

UPDATE ON GOVERNOR BROOME PROJECT

Highlights

- Initial mineralogical examination of the heavy mineral suite within the Governor Broome South East Heavy Mineral Deposit confirms low proportion of Valuable Heavy Minerals (VHM). This renders the mineralisation for that area as uneconomic.
- The VHM was an assumed percentage for Inferred Resource in the South East area. The other areas VHM has been based on testing and, accordingly, there should be no material impact to the results from those areas.
- Despite the exclusion of the South East area, this does not impact on the Governor Broome North, South, and East Deposits and the Board remains confident that the overall project remains of economic interest.
- The total tonnes of the Mineral Resources have reduced from approximately 200 million to 170 million, comprising 30 million of Indicated Resources and 140 million of Inferred Resources.
- A final report on the South East area is expected in July 2019.

Astro Resources NL (ASX: **ARO** or **the Company**) advises following its decision to undertake drilling work in ARO's 100% owned Governor Broome South East area (an area outside of the preliminary study Base Case announced on 28 June 2018 but nevertheless of economic interest) that sample results have now been received for the drilling programme. Unfortunately, initial examination of the heavy mineral concentrates of the samples taken from within the mineralised sections of the drill-holes indicates that only about 25% of the heavy mineral suite is comprised of valuable heavy minerals ("VHM").

The resulting VHM grades are sub-economic over most of the area; and sections containing mineralisation of potentially economic grade area of limited thickness, which would result in unviable waste/ore ratios. As a result of this information the Competent Person has concluded that there is no Mineral Resource reportable within the South East area.

The previously announced Inferred Resources for the South East area were estimated from heavy mineral results reported from a 2012 drilling campaign. These results were not accompanied by mineralogical data and the assumption was made that the proportion of valuable heavy minerals would be similar to that obtained from mineralogical characterisation of the heavy mineral mineralisation intersected in earlier drilling into the Governor Broome North, South, and East Deposits. Details of the mineralogy of these deposits are summarised in Table 1 below.

Table 1 Summary of Mineralogy of Governor Broome Deposits

Deposit	Ilmenite %	Secondary Ilmenite %	Leucoxene %	Rutile %	Zircon %	Total VHM %
North	51	5	5	2	5	68
South	46	3	2	1	4	56
East	52	4	4	1	5	66

The mineralogical characterisation was carried out by Allied Mineral Laboratories (“AML”) during 2012. AML analysed a total of 24 composite samples that were prepared from retained sinks from the 2005-2007 Metal Sands drilling programmes. The composites were selected from both the Warren Sands and the Beenup Beds in each of the Governor Broome North, South, and East areas.

The Mineral Resources of the Governor Broome Project are set out in Table 2, from which the previously reported Governor Broome South East Inferred Resources have been removed (31.6Mt @ 4.6% HM, 15% Slimes, 12% Oversize).

Table 2 Governor Broome Project Resources

Area	Unit	Category	Tonnage (Mt)	HM (%)	Slimes (%)	Oversize (%)
North	WS	Indicated	14.5	4.3	4.9	7.7
	WS	Inferred	0.36	4.8	6.1	11
	WS	Total	15	4.3	4.9	7.7
	BB	Indicated	15.1	5.4	18	8.6
	BB	Inferred	1.2	4.4	19	5.0
	BB	Total	16	5.3	18	8.3
South	WS	Inferred	9.7	4.2	6.2	7.5
	BB	Inferred	16	5.5	19	12
East	WS	Inferred	48	3.0	8.3	2.8
	BB	Inferred	66	4.1	19	7.5
All	WS	Total	73	3.5	6.6	4.5
	BB	Total	98	4.5	19	8.3
All	All	Indicated	30	4.9	12	8.1
		Inferred	140	3.9	14	7.4
Totals			170	4.1	14	6.3

The units WS and BB in the table refer to the geological units Warren Sands and Beenup Beds. The Warren Sands are a surficial Pleistocene sand unit, which sits unconformably above the Cretaceous Beenup Beds. The Beenup Beds sediments are of two main facies in the area: clayey sands and organic clays. The clay content, which is variable, tends to increase downward. Generally, the unit contains between 1% and 8% of valuable HM in its top few metres.

