

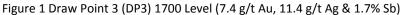
# Sampling at Sunlight adds further potential to Hillgrove Gold Project

## Highlights:

- Sampling completed on historic fill at Sunlight Mine, part of RVR's Hillgrove gold project
- 20 samples from draw points on 1700 and 1650 Levels returned weighted average grade of 5.7 g/t Au, 1.8 g/t Ag and 0.5% Sb
- Maximum gold grade of 14.4 g/t Au returned from sampling in draw point 13 on 1700 Level
- Sunlight vein system has a current Mineral Resource of 680,000 tonnes @ 8.0 g/t Au (175koz Au) and is open at depth and strike.
- Potential for Sunlight Fill to act as source of feed as Hillgrove transitions from treating Bakers
   Creek Waste Stockpile to full restart of underground mining operations
- Next steps are to undertake metallurgical characterisation test work

Red River Resources Limited (ASX: RVR) is pleased to update the market on progress at our exciting Hillgrove Gold Project. As part of the Hillgrove Gold Mine Restart Strategy, Red River has undertaken a grab sampling program to estimate the grades of historic fill remaining in the Sunlight workings. Samples were taken from accessible historic draw points on the 1700 and 1650 levels (refer to Table 1).

RVR sampled 13 draw points on the 1700 Level and seven draw points on the 1650 Level. In total, 49kg of samples were taken, and assaying has returned a weighted average grade of 5.7 g/t Au, 1.8 g/t Ag and 0.5% Sb across 20 samples. The maximum gold grade assayed was 14.4 g/t Au in draw point 13 (DP13) on the 1700 Level.







The Hillgrove Gold Project has a current JORC 2012 compliant Mineral Resource of 2.8Mt @ 5.1 g/t Au & 1.7% Sb (7.5 g/t Au Eq.) (approx. 460koz contained Au) plus a material JORC 2004 compliant Mineral Resource. The Hillgrove Project is located 22km from Armidale in New South Wales.

Over \$200m has been invested at Hillgrove to date and the Project includes a fully developed and accessible underground workings plus extensive surface infrastructure and equipment, including a 250ktpa capacity processing plant currently on active care & maintenance, comprising a selective flotation circuit (capable of producing antimony-gold and refractory gold concentrates), an antimony leach/electrowinning (EW)/refining & casting plant, a gold cyanide leach circuit & gold room and a pressure oxidation circuit.

The Sunlight Mine was operated from 1878 to 1915 and mined an estimated 200,000 tonnes of ore, of which, an estimated 69,800 tonnes of ore grading 35.7 g/t Au was crushed/processed. It is believed that the majority of ore that was not selected for processing was predominantly used as fill in the Sunlight Mine

The historical miners operated on approximate 50m levels (from 1740Rl to 1400Rl as per mine grid) and used shrinkage stoping methods. Stope widths were from 0.8 to 2m, with an average width of 1m, and the horizontal length of workings were approximately 500m at their longest.

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New England Antimony Mines (NEAM) mined and processed approximately 6,000 tonnes of Sunlight Fill in 2000/2001, with an estimated average grade of 3.7 g/t Au.

Table 1 Hillgrove Project Sunlight Historic Fill Sampling

Level	Sample Number	Sample Weight (kg)	Gold grade (g/t)	Silver grade (g/t)	Antimony (%)
1700	G08587 DP1	2.7	3.7	1.5	0.0%
1700	G08588 DP2	1.5	7.0	1.9	1.6%
1700	G08589 DP3	2.1	7.4	11.4	1.7%
1700	G08590 DP4	2.1	4.7	1.5	0.9%
1700	G08591 DP5	2.0	5.2	1.5	0.1%
1700	G08592 DP6	3.3	2.5	0.5	0.0%
1700	G08593 DP7	1.8	3.7	3.1	0.2%
1700	G08594 DP8	2.1	8.2	0.6	0.2%
1700	G08595 DP9	2.0	8.1	1.7	6.3%
1700	G08596 DP10	1.8	1.2	0.8	0.1%
1700	G08597 DP11	2.1	3.1	1.4	0.3%
1700	G08598 DP12	2.0	1.8	1.0	0.1%
1700	G08599 DP13	3.4	14.4	0.9	0.1%
1650	Xcut2_1	2.6	13.8	1.3	0.4%
1650	Xcut2_2	3.7	2.6	*	0.0%
1650	Xcut2_3	2.0	3.4	2.2	0.0%
1650	Xcut2_4	2.3	3.0	0.6	0.3%
1650	Xcut2_5	4.2	5.4	1.5	0.1%
1650	Xcut3	2.9	10.1	5.6	0.1%
1650	Xcut4	2.6	0.6	*	0.0%
Weighted average grade			5.7	1.8	0.5%
Below o	Below detection limit*				



