

ASX CODE: IFE

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# MORE MANGANESE EXPLORATION SUCCESS AT WILCHERRY HILL.

# **Highlights**

28th January 2014

- Drilling Completed at Hercules East Manganese Prospect.
- Significant Manganese (Mn) Intercepts Recorded highlights include...
  - > 12m @ 20.7% Mn (14HCRC001, 59m 71m downhole)
  - > 11m @ 29.9% Mn (14HCRC006, 65m -76m downhole)
  - > 17m @ 22.4% Mn (14HCRC007, 49m 66m downhole)
- Confirms Manganese Mineralisation (22m @ 22% Mn) in Hole 13HCRC026 from January 2013 Drilling.
- Successful in Confirming and Aiding Evaluation of the +3km Manganese Zone previously Identified on the Eastern Flank of the Hercules Iron Prospect.
- Follow up Drilling Planned.

The Directors of IronClad Mining (ASX:IFE) are pleased to provide an update on the recently completed exploration drilling program on the Hercules East Manganese (Mn) prospect, within the Wilcherry Hill project area in South Australia. IronClad is earning up to an 80% interest in all Manganese rights in the project area from Trafford Resources Limited (ASX : TRF) – see ASX release on 9<sup>th</sup> December 2013.

IronClad Mining Ltd Managing Director, Mr. Robert Mencel, said:

"Whilst our team is working hard to implement stage 1 of our Wilcherry Hill iron ore project, the decision to advance the stage 2 drilling is already bearing fruit.

The new drilling results continue to reinforce our belief that we have a very significant new zone of manganese mineralisation to augment and improve the economics of our stage 2 iron project. While more work is still required to confirm the extent of these encouraging results, I am optimistic that this manganese prospect can generate considerable additional value for IronClad shareholders."



## **Exploration Results**

IronClad's Hercules East Manganese (Mn) prospect is located in EL 5164 on South Australia's Eyre Peninsula, approximately 15km to the South East of the Company's developing Wilcherry Hill Iron project (Figure 1).

The drilling program was designed to follow up highly anomalous Manganese mineralisation (22m @ 22% Mn) intersected in hole 13HCRC026 during a January 2013 drilling campaign and test for northern and eastern extensions of the Inferred Resources of the Hercules Iron (Fe) prospect (*IronClad ASX Release March 2013 Quarterly Report & ASX Release 30/10/2013*).

The program comprised seven holes for 666 metres. Six holes were drilled with an east azimuth and one with a west azimuth to confirm geological assumptions. (Drill hole collar information and a location plan is listed in the supporting information section attached to this release).

The nominal 50m x 50m spaced program confirmed the original anomalous Manganese intercept and established the presence of Manganese mineralisation over a strike length of +100m.

Four of the holes intersected strongly anomalous Manganese mineralisation. Significant downhole intercepts are listed in Table 1. A broad (up to 78m downhole) Manganese rich zone was intersected (14HCRC001, 006 & 007 – Table 1) illustrating the large size potential of the system. (A table of intercepts greater than 10% Mn and minimum downhole intercept width of 3m is listed in the supporting information section).

Banded iron formation (BIF) stratigraphy was intersected in all holes.

Follow up drilling will be planned in the context of the prospective + 3km strike length implied by the latest drilling and the goal of defining a Manganese resource of over 5 Million tonnes.

	Dept	h (m)	Length							
Hole ID	From	То	(m)	Mn%	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	<b>P%</b>	S%	LOI%
14HCRC001	0	78	78	10.69	21.37	37.64	5.27	0.105	0.026	9.16
includes	2	6	4	18.02	19.00	25.11	6.04	0.049	0.093	12.34
includes	17	21	4	16.22	23.26	21.36	6.49	0.086	0.016	12.93
includes	59	71	12	20.72	20.87	24.40	2.60	0.154	0.027	10.87
14HCRC003	110	116	6	17.57	14.92	23.10	2.31	0.056	0.223	25.26
includes	112	116	4	20.26	14.91	16.54	2.46	0.050	0.231	27.97
14HCRC006	37	76	39	16.08	23.44	30.42	2.75	0.262	0.021	9.18
includes	37	42	5	21.01	28.67	17.00	1.58	0.180	0.017	9.73
includes	49	54	5	17.55	11.05	51.68	0.66	0.178	0.015	6.60
includes	65	76	11	29.90	21.05	12.15	2.25	0.363	0.020	11.39
14HCRC007	16	66	50	12.14	22.19	36.57	4.40	0.132	0.020	8.74
includes	44	47	3	11.93	30.74	27.98	2.26	0.088	0.020	7.47
includes	49	66	17	22.40	18.59	29.45	1.91	0.156	0.023	9.21

A geochemical lag sampling program is currently underway to assist in identifying drill future targets.

