

*Havilah Resources Limited* plans to sequentially develop its portfolio of gold, copper, iron, cobalt, tin and other mineral resources in South Australia. Our vision is to become a new mining force, delivering value to our shareholders, partners and the community.

190 million Ordinary Shares -- 8 million Unlisted Options

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# HIGH GRADE DRILLING RESULTS AT PORTIA

## Highlights

- High grade drilling results confirm and extend Portia pit floor gold mineralisation.
- Includes 10 m @ 8.62 g/t in PTAC 492, partially confirmed by washing results.

## **Drilling Results**

### Portia Gold Mine Area

All gold assay results have now been received for an intensive drilling program completed in September in and around the Portia Gold Mine. The purpose was to provide better definition of remaining oxidised gold resources that may be recoverable from the open pit with mine design modifications, which are currently being assessed. A total of 66, mostly aircore (AC) holes, were completed for 3,166 metres. Drilling was conducted in two areas as shown in Figure 2.

**Pit Floor -20RL** – A series of nominally 10 m spaced, mostly vertical holes were drilled on the -20RL pit floor to provide better grade definition of ore mining blocks and to test interpreted high grade structures. Typical patchy high-grade gold mineralisation within a lower grade halo was intersected in oxidised and unoxidized (pyritic) strongly weathered basement (saprolite), with some of the higher grade results summarised in the following table.



Hole ID	From (m)	To (m)	Intersection g/t Au
PTAC450	20	21	1 m @ 92.2
PTAC453	15	18	3 m @ 20.95
PTAC465	0	2	2 m @ 17.48
PTAC467	4	7	3 m @ 35.35
PTAC471	0	6	6 m @ 34.84
PTAC474	7	10	3 m @ 29.37
PTAC492	10	20	10 m @ 8.62
PTAC493	38	44	6 m @ 17.95

Some of these intervals have been reassessed using Havilah's sample washing process which involves producing a panned concentrate from the remaining bulk drill samples (generally 5-20 kg). The concentrate is then observed (the size and quantity of gold grains are recorded) and assayed and a bulk grade can be calculated to compare with the initial assay generated from the 1-3 kg sub sample collected during drilling (i.e. conventional lab assay).



Panned concentrate of drillhole PTAC492 10-12m showing extensive coarse gold recovered. The conventional assay (50 gm fire assay) for this interval was 27.8 g/t Au and the washed gold/panned concentrate result returned 28.22 g/t Au confirming the high gold grade for this interval. Field of view approximately 20 cm.



**Northern Pit** – A drill pad was constructed on the northern slump to allow further drill testing of the northern pit area (Figure 2). Drilling from the new drill pad intersected generally weakly mineralised LGC and low grade basement saprolite gold mineralisation which is currently being evaluated for mining viability.

### **Other Local Prospects**

Assay results from earlier PACE drilling of other prospects in the Portia region have now been compiled and evaluated and are presented below (locations are shown in Figure 1).

**Croziers South Prospect** – Two additional reverse circulation drillholes (CRRC018 and CRRC019) were completed for 216 metres to infill earlier anomalous results within the copper (gold – bismuth - tungsten) bearing magnetite skarn. Drilling intersected the skarn altered sequence in the weathered and oxidised zone with low copper results but elevated local bismuth (best result 6 m @ 0.16% Bi) and tungsten (best result 6 m @ 0.13% W).

**Shylock Prospect** – A total of 18 AC drillholes (SHAC020-037) were completed for 1,950 metres on four drill traverses, covering 500 metres of strike, targeting Portia style gold mineralisation at the base of the cover sequence and in basement. Drilling intersected the expected cover sequence with local occurrences of "Portia style" Light Grey Clay (LGC), with best results summarised in the following table.

Hole	Line	From (m)	To (m)	Intersection g/t Au	Comments
SHAC026	Line 2	78	83	5 m @ 0.66	Weathered basement
SHAC031	Line 3	79	83	4 m @ 0.59	LGC horizon
SHAC034	Line 4 (NE)	67	68	1 m @ 27.2	LGC horizon
SHAC036	Line 4 (NE)	80	84	4 m @ 0.44	Weathered basement

A number of intervals have been highlighted for sample washing. At this stage no further drilling is planned.

