

AngloGold Ashanti

Celina Project

Interpretation of Geochemical Results, 2017 Winter Drilling Program

Phillip Larson

Vesterheim Geoscience PLC

Duluth, MN

November 25, 2017

Thirty-five (35) northeast (NE) provenance basal till samples were analyzed from 18 boreholes drilled on the Celina Project in the winter of 2017. Fine-fraction (<63 micron) Au fire assay and multielement trace element analyses leveled against a regional dataset indicate some follow-up infill drilling is advisable. Results from borehole CR0020 (31 ppb Au + anomalous Mo-Bi-Te) strongly merit infill follow-up. Borehole CR0026 (10 ppb Au + anomalous Mo-W) has a weaker anomaly. Boreholes CR0017 and CR0017A intersect lightly reworked subaqueous meltout tills containing potentially significant Au anomalies (26, 53 ppb Au). Borehole CR0016 lacks Au fire assay data, but has anomalous Au-pathfinder elements (Mo-Te).

Taken together, results from CR0016, CR0017, CR0020, and CR0026 indicate anomalous Au and Au pathfinder elements proximal to, and down-ice of, the main structural break transecting the project area. Given the subtle geochemical signal that might be expected of a vein-hosted orogenic gold system, and bearing in mind that the drill program was designed such that a single significant Au or Au pathfinder anomaly merits follow-up infill drilling, these anomalies rank as potentially highly significant anomalies. More robust evaluation of the significance of these anomalies requires drilling additional boreholes up-ice of the structural break to better establish local background values.

Introduction

Twenty-nine (29) rotosonic boreholes were drilled at 27 sites on the Celina Project during the winter of 2017. Basal till was intersected in 20 boreholes at 19 of the drill sites. The basal till at 18 of the sites was characteristic Northeast (NE) provenance till, and consistent with relatively short mean transport length, derived from erosion of local bedrock. The basal till at 2 of the sites was characteristic of 'sodic' calcareous Northwest (NW) provenance till, indicative of relatively long mean transport lengths and limited erosion and entrainment of local bedrock. (Two boreholes at a single site – CR0009 – intercepted different tills; an upper NW-provenance till and a pocket of NE-provenance till in a slightly deeper depression.)

A total of 122 fine fraction (<63 micron) sediment samples were collected for Au 30g fire assay and 4-acid multielement analysis. Of these samples, 74 are characterized as till, with the

remainder predominantly derived from lacustrine gravel, sand, silt, and clays. In a few cases, saprolites present at the bedrock surface were sampled.

Of the 74 till samples analyzed, 37 are in a stratigraphic position consistent with a basal till. Of these samples, 35 are NE-provenance basal tills and 2 are NW-provenance basal tills (Table 2).

Evaluation of Anomalies

Analytical results for the 35 NE provenance basal tills are combined with an additional 713 analyses of regional NE provenance basal tills to evaluate anomaly significance. Significant results are tabulated in Table 1.

The basal till sample from borehole CR0020 contains a significant Au anomaly (Fig. 1), and an overlying sample of the basal till contains significant Bi and Te anomalies. Borehole CR0016, located 940 m along strike, was not assayed for Au, however two basal till samples contain anomalous Mo and weakly anomalous Te values. Boreholes CR0017 and CR0017A, located 1890 m along strike from CR0020, intercepted a basal meltout till with highly anomalous Au concentrations.

A single basal till sample from borehole CR0026 contains a moderate Au anomaly (Fig. 1). Other basal till samples from the same borehole are not anomalous for Au, and associated Au pathfinder element anomalies are absent. However, the proximity of CR0026 to the main structural break main warrant additional follow-up for this anomaly.

Weak basal till Au anomalies in CR009, CR0011, and CR0031 (6, 8, and 5 ppb, respectively) may be a signal of weak gold mineralization similar to the Roswold Prospect.

Table 1. Significant Au and Au-pathfinder results from W2017 Celina rotonomic drilling.