Table 1 Composite Intercepts above a 10% M cut off and 3m downhole width



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The target at the Hercules iron (Fe) prospect is near surface, low strip ratio mineralisation with grades suitable for upgrade via beneficiation. The drilling continued to identify zones of enriched, near surface iron (Fe) mineralisation. Intercepts greater than 30% Fe with a minimum down hole width of 3m are listed in Table 2. Additional data can be found in the supporting information section.

	Dept	h (m)	Length							
Hole ID	From	То	(m)	Fe%	Mn%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	<b>P%</b>	<b>S%</b>	LOI%
14HCRC003	0	24	24	34.32	3.36	22.76	9.72	0.094	0.028	11.80
includes	18	24	6	45.68	1.16	15.65	6.45	0.127	0.020	9.61
14HCRC003	33	48	15	35.31	3.16	29.99	4.17	0.097	0.023	9.38
includes	36	41	5	43.14	3.99	17.37	3.31	0.098	0.023	10.34
14HCRC003	66	88	22	30.82	3.48	42.01	1.92	0.137	0.020	5.83
14HCRC004	4	17	13	40.27	2.70	21.48	5.01	0.149	0.018	10.09
includes	7	10	3	45.95	3.83	14.97	3.27	0.182	0.015	8.93
includes	14	17	3	45.59	2.15	19.29	2.85	0.100	0.016	8.08
14HCRC006	28	45	17	34.11	8.17	26.95	3.20	0.174	0.018	8.33
includes	41	44	3	42.43	6.92	18.38	2.32	0.164	0.021	7.61
14HCRC007	66	77	11	37.14	4.19	23.52	4.39	0.363	0.026	10.93
includes	72	77	5	40.17	2.16	22.87	3.45	0.344	0.0314	10.92

Table 2 Composite Intercepts above a 30% Iron (Fe) cut off and 3m downhole width



Figure 1 Hercules East Manganese prospect location in relation to Wilcherry Hill Iron Deposits



