

Drillhole Log

Units Meters

HudBay Minerals

Province/State		Co-ordinate System		Grid/Property		Hole Type	Length	Date Started
Yukon		UTM NAD83 Canada Zone 9				Diamond Drillhole	129.00	28/08/2011
District	UTM North	UTM East	Local Grid E	Local Grid N	Collar Survey Method		Date Completed	
Watson Lake Mining District	7003743.36	442053.46			DGPS		30/08/2011	
Project	UTM Elevation	Azimuth Astro. (°)	Azimuth Grid (°)	Dip (°)	Drill Contractor		Date Logged	
013	1537.04	65.00		-85.00	Rodren Drilling Ltd		31/08/2011	
Area	Claim No.	NTS Sheet	Supervised By		Logged By		Verified	
MacMillan Pass	60495	1050/01	Matt Bodnar		Christina Taylor		<input type="checkbox"/>	
Zone/Prospect	Assessment Rpt. No.	Core Storage			Plug Depth	Makes Water	Capped	Environmental Inspection
Tom		On Site				<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Core Size (1)	HQ	129	Casing Pulled	Casing (1)	9.00	HW	Plugged	Pulsed
(2)			<input type="checkbox"/>	(2)			<input type="checkbox"/>	<input type="checkbox"/>
Purpose			Results			Comments		
Metallurgical hole - Target MET7, Replacing MET2 and MET4			High grade mineralization was intersected in the hole. The weighted average returned 6.20% Zn, 6.95% Pb and 95.7g/t Ag over 41.37 meters (17.00 to 58.37m).			Drilled from the same set up as TYK001 - Core stained purple in places to test for composition of carbonate veins - Mineral estimates based on TS91-014 assays - Not cemented - Not probed - Left open - Surveyed with a Trimble GeoXH - Geoexplorer 6000 Series		

Distance	Grid Azimuth (°) Original Final	Astro. Azimuth (°) Original Final	Dip (°) Original Final	Use Test	Survey Method	Mag. Field (nT)	Comments
0.00		41.4 65	-85	<input type="checkbox"/>	Multi-shot Reflex		Collar
14.00		66 89.6	-83.9	<input type="checkbox"/>	Multi-shot Reflex	57426	Bad
41.00		48.2 71.8	-83.7	<input type="checkbox"/>	Multi-shot Reflex	93269	
65.00		49.5 73.1	-83.8	<input type="checkbox"/>	Multi-shot Reflex	93328	
92.00		62 85.6	-83.5	<input type="checkbox"/>	Multi-shot Reflex	58713	
119.00		47.3 70.9	-83.2	<input type="checkbox"/>	Multi-shot Reflex	93378	

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<i>Lithology</i>								<i>Zn</i>	<i>Pb</i>	<i>Ag</i>
<i>From</i>	<i>To</i>			<i>Sample #</i>	<i>From</i>	<i>To</i>	<i>Len.</i>	<i>%</i>	<i>%</i>	<i>ppm</i>
<i>Structure:</i>										
18.00	-	bedding	35° to c/a							
19.70	-	bedding	20° to c/a							
20.20	-	bedding	35° to c/a							
20.70	-	bedding	40° to c/a							
<i>Veins:</i>										
17.00	- 21.22	quartz , 1%; 5mm, rare quartz veins, generally parallel to bedding, occasionally cross cutting.								

22.20	-	bedding	40° to c/a
23.60	-	bedding	50° to c/a
24.20	-	bedding	30° to c/a
24.80	-	bedding	65° to c/a
25.70	-	bedding	35° to c/a
26.80	-	bedding	40° to c/a
27.70	-	bedding	30° to c/a

Lithology							Zn	Pb	Ag
From	To		Sample #	From	To	Len.	%	%	ppm
29.80	-	bedding 50° to c/a							
32.40	-	bedding 35° to c/a							
35.10	-	bedding 40° to c/a							
36.00	-	bedding 20° to c/a							
36.75	-	bedding 30° to c/a							
37.90	-	bedding 10° to c/a							
39.00	-	bedding 30° to c/a							
40.00	-	bedding 35° to c/a							
42.40	-	bedding							
42.80	- 43.20	fault Highly broken, vuggy, clayey. Possibly some lost core here.							
44.70	-	bedding 60° to c/a							
Veins:									
21.22	- 35.1	carbonate , 2%; 5mm, carbonate veins generally constrained to cherty beds (perpendicular to bedding), occasionally cross cutting bedding.							
44.73	- 48.91	nss near solid sulphide							
		Fairly massive, irregular bands of sulphides in quartz/carbonate rich groundmass (brownish in colour). Minor blebby earthy chlorite. Mineralization consists of Pyrite, Sphalerite, Galena, Pyrrhotite, Chalcopyrite. Strongly brecciated in appearance. Likely proximal to vent.	N161784	44.73	45.37	0.64	8.01	17.48	285
			N161785	45.37	46.00	0.63	1.13	10.71	124
			N161786	46.00	47.00	1.00	0.8	21.38	240
			N161787	47.00	48.00	1.00	1.56	14.49	173
			N161788	48.00	48.91	0.91	1.62	3.46	43
Alteration:									
44.73	- 48.91	Moderate silicification hydrothermal, Weak chloritization other. Silicification of groundmass. Blebby earthy carbonate.							
Structure:									
44.73	- 48.91	fracture Weakly blocky, brecciated-healed.							
45.20	-	other 20° to c/a sulphide banding							
47.70	-	other 30° to c/a sulphide banding							
Veins:									