Borehole	Sample	Au (ppb)	Au %ile rank	Bi (ppm)	Bi %ile rank	Mo (ppm)	Mo %ile rank	Te (ppm)	Te %ile rank
CR0020	R863589	31	97.4	0.12	40.8	0.50	28.5	<0.04	
CR0020	R863544	2	57.6	0.33	96.1	0.96	52.7	0.08	85.9
CR0016	R863525			0.14	53.7	2.12	88.9	0.05	71.3
CR0016	R863524			0.10	31.6	4.64	98.1	0.06	79.2
CR0017	R863579	53*	98.5						
CR0017A	R863581	26*	97.0						
CR0026	R863616	10	90.1	0.13	46.5	0.53	30.2	<0.04	

**Results for meltout tills are not necessarily comparable to basal lodgment tills.*

Significantly, no boreholes were drilled north of the main structural break from which local background concentrations of Au and Au pathfinder elements might be evaluated.

Basal Meltout Tills

Five (5) boreholes at 4 sites (CR0012, CR0017, CR0022, CR0029) intercepted sand, gravel, and sandy diamicton at the bedrock surface. The bedrock contact ranged from 27 to 45 meters depth in these holes; inasmuch as these depth are well below the elevation at which significant reworking by wave action occurred in Glacial Lake Norwood, it is likely that these sands and gravels represent proximal deposition by debris flows from subaqueous recessional moraines.

Note that interval thicknesses of 4 to 5 meters is somewhat greater than one would expect for a subglacially deposited lodgement till.

Au fire assay results from two basal sand and gravel samples at site CR0017 were 26 and 53 ppb. Although the sample material is not a pristine lodgement till, and the samples have been reworked, it was not by long duration wave action. This suggests the reworking was minimal, and indicates that these anomalous values are highly significant, exceeding the 95th percentile threshold of the larger regional data set.

Anomalous Sediments

Calcareous sediment occurring at the bedrock surface at sites CR0029 and CR0030 is enigmatic; described as till by AGA geologists, its composition is not consistent with the broad regional trends characterizing both NE and NW provenance tills (samples R863636, R863637, and R863644). It is likely this material has been variably reworked by meltwater.

Recommendations

Anomalous Au and Au-pathfinder results at sites CR0020 and CR0017 are significant enough to merit follow-up by additional spaced drilling. Although lacking Au fire assay data, site CR0016 may warrant similar follow-up based on its anomalous Au-pathfinder concentrations (Mo, Te).

Moderate anomalous Au and anomalous Au-pathfinder results at site CR0026 may warrant follow-up by additional spaced drilling based on its proximity to the main structural break.

At all four (4) sites, it is critical that additional drilling include one or more drillholes sited north of the main structural break in order to collect material to characterize background Au, Au-pathfinder, and other trace element data.

Table 2. Interpretation of till chemotrophic classification and stratigraphic position, Winter 2017 Celina rotonomic drilling program.

