American Rare Earths Limited

(ASX:ARR)

An Australian exploration company focused on the discovery & development of Rare Earths and Critical mineral resources in North America and Australia

Commodity Exposure

Rare Earth Elements in the USA

Heavy Mineral Sands and Cobalt in Australia

Directors & Management

Creagh O'Connor
Non-Executive Chairman
Keith Middleton
Managing Director
Geoff Hill
Non-Executive Director
Vice Chairman
Denis Geldard
Non-Executive Director
Jim Guilinger
Chief Technical Advisor
Wayne Kernaghan
Company Secretary

Capital Structure

Ordinary Shares on Issue 338,058,326

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08 June 2021

2021 TECHNICAL REPORT ON THE NEVADA SEARCHLIGHT RARE EARTHS PROJECT - COMPLETED

Highlights

- 2021 Technical Report on the Searchlight Rare Earths Project completed by World Industrial Minerals, LLC
- A unique Rare Earths Elements ("REE") project, unusually endowed with high value Magnetic REE* plus heavy REE
- Initial sampling identifies widespread distribution of significant REE mineralization
- Surface Samples with significant REE grades include:
  - TREE: 14,800 ppm
  - HREE: 940 ppm
  - Magnetic REE*: 3,320 ppm
- The Project consists of 80 contiguous unpatented lode mining claims, prospective for rare earths, totaling 1620 acres (656 ha)
- High grade Heavy REE samples collected from monazite-apatite bearing veins in biotite granite, and hornblende-biotite granite sills occurring in Early Proterozoic granites
- Phased exploration plans currently underway including structural mapping, geochemical sampling, aerial geophysics, trenching and eventual drilling.

(*Magnetic REE include Neodymium, Praseodymium, Dysprosium, Terbium)

Summary

American Rare Earths ("ARR" or "Company") announces the release of the 2021 Technical Report on the Searchlight Rare Earths Project ("Technical Report") prepared by World Industrial Minerals, LLC ("WIM"). The Technical Report contains the background history of the mining district, previous exploration in the area, details of current sampling and mapping, analytical results, exploration recommendations, and a preliminary JORC 2012 Table 1 summary.

A copy of the Technical Report JORC 2012 Table 1 summary is located in Appendix A.

As previously announced, (see ASX announcement on 20 May 2021) the Searchlight REE Project ("the Project") is situated in the precious metal mining district of southwestern Nevada (NV), the Crescent mining district, located approximately 20 miles (32 km) from the town of Searchlight and 74 miles (119 km) south of Las Vegas, NV. In addition, the Project is approximately 19 miles (32 km) west of the only integrated operating and processing rare earths mine in the USA, the Mountain Pass rare earths mine, see Figure 1. Mountain Pass is reported to produce approximately 15% of the current global rare earths supply.

The Project consists of 80 contiguous unpatented lode mining claims totaling 1,620 acres (656 ha) staked by the Company in early 2021, see Figure 2. These claims are 100% owned by the company Western Rare Earths (WRE), a wholly owned US subsidiary of ARR. All surface and minerals are controlled by the US Department of the Interior's Bureau of Land Management (BLM), and all areas of WRE claim control are open to staking and mining.

The Project resides in the precious metal Crescent mining district of Nevada, with no current active mining. The Project does not have any known environmental encumbrances, and the State of Nevada is known as a friendly mining jurisdiction.

Figure 1 – Location Map

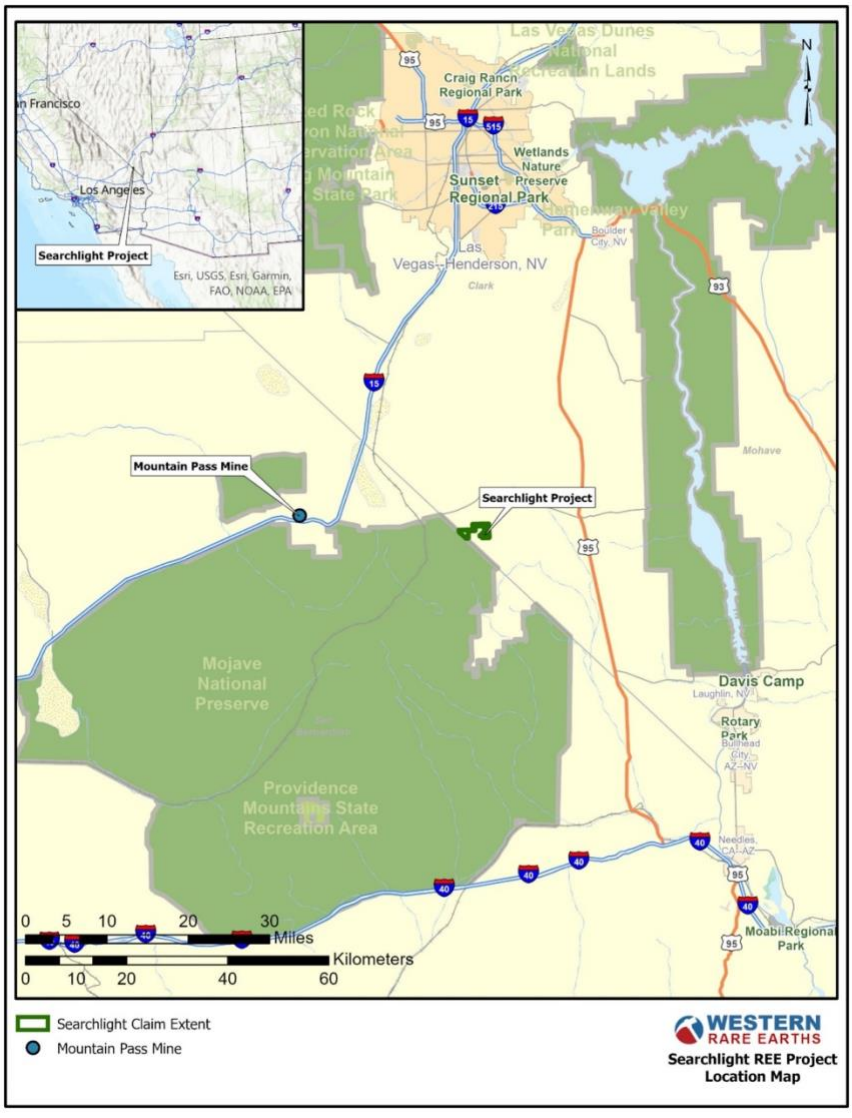
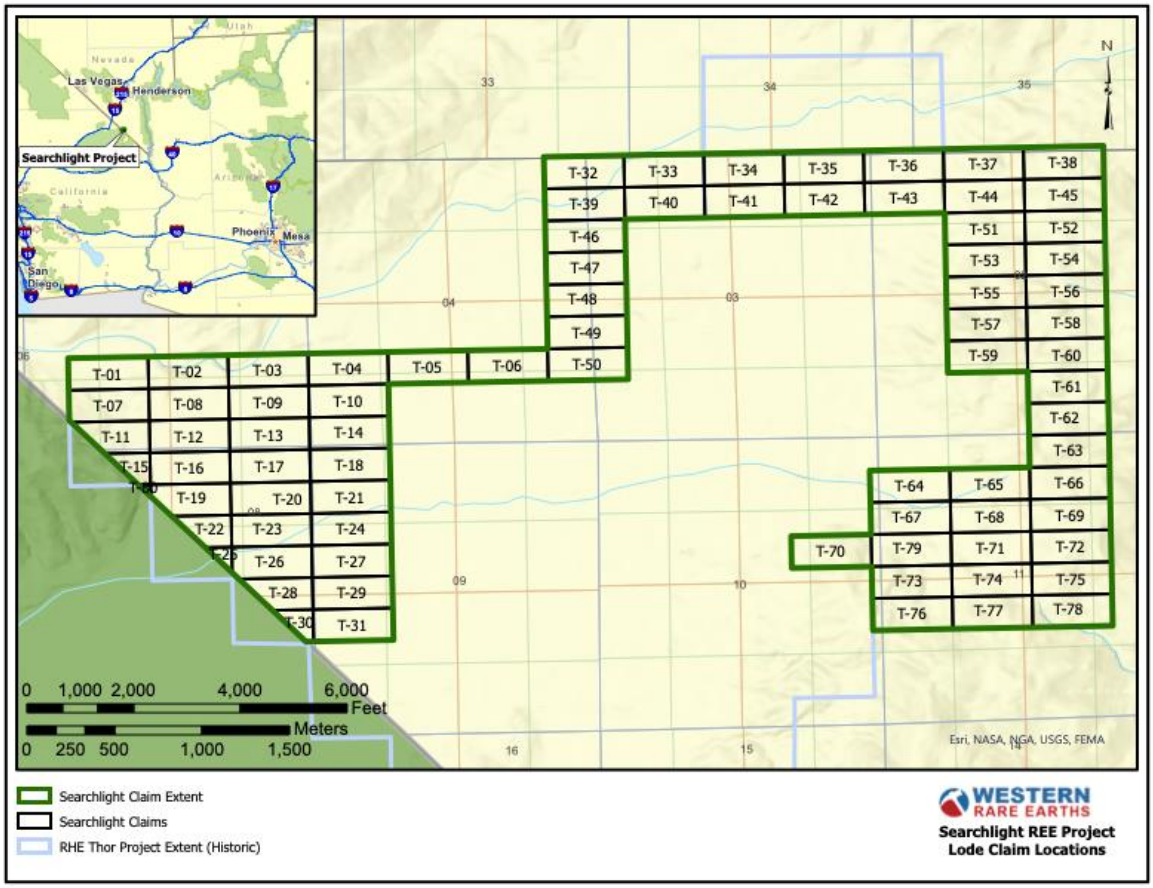
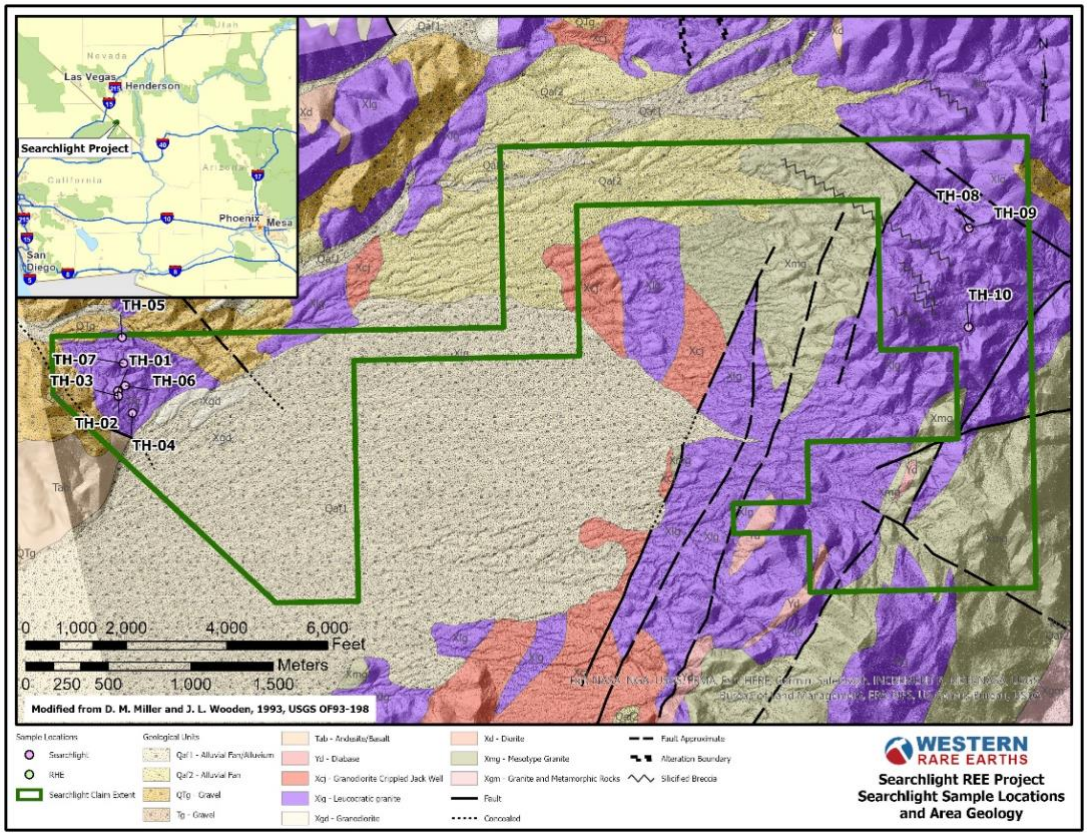


