Work Report for Prospecting Licence 3788, County Clare

Belmore Resources Lundin Mining Exploration

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Introduction

Licence 3788 was granted to Central Mining Finance (CMF) on 8/6/1994. Subsequently the licence was assigned to Belmore Resources plc who acquired CMF's interest. Belmore concluded a Joint Venture with Lundin Mining Exploration on this licence and on their other licences in their East Clare in early 2009 and since then Lundin have been carrying out an active exploration programme over the licence block. This licence was due for renewal on 8/6/2008 but EMD renewed it until7th June 2010 on the understanding that once the JV was in place the expenditure required for the period up to 2008 would be met and the additional expenditure for the period 2008 to 2010 would also have to be spent in order to seek renewal in 2010. EMD agreed that the original 2008 expenditure would have to be met by 31st August 2009.

No work report was submitted for this licence in June 2008 but a full report covering all work done since the 2006 Renewal Report was submitted in May 2009. This report covers all additional work done since the 2009 report.

The position of the licence relative to other Belmore/ Lundin licences in the area is shown in Figure 1.



Figure 1. Position of Prospecting Licence 3788, Tulla, County Clare

The licence is located immediately around and west of the town of Tulla and covers an area of Devonian and Lower Carboniferous rocks including extensive tracts of Waulsortian Reef. Previous work located a significant Pb/Zn deposit at the base of the Reef in Milltown Townland a couple of kilometres west of Tulla. The Milltown drilling indicated a non-JORC compliant resource of approximately 400,000 tonnes grading 12% zinc plus lead.



The general geology of this licence is shown in Figure 2.

Figure 2. Geology of Prospecting Licence 3788, showing location of recent drillholes.

Numerous drillholes have tested the base of the Waulsortian on this licence but the presence of the Milltown prospect and encouragement from other showings justifies further testing of this stratigraphic horizon.

Stratigraphy

The stratigraphy of the area is summarised as follows:

Age	Unit	Thickness	Lithology
Chadian or younger	Super-Reef	500m+	Shelf calcarenites, cherty
			immediately above the
			Waulsortian
Courceyan - Chadian	Waulsortian Reef	170-300m	Massive occasionally
			dolomitised stromatactic
			biomicrites
Courceyan	Ballynash	20-35m	Cherty nodular bedded
	Member		calcarenites and micrites, rare
			green tuff marker
Courceyan	Ballysteen Lst	80 -110m	Argillaceous bioclastic
			fossiliferous limestones
Courceyan	Ballymartin Fm	15-30m	Interbedded mudstnes and
			fossiliferous calcarenites
Courceyan	Ballyvergin Shale	3-9m	Non calcareous grey-green
			mudstone, Silurian acritarchs
Courceyan	Ringmoylan	20-30m	Fossiliferous black shales
	Shale		
Courceyan	Mellon House	12-18m	Calcareous sandstones and flaser
	Beds		bedded siltstones
U Dev- L. Carb	Old Red Sst	100m+	Red, yellow, green sandstones &
			mudstones

Diamond drilling

Three diamond drillholes were completed on licence 3788 since the May 2009 report. Drillhole 09-3788-49 is located in Kilboggoon Townland, about 2 km east-southeast of Tulla. This drillhole collared on a strong airborne magnetic anomaly detected by the Tesla survey.

The hole may be summarised as follows:

		Summary log		
Prospecting Licence Drillhole Number 6" Sheet number 25" Sheet number Easting Northing Final Depth Landowner	PL 3788 09-3788-49 150458 179222 349.5m Mary Keane	Drilling Contractor Core Size Logged by Elevation	Irish Drilling NQ Ciara Talbot 48m	

Summary			
		То	
	From	(metre	
	(metres)	s)	
	0	3	Overburden
Waulsortian	3	63.7	Partially dolomitised pale grey micrite
			Pale grey nodular bedded micrite with muddy wisps and
Ballynash Member	63.70	116.20	thin shales. Green tuff @ 65.9m. Reef lens 91.5 – 92.8m
			Argillaceous bioclastic limestones, thin shale units,
Ballysteen Fm	116.20	239.8	becoming cleaner especially 229.5 – 239.8m
Ballymartin Fm	239.8	270.7	Much shalier unit with abundant braciopods
Ballyvergin Shale	270.7	275.7	Finely banded greenish black silty shales
Ringmoylan Shale	275.7	298	Calcareous shales with thin fossiliferous horizons
Mellon House Beds	298	313	Flaser bedded sandstones and siltstones
Kiltorcan Fm			White and grey ssts, cornstones passing down into green
(ORS)	313	349.5	and finally red mudstones.
		349.5	End of drillhole



Figure 3. Location of Drillhole 09-3788-49.