Appendices: Supporting Information JORC Code, 2012 Edition – Table A1

Criteria	Commentary
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Sampling techniques	<ul> <li>Industry standard reverse circulation drilling undertaken.</li> <li>Reverse circulation drilling was used to obtain downhole samples at 1m intervals. From this 1m bulk sample, approximately 2 - 3kg was split and submitted for XRF analysis for the elements of interest.</li> <li>Elements of interest are manganese and iron – sampling technique is appropriate for these bulk commodities</li> </ul>
Drilling techniques	<ul> <li>The reverse circulation drilling program comprised 7 drillholes for 666m</li> <li>RC face sampling bit diameter used was 5 ½ inch</li> <li>Drill rods were 6m in length</li> </ul>
Drill sample recovery	<ul> <li>Reverse circulation recovery is considered to be acceptable</li> <li>After each metre interval the driller pauses to ensure the sample stream is cleared and cyclone cleaned, and after each rod (6m) the hole is cleared before sample collection recommenced</li> </ul>
Logging	<ul> <li>All RC cuttings were geologically logged at 1m intervals and representative cuttings placed in chip trays and retained as a permanent record.</li> <li>All logging is done following standard IFE procedures. Information is digitally logged directly into spreadsheet on site then uploaded into a master database after verification.         <ul> <li>All chip trays have been photographed.</li> <li>Observations of manganese and iron mineralisation were recorded at the time of drilling.</li> </ul> </li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>Each 1m bulk sample was split through a 1 in 8 hydraulically operated riffle splitter mounted under the cyclone of the drill rig. Sampling was dry</li> <li>The 2 – 3kg subsample was submitted to Amdel - Bureau Veritas Laboratory in Whyalla, South Australia for analysis.</li> <li>Nominal one in ten (10%) of all samples submitted by the IFE are duplicates</li> <li>Each sample submitted is crushed to a nominal 4mm then milled in a pulveriser to 90% passing 106µm.</li> <li>An analytical pulp of 250g is taken and the residue retained.</li> <li>A 0.66g subsample of the analytical pulp is fused with 7.2g of lithium metaborate to form a 40mm glass disc which is then presented to an XRF for the determination of elements of interest</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>Analysis was carried out using XRF for a routine suite of 11 elements and a gravimetric method was used to analyse LOI (loss on ignition). The components analysed by XRF Al2O3, CaO, Fe, K2O, MgO, Mn, Na2O, P, S, SiO2, TiO2.</li> <li>Nominal one in twenty (5%) of all samples submitted by the IFE are reference standards</li> <li>Nominal one in twenty of all samples are analysed in duplicate by the laboratory</li> <li>Blanks and reference materials are randomly inserted by the laboratory into every rack of samples.</li> <li>Laboratory used has adopted the ISO 9001 Quality Management Systems. NATA (ISO17025) certified reports are available.</li> <li>Levels of accuracy and precision are within control limits</li> </ul>
Verification of sampling and assaying	<ul> <li>Each sample bag was labelled with unique sample number assigned at point of sampling in field.</li> <li>Sample number is used to match assays from laboratory to in-house database containing drillbole coordinate data, geological log and sample description</li> </ul>
Location of data points	<ul> <li>All holes were surveyed by GPS to ± 3m accuracy. Surveying with differential GPS to ±0.5m accuracy will be will be completed at later stage if warranted by ongoing project prospectivity</li> <li>All survey information is in Datum MGA 94 Map Projection UTM Zone 53 South</li> <li>Downhole surveys were carried for all holes using a Ranger digital single shot camera. Lead drill rod is stainless steel.</li> </ul>
Data spacing and distribution	<ul> <li>Samples were collected at 1m intervals for each drillhole.</li> <li>Drillhole grid spacing nominal 50m x 50m. Drill pads are sited to minimise environmental damage therefore actual spacing may vary.</li> <li>Drillhole data and grid spacing is considered sufficient to establish geological and grade continuity for a bulk commodity mineral (Mn) in a banded iron formation.</li> <li>2 -3 m composting of the 1m drill samples was undertaken outside of the mineralised zones prior to assaying. 20 composites were submitted representing 8% of the total metres drilled</li> </ul>
Orientation of data in relation	Drillholes were sited on three east –west orientated lines. Drill direction was across the





Criteria	Commentary
to geological structure	<ul> <li>Orientation of the rock units, major structures and prospective mineralised zones is interpreted to strike to the North and dip to the west</li> </ul>
Sample security	Sampling conducted by Ironclad staff. Samples delivered to Laboratory by Ironclad staff
Audits or reviews	No audits or reviews have been undertaken at this time

## Section 2 Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status Exploration	<ul> <li>Exploration Licence EL 5164. Licensee is Trafford Resources Ltd. Ironclad Mining Ltd has joint venture agreements in place with Trafford that give it rights to the iron and manganese.</li> <li>The tenement is in good standing and currently expires 12/11/2014         <ul> <li>The tenement is located on Pastoral land</li> </ul> </li> <li>Extensive historical exploration has been conducted in the region for base metals,</li> </ul>
done by other parties	<ul> <li>precious metals and uranium. Apart from exploration by Ironclad since 2008 no exploration had been conducted by past explorers at the site of this drilling.</li> <li>Open file reports on past exploration are available from the South Australian Dept. for Manufacturing, Innovation, Trade, Resources and Energy</li> </ul>
Geology	<ul> <li>The iron and manganese mineralisation explored for occurs within Banded Iron Formation rocks of the Palaeoproterozoic Hutchison Group metasediments.</li> <li>The Hercules East Mn Prospect is still considered at this stage to represent a BIF target. The manganese rich zones characterise the BIF sequence in this area. XRD analysis confirmed the principal manganese mineral as pyrolusite (MnO<sub>2</sub>) (<i>IFE ASX</i> <i>Release 30 October 2013</i>). Rhodochrosite was observed at depth in the fresh rock during this this current drilling</li> </ul>
Drill hole Information	<ul> <li>Drillhole collar information is listed in Table A2 below. In summary:</li> <li>6 holes were drilled at an angle of -60 degrees to the east (090deg)</li> <li>1 hole was drilled at an angle of -60 degrees to the west (270deg) to confirm assumptions made on the west dip of the rock units.</li> </ul>
Data aggregation methods	<ul> <li>Assay results are listed below in Tables A3 and A4</li> <li>Table A3 lists manganese intercepts using a cut off of 10% Mn and minimum 3m downhole width</li> <li>Table A4 lists iron intercepts using a cut off of 25% Fe and minimum 3m downhole width.</li> <li>The cut off criteria used are regarded as significant from an exploration perspective in delineating potential zones of Mn and Fe rich banded iron formation mineralisation with the potential to be upgraded via beneficiation processes.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>Geometry of the manganese mineralisation in relation to the interpreted ≈ 45 degree west dipping, north striking, banded iron formation unit is at present unknown. Supergene enrichment is thought to play a role in the distribution of the manganese mineralisation.</li> <li>Downhole lengths are reported in Table A3 &amp; A4 not true widths.</li> </ul>
Diagrams	Figure A1 below shows the locations of all drillholes
Balanced reporting	Assay results presented in Tables A3 and A4 are considered to represent a balanced view. Intervals not quoted are below the cut-off criteria.
Other substantive exploration data	<ul> <li>Continuous disclosures of Exploration Results are found in periodic releases and Quarterly reports to the ASX.</li> <li>Refer: IFE ASX Release 30 October 2013</li> </ul>
Further work	<ul> <li>Continuous disclosures of Exploration Results are found in periodic releases and Quarterly reports to the ASX</li> <li>Further drilling will be planned once results from this phase of drilling have been interpreted.</li> </ul>