Lithology							Zn	Pb	Ag
From	To		Sample #	From	To	Len.	%	%	ppm
44.73	- 48.91	carbonate oth, 10%; 10mm, brecciated off-white (ferroan) carbonate veins throughout. Highly irregular.							
48.91	- 53.56	lmst limestone - mineralized Moderately bedded, beds of 0.1-10cm. Generally silicified mudstone, barite, sphalerite, galena, pyrite, and likely carbonate beds. Bedding is generally irregular.	N161789	48.91	49.91	1.00	3.69	8.74	202
			N161791	49.91	50.91	1.00	3.4	9.87	150
			N161792	50.91	51.91	1.00	0.06	11.37	133
			N161793	51.91	52.91	1.00	0.02	8.14	86
			N161794	52.91	53.56	0.65	0.09	12.06	121
Structure:									
49.80	-	bedding 30° to c/a							
51.10	-	bedding 30° to c/a							
Veins:									
48.91	- 53.56	carbonate oth, 5%; 10mm, Veins similar to previous unit (ferroan carbonate), though less irregular and less abundant							
53.56	- 57.74	nss near solid sulphide Fairly massive, irregular bands of sulphides in quartz/carbonate rich groundmass (brownish in colour). Minor blebby earthy chlorite. Mineralization consists of Pyrite, Sphalerite, Galena, Pyrrhotite, Chalcopyrite. Strongly brecciated in appearance. Silicified mudstone clasts near lower contact. Likely proximal to vent. Similar to 49.73-48.91m. Lower contact weakly gradational.	N161796	53.56	54.00	0.44	0.06	6.79	68
			N161797	54.00	55.00	1.00	0.14	6.62	70
			N161798	55.00	56.00	1.00	0.98	5.11	54
			N161799	56.00	57.00	1.00	8.38	21.99	236
			N161800	57.00	57.74	0.74	1.48	10.81	116
Alteration:									
53.56	- 57.74	Moderate silicification hydrothermal. Silicified groundmass, and silicified clasts at lower contact.							
Structure:									
56.10	-	other 20° to c/a sulphide banding							
Veins:									

Lithology							Zn	Pb	Ag	
From	To			Sample #	From	To	Len.	%	%	ppm
53.56	- 57.74	carbonate oth, 15%; 5mm, brecciated off-white (ferroan) carbonate veins throughout. Highly irregular. Also quartz veins in silicified mudstone.								
57.74	- 68.90	mdstn mudstone - mineralized								
		Generally weakly mineralized, though mineralization varies throughout. Patches of silicification (noted in alteration). Sections appear to contain stringer mineralization (most notably 57.74-60.24m). Otherwise rock is graphitic mudstone, generally massive, but sections with silty beds and pitted beds. Sections appear weakly brecciated. Pebbly at lower contact, though moderately altered and difficult to make out nature of contact.								
				N161801	57.74	58.37	0.63	2.69	2.86	37
				N161802	58.37	59.00	0.63	1.13	0.88	14
				N161803	59.00	60.00	1.00	0.78	0.75	9
				N161804	60.00	61.00	1.00	0.25	2.58	18
				N161805	61.00	62.00	1.00	0.66	1.93	14
				N161806	62.00	63.00	1.00	0.3	0.32	6
				N161807	63.00	64.00	1.00	0.03	0.31	7
				N161808	64.00	65.00	1.00	0.88	0.15	5
				N161809	65.00	66.00	1.00	0.01	0.04	2
				N161811	66.00	67.00	1.00	0.02	0.05	4
				N161812	67.00	68.00	1.00	0.03	0.02	3
				N161813	68.00	68.90	0.90	0.06	0.01	3
Alteration:										
57.74	- 60.24	Moderate silicification other.Weakly patchy, giving an overall mottled appearance. Also frequent light brown specks, concordant with bedding and fine, bladed carbonate?								
60.24	- 67.41	Weak silicification localized.Silicified "stringers", generally with Pyrite associated								
67.41	- 68.90	Moderate silicification other.Silicification of groundmass								
Structure:										
59.00	-	bedding 30° to c/a								
60.80	-	bedding 40° to c/a								
63.00	-	bedding 40° to c/a								
63.50	- 64.30	fault highly broken up, fractures appear greasy, graphitic.								
66.10	- 66.30	fault Broken up, graphitic gouge.								
66.70	-	bedding 40° to c/a								
Veins:										
57.74	- 60.24	carbonate oth, 10%; 3mm, fine, irregular, off-white ferroan carbonate veins. Slightly								