Drilhole 3788-50 is located in Cloonteen Townland about 1 km west-southwest of Tulla and was drilled to test the base of the Waulsortian Reef up ice from a series of strong lead/zinc geochem anomalies.

The hole may be summarised as follows:

		Summary lo	og	
Prospecting				
Licence	PL 3788			
		Drilling		
Drillhole Number	10-3788-50	Contractor	Irish Drilling	
6" Sheet number		Core Size	NQ	
25" Sheet number		Logged by	Matthew Reid	
Easting	147817			
Northing	179275			
Collar Elev.				
(approx)	51m			
Final Depth	202.5m			
Landowner	Michael McInerney			
Started	6/4/2010	Finished	15/4/2010	

Summary			
	From (metres)	To (metres)	
	0	12	Overburden
Waulsortian	12	173.65	Undolomitised pale grey reef micrites
Minor Fault	173.65	175	Broken rubble of reef and some gouge
Ballynash Member	175	182.35	Nodular bedded micrites with wavy argillite bands
Transition	182.35	187.8	Transitional into standard Ballysteen Fm (ABL)
Ballysteen Fm	187.8	202.5	Ballysteen Fm , dips c 20degrees.
		202.5	End of hole



Figure 4. Location of Drillholes 10-3788-50 and 10-3788-51.

Drillhole 10-3788-51 was drilled in Cutteen Beg Townland 1 km southwest of Tulla to test the base of the Waulsortian Reef.

			Summary lo	g	
Prospecting					
Licence	PL 378	8			
			Drilling		
Drillhole Number	10-378	8-51	Contractor	Irish Drilling	
6" Sheet number			Core Size	NQ	
25" Sheet number			Logged by	Matthew Reid	
Easting	148357	,			
Northing	178665	5			
Collar Elev.					
(approx)	51m				
Final Depth	157.5m	1			
Landowner	Michae	l Reidy			
Started	15/4/20	10	Finished	24/4/2010	
Summary	-	-	-		
	From	То			
	(metres)	(metres)			
	0	3	Overburden		
	0			1 11 1 12	

The drillhole may be summarised as follows:

Summary			
	From (metres)	To (metres)	
	0	3	Overburden
Dol Waulsortian	3	64.2	Dolomitised Waulsortian micrite
Waulsortian	64.2	86.55	Waulsortian micrite, partially dolomitised c 25%.
Ballynash Member	86.55	106.25	Nodular micrite with cherty nodules.
Transition	106.25	129	Rather nodular ABL with minor faulting
Ballysteen Fm	129	140.8	ABL with some dolomitised zones
Fault zone	140.8	152.2	Coarsely crystalline succrosic dolomite
Ballysteen Fm	152.2	156.5	ABL
Fault Zone	156.5	157.5	Coarsely crystalline succrosic dolomite

A detailed log of the drillhole is supplied in the appendix.

No significant mineralisation was observed in any of the drillholes.

Further Work

The Waulsortian Reef is still considered prospective and further work will consist of diamond drillholes to test this target.

Figures:

Figure 1.	Map showing the location of Prospecting Licence 3788 relative to the other Lundin/Belmore licences in County Clare.
Figure 2.	Geology of Prospecting Licence 3788.
Figure 3.	Location Map for DDH 09-3788-49.
Figure 4.	Location Map for DDH 10-3788-50 and 10-3788-51

Appendices:

- Appendix 1. Detailed drill log for 09-3788-49
- Appendix 2. Detailed drill log for 10-3788-50
- Appendix 3. Detailed drill log for 10-3788-51
- Appendix 4. Statement of Qualification for Technical Reports
- Appendix 5. Confidential Summary of Work

Drillhole No.	09-3788-49	Start Date		Samplinç Geochem	No
PL No.	3788	Finish Date		Micropal	
Easting	150458	Casing	3		
Northing	179222	BQ		Landowner	Mary Keane
Elevation	48	NQ	yes	Compensation	
Azimuth	0	Contractor	IDL	Material in hole	No
Dip	-90	Driller		Hole open	No
Final Depth	349.5	Geologist	Ciara Talbot	Core stored	Galmoy

From	То	Thickness	Code	F(m)	T(m)	Description	Alt Code	Sample #	From	То	Width	Zn%	Pb%
0	3	3	OVE			Overburden.							
						Waulsortain Reef - Partly dolomitised. Buff to pale grey in colour. Weak to moderate stromotactis development. Minor rust at fracture surfaces. Rare stylolites.Incipient fossil debris commonly seen. Minor calcite veining. Minor dissolution vugs eg. 38.8m and 45.3m. Trace oxidised pyrite (cubic) from 40.4 to							
3	63.70	60.70	WAL			40.6m. RQD over interval is 80%.							