Figure 2 – Claim Locations



In December 2020, geologists from World Industrial Minerals, LLC (WIM), working on behalf of WRE, performed three days of reconnaissance geologic mapping, and collected ten surface geochemical rock samples from monazite-apatite bearing veins in biotite granite, and hornblende-biotite granite sills occurring in Early Proterozoic granites in the Crescent mining district of southwestern Nevada, see Figure 3.

Figure 3 – Sample Locations and Area Geology



REE analyses of the rock samples indicate the presence of concentrated REE, see Table 1. Hazen Research, Inc. in Golden, Colorado USA, performed the analyses of the rock samples. The analytical results for all the samples are shown below in Table 2.

Table 1 - Summary of Searchlight Rock Samples– December 2020

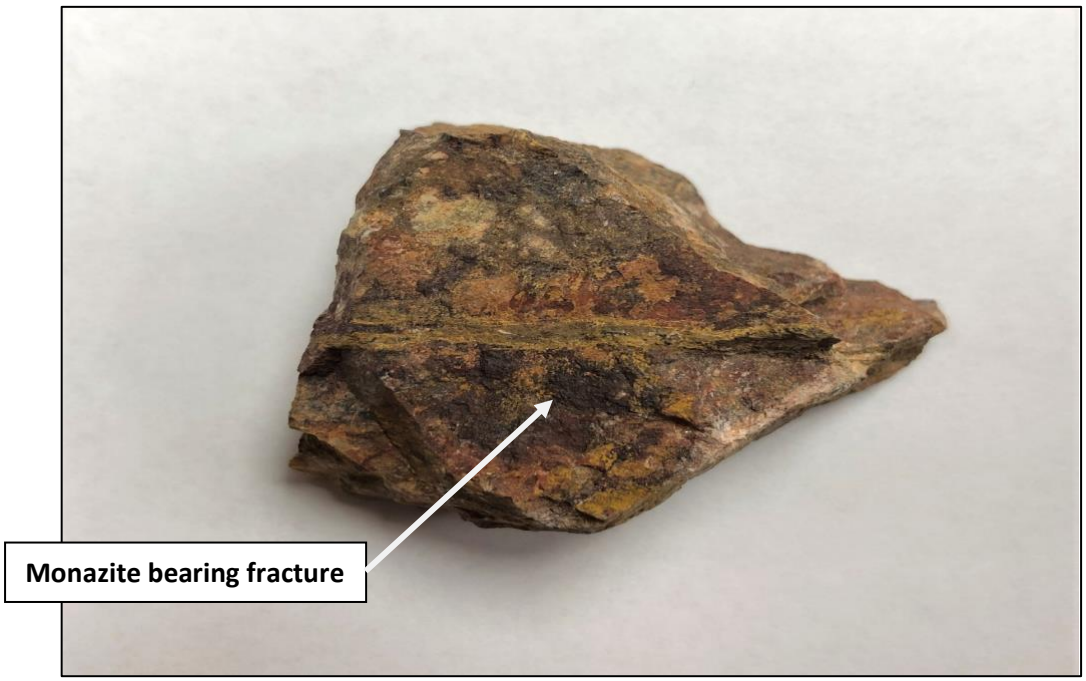
Sample_ID	Easting	Northing	TREE	HREE	Magnet Metals (Nd, Pr, Dy, Tb)	Sc	Summary Description
TH-01	665006	3923918	14800	940	3320	nd	Old trench exposure; 0.5 m chip sample across fractured granitic gneiss. Slightly altered.
TH-02	665004	3923917	330	90	20	20	Fine-grained mafic dike adjacent to sample TH-01 in old trench; 0.3 m thick
TH-03	665007	3923885	1200	60	220	nd	Fractured, slightly altered coarse-grained granitic gneiss in other old trench south of previous samples; minor slickensided surfaces, minor fault N20E. 0.4 m sample
TH-04	665092	3923782	570	30	120	nd	Float grab sample; hematite-stained granitic gneiss.
TH-05	665029	3924242	530	40	90	nd	Old road cut, poorly exposed , limonite-stained granitic gneiss.
TH-06	665049	3923948	310	10	40	nd	"typical" fresh gneissic granite; good exposure at road cut.
TH-07	665038	3924084	250	90	20	20	Dense, heavy, Fe-rich fine-grained mafic dike similar to sample TH-02; 0.5 m thick
TH-08	670161	3924906	220	20	40	nd	0.2 m zone with slightly elevated radiation in felsic gneiss with 5-10 mm quartz veinlets, strong Mn and Fe ox stain.
TH-09	670162	3924903	290	10	50	nd	Medium-grained qz-feld gneiss; character sample (grab); well-foliated.
TH-10	670160	3924304	440	40	50	nd	Small outcrop of coarse-grained hi-silica granite, only weakly foliated only; local patchy small pegmatitic zones.