Quantitative mineralogy of selected heavy mineral composites from the recent drilling will now be carried out. The results will be incorporated in the final report for the South East area, which is expected to be completed and released in late July.

Details of the JORC Code Table 1 and Drill Holes are set out in Appendix 1 and 2.

Impact on Preliminary Study

As noted above, the Company advises that there is no change to the preliminary study base case as reported in that announcement of 28 June 2018. Under the heading “Key Highlights”, the base case relied upon the Indicated Resource located in the Governor Broome North area. The Inferred Resource in the South East area was at the time investigated internally for assessment purposes only and was not reported in the announcement, other than by reference to the potential tonnage impact from conversion. The Board remains of the view that the highly prospective North area may be supplemented by smaller, higher grade resource tonnages such as occur in the East area in a future techno-economic assessment.

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The information in this report as it relates to Mineral Resources and Exploration Results for the Governor Broome Deposit is based on information compiled by John Doepel, a Director of Continental Resource Management Pty Ltd (CRM), who is a member of the Australasian Institute of Mining and Metallurgy. Mr Doepel has sufficient experience in mineral resource estimation relevant to the style of mineralisation and type of deposit under consideration 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 Doepel consents to the inclusion in this announcement of the information in the form and context in which it appears.

APPENDIX 1 - JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	- Air-core drilling was used to obtain 1m samples from target horizons; 1.5kg sub-samples were split from cyclone. Remaining sample stored for later testwork.
Drilling techniques	Vertical NQ Air-core
Drill sample recovery	- Recovery and retention of all size fractions was achieved; - Holes were conditioned at completion and cyclone cleaned before next hole drilled
Logging	All intervals geologically logged using a database designed to capture relevant data including lithology, grainsize, rounding, HM mineralisation, hardness, colour and stratigraphic unit. All chip trays stored for future reference.
Sub-sampling techniques and sample preparation	- Duplicate field splits at a 1:19 ratio. - Sample preparation via drying and manual pulverisation before removal of +3.3mm material; - Sample sizes adjusted to that required by specialist mineral sands laboratories and appropriate for grain size of mineralisation.
Quality of assay data and laboratory tests	- Analysis by Western Geolabs Pty Ltd by its standard HM analytical procedures for HM%, Slimes %, and Oversize %; - Quality controlled by duplicate splits of 70 samples being analysed by both Western Geolabs and Diamantina Laboratories; - Two samples in each 25 were given duplicate analyses by Western Geolabs.
Verification of sampling and assaying	- Competent Person carried out logging and supervised sampling. - Assay entry by digital capture of laboratory files, with later verification of significant intervals against geological logging. - No twinned holes were drilled.
Location of data points	- Astro drill-holes were located using a handheld GPS and corrected to level topography; - Grid MGA_GDA94, Zone 50.
Data spacing and distribution	1m samples collected and analysed throughout mineralized horizons; - Geological continuity across deposit; - Holes were drilled on 80m by 160m spacing; - Eight duplicate holes drilled. - No sample compositing applied.

Criteria	Commentary
Orientation of data in relation to geological structure	Vertical drilling through virtually horizontal stratigraphy resulted in intersected thickness equivalent to true thickness.
Sample security	Samples transported from site to laboratory in sealed polyweave bags by courier.
Audits or reviews	Sample techniques, logs, and data reviewed positively by independent consultant geologists.

Section 2 Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	The Governor Broome South East mineralisation is within R70/53, held by Astro Resources NL.
Exploration done by other parties	Previous air-core drilling was carried out by Astro during 2012.
Geology	- The Governor Broome Heavy Mineral Deposit occurs within a surficial Pleistocene sand unit, the Warren Sands, and in the immediately unconformably underlying Beenup Beds of the Cretaceous Warnbro Group. - The Warren Sands varies in thickness from 5m to 15m within the area. It contains HM mineralisation which increases in grade in the beds lower few metres. - The Beenup Beds sediments are of two main facies in the area: clayey sands and organic clays. The clayey sands contain medium- to coarse-grained, angular to sub-angular, unconsolidated quartz and minor feldspar grains. The clay content, which is variable, tends to increase downward. Generally, it contains between 1% and 8% of valuable HM in its top few metres.
Drill hole Information	See Appendix 2, which lists the 171 Astro air-core drill-holes drilled in 2019.
Data aggregation methods	- No grade cutting carried out; - No metal equivalents employed.
Relationship between mineralisation widths and intercept lengths	Vertical drilling through virtually horizontal stratigraphy resulted in intersected thickness equivalent to true thickness.
Diagrams	Will be provided in final report
Balanced reporting	Report gives balanced view of the deposit.
Other substantive exploration data	Not applicable at this stage.