From	То	Thickness	Code	F(m)	T(m)	Description	Alt Code	Sample #	From	То	Width	Zn%	Pb%
63.70	116.20	52.50	NMU			Nodular Micrite Unit - Pale grey calcarenite, fine to medium grained with frequent muddy wisps and shales <1mm to 2cm in width over 10% of the NMU interval. Common crinoidal debris.65.9m Green Tuff. 65.9 to 67.3m Transition to coarser calcarenite. Frequent paler micritic nodules to 71.5m then infilled with chert from 71.5 to 90.0m. From 90.0 to 116.2, nodules are filled with a combination of micrites and crinoidal debris with very rare cherts. 91.5 to 92.8m Reef lens. RQD over interval is 85%							
116.20	270.70	154.50	ABL			Argillaceous Bioclastic Limestone - the upper part of the ABL is a medium grey calcarenite with thin shale intervals. There are still some remnant nodular textures carried over from the NMU to about 137.6m. RQD over interval is 95 to 100%.							
				136.70	184.90	 From 136.7 to 184.9m shales comprise 30% of interval with fine to coarse crinoidal debris. 152.2m syringoporo. Rare brachiopods from 116.2 to 161.2m then significant increase in bracs. and crinoidal debris to 184.9m. Trace stringers of calcite. 							
				184.90	229.50	Cleaner less mucky medium grey calcarenite with frequent brachiopods. Common wisps of mud but rare shales (<5%). 199.6 and 199.8m michalinia							
				229.50	239.80	Overall much cleaner unit with michalinia (eg. 237.4m)							

From	То	Thickness	Code	F(m)	T(m)	Description	Alt Code	Sample #	From	То	Width	Zn%	Pb%
				239.80	270.7m	Sharp increase in shale content with bands of brachiopod debris in sections up to 70cm long in 40% of interval. Common bioturbation throughout sometimes giving the apperance of nodular textures. 249.8m michalinia. 262.3m and 262.8m Syringoporo. 262.5 Possible spec of coarse pale brown sphalerite.							
270.70	275.70	5.00	BVN			 Ballyvergin Shale - Finely banded black shale/ mud. Rare biodebris in muddy flow bands eg. 273.1m. Trace calcite stringers but otherwise very clean. RQD over interval is 85% 							
275.70	298.00	22.30	RIN			Ringmoylan Shales - Dominantly shales with <20% of pale medium grey calcarenites in ireegular and bioturbated thin bands <10cm maximum but more commonly 1cm thick. 281.0m michalinia. From 284.0m minor disseminated and nodules of pyrite. RQD 100%							
298.00	313.00	15.00	МНВ			Mellon House Beds - Flaser bedding. Intertidal. Buff to dark grey in colour. 308.2 to 308.4m Blebs and disseminated pyrite. 307.3m slickensides on calcite vein fracture surface. 311.9 to 312.3 Bioturbation.							

From	То	Thickness	Code	F(m)	T(m)	Description	Alt Code	Sample #	From	То	Width	Zn%	Pb%
313.00	349.50	36.50	ORS			Old Red Sandstone - 313.0m to 316.1m Medium grey sandstone with darker rounded clasts in bands 2cm to 40cm. Clasts are <2mm to 1cm in diameter. 320.8 to 321.7m vertical calcite vein <1cm diameter. 327.9m Black shale rip up clasts in pale buff sandstone. From 330.0m to 333.0m Buff sandstones with sub-rounded to sub-angular (rip up?) clasts <2cm in diameter. Rare clasts replaced by pyrite. 330.85cm of solid black shale. 333.0 to 334.3m Green banded sandstone.335.7 to 336.4m Has the apperance of a conglomerate of rip up clasts with green to black mud wisps around elongate sub-rounded to sub-angular clasts <2cm diameter. 337.6 to 338.1m Rip up clasts 2mm to 3cm in diameter. 338.4 to 338.8m as above but less mud wisps.							
				339.10	342.20	Sharp contact at 80 degrees. Green with rounded calcite concretions							
				344.00	349.50	True red ORS with rare green wisps and blebs and minor calcite concretions.							
349.50			EOH			End of Hole							