Figure 2 Hillgrove Project Sunlight Historic Fill Sampling (1650 Level)

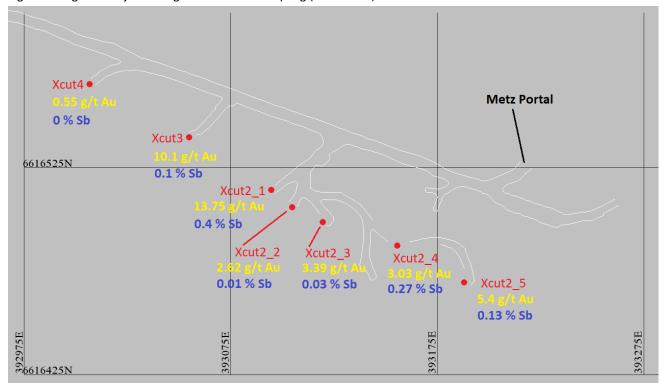


Figure 3 Cross Cut 4 (Xcut4) 1650 Level





Figure 4 Hillgrove Project Sunlight Historic Fill Sampling (1700 Level)

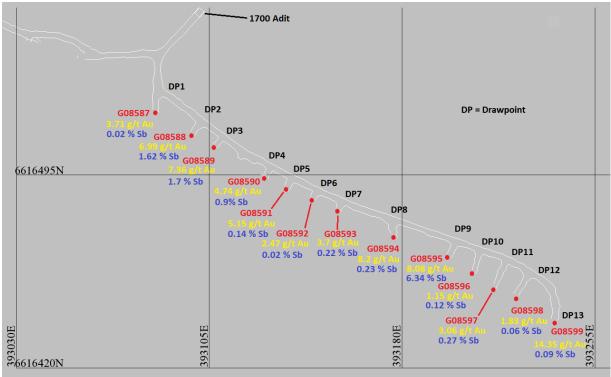


Figure 5 Draw Point 3 (DP3) 1700 Level





Figure 6 Sun Light Long Section

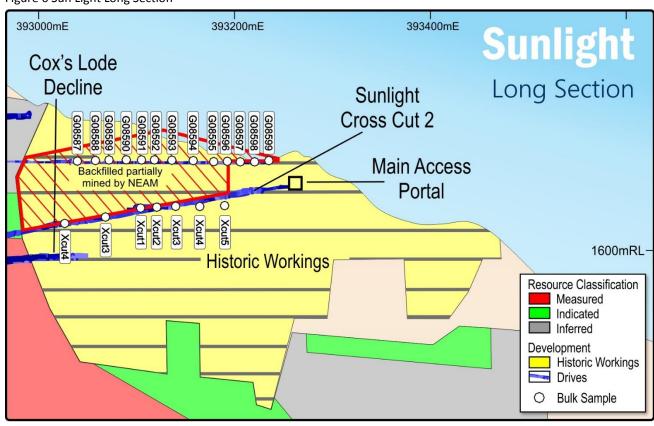
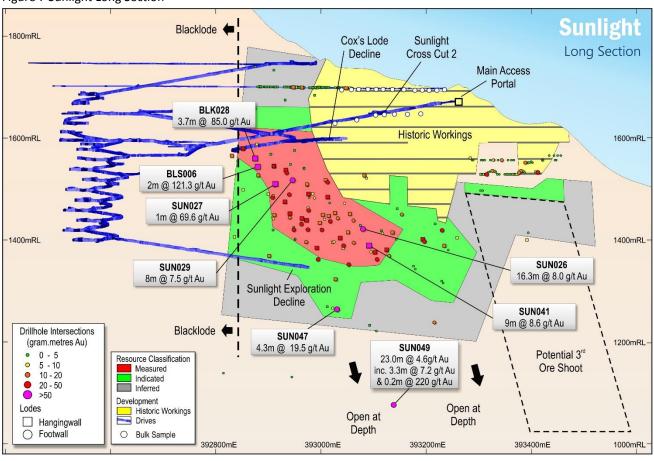


Figure 7 Sunlight Long Section





## **Next Steps**

RVR intends to take a representative sample of the Sunlight Fill to conduct metallurgical test work. A review of the historic Sunlight mine plans and sections will be undertaken to seek to estimate the amount of fill that is available for mining without any additional development activities (able to be accessed by current underground development)

### **Sunlight Mineral Resource**

The Sunlight Vein System has a current gold dominant JORC 2012 Mineral Resource of 680kt @ 8.0 g/t Au. Mineralisation consists of visible free gold in an arsenopyrite rich halo surrounding quartz breccia and stibnite veins.