Lithology							Zn	Pb	Ag
From	To		Sample #	From	To	Len.	%	%	ppm
		thicker straight white quart veins.							
60.24	- 67.41	carbonate str, 2%; 10mm, Variable stringer off-white (ferroan) carbonate veins, with associated Pyrite.							
67.41	- 68.9	carbonate oth, 5%; 3mm, Brecciated off-white (ferroan) carbonate veins throughout.							
68.90	- 80.35	sndstn sandstone							
		Medium grained sandstone with small pebbles in places. Interbedded with pebbly conglomerate. Often the contact between the two units is sharp, and appears dissolved (stylolitic), generally low angle. Conglomerate consistent with next unit. 70:30 sandstone:conglomerate.	N161814	68.90	69.90	1.00	0.1	0.005	1
			N162408	74.65	75.40	0.75	0.005	0.005	1
			N162409	75.40	76.05	0.65	0.01	0.005	1
			N162411	76.05	76.70	0.65	0.005	0.005	1
			N162412	76.70	77.35	0.65	0.02	0.005	1
Alteration:									
68.90	- 70.90	Weak silicification localized. Groundmass is generally altered, mottled.							
Structure:									
68.90	- 70.00	fracture generally blocky							
73.50	-	sheared 20° to c/a							
75.10	-	contact 15° to c/a contact between sandstone and conglomerate							
77.40	-	sheared 20° to c/a graphitic							
Veins:									
68.90	- 80.35	quartz stk, 5%; 100mm, Several generations of veins. Thinner, straight veins, and coarser veins in which some material has been dissolved out, and euhedral quartz crystals have formed.							
80.35	- 125.00	congl conglomerate							
		Clast supported, polymict conglomerate. Clasts are dominantly composed of white to light grey chert (~80%), but dark grey to black mudstone (5%), medium grey siltstone (10%), and white quartz (5%) clasts are also common. Clast size generally ranges from 0.1-2cm, though rarely clasts are up to 5cm in diameter. Clasts are subangular to subrounded. Mudstone clasts tend to be more angular, and occasionally distended/elongate. Clasts are weakly aligned. Rare mudstone beds. Matrix is very fine grained and grey. Blocky in places. Mud becomes more dominant and core becomes graphitic ~124.3m.							
112.00	- 112.30	qtzvn qtz vein							

Lithology						Zn	Pb	Ag		
From	To			Sample #	From	To	Len.	%	%	ppm
		Massive white quartz vein, vuggy (likely some other material dissolved out) with euhedral quartz crystals growing into vugs.								
120.00	- 121.40	mdstn mudstone Dark grey mudstone with interbeds of siltstone, 1-8cm thick, 5% siltstone beds overall. Core is highly broken.								
Structure:										
86.80	- 88.10	fracture blocky								
89.00	-	other 40° to c/a clast alignment								
93.80	- 94.20	fracture blocky								
97.70	-	other 30° to c/a clast alignment								
110.10	- 114.40	fracture blocky, graphite on fractures								
114.40	- 120.00	fracture weakly fractured, but graphite on fractures.								
120.00	-	contact 15° to c/a sharp, slightly wavy								
120.01	- 122.20	fault graphitic gouge								
120.10	-	bedding 55° to c/a								
121.00	-	other 30° to c/a clast alignment								
124.30	- 125.00	fracture blocky								
Veins:										
80.35	- 120	quartz , 1%, 30°; 10mm, Straight white quartz veins, most low angle.								
120.00	- 121.4	quartz , 1%; 5mm, generally small quartz or carbonate veins cross cutting bedding, with one larger off white carbonate vein parallel to bedding.								
121.40	- 125	quartz , 2%, 50°; 25mm, Straight white quartz veins, generally ~50 degrees though rare smaller veins crosscutting.								
125.00	- 129.00	mdstn mudstone Fine grained dark grey mudstone interbedded with medium grey silty beds. ~5% silty beds, 0.5-5cm thick, increasing in abundance and thickness downhole. Bedding is fairly irregular, with microfractures and possible slumping. Broken and gouge at upper contact.								
Structure:										

<i>Lithology</i>									
<i>From</i>	<i>To</i>		<i>Sample #</i>	<i>From</i>	<i>To</i>	<i>Len.</i>	<i>Zn</i> %	<i>Pb</i> %	<i>Ag</i> ppm
125.00	-	contact 40° to c/a sharp, highly wavy							
125.01	- 127.30	fault blocky, graphitic gouge							
125.10	-	bedding 40° to c/a							
127.40	-	bedding 30° to c/a							
128.00	-	bedding 70° to c/a							
128.50	-	bedding 50° to c/a							
<i>Veins:</i>									
125.00	- 129	quartz , 2%; 10mm, Small boudinaged quartz veins, and off-white (ferroan)carbonate infilling breccia.							