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# Cost effective geophysics survey identifies high-grade gold targets at Hog Ranch

Rex Minerals Ltd (Rex or the Company) has completed an Induced Polarisation (IP) geophysical orientation survey over known gold mineralisation at Rex's Airport and Cameco deposits at the Hog Ranch Gold Property, Nevada, USA (Figure 1).

The purpose of the survey was to investigate if IP can be utilised as an effective exploration tool by surveying known high-grade gold deposits, to ascertain whether the gold mineralising features 'light up' in IP data.

The results from the survey are extremely encouraging because they have identified key features (anomalies) which correlate to known high-grade gold drill intersections, at both locations. Based on the orientation survey data, Rex is confident that IP will be a very useful exploration tool.

# HIGHLIGHTS

- New drill targets (IP anomalies) have been identified
- A distinct chargeability anomaly was identified directly over the historical drill intercept at Cameco (95-031 which intersected **6.1m @ 61.1g/t gold**) (see Figure 4)
- Results from the IP survey at Airport have identified a resistivity anomaly directly over high-grade gold mineralisation (see Figures 2 and 3)
- Rex is progressing a much larger 3D IP survey over multiple prospects at Hog Ranch
- IP has the potential to significantly reduce discovery costs and to fast track the rate of discovery of high-grade gold mineralisation at Hog Ranch.

Rex's Managing Director, Richard Laufmann, said: "We already know we have a huge gold system at Hog Ranch, but the ability to accurately locate the extensions of high-grade before we drill has the potential to be a real game changer.

"We have a long list of historical high-grade hits at Hog Ranch which we need to follow up. We now believe that with the aid of a 3D IP survey, we will be able to focus the drill bit into the larger and more continuous lode gold targets throughout Hog Ranch."



# **IP orientation surveys**

Rex has recently completed a series of 2D orientation Induced Polarisation (IP) surveys over the Airport and Cameco deposits. The surveys were undertaken as a result of observations made from the recent drilling at Cameco which indicated a direct relationship between pyrite mineralisation and gold mineralisation.

In order to give a more thorough assessment of the capabilities of an IP survey at Hog Ranch, it was decided to conduct the surveys over the known gold positions at both Cameco and Airport.

The survey locations relative to the existing drill hole information at Cameco and Airport are shown in Figure 1.



**Figure 1:** Location of the recent IP orientation surveys completed over the Cameco and Airport deposits at the Hog Ranch Gold Property, Nevada USA.

## **IP Survey results over the Airport Deposit**

Historical drilling data has identified high-grade intersections (over 5g/t in some locations) at shallow levels which are surrounded by lower-grade gold assay results, which in some cases extend for up to 100m in thickness. It is interpreted that the controlling structures for the gold mineralisation at Airport are generally steep dipping and striking in a northerly direction.



The IP survey at Airport was undertaken as a single 2D line running due east, perpendicular to the interpreted controlling structures. The IP line extended for over 800m, centred on the higher-grade gold mineralisation and extending well beyond the mineralisation to the east and to the west.

The information gathered from the IP survey at Airport was significant in terms of the capability of both the resistivity and chargeability data sets to identify favourable sites for gold mineralisation at both locations and throughout Hog Ranch (see explanation of each data set on page 7).

The anomalies identified in the survey are largely steep-to-vertical discrete features that appear to match structures that cut through the host rocks, which are generally shallow-to-horizontal.

The resistivity data at Airport identifies a distinct near-to-vertical feature which is centred directly over the defined gold mineralisation (see Figure 2 and Figure 3). There are also some additional steeply oriented anomalies which are more subtle, but very distinct, and which have not yet been tested.

The chargeability data also identified an anomaly within close proximity to defined gold mineralisation at Airport, with a slight offset towards the east. There are also some similar untested anomalies on this section to the west and a more substantial and untested chargeability anomaly to the east of the currently defined gold mineralisation at Airport (Figure 2).

# **IP Survey results over the Cameco Deposit**

The focus of the IP survey at Cameco was to see if some of the very high-grade drilling results and their controlling structures could be identified using an IP survey. A total of three east striking IP lines were completed, which were 100m apart and covered the bulk of the known gold mineralisation based on the historical drilling. This was complemented by one north-striking IP line designed to test for features that are possibly striking in a more easterly direction.