HOLE_ID	DEPTH(m)	EASTING	NORTHING	HEIGHT	DIP	AZIMUTH
14HCRC001	78	652477	6368042	227	-60	90
14HCRC002	144	652422	6368055	228	-60	90
14HCRC003	120	652458	6367974	227	-60	90
14HCRC004	72	652508	6367973	225	-60	90
14HCRC005	84	652429	6368093	228	-60	90
14HCRC006	90	652457	6368093	228	-60	90
14HCRC007	78	652504	6368041	225	-60	270

Table A2 Hercules East Mn Prospect Provisional Drill Hole Collar Information

	Dept	h (m)	Length							
Hole ID	From	То	(m)	Mn%	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	<b>P%</b>	S%	LOI%
14HCRC001	0	78	78	10.69	21.37	37.64	5.27	0.105	0.026	9.16
includes	2	6	4	18.02	19.00	25.11	6.04	0.049	0.093	12.34
includes	17	21	4	16.22	23.26	21.36	6.49	0.086	0.016	12.93
includes	59	71	12	20.72	20.87	24.40	2.60	0.154	0.027	10.87
14HCRC002	35	39	4	11.96	20.96	35.78	4.74	0.114	0.023	10.33
14HCRC003	48	51	3	15.62	20.52	33.03	3.36	0.096	0.027	10.59
14HCRC003	97	100	3	13.70	11.53	54.33	1.20	0.106	0.032	7.40
14HCRC003	110	116	6	17.57	14.92	23.10	2.31	0.056	0.223	25.26
includes	112	116	4	20.26	14.91	16.54	2.46	0.050	0.231	27.97
14HCRC004	49	52	3	13.74	22.54	32.04	4.41	0.142	0.035	10.01
14HCRC004	62	66	4	20.45	16.45	27.49	7.61	0.153	0.034	10.54
14HCRC005	11	14	3	12.25	16.14	45.55	4.39	0.066	0.014	8.29
14HCRC005	26	31	3	10.22	15.87	52.96	1.87	0.084	0.021	7.25
14HCRC006	12	15	3	11.14	28.05	25.07	5.97	0.098	0.017	11.54
14HCRC006	37	76	39	16.08	23.44	30.42	2.75	0.262	0.021	9.18
includes	37	42	5	21.01	28.67	17.00	1.58	0.180	0.017	9.73
includes	49	54	5	17.55	11.05	51.68	0.66	0.178	0.015	6.60
includes	65	76	11	29.90	21.05	12.15	2.25	0.363	0.020	11.39
14HCRC007	7	10	3	10.51	30.12	23.80	4.36	0.143	0.012	12.07
14HCRC007	16	66	50	12.14	22.19	36.57	4.40	0.132	0.020	8.74
includes	44	47	3	11.93	30.74	27.98	2.26	0.088	0.020	7.47
includes	49	66	17	22.40	18.59	29.45	1.91	0.156	0.023	9.21

Table A3 Hercules East Mn Prospect. Composite Intercepts above a 10% Mn cut off and 3m downhole width.