Table 2 - Summary of Searchlight Rock Sample Analyses – December 2020

Element (ppm)	Western Prospect Area							Northeast Prospect Area		
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Dy	150	nd	nd	nd	nd	nd	nd	nd	nd	nd
Er	30	nd	nd	nd	nd	nd	nd	nd	nd	nd
Gd	250	nd	10	nd	nd	10	nd	nd	nd	10
Ho	20	nd	nd	nd	nd	nd	nd	nd	nd	nd
Sm	380	nd	20	nd	nd	nd	nd	nd	nd	10
Tb	30	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tm	70	90	30	30	40	10	90	20	10	20
Yb	10	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total HREE's	**940**	**90**	**60**	**30**	**40**	**20**	**90**	**20**	**10**	**40**
La	3,280	40	310	140	130	70	40	60	10	110
Ce	6,900	60	590	270	260	160	80	120	200	210
Nd	2,430	nd	170	90	70	40	nd	20	50	50
Pr	710	20	50	30	20	nd	20	20	nd	nd
Total LREE"s	**13,320**	**120**	**1,120**	**530**	**480**	**270**	**140**	**180**	**260**	**370**
Y	540	20	20	10	10	30	20	20	20	30
Total REE +Y	**14,800**	**230**	**1,200**	**570**	**530**	**320**	**250**	**220**	**290**	**440**
Sc	nd	20	nd	nd	nd	nd	20	nd	nd	nd
Thorium	1,960	10	220	110	60	40	10	30	50	60
U	nd	500	nd	nd	100	nd	600	300	nd	nd
Magnetic Ele Nd,Pr,Dy,Tb	3,320	20	220	120	90	40	20	40	50	50

In addition, the Company obtained petrographic analysis of the rock samples from DCM Science in Lakewood, Colorado USA. In summary from DCM, Sample TH-01 (aka Sample 1) "is a red colored, hard and dense granite/gneiss with areas of localized fracturing and crude banding. The rock shows significant iron staining. Microscopic Description: Major Mineralogy: Quartz 30%, Sericite 22%, Plagioclase 18%, Calcite 12%, Goethite/Hematite 12%, Monazite 3%, and Chlorite 3%. Trace Mineralogy: Rutile, Mn oxide, Leucoxene, Zircon, Calcite.", see Plate 1.

Plate 1 – Sample TH-01



Physical and analytical results from Sample TH-01 have provided direction to the Company for additional geological mapping and geochemical sampling across the Searchlight Project area.

The December 2020 mapping and sampling indicates that principal REE mineralization in the Searchlight Project area occurs as structurally-controlled, monazite-apatite vein systems. Similar REE vein deposits occur at various places in the world (Steenkampskraal REE deposit, South Africa, and Hoidas Lake, Saskatchewan, Canada).

The most important REE mineralization identified to date at the Searchlight Project area occurs in a structural zone located within the western block of claims (Western Prospect). The eastern extension of the trend is concealed by alluvial cover, which effectively masks bedrock radioactivity.

The Project appears to be a unique REE opportunity, unusually endowed with high value magnet REEs (Nd, Pr, Dy, Tb,) plus heavy REE's, that warrants further study and exploration. The initial sampling demonstrates that there is widespread distribution of significant REE mineralization. A phased exploration program is currently being developed to better define potential REE targets using detailed ground/airborne geophysics, trenching and focused sampling.

The Company, together with its wholly owned subsidiary WRE, is developing phased exploration plans to perform the following near-term tasks:

- Conduct detailed geological mapping and sampling to better delineate REE bearing vein and fracture structures to define trenching/drilling targets.
- Complete a ground/drone radiation survey over alluvial covered areas to delineate radiometric trends to define trenching/drilling targets.
- Pending these results, permit a trenching program under the less –than-5-acre NOI permitting process.
- If trenching is successful, reclaim trenches and permit a less-than-5-acre NOI drilling program.

Commenting on the recent acquisition of the Searchlight REE Project, Managing Director of the Company, Keith Middleton said:

"The Searchlight REE Project (Nevada) is the perfect complement to the Company's existing portfolio of rare earths projects in the US. The La Paz Project (Arizona) and the Laramie REE Project (Wyoming) are deposits that both offer high value magnet REEs, scandium, and potentially other critical minerals- without significant penalty elements. The robust Searchlight Heavy REE project, which also contains high value magnet REEs, is an excellent complement offering an attractive, diversified rare earths portfolio package to investors and potential offtake partners seeking REE raw materials.

"All three of the Company's projects are in mining friendly jurisdictions. Global rankings of mining jurisdictions according to the Frasier Institute have Nevada ranked as number one and Arizona ranked as number two for 'Overall Investment Attractiveness for mining'; and Arizona ranked number one and Nevada ranked number two for 'Mineral Potential'.

"Wyoming, historically known for robust oil, gas and coal production, sees the REEs as the future of the resource economy of the state. The Biden Administration, and other western leaders, have prioritised the need for REEs to be sourced from responsible and secure supply chains- excluding China.

The Company continues to position itself well as we advance the projects toward its main goal of increasing enterprise value for investors," concluded Keith Middleton.

This market announcement has been authorised for release to the market by the Board of American Rare Earths Limited.

Keith Middleton

Managing Director

This ASX announcement refers to information extracted from market announcements, which are available for viewing on ARR's website **https://americanrareearths.com.au**

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

Competent Persons Statement: The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr. Jim Guilinger. Mr. Guilinger is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc). Mr. Guilinger is Principal of independent consultants World Industrial Minerals LLC. Mr. Guilinger has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking 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. Guilinger consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

APPENDIX A

JORC Code, 2012 Edition – Table 1 Searchlight Rare Earths Project

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *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.*	• Individual grab rock samples and were collected by hand at the surface, from in-situ outcrops. • Grab samples are believed to be representative of the outcrops they came from • 1-2kg rock samples were collected by a geologist, samples were broken using a hammer from outcrop. Rock samples were crushed in the laboratory and then pulverized before analysis.
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, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• No drilling
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• No Drilling

Criteria	JORC Code explanation	Commentary
Logging	• *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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Rock samples were geologically described and photographed. • No logging
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• No Drilling • Samples were analyzed at Hazen Laboratories in Golden Colorado, the samples were crushed, pulverized and assayed by ICP-ME MS81 for REE • ~2kg of rock was crushed and pulverized and a subsample was taken in the laboratory and sent for analysis. • Grab sampling was selective based upon geological observations. • Each sample was 1kg to 2kg in weight which is appropriate to test for grain size of material.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *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.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The samples were crushed and assayed for 34 elements by fusion ICP-MS. The procedure will report near total results. • No geophysical tools used in the sampling program. • Internal laboratory standards were analysed with rock samples.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Consulting company personnel have observed and collected the assayed samples. • No Drilling • Field data were all recorded in field notebooks and sample record books and then entered into a digital database. • No Adjustments were made.
Location of data points	• *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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Sample location is based on GPS coordinates +/- 5m accuracy. • The grid system used to compile data was NAD83 Zone 12N. • Topography control is +/- 10m
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• Both randomly spaced surface chip sampling • The data alone will not be used to estimate mineral resource or ore reserve • None
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *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.*	• Rock samples were taken of selected outcrops that were considered representative of varying rock types. • No drilling
Sample security	• *The measures taken to ensure sample security.*	• Samples were kept in numbered bags until delivered to the laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Sampling techniques are consistent with industry standards.

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	• *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.*	Western Rare Earths Project Acquisition –81 Unpatented mining claims on BLM US Federal Land totalling approx. 1620 acres were staked in the Searchlight Project Area. The claims are 100% owned by WRE (100% owned ARR subsidiary).
	• *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.*	No impediments to holding the claims exist. To maintain the claims an annual holding fee of $165/claim ($13,365) is payable to The BLM.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Sampling in the region was completed by Elissa Resources Ltd on adjacent mining claims controlled by Red Hill Energy.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The deposit is within veins/veinlets in pre Cambrian granites/gneisses. REE elements are hosted in monazite, and apatite which is found in veins and veinlets within the granites/gneisses.

Criteria	JORC Code explanation	Commentary

Drill hole Information	• *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:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *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.*
		• No Drilling

Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No high-grade cutting • No aggregation used • No metal equivalents used
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• No Drilling • No Drilling • No Drilling
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.*	• See maps in body of Report discussing "claims staked" and "sample locations"

Criteria	JORC Code explanation	Commentary
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.*	• Total REE's range in samples: 14,800 – 220ppm; HREE's: 940-20ppm See Figures in report for sample site locations and assay values.
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.*	In hand specimen this rock is a red colored, hard and dense granite/gneiss with areas of localized fracturing and crude banding. The rock shows significant iron staining. Microscopic Description: *Major Mineralogy: Quartz 30% Sericite 22% Plagioclase 18% Calcite 12%* *Goethite/Hematite 12% Monazite 3% Chlorite 3%* *Trace Mineralogy: Rutile, Mn oxide, Leucoxene, Zircon, Calcite,*
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).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further mapping and sampling is planned leading to drill targets.