**East Portia Prospect** - A total of 6 AC drillholes for 722 metres were completed to test a basement gold-bismuth anomaly for a possible hanging wall repetition of the Portia gold mineralisation (see Figure 1). Locally anomalous copper intersections were found near the base of oxidation associated with pyrite and local chalcocite and chalcopyrite (copper sulphide minerals). No further drilling is planned at this stage.

Hole	From	То	Intersection	Comments
EPAC002	116	119	3 m @ 0.56% Cu	5% pyrite and 1% chalcocite (copper sulphide) in saprolite
EPAC004	76	77	1 m @ 1.87 g/t Au	Oxidised saprolite
EPAC006	115	117	2 m @ 0.51% Cu	5% pyrite and minor chalcopyrite and chalcocite in saprolite

**Lorenzo/South Portia Prospect** – 12 AC drillholes for 1,360 metres were completed as a partial test of the extensive Lorenzo basement multi-element anomaly. Several holes intersected "Portia style" LGC and visible gold was panned from some intervals. Sample washing of most LGC intervals was completed with results confirming the generally low gold values as summarised in the following table.



Hole	From	То	Intersection g/t Au	Comments
SPAC002	82	84	2 m @ 0.56	LGC - conventional 50 gm fire assay
	82	84	2 m @ 0.34	LGC - Washed sample assay
SPAC003	80	82	2 m @ 0.06	LGC - conventional 50 gm fire assay
	80	82	2 m @ 0.66	LGC - Washed sample assay
SPAC004	79	81	2 m @ 1.12	LGC - conventional 50 gm fire assay
	79	81	2 m @ 0.38	LGC - Washed sample assay
SPAC005	77	79	2 m @ 0.10	LGC - conventional 50 gm fire assay
	77	79	2 m @ 0.56	LGC - Washed sample assay
SPAC006	80	82	2 m @ 0.17	LGC - conventional 50 gm fire assay
	80	82	2 m @ 0.17	LGC - Washed sample assay

Some intervals of weakly anomalous gold are also associated with elevated bismuth and arsenic, which may be useful locally as pathfinder elements for gold. Further drilling is warranted to define the Light Grey Clay (LGC) occurrences and to continue testing other anomalous gold and base metal targets defined from previous drilling in this large and promising mineralised zone.

**Commenting on the drilling results, Havilah Managing Director, Dr Chris Giles said:** "The pit floor drilling campaign returned some spectacular gold intersections in the saprolite bedrock material as is typical of Portia.

"We are currently updating and refining our internal resource models with the objective of mining and processing as much of this high grade material as possible over coming months.

"The regional drilling did not produce immediate results, but the potential still remains for significant discoveries in this highly mineralised terrain if we are clever enough to decipher the new clues we have gained.

"One of our problems is having so much mineralisation "noise" in this region, and identifying what are the key ore grade mineralisation indicators from all of the anomalous results" he said.

This announcement contains certain statements which may constitute "forward-looking statements". Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, performance or achievements to differ materially from those expressed, implied or projected in any forward looking statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

#### Competent Persons Statement

The information in this announcement that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on data and information compiled by geologist, Dr Chris Giles, a Competent Person who is a member of The Australian Institute of Geoscientists. Dr. Giles is Managing Director of the Company and is employed by the Company on a consulting contract. Dr. Giles has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr. Giles consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported

For further information visit <u>www.havilah-resources.com.au</u> **Contact:** Dr Chris Giles, Managing Director, on (08) 8155-4500 or email: <u>info@havilah-resources.com.au</u>





*Figure 1* Areas of drilling in the vicinity of the Portia Gold Mine referred to in the text.





*Figure 2* Locations of drillholes in the Portia open pit for which assay results have become available in the last month are identified in red. Earlier drillholes that have previously been reported are identified in yellow.