The Sunlight Vein System is open at depth and strike, with potential for high grade gold resource extensions down plunge and to SE. Current development (the Cox's Lode Decline is connected to the Syndicate Decline) is only 40m from the first designed Sunlight ore drive. The Sunlight Exploration Decline was recently developed by a previous owner to provide drill platforms at depth to test the down dip extensions of the Sunlight Vein System.

Table 2 Sunlight Mineral Resource (at a 5g/t Gold Equivalent cut-off)

Resource Class	Tonnage (kt)	Au (g/t)	Sb (%)	Au Eq. (g/t)	Cont. Au (koz)	Cont. Sb (kt)
Measured	270	9.4	0.2	9.0	82	1
Indicated	260	7.6	0.2	7.3	64	1
Inferred	150	6.1	0.5	6.3	29	1
Total	680	8.0	0.3	7.7	175	2

Source: AMC Consultants Pty. Ltd. Hillgrove Mineral Resource Estimate (August 2017)

Tonnages and grades are rounded. Discrepancies in totals may exist due to rounding.

Gold equivalent (Au Eq.) has been calculated using the metal selling prices, recoveries and other assumptions contained in the AMC Estimate and included this announcement.



## Hillgrove Gold Project Mineral Resource (JORC 2012 Compliant Only)

Table 3 Hillgrove Gold Project Mineral Resource (at a 5g/t Gold Equivalent cut-off)

Resource Class	Tonnage (kt)	Au (g/t)	Sb (%)	Au Eq. (g/t)	Cont. Au (koz)	Cont. Sb (kt)
Measured	690	5.8	2.6	9.8	129	18
Indicated	1,100	4.9	1.5	7.0	173	17
Inferred	1,000	5.0	1.1	6.5	161	11
Total	2,800	5.1	1.7	7.5	459	48

Source: AMC Consultants Pty. Ltd. Hillgrove Mineral Resource Estimate (August 2017)

Tonnages and grades are rounded. Discrepancies in totals may exist due to rounding.

Gold equivalent (Au Eq.) has been calculated using the metal selling prices, recoveries and other assumptions contained in the AMC Estimate and included this announcement.

## **Gold Equivalent Calculation**

It is Hillgrove Mines Pty Ltd opinion that all the elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold, based on previous mill production and sales. The gold equivalent (Au Eq.) and the cut-off are based on the following:

- Metallurgical test work (carried out in 2016 and 2017) and mill production data demonstrates that total gravity/float recoveries of 91% gold (Au) and 86% antimony (Sb) are achievable.
- Net smelter return calculations for the deposits indicate that Au Eq. grades above 4.8 g/t are economic, based on site costs, mill recoveries, off-site transportation and royalty costs.
- The Sunlight deposit has a particle gold component that is amenable to gravity separation that represents 20% of total gold recovery.

Au Eq. was calculated based on commodity prices as at 18 July 2017. The individual grades, the assumed commodity prices and metal recoveries, and the Au Eq. formula are as follows:

- Au Eq. (g/t) = (Au g/t \* 91%) + (2.0 \* Sb % \* 86%)
  - Where 2.0 = (US\$7,950/100) / (US\$1,234/31.1035)
  - Gold price = US\$1,234/oz and gold recovery = 91%
- Antimony price = US\$7,950/tonne and antimony recovery = 86%



## **About Red River Resources (ASX: RVR)**

RVR is seeking to build a multi-asset operating business focused on base and precious metals with the objective of delivering prosperity through lean and clever resource development.

RVR's foundation asset is the Thalanga Base Metal Operation in Northern Queensland, which was acquired in 2014 and where RVR commenced copper, lead and zinc concentrate production in September 2017.

RVR has recently acquired the high-grade Hillgrove Gold-Antimony Project in New South Wales, which will enable RVR to build a multi-asset operating business focused on base and precious metals.

