									
						Sandstone ?	dk grn-gry, vfg, abun mafics, sl. calcareous	no sulfides	
						Porphyry	Lt. gry, 2% mafics or less, mostly aphanitic, 2-3% sulfide	2-3% sulfides	FeS2
360									
						Shale	grn-gry, feels silty, hard, thin poorly develop. fissile layers, non-calcar.	no visible sulfide	
						limestone	red-brn to brn, hard, massive to granular-clastic in appear.	no visible sulfides	
365						Shale & limestone	same as above	no visible sulfide	
370									
						Shale	dk grn-gry, sl. calcar to calcar, massive to poorly fissile, sl. silty feel, some zones show mod. fissility	no visible sulfide	
375									
						Shale	as above		
380						Shale	as above		
385									

DRILL CUTTING LOG

Logged by: Hans Curtis

Contractor: Taylor | Coordinates: | Project: Gilt Edge - sulfide | Hole No.: BED-02

Drill Type: Portadrill | Casing Depth: 400' | State: S.D. | Sheet: 12 of 12

Hole Size: 8" | Bearing: | Inclination: | Date Started: 12-10-87 | Property: USFS - Mann

Collar Elev.: | Final Depth: 400' | Date Completed: | Hole Surveyed:

Distance (feet)	Graphic Logs: Alteration (1 Weak, 2 Moderate, 3 Strong)	Total Sulfides (vol %)	Rock Type & Structure	Down Hole Location: Distance Down Hole (feet)	Elevation	Rock Type	Geologic Notes: Description (Mineralogy, Alteration, Textures, Grain Size, Fragment Size)	Mineralization: Distribution (Massive, Disseminated, Veinlet, Replacement)	Type
385						Shale	dk. gm-gray, sl. calcar to calcareous, poor to mod. fissility, sl. silty in spots,	no visible sulfide!	
390						Shale	as above		
395						Shale	as above		
400							TD 401 FT 12-12-87		

DRILL CUTTING LOG

Logged by: Mary Curtin