





Samples 2932 - 2935 from St. Dizier

SD22

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Four drill core samples were received for petrological examination; thin-sections were prepared and described, and the silver-grey sulphide in 2935, occurring as radiating aggregates on fracture-surfaces, was identified by X-ray powder diffraction, this being the cheapest and most positive method.

All the rocks show evidence of extensive metasomatism and there is some uncertainty concerning their origin. 2932 was a breccia or conglomerate; no granitic components as such were identified. 2933 is a skarn or calc-silicate assemblage, probably originating from a carbonate rock. 2934 and 2935 could have been minor intrusives, but may have originated as impure carbonates; they both contain dark serpentinous aggregates representing an easily decomposed Mg-silicate such as diopside or a member of the humite group (cp. other St. Dizier rocks). The occurrence of stibnite on fracture-surfaces is probably related to a late low-temperature alteration phase in 2935.

H.W. Fønder, M. Sc.

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	CENTRAL MINERALOGICAL SERVICES Comments
SD22 93.2m 2932 (T.S. 46405)	Metasomatised ?Conglomerate. Patches of finely granular quartz-feldspar-phlogopite, coarser mosaic quartz; matrix of quartz, phlogopite, clusters of acicular tremolite, sulphides.	Vague relict conglomeratic fabric; most minerals micro-granular. Relict textures absent.	Loose clusters of small dravite crystals. Sulphides are pyrrhotite, pyrite. Trace siderite, fluorite.	Pervasive, intensive metasomatism, perhaps overprinting an earlier hornfelsing event, has masked primary rock details.
121.8m 2933	Skarn. Coarse, intergrown prismatic tremolite crystals, partly replacing/ enclosing diopside. Scattered flakes of very pale phlogopite. No relict minerals.	Replacement textures; typical skarn-type fabric, medium- to coarsely-crystalline.	Irregular pyrrhotite patches. Siderite veinlets and impregnations.	Assemblage of Mg-Ca silicates suggests pyrometasomatism of a carbonate rock, possibly dolostone.
132.8- 132.9m 2934	Metasomatic Rock. Mainly a mosaic of small poorly twinned plagioclase crystals; porphyro-blasts of tremolite; Ti-biotite flakes; orange/blue tourmaline; sulphide grains.	Mostly medium-grained; poor relict textures, probably igneous.	Granular sphene throughout. Sulphide grains are pyrrhotite. Very minor quartz.	Original rock not known, but believed to have been minor felsic intrusive. Dark patch includes a serpentinised Mg-silicate, ?humite group.
140.4m 2935 (T.S. 46408)	Altered Metasomatic Rock. Mosaic of untwinned plagioclase, patches of serpentinised Mg-silicate (?diopside/humite) and of chloritised/sericitised tremolite. Sulphides on fractures.	Mostly medium-grained with coarse zones and random patches; no relict textures.	Scattered Ti-biotite/phlogopite flakes. Pyrite and pyrrhotite grains. Carbonate patches.	Similar assemblage to 2934, but with younger phase of argillic alteration. Sulphide on fracture is stibnite (confirmed by XRD).

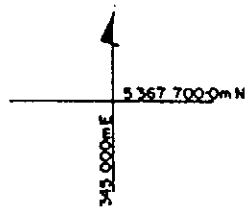
HOLE NO. SD 22

GOLD FIELDS EXPLORATION PTY. LIMITED  
DIAMOND DRILL HOLE PLOT

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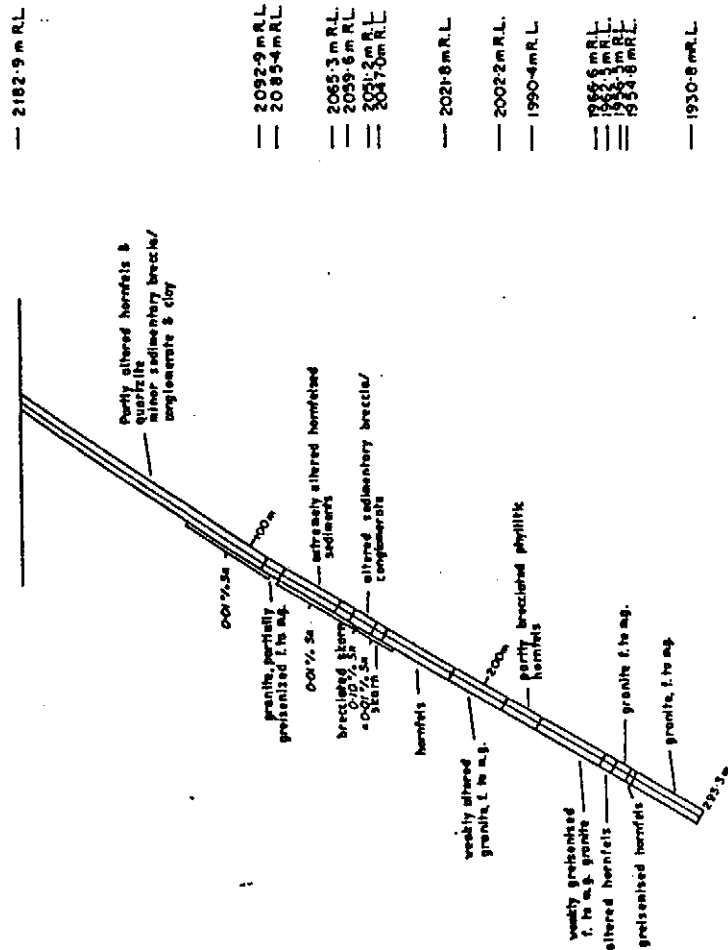