	Dept	h (m)	Length							MINING
Hole ID	From	То	(m)	Fe%	Mn%	SiO₂%	Al <sub>2</sub> O <sub>3</sub> %	<b>P%</b>	<b>S%</b>	LOI%
14HCRC001	9	18	9	35.83	8.53	19.48	5.00	0.113	0.014	10.30
14HCRC001	33	48	15	33.24	10.47	22.51	3.55	0.142	0.024	9.52
14HCRC001	63	67	4	24.59	20.47	21.16	1.78	0.162	0.026	10.26
14HCRC002	7	12	5	37.99	4.83	21.61	3.82	0.218	0.030	11.52
14HCRC002	32	36	3	28.72	5.28	33.00	5.47	0.109	0.026	10.95
14HCRC002	68	85	17	30.64	0.61	49.84	0.95	0.098	0.015	3.76
14HCRC003	0	24	24	34.32	3.36	22.76	9.72	0.094	0.028	11.80
includes	18	24	6	45.68	1.16	15.65	6.45	0.127	0.020	9.61
14HCRC003	33	48	15	35.31	3.16	29.99	4.17	0.097	0.023	9.38
includes	36	41	5	43.14	3.99	17.37	3.31	0.098	0.023	10.34
14HCRC003	66	88	22	30.82	3.48	42.01	1.92	0.137	0.020	5.83
14HCRC004	4	17	13	40.27	2.70	21.48	5.01	0.149	0.018	10.09
includes	7	10	3	45.95	3.83	14.97	3.27	0.182	0.015	8.93
includes	14	17	3	45.59	2.15	19.29	2.85	0.100	0.016	8.08
14HCRC004	34	38	4	33.83	2.32	34.31	4.00	0.147	0.020	8.63
14HCRC004	41	50	9	31.06	5.79	38.83	1.67	0.097	0.021	5.81
14HCRC004	60	63	3	31.02	6.32	30.17	7.69	0.140	0.026	7.51
14HCRC005	0	4	4	34.69	0.70	33.04	5.56	0.125	0.066	9.69
14HCRC005	42	66	24	29.80	1.24	48.17	1.69	0.148	0.015	4.92
14HCRC006	5	9	4	32.86	2.23	35.08	4.60	0.115	0.026	9.19
14HCRC006	28	45	17	34.11	8.17	26.95	3.20	0.174	0.018	8.33
includes	41	44	3	42.43	6.92	18.38	2.32	0.164	0.021	7.61
14HCRC006	62	65	3	39.45	3.57	25.21	2.02	0.447	0.026	9.25
14HCRC007	0	9	9	35.80	4.68	25.22	5.11	0.116	0.015	9.96
14HCRC007	28	57	29	31.18	11.72	24.83	3.22	0.159	0.022	9.38
14HCRC007	66	77	11	37.14	4.19	23.52	4.39	0.363	0.026	10.93
includes	72	77	5	40.17	2.16	22.87	3.45	0.344	0.0314	10.92

Table A4 Hercules East Mn Prospect. Composite Intercepts above a 25% Fe cut off and 3m downhole width.





Figure A1 Hercules East Manganese prospect drill hole locations.





#### JORC COMPLIANCE – CONSENT OF COMPETENT PERSON

The information in this announcement that relates to exploration results is based on information compiled by Chris Mroczek, who is a Member of The Australasian Institute of Mining and Metallurgy and who has more than five years' experience in the field of activity being reported on and is the Chief Geologist of the Company.

Mr. Mroczek has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Mroczek consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### DISCLAIMER

This report contains certain forward-looking statements. The words 'anticipate', 'believe', 'expect', 'project', 'forecast', 'estimate', 'likely', 'intend', 'should', 'could', 'may', 'target', 'plan' and other similar expressions are intended to identify forward-looking statements. Indications of, and guidance on, future earnings and financial position and performance are also forward-looking statements.

Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of IronClad, and its officers, employees, agents and associates, that may cause actual results to differ materially from those expressed or implied in such statements.

Actual results, performance or outcomes may differ materially from any projections and forward-looking statements and the assumptions on which those assumptions are based.

You should not place undue reliance on forward-looking statements and neither IronClad nor any of its directors, employees, servants or agents assumes any obligation to update such information.

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