### Details for all drillholes reported in the text

		Grid Sys	Grid System UTM Zone 54 (AGD 66 datum)			Din	EOH
Hole_ID	Area	Easting		RL		degrees	metres
		m	Northing m	m	UTM azimuth	ucgrees	metres
PTAC450	-20RL	447765	6521715	-20	0	-90	32
PTAC453	-20RL	447774	6521716	-20	0	-90	32
PTAC465	-20RL	447761	6521744	-20	0	-90	32
PTAC467	-20RL	447795	6521780	-20	0	-90	32
PTAC471	-20RL	447770	6521763	-20	0	-90	32
PTAC474	-20RL	447800	6521763	-20	0	-90	32
PTAC492	-20RL	447779	6521668	-10	144	-60	56
PTAC493	-20RL	447775	6521667	-10	93	-78	56
SHAC026	Shylock	444410	6523449	65	115	-60	94
SHAC031	Shylock	444555	6523566	65	142	-60	120
SHAC034	Shylock	444769	6523542	65	135	-60	102
SHAC036	Shylock	444697	6523612	66	135	-60	95
EPAC002	East Portia	448570	6521852	67	270	-60	119
EPAC004	East Portia	448595	6521628	68	270	-60	120
EPAC006	East Portia	448696	6521627	67	270	-60	132
SPAC002	South Portia	447745	6521002	71	270	-60	103
SPAC003	South Portia	447794	6521002	71	270	-60	105
SPAC004	South Portia	447699	6520801	71	270	-60	123
SPAC005	South Portia	447745	6520801	70	270	-60	99.0
SPAC006	South Portia	447796	6520800	70	270	-60	102
CRRC018	Croziers Sth	447225	6507430	95	248	-60	108
CRRC019	Croziers Sth	447270	6507450	95	248	-60	108



# JORC Code, 2012 Edition – "Table 1"

### **Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria .	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation.</li> </ul>	<ul> <li>RC or AC drill chips received directly from the drilling rig via a cyclone were riffle split as 1m intervals to obtain 2-3kg samples and collected in numbered calico bags. Damp samples are collected by scoop sampling. All samples were submitted to ALS Global assay lab in Adelaide.</li> <li>At ALS assay lab the samples are crushed in a jaw crusher to a nominal 6mm (method CRU-21) from which a 3 kg split is obtained using a riffle splitter. The split is pulverized in an LM5 to 85% passing 75 microns (method PUL-23). These pulps are stored in paper bags.</li> <li>All samples are then analysed for a 33 element package using ALS's ME-ICP61 suite, whereby samples undergo a 4 acid digest and analysis by ICP-atomic emission spectrometry and/or ICP mass spectrometry. Over limit Cu, Pb and Zn are re-assayed using ME-OG62</li> <li>Gold is analysed by 50g fire assay, with atomic absorption spectrometry finish using ALS method Au-AA26.</li> <li>Handheld XRF readings may be collected from certain intervals and used as a guide but are not reported here.</li> </ul>
Drilling techniques	<ul> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</li> </ul>	<ul> <li>All RC holes were drilled using standard face-sampling bits, with bit sizes ranging from 120mm to 144mm.</li> <li>All AC holes used 121mm blade bit.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative pature.</li> </ul>	<ul> <li>The sample yield and wetness of the RC and AC samples was routinely recorded in drill logs.</li> <li>Sample recoveries were continuously.</li> </ul>
	<ul> <li>Whether a relationship exists between</li> </ul>	monitored by the geologist on site and adjustments to drilling methodology were



Criteria	JORC Code explanation	Commentary
	sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	<ul> <li>made to optimize sample recovery and quality where necessary.</li> <li>It is noted that sample quality may be less than optimum for short intervals particularly at rod changes, which is a perennial problem in air core and reverse circulation drilling at Portia, where soft, fractured and wet sample may be encountered. Poor quality samples are not submitted for analysis but there is no evidence that gold is concentrated in intervals with poor sample recoveries, so that the possibility of systematic grade overestimation is unlikely. Overall RC and AC sample recoveries were at an acceptable level for interpretation purposes at an exploration level.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All RC and AC samples and drill core were logged in detail by experienced geologists directly into a digital logging system with data uploaded directly into an XL spreadsheet.</li> <li>Logging is semi-quantitative and 100% of reported intersections have been logged.</li> <li>Logging is of a sufficiently high standard to support any subsequent interpretations, resource estimations and mining and metallurgical studies.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to</li> </ul>	<ul> <li>Dry RC and AC drill samples were riffle split on 1m intervals while damp intervals are scoop sampled on 1m intervals.</li> <li>Sample preparation and assaying methods are summarized above.</li> <li>Quality control procedures include the insertion of standards ,blanks and duplicates into the regular sample number sequence (1 in 25 samples). If any blank, standard or duplicate is out of spec, reassay of retained samples is requested of the laboratory as a first step.</li> <li>Sampling size is considered to be appropriate for the style of mineralisation observed. Assay repeatability for gold, tin and other metals has not proven to be an issue.</li> <li>No drill core samples were collected for</li> </ul>