Note that Sections 3 and 4 are not relevant for any reporting for this early-stage exploration Project

2021 Technical Report on the Nevada Searchlight Rare Earths Project

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CONTENTS

FIGURES

1. SUMMARY

A geological review and sampling program of the Searchlight Property, a REE exploration project, located in Clark County, Nevada (Figure 1-1) was completed on behalf of American Rare Earths Ltd. (ARR). The Company currently trades on the Australian Stock Exchange (ASX) under the symbol ARR.

The Searchlight REE Project is an exploration project located in a precious metal mining district in the eastern Mojave Desert Region about 119 kilometers south of Las Vegas and 30 kilometers east of the only operating Rare Earths mine in North America at Mountain Pass (Figure 1-1). It consists of 80 contiguous unpatented lode mining claims totaling 1620 acres (656 has) staked in early 2021. These claims are 100% owned by the company Western Rare Earths (WRE), a US subsidiary of ARR. The area is readily accessible by road, with climate and terrain favoring year-around exploration activities. There are no apparent environmental issues of serious concern.

The old mining district in which the Searchlight Project is located was variously explored and mined for precious metals and turquoise in the early 1900s, but it was not an important producer. Some exploration was done in modern times for porphyry copper and detachment-related gold by major companies, but no significant discoveries were made. During the 1950s uranium prospecting rush, a significant number of REE-thorium occurrences were discovered in the district and in adjacent areas. Some of these were variously explored, but apparently none were mined. The district has received little attention since. The eastern Mojave Desert Region is extensively underlain by Precambrian age rocks that host one of the world's largest and richest REE deposits; the Mountain Pass mine located 30 kilometers west of the Searchlight Project area and an abundance of other REE occurrences throughout the region, including the La Paz Rare Earth Project 250 kilometers to the South. Most of these have been identified by prospecting with radiation detectors because REE minerals are often associated with thorium (Th), a naturally-occurring radioactive element. In the Searchlight Project area, zones of anomalous radioactivity are typically marked by old prospect workings, many of which contain anomalous to significant amounts of REE.

The best sample assay (in ppm) on the project is summarized as follows:

- **TREE : 14,800**
- **HREE : 940**
- **Magnet Minerals : 3,320**

The Precambrian rocks in the Searchlight Project area are predominantly intrusive igneous rocks of Early Proterozoic age. The most abundant rock is biotite-bearing, light-colored granite that is locally cut by pink granite and pegmatites. The bedrock also includes large areas of dark-colored biotite granite and hornblende-biotite granodiorite, which may represent sills, sheets or elongate plutons that are interlayered with the pink granite and pegmatite bodies. REE mineralization appear most abundant near or along contacts of light-colored granitic rock bodies with dark-colored, biotite-rich rock bodies.

Recent mapping and sampling by ARR indicates that the principal REE mineralization in the Searchlight Project area occurs as structurally-controlled, monazite-apatite vein systems. Similar REE vein deposits of economic importance occur at various places in the world. They are typically not very large but they can be very rich and they often contain significant amounts of the especially valuable heavy REE (HREE). Examples include the Steenkampskraal deposit in South Africa, probably the highest-grade REE deposit in the world

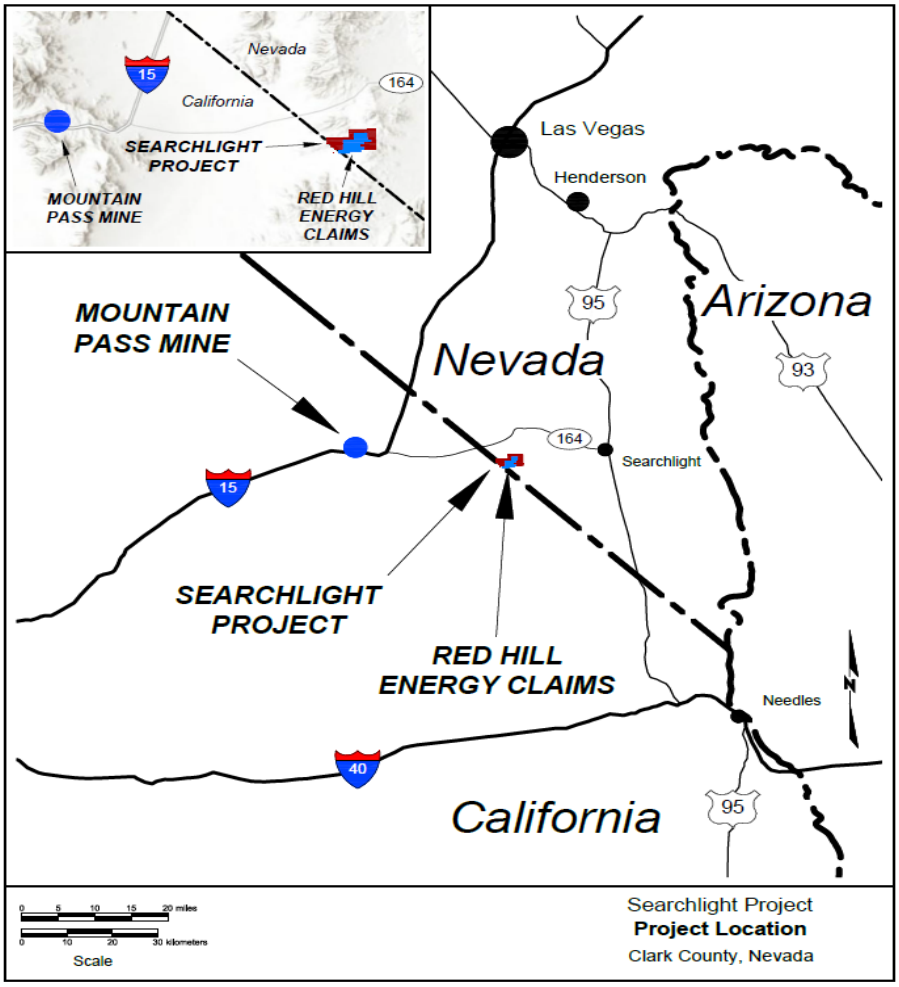
(17% REE-oxide), consisting of a narrow vein that extends only 400 meters or so along strike and the Hoidas Lake deposit in Saskatchewan, averaging about 2.05% REE in narrow veins over a strike length of 475 meters.

The most important REE mineralization identified to date in the Searchlight Project area occurs in a structural zone located within the western block of claims (Western Prospect). Seven samples were collected from this area of heavily iron stained and fractured granite/gneiss. The eastern extension of the trend is concealed by alluvial cover, which effectively masks bedrock radioactivity. Exposures are mainly limited to old prospect workings or outcrops. Where exposed, the fractured intrusive body itself is often anomalously radioactive, due to mineralization within these fractures. An additional three samples were collect further to the east on the claims from an area of anomalous radioactivity.

The Searchlight Project appears to be a unique REE property unusually endowed with heavy REE's that warrants further study and exploration. The initial sampling demonstrates that there is widespread distribution of significant REE mineralization. A Phase I exploration program is recommended to better define potential REE targets using detailed ground/airborne geophysics, trenching and focused sampling.

The completed JORC Table 1 included in this report is located in Appendix A.

Figure 1-1 General Location Map



2. INTRODUCTION

2.1 Terms of reference

The Author will be paid a consulting fee for the preparation of this Report. This will be comprised of a daily fee plus reimbursement of out-of-pocket expenses. Receipt of this payment is not contingent upon the conclusions of this Report or the success of any potential share offering.

All measurements herein will be given in Metric system units (meters, metric tons, degrees centigrade etc.) except where designated in Imperial units. All currency values are in United States Dollars except where designated otherwise.

Abbreviations

^{O}C	Degree Celsius
^{O}F	Degree Fahrenheit
ASX	Australian Stock Exchange
ATV	All-terrain vehicle
BLM	Bureau of Land Management
cm	centimeter
ft	Foot
’	Feet
g	Gram
g/t	Gram per ton
ha	Hectare
HREE	Heavy Rare Earths Elements
kg	Kilogram
km	Kilometer
Ltd	Limited
m	Meter
mm	Millimeter
mt	Metric ton
NV	Nevada
ppm	Part per million
REE	Rare Earths Element
st	Short ton
t	Metric ton
TREE	Total Rare Earths Elements
TREO	Total Rare Earth Oxides
USGS	United States Geologic Survey
yr	Year

2.2 Purpose of Report

The purpose of this report is to provide American Rare Earths LTD. (ARR) its investors and potential investors with a clear summary of the Company’s Property assets. Included in this summary are recommendations for further exploration.