Of particular significance from the IP survey results at Cameco, was the definition of a small but strong anomaly on section 4,560,700mN in almost the exact position of the historical intersection from drill hole 95-031 which intersected 6.1m @ 61.1g/t gold and 55.6g/t silver (Figure 4). This drill intersection has been followed up based on multiple possible interpretations without success previously.

The significance of the results over this drill intersection is that the IP survey could distinguish the position of the high-grade gold mineralisation from the surrounding drill hole locations which contained significant alteration, but only low-grade to no-gold mineralisation.

The IP surveys completed to the north of section 4,560,700mN also identified a subtle feature extending in a northerly direction which is interpreted to be the possible extension of the structure which hosts the high-grade gold from drill hole 95-031. However, the anomalism to the north was generally a weaker response and also in a deeper position which has not been tested from any of the historical drilling at Cameco.

There are a number of other features defined in the IP survey results which are untested at this stage. One of the more significant larger features was observed on section 4,560,700mN which highlights the location of a significant chargeability anomaly which appears to correspond with a major fault that is interpreted to strike in a northerly direction (Figure 4).





**Figure 2:** Cross section 4,561,370mN at Airport with the modelled 2D Resistivity image above and the modelled 2D Chargeability image (below) relative to the historical drill hole intersections.





**Figure 3:** Close up portion of cross section 4,561,370mN (see Figure 2 for reference location) at Airport showing the modelled 2D IP Resistivity image where there exists more detailed historical drilling information and higher gold assay results.





# Modeled Chargeability

# Hole 95-031 6.1m @ 61.1g/t gold and 55.6g/t silver from 50.3m

**Figure 4:** Cross section 4,560,700mN at Cameco showing the modelled Chargeability image relative to a high-grade gold drilling intersection identified in drill hole 95-031.



# Explanation of the features that a 2D IP survey can identify

An IP survey will produce two data sets which relate to measurements of different physcial properties of the underlying rocks.

#### **Resistivity Image**

The resistivity information is a measurement of the relative ability of the underlying rocks to conduct electricity. With specific reference to Hog Ranch, it has been shown from the IP survey and other earlier resistivity survey data that the clay-rich Lake Sediments and also the softer and clay-rich unwelded Tuff rocks (the latter of which this is a favourble host rock for the gold mineralisation) are good conductors of electricity and therefore show up in the resistivity survey as a distinct resistivity low (a blue to purple colour on the images).

The broader hard and siliceious rock units are typically poor electrical conductors and display as resistivity high features (orange to red colours on the images). In addition, where there exists a narrow disturbance or a narrow and steep resistivity high, this often relates to a near-to-vertical structure which may have vein material such as a laminated quartz-adularia vein, which can host very high-grade gold mineralisation in epithermal gold deposits such as Hog Ranch.

#### **Chargeabilty Image**

The chargeability image highlights where parts of the underlying rocks contain minerals which are capable of holding an electric charge over a longer period of time. One key mineral that has this attribute is fine grained pyrite. In the case of Hog Ranch, the original host rocks are generally devoid of pyrite and it is interpreted that most of the pyrite and/or other sulphide minerals have been introduced into the area as a result of hydrothermal fluids which also deposited the gold mineralisation at Hog Ranch.

Therefore, Rex interprets that the chargeability data at Hog Ranch combined with understanding the host rocks and structures that can be identified from the resistivity data, could define where there has been significant pyrite introduced into the host rocks, which could in turn relate to high-grade gold positions.

### Next steps based on the IP survey results

The orientation survey over Airport and Cameco was very successful in terms of showing that an IP survey can define the key features that could relate to high-grade gold mineralisation at Hog Ranch. There is a further refinement that can now be undertaken, using the same technique to more accurately locate these potential high-grade gold positions.

Rex is planning to take the next step with the IP data by completing a number of 3D IP surveys. The benefit of a 3D survey relative to the 2D survey is that the dip, strike and depth of the respective anomalies and other geological features will be more accurately defined, in addition to being capable of extending to much greater depths than is otherwise possible from a 2D IP survey.