Sample Number	DHID	From (m)	To (m)	Media	Till Stratigraphic Unit	Till Class	Stratigraphic Position
R863528	CR0001	33.9	34.7	till	nw sodic		
R863529	CR0001	39.65	45.17	lacustrine			
R863530	CR0001	39.65	45.17	lacustrine			
R863531	CR0001	45.17	49.65	lacustrine			
R863533	CR0002	29.25	30.75	till	nw sodic		
R863534	CR0002	32.8	33.55	till	ne undivided		Basal
R863536	CR0003	50.75	51.2	till	ne undivided		Basal
R863539	CR0004	25.2	27.2	till	nw sodic		
R863540	CR0004	30.5	32.75	sand/gravel			
R863541	CR0004	32.75	36.6	sand/gravel			
R863542	CR0004	36.6	38.35	sand/gravel			
R863543	CR0004	38.35	40.3	till	ne undivided		Basal
R863544	CR0004	40.3	40.85	till	ne undivided		Basal
R863546	CR0005	45.75	49.55	sand/gravel			
R863547	CR0005	49.55	50.35	till	ne undivided		Basal
R863548	CR0005	50.35	53.24	till	ne undivided		Basal
R863550	CR0006	18	19.95	till	nw sodic		
R863551	CR0006	21.25	22.85	till	ne intermediate		Basal
R863552	CR0006	22.85	24.1	till	ne undivided		Basal
R863554	CR0007	36.45	38.75	sand/gravel			
R863555	CR0007	38.75	42	sand/gravel			
R863556	CR0007	42	42.5	till	ne undivided	high Fe	
R863557	CR0007	42.5	43	till	ne undivided	high Fe	Basal
R863560	CR0009	8.45	9.35	till	nw sodic		
R863561	CR0009	9.35	10.35	till	ne intermediate		Basal
R863563	CR0009A	8.7	9.49	till	nw sodic		Basal
R863565	CR0010	8.7	9.95	till	ne undivided		Basal
R863566	CR0010	9.95	10.05	till	ne undivided	high Fe	Basal
R863568	CR0011	6.15	9.15	till	nw sodic		
R863569	CR0011	6.15	9.15	till	nw sodic		
R863571	CR0011	13.85	15.25	till	ne undivided		
R863570	CR0011	16.75	17.4	sand/gravel			
R863572	CR0011	17.4	17.98	till	ne intermediate		Basal
R863574	CR0012	17.3	18.3	till	nw sodic		
R863575	CR0012	27.35	32	sand/gravel			
R863578	CR0013	29	30.45	till	nw sodic		Basal
R863577	CR0013	42.5	48.35	sand/gravel			
R863576	CR0013	48.35	48.77	till	ne undivided		
R863517	CR0016	21.5	23.45	till	nw sodic		
R863518	CR0016	34.85	36.5	till	nw sodic		
R863519	CR0016	44.35	46.05	till	nw sodic		
R863521	CR0016	50.95	51.8	lacustrine			

Sample Number	DHID	From (m)	To (m)	Media	Till Stratigraphic Unit	Till Class	Stratigraphic Position
R863520	CR0016	50.95	51.8	lacustrine			
R863522	CR0016	64	64.4	lacustrine			
R863523	CR0016	64.4	67	till	ne undivided	high Fe	Basal
R863524	CR0016	67	68.55	till	ne undivided	high Fe	Basal
R863525	CR0016	68.55	70.05	till	ne carb-sulf	high Fe	Basal
R863526	CR0016	70.05	70.7	saprolite			
R863579	CR0017	42.2	45.72	sand/gravel			(basal meltout)
R863580	CR0017A	33	34.35	till	nw sodic		
R863581	CR0017A	40.5	43.8	sand/gravel			(basal meltout)
R863501	CR0018	16.15	17.65	till	nw sodic		
R863502	CR0018	21.45	22.95	till	nw sodic		
R863503	CR0018	26.85	27.35	till	nw sodic		
R863504	CR0018	32.85	33.85	till	ne undivided		Basal
R863505	CR0018	33.85	36.9	saprolite			
R863510	CR0018	36.9	39.8	saprolite			
R863583	CR0019	20.05	21.35	till	nw sodic		
R863584	CR0019	30.5	33.22	till	ne intermediate		Basal
R863586	CR0020	26.8	28.6	till	nw sodic		
R863587	CR0020	38.05	42.7	sand/gravel			
R863588	CR0020	42.7	44.35	till	ne undivided		
R863589	CR0020	44.35	45.75	till	ne undivided		Basal
R863591	CR0020	45.75	47.25	saprolite			
R863592	CR0020	47.25	47.75	sand/gravel			
R863595	CR0021	11.2	12.95	till	nw sodic		
R863596	CR0021	12.95	13.41	till	ne intermediate		
R863597	CR0021	13.41	14	sand/gravel			
R863599	CR0022	35.6	36.6	till	ne intermediate		
R863600	CR0022	36.6	38.55	sand/gravel			(basal meltout?)
R863602	CR0023	8.55	9.85	till	nw sodic		
R863603	CR0023	18.3	21.35	sand/gravel			
R863604	CR0023	21.35	22.85	sand/gravel			
R863605	CR0023	25.75	26.75	till	ne undivided	high Fe	Basal
R863606	CR0025	18.15	22.3	till	nw sodic		
R863607	CR0025	18.15	22.3	till	nw sodic		
R863608	CR0025	22.3	26	sand/gravel			
R863609	CR0025	26	33.55	sand/gravel			
R863610	CR0025	33.55	36.6	sand/gravel			
R863611	CR0025	36.6	38.1	sand/gravel			
R863612	CR0025	38.1	39.3	till	ne intermediate		
R863613	CR0025	39.3	40.23	till	ne intermediate		Basal
R863614	CR0026	30	32.4	till	nw sodic		
R863615	CR0026	36.6	38.65	sand/gravel			
R863616	CR0026	38.65	40.35	till	ne undivided		Basal
R863617	CR0026	40.35	42.35	till	ne undivided		Basal