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PLAN

5 367 659.5mN  
345 129.0mE



DIP PROFILE

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: St. Dizier

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: SD22

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA											
m	To	m	%		Sample No.	From	To	Rec. %	Sn (ppm)	WO <sub>2</sub> (ppm)						
0	5.2	0	0	NO CORE (Drilled with HW casing advancer).												
2	61.4	49.5	88	BADLY BROKEN SANDSTONE												
				Pale brown, grey, grey-brown, fine grained, largely unbedded (rare BCA's - contorted or 20-30° to c.a.), quartz veined throughout. Some quartz veins have minor pyrite, micas (including Ti-biotite) both within them and in an altered selvage around them, occasionally with traces of sphalerite and ?chalcocopyrite. Minor brown tourmaline in (banded) tourmalinized zones and tourmaline veinlets. Some grey sandstone is finely micaceous (muscovite) with a spotted texture (cf. SD21). Extremely badly broken on variously oriented joints and fractures, particularly 54.1-57.6m where only pebbles recovered and 1.6m core lost, 6.7m core loss overall.												
4	73.7	11.7	95	QUARTZITE												
				Brown-grey, hard (silicified), banded (bedding? BCA's 25-50°, 30° average). Quartz veined throughout, irregular veins ±pyrite. Less broken cf. above but still badly broken on variously oriented joints and fractures some of which coated with brown tourmaline. Lower 1.0m is pale yellow-brown fine grained sandstone. 0.6m core loss.												
7	81.2	3.7	49	MICACEOUS CLAY												
				Pale brown, very soft: in places so soft that it cannot maintain the core shape and has sunk into the channel filling it like a sediment! Very mica-rich - generally a pale brown variety. Minor disseminated fine grained pyrite, particularly 77.6-78.1m? (0.8m core loss 77.6-79.0m). Major core losses throughout which total 3.8m. Minor vein quartz ± pyrite.	3952	76.6	77.6		40	20						
					3953	77.6	78.1		70	40						
					3954	78.1	81.2		90	<10						