2.3 Sources of Data

The data in this Report comes from multiple sources. All of the data and information supplied are legal property of the Company. Chiefly, data was extracted from historic reports written on the adjacent Red Hills Energy property by geologists employed by Elissa Resources Ltd.

The Author has reviewed, verified, interpreted and analyzed all of the data presented in this Report. The Author has also relied on reports referenced in Section 27.

It is believed that the underlying information contained herein is reliable, based on the systematic data verification procedures (including field examination of pertinent geologic features) performed by the John Keller, Senior Exploration Geologist for World Industrial Minerals.

Reliance has been on the following key reports:

Curt Hogge, et.al., 2010, Thor REE Project Update, Clark County, Nevada, USA: NI-43101 Published Report.

Bruns, JJ, 2011, Rare Earth Mineralization Southern Clark County, Nevada, Senior Thesis, Cal State Polytech-Pomona CA.

The results and opinions expressed in this Report are conditional upon the aforementioned technical and legal information being current, accurate and complete as of the date of this Report and the understanding that no information has been withheld that would affect the conclusions made herein. The Author does not assume responsibility for Company's actions in distributing this Report.

The Author therefore cannot guarantee the correctness of all of the information but, to the extent of his investigation and within the scope of the assignment, he believes that the Report is substantially correct.

2.4 Disclaimer

The herein proposed exploration is designed to identify additional rare earths mineralization within Proterozoic granites identified from mapping. It is herein stated that by completion of the proposed exploration program success is not assured.

3. RELIANCE ON OTHER EXPERTS

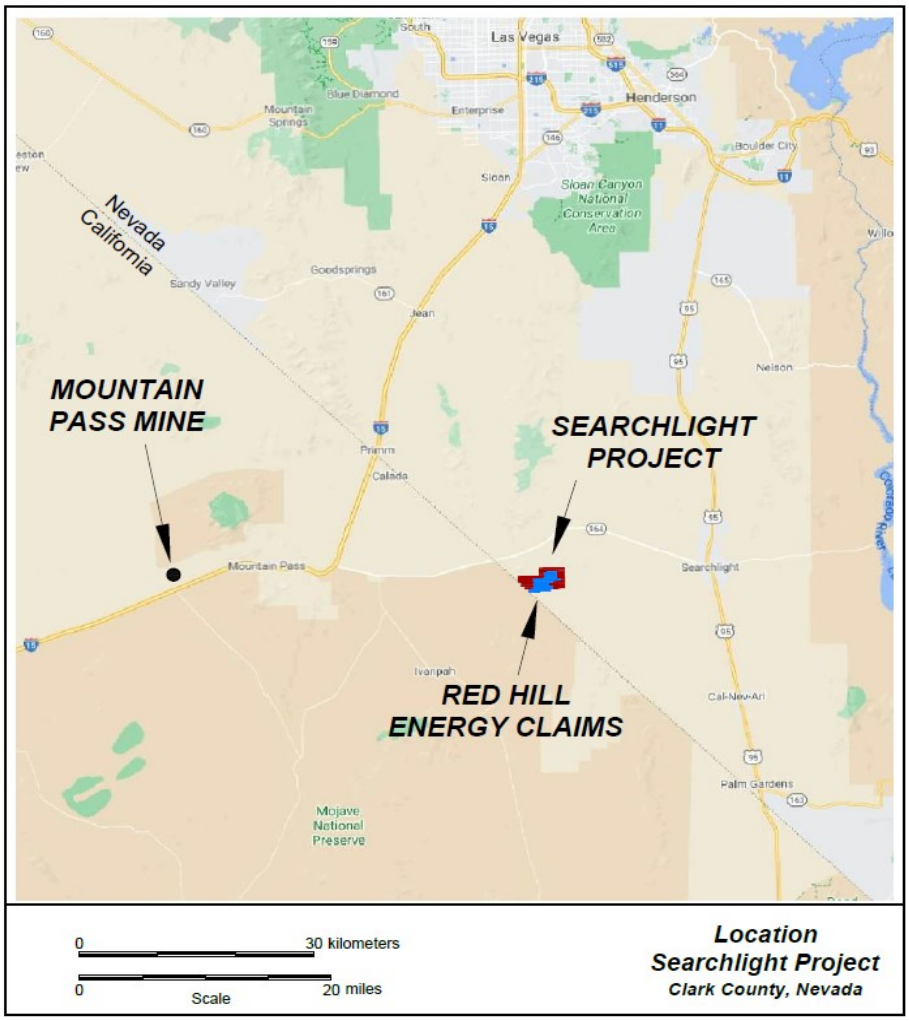
This is an early stage exploration project. No outside experts were consulted for this project.

4. PROPERTY DESCRIPTION AND LOCATION

The Searchlight REE Project is in the Crescent Mining District in southwestern Clark County, Nevada, approximately 74 miles (119 km) south of Las Vegas, a very sparsely populated area in the Eastern Mojave Desert Region (Figure 4.1) of the southwestern United States. The project lies about 20 miles (32 km) west of the Searchlight Mining District in southern Nevada and 19 miles (30 km) east across the Ivanpah Valley from the well-known Mountain Pass REE Mining District in eastern San Bernardino County, California.

The project is comprised of 80 contiguous unpatented lode mining claims (Figure 2) totaling 1617.9 acres (656 has). The claim block lies within the US Geological Survey 7.5-minute (1:24,000 scale) Crescent Peak and Hopps Well topographic quadrangles and includes all or portions of Sections 2,3,4,5,8,9,10,11 of R61E, T28S (Figure 4.2.)

Figure 4-1 General Location Map



4.1 Unpatented Claims

The Property consists of 80 unpatented lode mining claims totaling approximately 1618 acres (654 has). The claim block lies within the US Geological Survey 7.5-minute (1:24,000 scale) Crescent Peak and Hopps Well topographic quadrangles and includes all or portions of Sections 2,3,4,5,8,9,10,11 of R61E, T28S. The claims are listed in Appendix B. Figure 4-2 shows the shows the location of the unpatented claims.

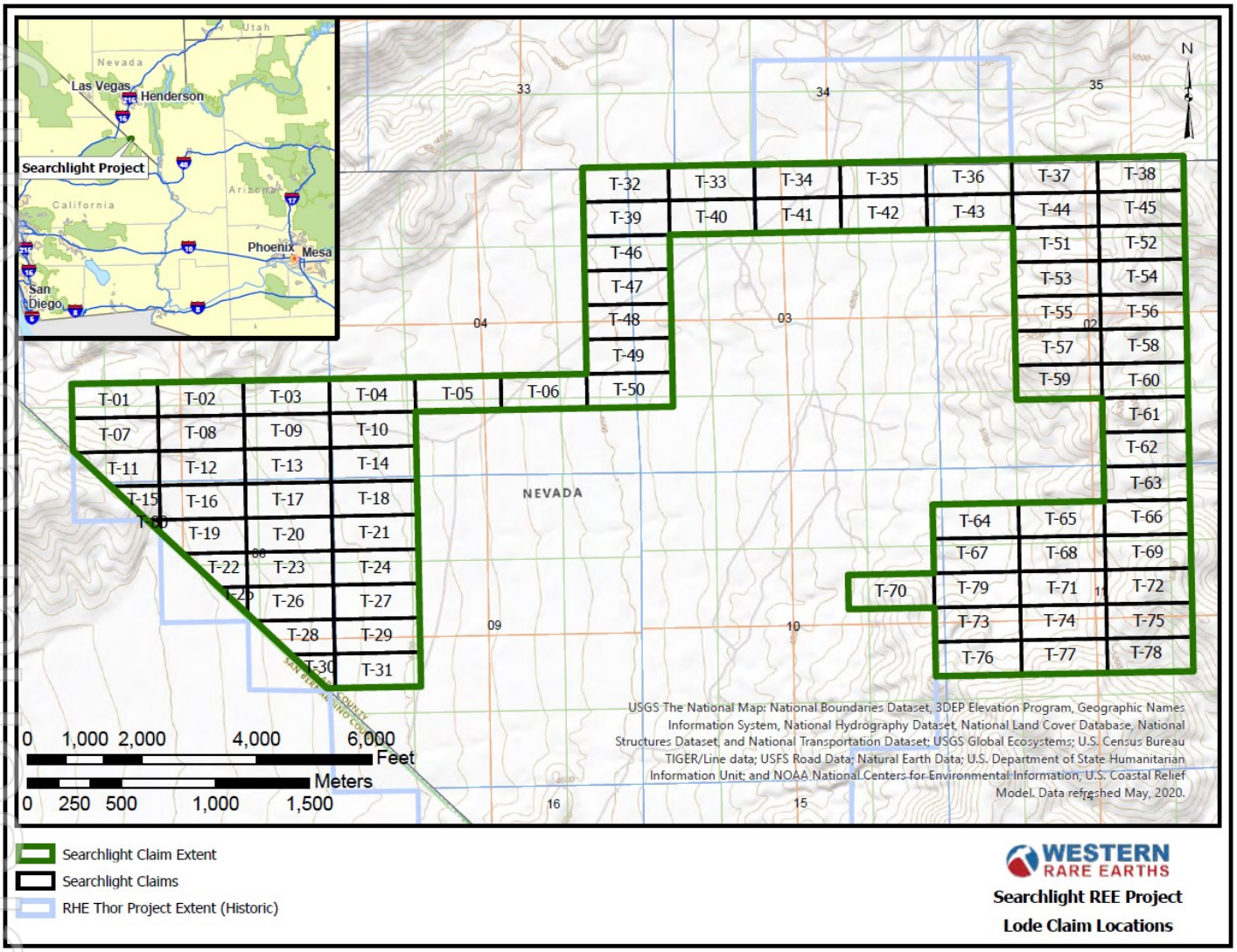
The unpatented lode mining claims are located on United States Federal land and administered by the U. S. Bureau of Land Management (BLM). A lode mining claim consists of 20.66 acres (8.57) has) and their locations staked in the field and located on a map. Once the staking is complete, the claims are filed with the State of Nevada BLM office and a $212 per claim filing fee is paid.