APPENDIX 2 – Drill-hole Information

The table below details the air-core holes drilled during 2019. All holes were drilled vertically.

Hole ID	E MGA Z50 (GDA94)	N MGA Z50 (GDA94)	RL (m)	Depth (m)
GB1834	356178	6203811	20.8	20
GB1835	356573	6204205	21.5	23
GB1836	356687	6204321	21.7	20
GB1837	356518.5	6204376	21.3	20
GB1838	356576	6204439	21.4	20
GB1839	356633	6204496	21.5	20
GB1840	356670	6204544	21.6	20
GB1841	356727	6204606	21.7	20
GB1842	356801.5	6204659	21.9	20
GB1843	356861	6204718	22.2	20
GB1844	356923	6204785	22.3	20
GB1845	356971	6204830	22.4	20
GB1846	357028	6204882	22.5	20
GB1847	357078	6204946	22.6	20
GB1848	357143	6205001	22.7	20
GB1849	357198	6205057	22.8	20
GB1850	357254	6205112	22.9	20
GB1851	357310.5	6205168	23	20
GB1852	357069	6204730	22.4	20
GB1853	357028	6204658	22.3	20
GB1854	357026	6204656	22.3	20
GB1855	356971	6204602	22.2	20
GB1856	356462	6204320	21.2	20

GB1857	356405	6204263	21.1	20
GB1858	356350	6204207	21	20
GB1859	356292	6204150	20.9	20
GB1860	356236	6204094	20.8	20
GB1861	356179	6204037	20.7	20
GB1862	356115	6203980	20.6	20
GB1863	356068	6203932	20.5	20
GB1864	356009	6203867	20.4	20
GB1865	355953	6203811	20.3	20
GB1866	355890	6203748	21	20
GB1867	355891	6203642	21.4	20
GB1868	355783	6203641	20.3	20
GB1869	356256	6203648	20.5	20
GB1870	356299	6203705	20.6	20
GB1871	356355	6203762	20.7	20
GB1872	356412	6203818	20.8	20
GB1873	356468	6203875	20.9	20
GB1874	356525	6203931	21	20
GB1875	356526	6203932	21	20
GB1876	356582	6203985	21.1	20
GB1877	356638	6204044	21.2	20
GB1878	356695	6204101	21.3	20
GB1879	356751	6204157	21.4	20
GB1880	356857	6204045	21.4	20
GB1881	356809	6203989	21.3	20
GB1882	356752	6203932	21.2	20
GB1883	356696	6203876	21.1	20

GB1884	356639	6203819	21	20
GB1885	356583	6203763	20.9	20
GB1886	356526	6203706	20.8	20
GB1887	356464	6203650	20.7	20
GB1888	357158	6203884	21.5	16
GB1889	357100	6203826	21.4	17
GB1890	357043	6203770	21.3	17
GB1891	356987	6203713	21.2	17
GB1892	356930	6203657	21.1	20
GB1893	357154	6203660	21.2	17
GB1894	357213	6203715	21.3	20
GB1895	357271	6203773	21.4	20
GB1896	357272	6203774	21.5	20
GB1897	357339	6203843	21.6	20
GB1898	356801	6204221	21.5	20
GB1899	356864	6204271	21.6	20
GB1900	356921	6204327	21.7	20
GB1901	357091	6204497	22.1	20
GB1902	357147	6204553	22.2	20
GB1903	357204	6204610	22.3	20
GB1904	357260	6204667	22.4	20
GB1905	357317	6204723	22.5	20
GB1906	357372.5	6204778	22.6	20
GB1907	357430	6204834	22.7	20
GB1908	357488	6204893	22.8	20
GB1909	357481	6204683	22.5	20
GB1910	357431	6204611	22.4	20