PROJECT: St. Dizier

GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

HOLE NUMBER: SD22

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INTERVAL		RECOVERY		DESCRIPTION	Sample No	From	To	Rec. %	ASSAY DATA									
From	To	m	%						Sn (ppm)	SSn	Cu	Pb	Zn	Sb	WO <sub>3</sub> (ppm)			
				136.6m. Some variously oriented banding - not bedding. Generally quite competent. Minor veinlet and disseminated pyrite.	3994	122.4	123.4		30									
					3995	123.4	124.4		30								10	
				126.0-126.6m Greisenized medium grained granite dyke. Quartz, muscovite, minor tourmaline, fluorite assemblage. Lower contact approx. 60° to c.a.	3996	124.4	125.4		80								<10	
					3997	125.4	126.4		20								10	
					3998	126.4	127.4		110								20	
					3999	127.4	128.4		510								30	
				128.1m Thin (2cm) vein of quartz, sphalerite and galena at approx 10° to c.a.	4000	128.4	129.4		40								60	
					4240	129.4	130.4		70								20	
					4241	130.4	131.4		10								10	
				130.8-135.3m Siliceous altered zone in which small clots of Ti-biotite, green mineral, pyrite/pyrrhotite, tourmaline (0.5-1cm across) are surrounded by bleached haloes and set in a mottled, mauve-brown siliceous matrix.	4242	131.4	132.4		20								10	
					4243	132.4	133.4		20								10	
					4244	133.4	134.4		50								10	
					4245	134.4	135.4		20								10	
					4246	135.4	136.4		40								10	
					4247	136.4	137.4		70								10	
				Petrological Samples: 121.8, 132.85m	4248	137.4	138.4		40								10	
					4249	138.4	139.4		40								10	
0.9	146.6	5.6	98	BRECCIATED SKARN(?)	4250	139.4	140.9		30								<10	
					4251	140.9	141.9		0.02	<0.01	0.01	0.02	0.17	0.70			30	
				Grey-green, yellow-green. Unbedded, mottled texture. Veined by black chlorite or serpentine(?) and carbonate ± silver-grey sulfides. The latter also occur on joint facings, where they are finely acicular and radiating (stibnite?), and more rarely, finely disseminated. Badly broken around thin (<5cm) quartz-sphalerite galena vein (VCA 15°?) top 0.5m, more competent but still broken on irregular fractures elsewhere. Identifiable breccia fragments are generally angular altered pieces of hornfels/quartzite.	4252	141.9	142.9		0.02	0.02	<0.01	<0.01	0.09	1.0				<0.01
					4253	142.9	143.9		0.01	<0.01	<0.01	<0.01	0.03	0.02				0.01
					4254	143.9	144.9		0.01	0.01	<0.01	<0.01	0.06	0.02				<0.01
					4255	144.9	145.9		0.01	0.01	0.01	0.01	0.03	0.02				0.01
					4256	145.9	146.9		0.02	0.01	0.02	0.07	0.19	0.10				0.01
				Petrological Sample: 142.4m														
				Broken zone at contact.														

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GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

PROJECT: St. Dizier

HOLE NUMBER: S022

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (wt% unless otherwise stated)										
From	To	m	%		Sample No	From	To	Rec. %	Sn	SSn	Cu	Pb	Zn	Sb	WO <sub>3</sub>
6.6	156.4	9.8	100	ALTERED QUARTZITE BRECCIA	4257	146.6	147.6		0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.01
					4258	147.6	148.6		<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01
				Mauve brown thoroughly Ti-biotized quartzite breccia. Fragments are generally small (<2cm), mauve-brown to white quartzite set in a matrix of quartz, Ti-biotite and pyrite (total sulfide <5%). Broken on rough, partly slickensided and serpentinous joints.	4259	148.6	149.6		0.10	0.01	<0.01	0.02	0.03	<0.01	0.01
					4260	149.6	150.6		<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01
					4261	150.6	151.6		0.01	<0.01	0.01	0.01	0.01	<0.01	<0.01
					4262	151.6	152.6		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
					4263	152.6	153.6		<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.01
					4264	153.6	154.6		<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01
				Contact distinct, slightly irregular at 60° to c.a.	4265	154.6	155.6		<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01
					4266	155.6	156.4		<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
6.4	161.3	4.4	90	SKARN	4267	156.4	157.4		0.01	0.02	0.01	<0.01	0.04	<0.01	<0.01
					4268	157.4	158.4		0.01	0.01	0.01	<0.01	0.03	<0.01	<0.01
				Grey-green, veined (jostle brecciated?) top 1.1m by serpentine and pyrite/pyrrhotite. Below this comprises green-black serpentine, coarse phlogopite minor pyrite/pyrrhotite. No magnetite observed. Broken where veined at top, otherwise fairly competent 0.5m core loss.	4269	158.4	159.4		0.01	0.01	0.01	<0.01	0.02	<0.01	<0.01
					4270	159.4	160.4		<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
					4271	160.4	161.3		0.01	<0.01	0.01	<0.01	0.02	<0.01	<0.01
				Sharp contact, weakly slickensided at 80° to c.a.											
									Sn (ppm)						WO <sub>3</sub> (ppm)
1.3	190.6	28.9	99	HORNFELS	4272	161.3	162.3		<10						<10
					4273	162.3	163.3		30						30
				Mauve-brown, mostly unbedded (faint bedding at 174.1m, 45° BCA). Altered, veined by quartz, pyrite/pyrrhotite and/or calcite includes patchy visible Ti-biotite. Mostly competent with few breaks except around carbonate or sulfide veins and in lower 3.5m.	4274	163.3	164.3		<10						10
					4275	164.3	165.3		20						20
				177.1-178.1m Brecciated. Brown hornfels fragments set in a grey quartz, fine Ti-biotite?, pyrite matrix.											
				179.8m 2cm thick brecciated quartz-sphalerite galena vein crossing core at 10-20° to c.a.											
				180.8-181.8m Brecciated zone similar to 177.1-178.1m.											