This announcement has been authorised for release by the Managing Director/CEO of Rex Minerals. For more information about the Company and its projects, please visit our website <a href="https://www.rexminerals.com.au/">https://www.rexminerals.com.au/</a> or contact:

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## **COMPETENT PERSONS STATEMENT**

The information in this announcement for the Hog Ranch Property that relates to Exploration Results, Exploration Targets or Mineral Resources is based on, and fairly reflects, information compiled by Mr Steven Olsen who is a Member of the Australasian Institute of Mining and Metallurgy and an employee of Rex Minerals Ltd. Mr Olsen has sufficient experience which is 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'. Mr Olsen consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### **Forward-Looking Statements**

This announcement contains "forward-looking statements". All statements other than those of historical facts included in this announcement are forward-looking statements. Where the Company expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. However, forward-looking statements are subject to risks, uncertainties and other factors, which could cause actual results to differ materially from future results expressed, projected or implied by such forward-looking statements. Such risks include, but are not limited to, copper, gold and other metals price volatility, currency fluctuations, increased production costs and variances in ore grade or recovery rates from those assumed in mining plans, as well as political and operational risks and governmental regulation and judicial outcomes. The Company does not undertake any obligation to release publicly any revisions to any forward-looking statement.



# JORC Code, 2012 Edition – Table 1 Report

# Section 1 Sampling Techniques and Data

| Criteria  | Commentary  |  |  |  |  |  |
|---|---|--|--|--|--|--|
| Sampling techniques                                     | Not applicable. No new drilling results reported.   |  |  |  |  |  |
| Drilling techniques                                     | Not applicable. No new drilling results reported.   |  |  |  |  |  |
| Drill sample recovery                                   | Not applicable. No new drilling results reported.   |  |  |  |  |  |
| Logging   | Not applicable. No new drilling results reported.   |  |  |  |  |  |
| Sub-sampling techniques and sample preparation          | Not applicable. No new drilling results reported.   |  |  |  |  |  |
| Quality of assay data and laboratory tests              | <ul> <li>The Survey was completed by geophysical contractor, Planetary Geophysics. The survey details are as follows:</li> <li>Pole-Dipole IP/Resistivity survey with lines read to n=10 @ 50m dipole spacing</li> <li>The survey was collected using a GDD TXIV transmitter and an Iris Elrec pro receiver.</li> </ul> |  |  |  |  |  |
| Verification of sampling and assaying                   | Not applicable. No new drilling results reported.   |  |  |  |  |  |
| Location of data points                                 | All co-ordinates are recorded in UTM NAD83 (Zone 11N).All lines and the dipole locations were identified using a handheld GPS.  |  |  |  |  |  |
| Data spacing and distribution                           | Not applicable. No new drilling results reported.   |  |  |  |  |  |
| Orientation of data in relation to geological structure | Not applicable. No new drilling results reported.   |  |  |  |  |  |



| Criteria          | Commentary  |
|-------------------|---|
| Sample security   | Not applicable. No new drilling results reported. |
|                   |   |
| Audits or reviews | Not applicable. No new drilling results reported. |



## Section 2 Reporting of Exploration Results

| Criteria                                | Commentary  |
|---|---|
| Mineral tenement and land tenure status | The Hog Ranch Property (including Krista) is made up of 583 unpatented mining claims located in Washoe County, Nevada. The underlying title is held in Platoro West Incorporated (Platoro) and Nevada Select Royalty Inc. The claims are subject to an underlying agreement between Platoro, Nevada Select Royalty Inc and Hog Ranch Minerals Incorporated. The agreement provides full operational control of the Project to Hog Ranch Minerals Inc., with a series of minimum expenditure and activity commitments required to keep the agreement and the option to acquire 100% of Hog Ranch in good standing.   |
|   | In August 2019, Rex purchased a 100% interest in Hog Ranch via its purchase of the private company Hog Ranch Group, which in turn has 100% ownership of the company Hog Ranch Minerals Inc.   |
|   | The mining claims at Hog Ranch are located on open public land managed by the Bureau of Land Management (BLM).  |
| Exploration done by other parties       | Gold mineralisation at Hog Ranch was first discovered in 1980, with initial drilling in 1980 to 1981. Ferret Exploration was the first company to actively pursue the gold potential at Hog Ranch, leading to some initial Mineral Resource estimates (not considered to be JORC compliant) and some mining proposals. A consortium made up of Western Goldfields, Geomax (parent Company of Ferret Exploration) and Royal Resources ultimately provided the funding to commence gold production at Hog Ranch in 1986 via open pit mining and heap leach methods under the name of Western Hog Ranch Inc.   |
|   | After approximately 18 months of production, the Property was subsequently sold to WMC, who purchased 100% of Hog Ranch in early 1988. WMC commenced a significant exploration effort, drilling over 1,600 RC holes, a series of additional deep diamond drill holes and further detailed studies during the life of the operation which continued until 1991. Residual gold production and subsequent rehabilitation commenced soon after the mining operations ceased, all of which was completed by 1994. A summary of the gold production and geological information that was obtained during the mining operations was later summarised in a paper by Bussey (1996) – see Table 3. |
|   | At the time WMC were completing rehabilitation work over the historical mining locations, Cameco commenced exploration at<br>Hog Ranch to the west of the Historical Mining where much of the prospective rocks are under shallow cover rocks. The<br>subsequent effort by Cameco and later followed on by a number of joint venture partners led to the discovery of gold<br>mineralisation over a broad area at the Cameco Deposit.   |
|   |   |