The claims can be held in perpetuity provided an annual claim holding fee of $165 per claim is paid on or before September 1 of each calendar year the claims are held. Failure to pay this annual holding cost or paying late will result in the voiding of the claim. Additionally claims must be recorded annually in the County in which they were staked. All claims are located in Clark County, Nevada.

Once claims are staked and fees paid, the claim holder has a right of access on the claims and the right to explore once all required exploration permitting requirements is met. Other than the right to explore and develop the claims for their mining content, the claim holder has no other rights to the property.

Other than failing to pay the annual holding costs or paying late, which results in the voiding of the claims, there are no other significant factors and risks discussed in this report that may affect access, title, or the right or ability to perform work on the property.

Figure 4-2 Searchlight Project Area Showing Unpatented BLM Claims



4.2 Claim and State Exploration Permit Holding Costs

The annual claim holding costs are $165 per claim payable to the BLM. For the following period through August 31 2022 the annual holding cost would total $13,200 for the 80 claims. Clark County Notice of intent to hold filing fees would total $25/claim or $2,000 annually.

4.3 Company Interest

ARR has a 100% interest in the mining claims.

4.4 Encumbrances

There are no encumbrances associated with the mining claims.

4.8. Environmental Liabilities

There are no environmental liabilities associated with the mining claims.

4.9 Permitting

Limited areas of the claims will permitted for trenching/core drilling under the 5 acre NOI (Notice of Intent) permitting procedure in the near future.

5. ACCESSIBILITY, CLIMATE, INFRASTRUCTURE AND PHYSIOGRAPHY

The Searchlight Project is in the southwestern United States in the eastern part of the Mojave Desert Region. It is located in southwestern Clark County in southern Nevada, very near the California state line and is approximately 47 air miles (76 km) due south of Las Vegas, the largest city in the region. Access from Las Vegas is via U.S. Highway 95 for 54 miles (87 km) south-southeast to the small old mining town of Searchlight, Nevada, then west via Nevada State Highway 164 for 15 miles (24 km) and then 5 miles (8 km) south-southeast on a series of unpaved all-weather roads.

The project is located at the south edge of the Crescent Peak Range along the west flank of the New York Mountains, with part of the project flanking the broad Ivanpah Valley which extends westward into California. The terrain is typical of the eastern Mojave Desert Region and is part of the Basin and Range Physiographic Province, consisting of rugged hills ranging from 3,900 to 5,900 feet (1,200 to 1,800 m) in elevation and separated by broad basins ranging from 2,900 to 3,900 feet (900 to 1,200 m) in elevation.

The climate is arid desert with two seasons: a wet cool winter and a dry hot summer. The main period of rain occurs between December and March with some electrical storms during the later summer months. Annual rainfall averages 4.5 inches (11 cm) per year and temperatures range from 69°F to 104°F (21°C to 40°C) during summer and 37°F to 69°F (3°C to 21°C) during winter. The prevailing vegetation consists of mesquite and acacia, with creosote bush, white bursage and galleta grass in the basins and Mojave Desert forbs, shrubs and succulent plants, including abundant Joshua trees, yucca and other cacti, in the hills.

Historically, the local economy was largely dependent on mining, with a number of small mines.

Today, the local economy is based largely on tourism and ranching, but experienced labor capable of fulfilling short-term mineral exploration or development needs still exist in the local community. Las Vegas (pop. 1.8 million; 74 miles from the project by road) offers full service facilities and daily commercial air flights to major American cities. The town of Searchlight (pop. 1,088; 20 miles east by road) offers modest facilities including food, lodging and fuel. Cell phone coverage is available throughout most of the area, including much of the Searchlight claim block.

The project is located on public lands administered by the U.S. Bureau of Land Management (BLM) which are open for public access and mineral claim staking. Mineral exploration, development and other operations that create surface disturbances require permitting by the BLM.

Major power lines cross the area about 2 miles (3.2 km) northwest of the claim block. Known water on the claims is located at the Cripple Jack Well, in the northern part of the claim block. This water was formerly used by local ranchers for livestock. Experienced mining people reside in the nearby communities of Searchlight, Nevada and Mountain Pass, California. There are acres of flat basin terrain on the claims and adjacent public land, offering potential sites for future mill sites, tailings storage, waste disposal, leach pads and other processing facilities. In the past, the BLM has commonly permitted this type of Infrastructure.

6. HISTORY

6.1 Searchlight Project Area

The Searchlight Project is in the southern part of the Crescent Mining District (Figures 4.1, 4.2)

Gold and silver were discovered in the district in the early 1900s, with ensuing periods of mining activity in 1905-1907, 1911, 1930 and 1934-1941. Principal producers were the Nippeno, Big Tiger, Calavada (Lily) and Double Standard mines. Total production is unknown but likely small, possibly only about US$62,000 (Longwell, et al., 1965). In more recent times, the district has been intermittently explored by various individuals or companies searching for gold, silver, copper, lead, molybdenum, vanadium and uranium. Kennecott in the early 1950s identified Crescent Peak as a possible porphyry Cu-Mo system and drilled three exploration holes in 1954. The same target was later examined by a number of other companies, including Utah Construction (Utah International), American Smelting and Refining, Homestake (in 1962) and U.S. Borax (late-1970s). No further work has since been done on this copper target.

During the 1980s into the 1990s, Tenneco Minerals and several other large companies intermittently explored the area for various types of gold deposits, including detachment fault-related gold, but no serious discoveries were made. In 1988, platinum group metals were detected from base metal-bearing samples taken from the flank of Crescent Peak (Lechler, 1988), but this occurrence has received no further attention.

During the 1950s uranium prospecting rush, the district received some attention for uranium and thorium. Occurrences of radioactive minerals, mainly thorium with associated rare earth elements (REE), were discovered at the Thor Claim, southwest of Crescent Peak and in an area 3 miles south of Crescent Peak extending southward into California. Examinations by U.S. Atomic Energy Commission (AEC) geologists in 1955 reported a sample from the Thor Claim with 0.15% ThO_2 and 1.54% REE and a sample from the "Prospectors Uranium Claim, No. 1-20" south of Crescent Peak as containing 0.874% U3O8, 0.63% ThO2 and 6.81% rare earth oxide (REO). The abundance of the Precambrian REE deposits around the Ivanpah Valley along the Nevada-California border (which includes the Crescent Peak District and Searchlight Project area) was interpreted by Volborth (1962) as representing "a rare-earth province." During the mid -1970s to early 1980s, a broad-scale airborne radiometric survey was flown over the Mojave Desert Region as part of the NURE Program (National Uranium Resources Evaluation) by the U.S. Department of Energy. Contoured plots of K (potassium), Th, and U data from this survey, compiled by Duval (1990), reveals the presence of a very large Th (thorium) anomaly over an area that includes the Searchlight Project, with a smaller anomaly centered over the Mountain Pass REE district.

In 2010 Elissa Resources as part of their regional evaluation program conducted for Red Hill Energy sampled the Western Prospect Area of the Searchlight near ARR sample Th-1 with the following results in ppm:

Red Hill Sample #	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	TREE
BK-36	2960	6270	635	2370	346	2.7	251	28.9	126	17.9	33	2.7	10.7	1.17	424	**13,479**

6.2 Historic Production

There has been no production of REE's in the Searchlight Project Area.