Sample Number	DHID	From (m)	To (m)	Media	Till Stratigraphic Unit	Till Class	Stratigraphic Position
R863618	CR0026	42.35	43	till	ne undivided		Basal
R863619	CR0026	42.35	43	till	ne undivided		Basal
R863620	CR0026	43	43.6	till	ne undivided	high Fe	Basal
R863511	CR0027	12	13.5	till	nw sodic		
R863512	CR0027	18.3	19.8	till	nw sodic		
R863513	CR0027	24.5	26	till	nw sodic		
R863514	CR0027	33.5	34.15	lacustrine			
R863515	CR0027	34.15	35.05	till	ne undivided		Basal
R863623	CR0028	44.25	46	lacustrine			
R863624	CR0028	46	50	till	ne undivided		Basal
R863625	CR0028	50	50.3	till	ne intermediate		Basal
R863626	CR0028	50.3	51.3	till	ne intermediate		Basal
R863627	CR0028	51.3	52.73	sand/gravel			
R863628	CR0028	52.73	53	till	ne intermediate		Basal
R863629	CR0028	53	53.34	till	ne intermediate		Basal
R863630	CR0029	10.5	11.8	till	nw sodic		
R863631	CR0029	21.35	22.6	lacustrine			
R863632	CR0029	22.6	24.2	till	ne intermediate		Basal
R863634	CR0029	24.2	24.4	till	ne undivided	high Fe	Basal
R863635	CR0029	24.4	24.55	sand/gravel			(basal meltout?)
R863636	CR0029	24.55	24.85	?			
R863637	CR0029	24.85	25.3	?			
R863638	CR0029	25.3	25.9	rock			
R863639	CR0029	25.9	26.82	rock			
R863641	CR0030	0.2	2.35	sand/gravel			
R863642	CR0030	6.7	8.2	till	nw sodic		
R863643	CR0030	12.1	14.5	lacustrine			
R863644	CR0030	14.5	15.2	?			
R863646	CR0031	6.1	7.9	till	nw sodic		
R863647	CR0031	13.5	14.5	sand/gravel			
R863648	CR0031	14.5	18.3	sand/gravel			
R863649	CR0031	18.3	21.35	sand/gravel			
R863650	CR0031	21.35	24.2	sand/gravel			
R863651	CR0031	24.2	25.5	till	ne intermediate		Basal