On behalf of the Board,

**Mel Palancian** 

**Managing Director** 

**Red River Resources Limited** 

For further information please visit Red River's website or contact:

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#### COMPETENT PERSON STATEMENT

#### **Mineral Resources**

The information in this report that relates to the reporting of the Hillgrove Mineral Resource Estimate reported in accordance with the JORC 2012 Code is based on and fairly represents, information and supporting documentation compiled by Rodney Webster who is a Member of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Mr Webster is independent of Hillgrove Mines Pty Ltd. and an employee of AMC Consultants Pty Ltd. Mr Webster has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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'.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original report and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original report

## **Exploration Results**

The information in this report that relates to Exploration Results is based on information compiled by Mr Mitchell Tarrant who is a member of The Australasian Institute of Mining and Metallurgy, and a full time employee of Red River Resources Ltd., and who has sufficient experience 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 the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves' (JORC Code).

Mr Tarrant consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.



## 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 (e.g. 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 (e.g. '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 types (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>Sampling consisted of 20 grab samples taken from 20 different draw points</li> <li>Sample weights ranged from 4.22 to 1.1 kg.</li> <li>Samples were sent to ALS (Brisbane) for analysis</li> <li>Analysis consisted of 50g Fire Assay for Au &amp; four acid digest and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for the following elements; As, Sb, Ag, Cu, Fe, Pb, S, W and Zn. Elements that went over set detection triggers were measured using XRF.</li> </ul>
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	No drilling was carried out.
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 nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	No drilling was carried out
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support	No drilling was carried out



Criteria	JORC Code explanation	Commentary
	<ul> <li>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>	
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 the grain size of the material being sampled.</li> </ul>	<ul> <li>No drilling was carried out</li> <li>Samples were dry and not split in the field</li> <li>Sample sizes would appear to be appropriate for the grain size of material being sampled</li> </ul>
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>The assay methods employed are considered appropriate for near total digestion</li> <li>Laboratory certified standards were used in each sample batch</li> <li>Certified standards returned results within an acceptable range</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>	Laboratory results have been reviewed by Company geologists and laboratory technicians
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole	Sample points were digitised from underground survey pickups



Criteria	JORC Code explanation	Commentary
	surveys), trenches, mine workings and other locations used in Mineral Resource estimation.  Specification of the grid system used.  Quality and adequacy of topographic control.	<ul> <li>Accuracy is assumed to be +/-2m</li> <li>Grid system MGA94 zone 56 and AGD66 zone 56 are used.</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> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Sampling consisted of 20 grab samples taken from 20 different draw points</li> <li>Sample weights ranged from 4.22 to 1.1 kg.</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>	No drilling was carried out
Sample security	The measures taken to ensure sample security.	Samples have been overseen by company geologists during transport from site to assay laboratories.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have been carried out at this point



# **Section 2 Reporting of Exploration Results**

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The sampling was conducted on Mining Lease 1026</li> <li>ML1026 is held by Hillgrove Mines Pty Ltd. (a wholly owned subsidiary of Red River Resources)</li> <li>Native title does exist over ML1026.</li> <li>The Mining Lease is in good standing</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>Historic mining and processing was conducted by the Sunlight and West Sunlight mining companies in 1878 to 1915.</li> <li>NEAM mined 6000 tonnes of historic Sunlight backfill in 2000/2001. This fill had an average grade of 3.7 g/t Au.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	Hillgrove is defined as an orogenic gold-antimony deposit. Mineralisation is developed in veins, vein breccias, sheeted veins, network stockworks and as alteration sulphide haloes to the main structures. The vast majority of fissures are sub-vertical and vary in widths of up to 20m in places. Paragenetic studies have previously indicated that the earliest mineralising event was a scheelite-bearing phase of quartz veining. Subsequent phases of arsenopyrite—pyrite—quartz—carbonate veining were accompanied by gold and minor base metal sulphides. Alteration is typically sericite—ankerite—quartz. Overprinting stibnite—quartz veining with gold-electrum, aurostibite and arsenopyrite form an important subsequent phase. Veining can be inferred from historical records to extend for vertical depths of over 1 km.
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, including, easting and northing, elevation or RL, dip and azimuth, down hole length, interception depth and hole length.</li> <li>If the exclusion of this information is justified the Competent Person should clearly explain why this is the case.</li> </ul>	No drilling was carried out



Criteria	JORC Code explanation	Commentary
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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>No cut-offs were implemented</li> <li>Standard weight averaging was used to calculate a weight average grade.</li> <li>No drilling was carried out</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 statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	No drilling was carried out
Diagrams	<ul> <li>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 plans and sections.</li> </ul>	Refer to plans and sections within report
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.	The accompanying document is considered to represent a balanced report
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported.	All meaningful and material data is reported
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Metallurgical test work on this material is underway