6.3 Historic Mining

There has been no mining of REE's in the Searchlight Project Area.

6.4 Historic Processing

There has been no processing of REE's in the Searchlight Project Area.

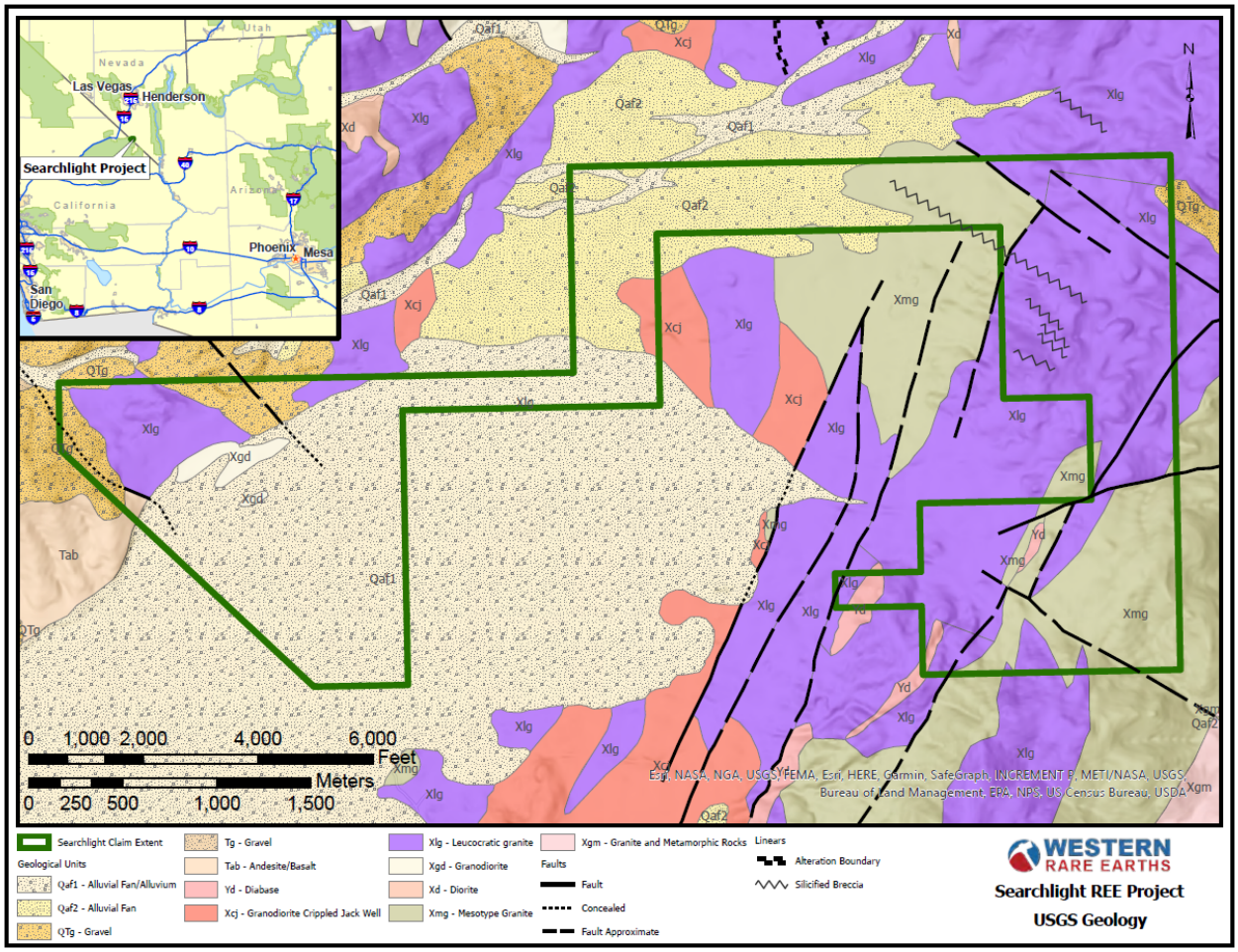
7. GEOLOGIC SETTING

7.1 Regional Geology

The Searchlight project area lies within the eastern Mojave Desert geologic terrane, a part of the vast Basin and Range Physiographic Province that dominates much of the western United States (Figure 7-1). The eastern Mojave region is underlain predominantly by Precambrian crystalline basement rocks that represent the western margin of the North American craton during Early Proterozoic time, 1600 to 2500 Ma (million years ago). These rocks received little study until recently and are now recognized as being chemically and chronologically anomalous compared to other Proterozoic age crustal rocks in the western United States (Miller, et.al, 2007). The Proterozoic history of the region is dominated by an 1800 Ma sedimentary and volcanic rock complex that was intruded and metamorphosed at 1760 Ma and 1730 Ma, metamorphosed again about 1700 Ma by the Ivanpah Orogeny and intruded again from 1690 to 1670 Ma by granitic bodies along a north-south zone in the New York and McCullough Mountains. Subsequent geologic events include the formation of mylonite, Middle Proterozoic intrusions at 1400 Ma and diabase sheet intrusions at 1100 Ma (Miller and Wooden, 1994).

At the beginning of Paleozoic time (542 Ma), the eastern Mojave Desert Region stood well above sea level and was deeply eroded. It slowly sank and became part of the continental-scale Cordilleran Geosyncline trough into which large volumes of near-shore and offshore marine sediments were deposited during early Paleozoic time. Later the region was uplifted and deformed by the late-Paleozoic Antler Orogeny (about 359 Ma) and the successive Sonoma, Nevadan and Laramide orogeny's during mid-Mesozoic to early-Cenozoic time. Various events of compression, plutonism, uplift, volcanism, extensional faulting and erosion accompanied these orogenic events.

Figure 7-1 Regional Geology of the Searchlight Project Area



7.2 Searchlight Property Geology

The Searchlight Project claim block lies south and southeast of Crescent Peak, covering the western flank of the New York Mountains and extending westward into a broad alluvial-filled valley that is a part of the very large Ivanpah Valley which dominates the California part of the region to the west (Figure 7.2). The thickness of the fill in the Thor alluvial valley is unknown but is probably relatively thin as Proterozoic bedrock locally surfaces at several outcrops within the valley. The predominant bedrock is an Early Proterozoic (1672–1695 Ma) equigranular leucocratic granite that contains variable amounts of biotite. The granite is potassium-rich (>5% K_2O), not conspicuously foliated and is locally cut by slightly younger pink granite and pegmatites. The bedrock also includes large areas of mesocratic (dark-colored) gray biotite granite and porphyritic hornblende-biotite granodiorite. The mesocratic biotite granite (compositionally a biotite monzonite or granodiorite) may be a phase of the leucocratic granite. It is commonly crudely foliated or layered and locally contains abundant wallrock fragments and large swirls of biotite (up to 25%). The mesocratic hornblende-biotite granodiorite, which is apparently the youngest phase (1659 Ma) of the Early Proterozoic intrusive complex, occurs mainly on the northwest down-faulted side of a series of NNE-SSW trending faults in contact with the slightly older leucocratic granite body on the southeast up-faulted side of the fault zone.

7.3 Mineralogy

DCM Science, a petrographic laboratory located in Lakewood Colorado USA was commissioned to determine the mineralogy and rare earth association with a high grade REE sample (TH-01) collected on the western portion of the claim block. The sample was prepared as a standard polished thin section for study by reflected polarized light microscopy (RL) and transmitted polarized light microscopy (PL). A color photomicrograph is included to document relevant features.

The detailed mineralogy is listed as follows:

TH-01

In hand specimen this rock is a red colored, hard and dense granite/gneiss with areas of localized fracturing and crude banding. The rock shows significant iron staining.