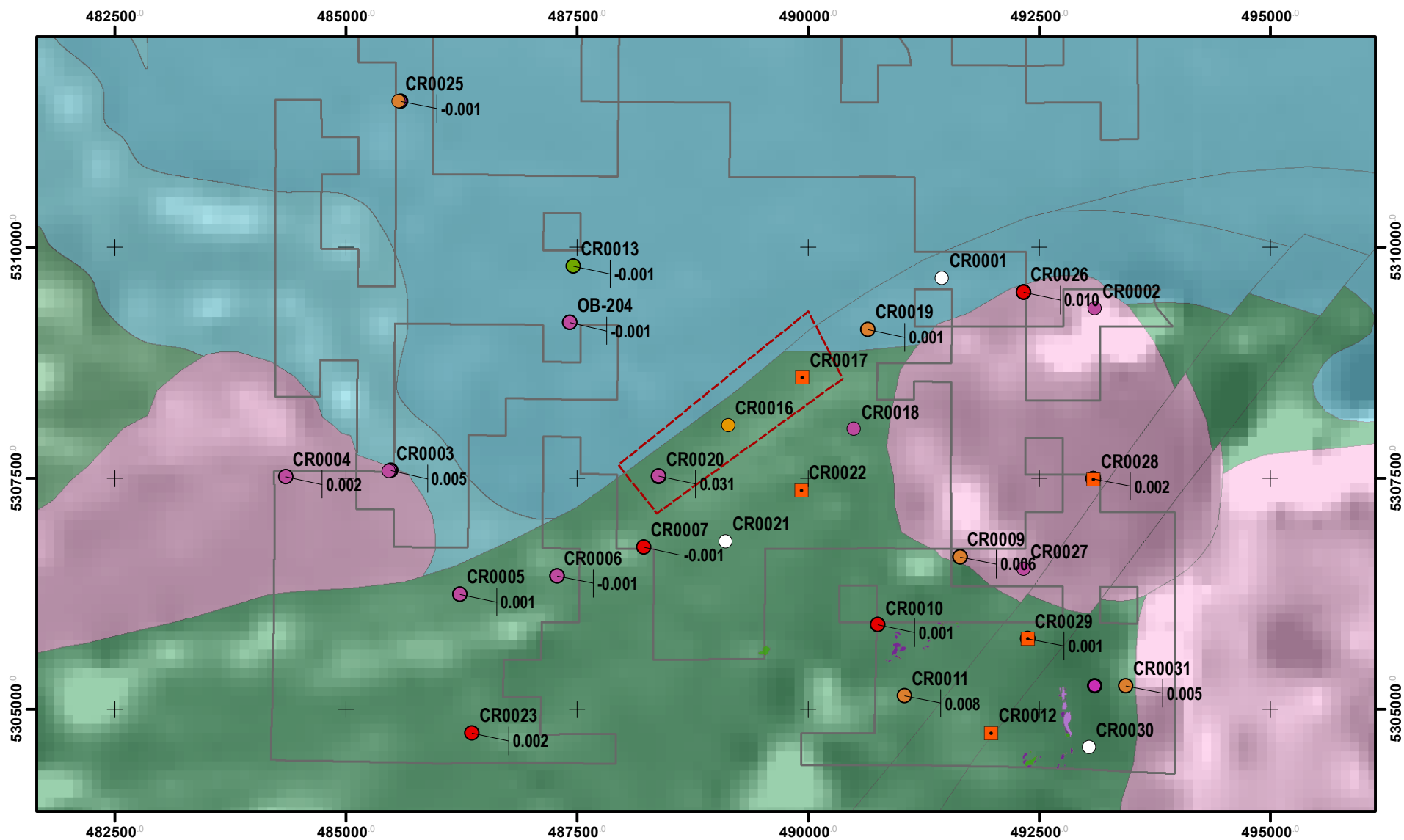


Figure 1. Celina Project Winter 2017 Rotosonic Drilling

Basal Till Character

- no basal till encountered
- ne basal meltout
- nw sodic

● ne undiv

● ne ferrous

● ne intermediate

● ne carb-sulf

Recommended Follow-up Drilling

■ Prospective area

Points are labeled with fine fraction Au fire assay results (ppm).