| Criteria | Commentary   |           |             |               |            |                         |  |
|----------|--|-----------|-------------|---------------|------------|-------------------------|--|
|          | Table 3: (after Bussey, 1996) Summary of the historical production (mined) from each open pit based on production blast hole information prior to placement onto the leach pads.   |           |             |               |            |                         |  |
|          | Deposit/Resources  | Tons (Mt) | Tonnes (Mt) | Gold (oz/ton) | Gold (g/t) | Comments                |  |
|          | Bells  | 1.18      | 1.07        | 0.041         | 1.4        | Found first, mined last |  |
|          | East Deposit   | 1.00      | 0.91        | 0.038         | 1.3        |                         |  |
|          | Krista Deposit   | 4.64      | 4.21        | 0.036         | 1.23       | Largest deposit         |  |
|          | Geib Deposit   | 1.28      | 1.16        | 0.033         | 1.13       |                         |  |
|          | 139 Deposit  | 0.23      | 0.21        | 0.028         | 0.96       | Local visible gold      |  |
|          | West Deposit   | 0.17      | 0.15        | 0.045         | 1.54       |                         |  |
|          | TOTAL  | 8.5       | 7.7         | 0.036         | 1.23       |                         |  |
| Geology  | The geological setting, alteration and characteristics of the gold mineralisation defined at Hog Ranch all provide strong evidence<br>that Hog Ranch is a low sulphidation epithermal style of deposit which formed close to the surface (Figure 5).The hydrothermal fluids that have resulted in both the alteration and gold mineralisation are interpreted to have been linked to a<br>deep-seated source via a series of faults which acted as the plumbing system required to bring the mineralising fluids up to the<br>paleosurface at Hog Ranch. This model of emplacement and formation for shallow epithermal gold mineralisation is similar to<br>many epithermal deposits worldwide as documented by many authors (i.e. White and Hedenquist, 1995; Hedenquist, et al., 2000;<br>Sillitoe; R. H., 1993, Corbett, 2002).At Hog Ranch, there are broadly two target types that are considered to exist which may have the potential to be economically<br>significant (Figure 6). These target types are defined as:1. Extensive shallow and low-grade gold mineralisation within 100m of the paleo water-table, which has favourably<br>extended along the more porous rock units; and2. Higher grade quartz-adularia vein hosted gold mineralisation within feeder structures underneath this large system,<br>which would have most likely developed at over 200m beneath the current day surface over a position known as the<br>boiling zone. |           |             |               |            |                         |  |











| Criteria   | Commentary  |
|--|---|
| Drill hole information   | Not applicable. No new drilling results reported.   |
| Data aggregation<br>methods  | Not applicable. No new drilling results reported.   |
| Relationship between<br>mineralisation widths<br>and intercept lengths | Not applicable. No new drilling results reported.   |
| Diagrams   | See figures 2, 3 and 4 for cross-sections representing the geophysics results in this release.  |
| Balanced reporting   | Not applicable. No new drilling results reported.   |
| Other substantive<br>exploration data                                  | Hog Ranch Property has been the subject of extensive exploration and historical drilling, predominantly over the period from 1981 through to 1997, in addition to a period of historical mining from 1989 to 1991. Rex has reported drilling information from work completed in 2019 and 2020 by Rex in earlier announcements, including a summary of the historical drilling information which was reported in a recent Mineral Resource announcement published on 2 September 2019. |
| Further work   | The results from the 2D IP surveys as reported in this release have provided Rex with incentive to pursue further IP surveys with the aim of further refining the potential location for high grade gold mineralisation at Hog Ranch Property. Rex is planning to complete additional 3D IP surveys over the course of the next 2-3 months.   |