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PROJECT: St. Dizier

GOLD FIELDS EXPLORATION PTY. LIMITED  
 DRILL CORE LOG AND ASSAY DATA

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No	From	To	Rec. %
				184.0-185.2m Irregular 1cm thick quartz/biotite/pyrite running parallel to c.a.				
				185.2-187.0m Siliceous zone comprising quartz, pyrite and pyrrhotite, Ti-biotite. Altered zone or breccia matrix(?).				
				Broken at contact, contact angle not apparent.				
190.6	213.4	22.6	99	<u>WEAKLY ALTERED FINE TO MEDIUM GRAINED GRANITE</u>				
				Pale green-grey. Comprises quartz, mostly weakly sericitized feldspars, minor (<3%) biotite or chlorite after biotite, minor tourmaline in quartz-tourmaline clots, thin veins and nodules up to 10 cm diameter muscovite. Top 30 cm is brecciated. Grainsize generally about 1mm, varies 0.5-3.0mm. Broken on rough joints.				
				194.8-206.3m Partly, weakly greisenized. Includes possible sheared zone 199.1-199.6m.				
				Contact irregular 10-20° to c.a.				
.4	227.8	14.2	99	<u>PARTLY BRECCIATED PHYLLITIC HORNFELS</u>				
				Grey, grey-brown finely micaceous, in places small (≤10cm) masses of pure Ti-biotite. Bedding where visible is generally near-parallel BCA. Includes thin (≤1cm) veins and pods of carbonate-pyrrhotite and actinolite-tremolite. Mostly competent but broken very badly in places on very soft serpentinous shear zones, particularly lower 1m.				
				209.3-210.3m Fine grained granite as above. Contacts at about 30° to c.a.				

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GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

PROJECT: St. Dizier

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA													
m	To	m	%		Sample No	From	To	Rec. %										
8	255.6	27.0	97	WEAKLY GREISENIZED FINE TO MEDIUM GRAINED GRANITE														
				Green-grey, comprising quartz, sericitized feldspar, minor chloritized/sericitized biotite and very minor muscovite, trace veinlet pyrite. Minor brown-black tourmaline in quartz-tourmaline nodules. Grainsize <1.0 to 5mm. Mostly weakly (but variably) greisenized down to 240m, alteration minor below that point. Rare coarser grained (micropegmatitic) patches with traces disseminated pyrrhotite. Core fairly competent except at														
				<u>227.8-231.6m</u> Extremely badly broken, including shear zone 230.0-230.3m (approx.) 0.8m core loss.														
				<u>223.8-235.4m</u> Badly broken zone.														
				Contact sharp but very irregular - no measurable contact angle.														
6	260.4	4.8	100	ALTERED (GREISENIZED?) HORNFELS														
				Dark grey, hard, comprising grey matrix of quartz and fine grained grey micas(?), elongated, rounded blebs of brown tourmaline (1-3mm), abundant disseminated and veinlet sulfides (pyrite, pyrrhotite, minor sphalerite), minor angular fragments of quartz (possibly extremely boudinaged vein quartz??). Banded (?bedding, BCA's 20-50°). Enriched in Ti-biotite near upper contact. Fairly competent-broken on slickensided graphitic joints.														
				Granite badly broken at contact, no contact angle visible - 0.5m core loss.														
4	271.8	5.9	80	FINE TO MEDIUM GRAINED GRANITE														
				White to pale greenish yellow. Comprises quartz, feldspars (?plagioclases commonly weakly argillized/sericitized), minor														

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA														
From	To	m	%		Sample No	From	To	Rec. %											
				(s5%) biotite or chlorite after biotite. Minor black tourmaline ?vug-fillings (apparently open space-fillings), surrounded by a quartz-muscovite greisen selvage. Minor micropegmatitic and mymekitic textures (no biotite) lower 2m. Fairly competent except top 2m where badly broken and 1.5m core loss.															
				269.4-269.7m Fine grained grey greisen vein, VCA approx. 45°.															
				Irregular semi-gradational contact. Some assimilation of horn- fels?															
8	273.9	2.1	100	<u>GREISENIZED HORNFELS</u>															
				Very similar to previous intersection (255.6-260.4m). BCA's 0-20°.															
				Contact sharp at 30° to c.a.															
9	293.3	19.4	100	FINE TO MEDIUM GRAINED GRANITE															
				Essentially the same as previous intersection (260.4-271.8m) except no unusual textures and (chloritized) biotite abundant in places.															
				END OF HOLE 293.3m															

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