Criteria	JORC Code explanation	Commentary	
	the grain size of the material being sampled.	assay.	
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul> <li>All samples are prepared at ALS Global laboratory in Adelaide and assayed interstate. The total assay methods are standard ALS procedure and are considered appropriate at the exploration reporting stage.</li> <li>All gold was determined by fire assay with AAS finish. Higher grade samples were check re-assayed as described below.</li> <li>Other elements were analysed by multi-element digest methods with ICP finish. Quality control procedures include the insertion of standards, blanks and duplicates into the regular sample number sequence (1 in 25 samples). If any blank, standard or duplicate is out of spec, reassay of retained samples is requested of the laboratory as a first step ALS also insert their own QC/QA samples into the sample sequence.</li> </ul>	
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>Rigorous internal QC procedures are followed to check all assay results.</li> <li>All data entry is under control of a specialist database geologist, who is responsible for data management, storage and security.</li> <li>No adjustments to assay data are carried out.</li> </ul>	
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Down hole drill surveys were conducted routinely every 30m down hole.</li> <li>Drillhole collar coordinates are surveyed in UTM coordinates using a differential GPS system with an x:y:z accuracy of 20cm:20cm:40cm and are quoted in AGD66 datum coordinates.</li> </ul>	
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> </ul>	<ul> <li>This is a resource definition drilling program designed to test for mineralisation extensions, hence drillhole spacing is important. RC and AC holes were generally spaced at regular intervals on lines designed to infill gaps in the resource model.</li> </ul>	



Criteria	JORC Code explanation	Commentary
	<ul> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Sample compositing was not used.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>The drillhole azimuth and dip was chosen to intersect the mineralized zones as nearly as possible to right angles and at the desired positions to maximize the value of the drilling data.</li> <li>At this stage, no material sampling bias is known to have been introduced by the drilling direction.</li> </ul>
Sample security	<ul> <li>The measures taken to ensure sample security.</li> </ul>	<ul> <li>RC and AC assay samples are collected directly from the riffle splitter in pre- numbered calico bags.</li> </ul>
		<ul> <li>Several calico bags are placed in each polyweave bag which are then sealed with cable ties. The samples are transported to the assay lab by Havilah personnel at the end of each field stint.</li> </ul>
		<ul> <li>There is minimal opportunity for systematic tampering with the samples as they are not out of the control of Havilah until they are delivered to the assay lab.</li> </ul>
		<ul> <li>This is considered to be a secure and reasonable procedure and no known instances of tampering with samples have occurred since drilling commenced</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>Ongoing internal auditing of sampling techniques and assay data has not revealed any material issues.</li> </ul>

### **Section 2 Reporting of Exploration Results**

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	<ul> <li>Exploration is taking place on Havilah Resources 100% owned Exploration Licenses and Portia Mining Lease ML6346</li> </ul>
	• The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	



Criteria	JORC Code explanation	Commentary
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Aircore drilling was carried out in the region by the Pasminco – Werrie Gold JV in the late 1990s.</li> <li>.</li> </ul>
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul> <li>Eluvial gold in base of Tertiary sediments and nuggetty gold mineralisation in fracture veined saprolite bedrock.</li> </ul>
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	See separate Tables in this report
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>Intercepts are calculated using the length-weighted averages of individual samples. Minimum grade truncations are applied. Local geology is also used as an input.</li> <li>Where higher grades exist, a separate high grade sub-interval will normally be reported.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear</li> </ul>	<ul> <li>Down-hole lengths are reported. Drillholes are always oriented with the objective of intersecting mineralisation as near as possible to right angles, and hence down- hole intersections in general are as near as possible to true width.</li> <li>For the purposes of the geological</li> </ul>



Criteria	JORC Code explanation	Commentary
	statement to this effect (eg 'down hole length, true width not known').	interpretations and resource calculations the true widths are always used.
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	<ul> <li>Plan showing the location of the drillholes in relation to previous drillholes.</li> </ul>
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	<ul> <li>Only meaningful potentially economic grade intervals are reported.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>Relevant geological observations are reported in this and previous announcements. Other data not yet collected or not relevant</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	These holes are part of a resource definition drilling program.