GB1911	357371	6204557	22.3	20
GB1912	357315	6204497	22.2	20
GB1913	357261	6204440	22.1	20
GB1914	357202	6204388	22	20
GB1915	357152	6204327	21.9	18
GB1916	357095	6204273	21.8	18
GB1917	357033	6204215	21.7	20
GB1918	357032	6204214	21.7	20
GB1919	356979	6204159	21.6	20
GB1920	357057	6204090	21.6	20
GB1921	356932	6204090	21.5	20
GB1922	357546	6204715	22.6	18
GB1923	357599	6204782	22.8	18
GB1924	357778	6204505	22.7	20
GB1925	357719	6204450	22.6	18
GB1926	357665	6204390	22.5	18
GB1927	357609	6204333	22.4	17
GB1928	357551	6204276	22.3	16
GB1929	357497	6204213	22.2	15
GB1930	357437	6204166	22.1	18
GB1931	357381	6204107	22	17
GB1932	357316	6204058	21.8	20
GB1933	357271	6203996	21.7	20
GB1934	357216	6203938	21.6	18
GB1935	357188	6204130	21.8	18
GB1936	357246	6204210	21.9	20
GB1937	357308	6204271	22	20

GB1938	357384	6203885	21.7	18
GB1939	357436	6203942	21.8	20
GB1940	357498	6204002	21.9	18
GB1941	357550	6204053	22	18
GB1942	357612	6204110	22.1	18
GB1943	357665	6204168	22.2	15
GB1944	357722	6204225	22.3	18
GB1945	357778	6204288	22.4	15
GB1946	357840	6204340	22.5	15
GB1947	357896	6204393	22.6	18
GB1949	358063	6204124	22.5	16
GB1950	358186	6204023	22.5	15
GB1951	358138	6203964	22.4	15
GB1952	357826	6203956	22.2	15
GB1953	357851	6204070	22.3	15
GB1954	357815	6204005	22.2	15
GB1955	357743	6203967	22.2	18
GB1956	357614	6203687	21.7	16
GB1957	357675	6203722	21.8	15
GB1958	357732	6203781	21.9	20
GB1959	357794	6203834	22	18
GB1960	357962	6203785	22.1	18
GB1961	357903	6203729	22	15
GB1962	357850	6203669	21.9	15
GB1963	358042	6203639	22	18
GB1964	358158	6203750	22.2	18
GB1965	358197	6203789	22.3	18

GB1966	358363.5	6203733	22.3	18
GB1967	358312	6203675	22.2	15
GB1968	357497	6203806	21.7	20
GB1969	357635	6203944	21.8	20
GB1970	357815	6204094	22.3	20
GB1971	357987	6204265	22.6	18
GB1972	358013	6204061	22.4	17
GB1973	357956	6204003	22.3	15
GB1974	358007	6203920	22.3	16
GB1975	355571	6203654	20	20
GB1976	355628	6203704	20.1	20
GB1977	355700	6203764	20.2	20
GB1978	355772	6203821	20.3	18
GB1979	355832	6203903	20.4	20
GB1980	355879	6203955	22	20
GB1981	355904	6203994	21.5	20
GB1982	355969	6204051	20.7	20
GB1983	355970	6204052	20.7	20
GB1984	356023	6204108	20.8	20
GB1985	356078	6204163	20.9	20
GB1986	356133	6204215	21	20
GB1987	356247	6204337	21.2	20
GB1988	356305	6204388	21.3	20
GB1989	356357	6204466	21.4	20
GB1990	356426	6204509	21.5	20
GB1991	356479	6204557	21.6	18
GB1992	356532	6204613	21.7	20

GB1993	356595	6204675	21.8	20
GB1994	356642	6204736	21.9	20
GB1995	356707	6204763	22	18
GB1996	356758	6204841	22.1	18
GB1997	356812	6204901	22.2	16
GB1998	356870	6204954	22.3	18
GB1999	356926	6205006	22.4	18
GB2000	356974	6205063	22.5	18
GB2001	357040	6205125	22.6	20
GB2002	357098	6205179	22.7	15
GB2003	357152	6205229	22.8	15
GB2004	357153	6205230	22.9	15
GB2005	357209	6205292	23	18