Drillhole No.	10-3788-50	Start Date	06/04/2010	Sampling Geochem	
PL No.	3788	Finish Date	15/04/2010	Micropal	
Easting	147817	Casing	12		
Northing	179275	BQ		Landowner	Michael McInnerney
Elevation	51	NQ	202.5	Compensation	
Azimuth	0	Contractor	IDL	Material in hole	
Dip	-90	Driller	DC	Hole open	No
Final Depth	202.5	Geologist	MR	Core stored	Doora

From	То	Thickness	Code	Descri	otion		Alt Code	Sample #	From	То	Width	Zn%	Pb%
0	12	12	OVE			Casing / overburden . No recovery. 12m due to drumlin/glacial topo feature. In local area rock outcrops where not covered by drumlins.							
12.00	175.00	163.00	WAL	12.00	53.45	Waulsortian . Undolomitised, pale grey stromatactid waulsortian with occ bc/fossils and thin mm thick calcite veins. Rock is bleached and has a pale yellow limonitic stain with greater staining on joint planes including orange to purple (ferro-manganoan?) oxides. Joints do not typically have any fill. Patches of rock are mod broken due to drilling of joint set intersections and J's with low angles to LCA.							
				53.45	64.00	Waul as above. More heavily stained (yellow-orange limonitic and FeOH stains) with vuggy weathering preferentially removing stroma fill. Rock is more broken due to joints and vuggy weathering. Possible minor cavities.							

From	То	Thickness	Code	Description		Alt Code	Sample #	From	То	Width	Zn%	Pb%
				64.00 80.00	Waul as 12-53.45m							
				80.00 83.00	Waul as above with strongly orange stain to joint planes and evidence of reasonable fluid flow with some clay- grit joint fill. Probably minor cavities (<10cm per cav).							
				83.00 84.75	Waul as 12-53.45m							
				84.75 85.35	Discrete cavity delineated by driller. Roof and floor apear weathered.							
				85.35 117.30	0 Waul as 12-53.45m							
				117.30 123.30	Waul. Bleached and weathered as above. Broken in patches due to drilling of joints at 5-10°TCA.							
				123.30 124.60	0 Waul as above with <10% calcite veins at 40°TCA							
				124.60 125.30	0 Massive coarse grained white clacite vein.							
				125.30 164.70	Waul, pale grey undol. Only v minor staining but appears slightly bleached. Occ patches of mod abb calcite veins and angular vein related breccia.							
				164.70 168.3	5 Cavity, minor rubble and silty recovery.							
				168.35 173.65	5 Waulsortian as above (125.3-164.7m) with minor calcite veining and vein related breccia with a small amount of vein fil pyrite.							

From	То	Thickness	Code	Description		Alt Code	Sample #	From	То	Width	Zn%	Pb%
			FLT	173.65 175.0	0 Very broken and weathered, possibly gouged zone. Rubbley recovery of waulsortian equivalent? And white dolomite.							
175	187.8	12.8	NMU	175.00 182.3	5 NMU. Standard NMU with nodular lozenge-shaped micrites and undulose <1-5mm wisps of black argillite. Occasional <1cm planar bands of argillite. Occ fine bc, generally crinoid debris. Occ fine specks of Pyrite. S0=65°TCA							
				182.35 179.4	5 NMU transition to ABL. Gradational change from NMU nodular micrites to more argillaceous planar facies. NMU nod mics becoming less nodular and more massive, interbedded with discrete 5-10cm planar argillite beds.							
				179.45 179.5	5 Mod abb vfgr disseminated sulphides. Too fine to identify confidently but probably arsenopyrite.							
				179.55 184.2	0 NMU transition to ABL as above.							
				184.20 184.2	 Minor fault with <1cm gouge at 20°TCA. 							
				184.21 185.0	0 NMU transition to ABL as above.							
				185.00 185.2	0 Minor cavity and gouged, weathered calc-argillite. Probable fault.							
				185.20 187.20	0 NMU transition to ABL as above.					1		
				187.20 187.4	0 Minor cavity and gouged, weathered calc-argillite. Probable fault.							

From	То	Thickness	Code	Description	Alt Code	Sample #	From	То	Width	Zn%	Pb%
				187.40 187.45 Fault plane with minor gouge at 42°TCA							
				187.45 187.80 NMU transition to ABL as above.							
187.80	202.50	14.70	ABL	187.80 202.50 ABL. Standard ABL. 10-20cm slightly bc wackestones interbedded with 10- 20cm calcareous argillite horizons with scattered to abb bc (gen crinoid, brach, bivalves) and wisps of micrite. Occ horn corals and smaller solitary corals. Occ thin caclite veins. S0=70°TCA	,						

Drillhole No.	10-3788-51	Start Date	15/04/2010	Sampling Geochem	
PL No.	3788	Finish Date	24/04/2010	Micropal	
Easting	148357	Casing	3		
Northing	178665	BQ		Landowner	Michael Reidy
Elevation	51	NQ	157.5	Compensation	500
Azimuth	0	Contractor	IDL	Material in hole	No
Dip	-90	Driller	DC	Hole open	No
Final Depth	157.5	Geologist	MR	Core stored	Doora

From	То	Thickness	Code	Descriptio	n	Alt Code	Sample #	From	То	Width	Zn%	Pb%
0	3	3	OVE		Casing / overburden. No recovery.							
3.00	86.55	83.55	WAL	3.00 64.2	Waulsortian, dolomitised (>90%). Standard dol waul. Slightly pitted in places. Occ white dol veins. Mod dev mod abb stroma. Occ bioclasts. Occ joints. Slightly bleached and slightly limonitic stained.	DO9						
			WAL	64.20 86.5	5 Waul as above. Part dol, ~25%. LC is base of waulsortian marked by several wispy argillites and a change to NMU- type micrites. Stylolitically modified. BoWn(S0)@70°TCA.	DO5						
36.55	106.25	19.70	NMU	86.55 91.8	NMU. Standard NMU. Cherty lozenge shaped wackestone nodules with abb undulose mm scale argillite bands. Chert as replacive nodules to bands. Slightly bleached.	UNA						
				91.80 94.1	NMU as above but more bleached.	UNA						
				94.10 99.8	0 NMU as above, (86.55-91.8m)	UNA						

From	То	Thickness	Code	Descri	ption		Alt Code	Sample #	From	То	Width	Zn%	Pb%
				99.80	106.25	Nodular micrites with abb wispy <mm argillites and occ thicker argillites. S0=55°TCA.</mm 	UNA						
106.25	157.50	51.25		106.25	122.15	ABL . Slightly cherty semi-nodular to 10- 20cm wackestones with abb calc- argillite beds and 1cm argillite bands.	UNA						
				122.15	122.20	Fault. Minor gouge and 5cm white calcite vein.	UNA						
				122.20	128.10	ABL as above.	UNA						
				128.10	128.50	Fault zone. 5cm gouge at top underlain by sligtly gouged rock veined with pink dolomite.	UNA						
				128.50	129.00	ABL as above	UNA						
				129.00	132.90	ABL. Typical . 20-30cm slightly bc wackestones interbedded with 2-5cm calc-argillite beds with occ to mod abb bc.	UNA						
				132.90	134.95	ABL replaced by coarsely crystaline 0.5-1mm sucrosic dolomite and veined by pink dolomite. Rock has dark appearance with argillite content accentuated by dolomitisation and recrystalisation.	DO9						
				134.95	140.80	ABL as above, 129-132.9m. Occ cal V.	UNA						1

From	То	Thickness	Code	Descri	ption		Alt Code	Sample #	From	То	Width	Zn%	Pb%
				140.80	152.20	Fault Zone and hydrothermally altered zone. ABL replaced by coarsely crystaline 0.5-2mm sucrosic dolomite and veined by pink dolomite. Rock has dark appearance with argillite content accentuated by dolomitisation and recrystalisation. Argiilite rich beds have been dolomitised to a lesser extent and argillite appears softened. Some beds have been tectonically activated and include gouge. Some minor specks of pyrite. Some parts broken.	DO9						
				152.2	156.5	ABL similar to 132.9-134.95m. Unable to tell displacement on fault zone but probably low as ABL here appears to be of the upper unit still.	UNA						
				156.5	157.5	ABL replaced by coarsely crystaline dol 0.5-1mm similar to 132.9-134.95m	DO9						