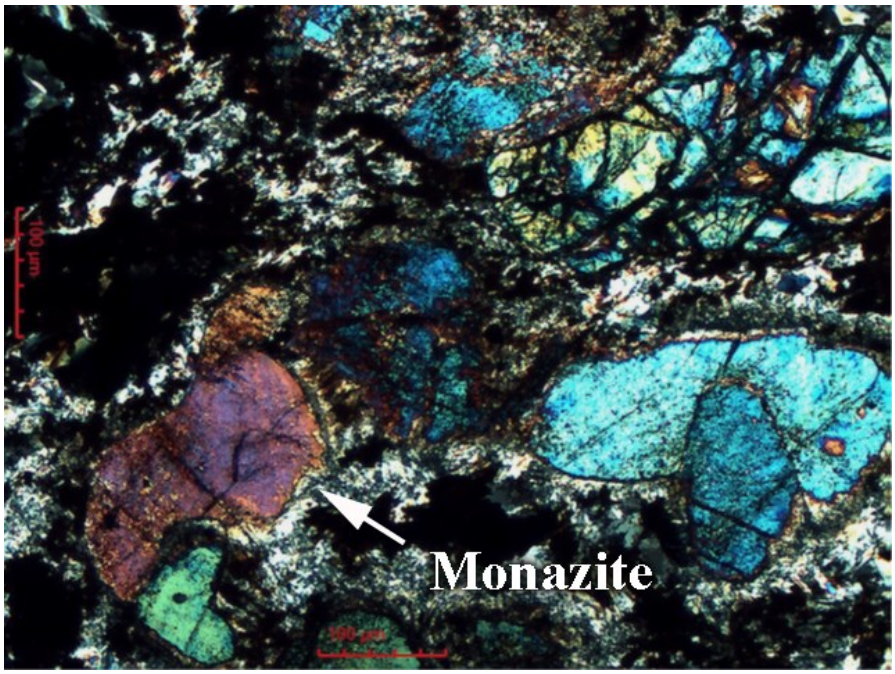
Microscopic Description:
Major Mineralogy: Quartz 30% Sericite 22% Plagioclase 18% Calcite 12%
Goethite/Hematite 12% Monazite 3% Chlorite 3%

Trace Mineralogy: Rutile, Mn oxide, Leucoxene, Zircon, Calcite,

In thin section the rock is primarily composed of hard silicates. Plagioclase in the form of albite is the only feldspar identified. The albite occurs as anhedral coarse grains with measurements that vary from 100µm to over 1mm. Individual grains show a high degree of fracturing and approximately half of the albite shows moderate to strong sericitization. Mixed with the sericite is red/yellow hematite/goethite. Iron oxide also occurs as thick patches and as fracture filling. Carbonate assumed to be calcite is present in significant amounts and occurs as secondary fracture filling and fine grained patches with sericite. Quartz is the dominant hard silicate and occurs as single rounded grains and aggregates showing a mosaic texture. Individual quartz grains vary

significantly from 10µm to 300µm in size. Monazite is the only rare earth phase identified in the sample and occurs as anhedral grains along fractures with quartz, books of green chlorite and calcite. Individual grains vary from 10µm up to 700µm in size. Aggregates of monazite measure several millimeters. Accessory minerals include small yellow grains of rutile, leucoxene, zircon and rare clots of Mn oxide.

Hand Specimen showing a rusty color and fracture filling



Several bright colorful grains of monazite with iron oxide and sericite – 100X PL

7.4 Mineralization

Based on the WRE sampling, petrographic studies and literature review of REE mineralization in the area rare earths are associated with various phosphate minerals - monazite, apatite and xenotime. These REE enriched minerals occur as fracture filling, veins and veinlets based on WRE sampling completed to date. A literature review of REE occurrences in the area indicates these minerals can also be found as disseminations in biotite rich intrusive rock; in pipes and in fault structures. More detailed sampling and mapping of the Searchlight property is necessary to delineate more areas of REE mineralization.

8. DEPOSIT TYPE

Rare earth metals are naturally occurring components of the earth but seldom if ever found in pure form. They are chemically active and readily bond with oxygen and other metals, or substitute for other metals to form complex minerals. The principal concentrations of rare earth elements are associated with relatively uncommon varieties of igneous rocks such as alkalic rocks and carbonatites. The nearby Mountain Pass REE mine is a carbonatite hosted REE occurrence, for example.

The Crescent District contains many old base and precious metals mines and prospect workings. Currently, the only deposit types of immediate interest in the Searchlight Project area are the abundant rare earth elements occurrences.

The reported and documented REE occurrences in the Searchlight Project area are of interest to WRE because: (a) REE are valuable for numerous vital and irreplaceable uses in various high-tech applications and (b) REE are expected to be in short supply due to the recent announcement by China – which now refines about 97% of the world's REEs and mines about 60% of the world's REE's– that its future exports of REEs may be greatly curtailed. (USGS Mineral commodity Summary 2021)

Rare-earth elements, including yttrium – which is classed with REE because of chemical similarities and geochemical affinities –Because of the close association of REEs with natural radioactive elements, radiometric surveys using various types of radiation detectors, such as scintillometers or geiger counters, are commonly used to help locate REE mineralization. The nearby Mountain Pass, California, REE deposit, for example, was discovered during surface prospecting for uranium in the early 1950s using a geiger counter (Olson et al., 1954).

Recent geological mapping and sampling by WRE at Searchlight indicates the presence of structurally-controlled REE-bearing monazite-apatite (±xenotime) vein deposits of potentially significant size and tenor. Additionally, based on literature review of REE prospects in the area, there is potential for the occurrence of disseminated REE mineralization hosted in pipes and intrusives.

Structurally-controlled REE-bearing vein deposits of potential economic importance occur at various places in the world. These vein systems are typically not very large, but they can be very high grade. Additionally, they are often dominated by the REE-bearing phosphate minerals monazite, xenotime and apatite, minerals that often contain significant amounts of the especially valuable heavy rare earth elements (HREE). Two examples of currently important REE-bearing vein deposits are summarized below:

Steenkampskraal REE deposit, South Africa – The monazite-apatite vein system at Steenkampskraal hosts perhaps one of the highest grade REE deposits in the world with a grade of 17% total REO (rare earth oxide). It also contains significant amounts of thorium (which has been mined intermittently since the late-1950s), copper and gold. Hosted by Proterozoic age granite, the largest vein extends 400 m (1,300 ft.) along strike at the surface, 450 m (1,480 ft.) down-dip at depth and averages 0.5 m (1.6 ft.) in width. It is parallel to a sheared cuspate anticline, at the core of which quartz diorite and leucocratic quartz diorite are found in direct contact with the vein (Andreoli et al., 1994).

Hoidas Lake, Saskatchewan, Canada – Numerous REE-bearing apatite-allanite±monazite veins occur in a 60 m wide vein system along fractures/faults related to a large fault/shear zone (Harvey et al., 2002). The veins are hosted by Archean or Early Proterozoic age granitic and quartz diorite gneisses that intrude amphibolite and

which are in turn intruded by garnet-bearing diorite gneiss and granitic pegmatite. Exploration has focused on a 475 m (1,560 ft.) long zone of veins with widths of 5 m (16 ft.) or less that contain an average of about 2.05% total REE (Great Western Minerals website, September, 2010). The deposit is unusual in that it has one of the highest proportions of neodymium (Nd) of any known REE deposit in the world.

9. EXPLORATION

In December 2020, John Keller, senior geologist for World Industrial Minerals on behalf of WRE, completed a sampling program on the Searchlight Rare Earths Prospect located in Clark County, southern Nevada. A total of 10 samples (see Appendix C for Hazen Assay Report) were collected:

- Seven (7) in the western prospect area
- Three (3) in the northeast portion of the project area

Reconnaissance sampling completed previously by Elissa Resources showed the following assay results in an old trench (same area as ARR sample TH-01) exposure:

Red Hill Sample #	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	TREE
BK-36	2960	6270	635	2370	346	2.7	251	28.9	126	17.9	33	2.7	10.7	1.17	424	**13,479**

This good assay result (from sample site BK-36) located on lands open for staking plus good assay results in the follow up sampling by John Keller in this Western Prospect Area led to the decision to stake the open ground in early January 2021.

Sampling

The sampling was guided by use of a Personal Radiation Detector (PRD) Model 1500 equipped with a synthetic (NaI(Tl) (thallium-doped sodium iodide) crystal was used to identify radioactive rocks known to be associated with rare earths. Additionally, samples were taken of the country rock granite/gneiss which had modest to very little radioactivity to determine background REE values for the prospect area. The highest grade REE values are associated with veins and veinlets cutting highly altered granites and gneisses Additional samples were taken of these rock types that were not noticeably radioactive to determine background REE values.

Results

Shown in the Table 1 are the locations and summary geology of the samples collected plus a summary of the assays. Note that the assays are have been converted to parts per million (ppm) from weight% (wt%) {As reported by Hazen in the assay results Appendix 3}. The conversion formula from wt% to ppm is wt%/10^4 . All samples sites are shown on the Figure 9-1. Table 2 shows the assay values for each sample site. What is striking are the very high heavy rare earth values. Our sampling confirms significant REE mineralization on the property. Thorium is the only radioactive mineral present in the area and high thorium values directly correlate to high REE values. Minimal amounts of uranium were found on the prospect. Shown below are the assay results from the sampling. Scandium was rarely found on the property with only 2 of the 10 samples collected assaying 20ppm each.

Table 1 Sample Locations, Assays Summary and Geology

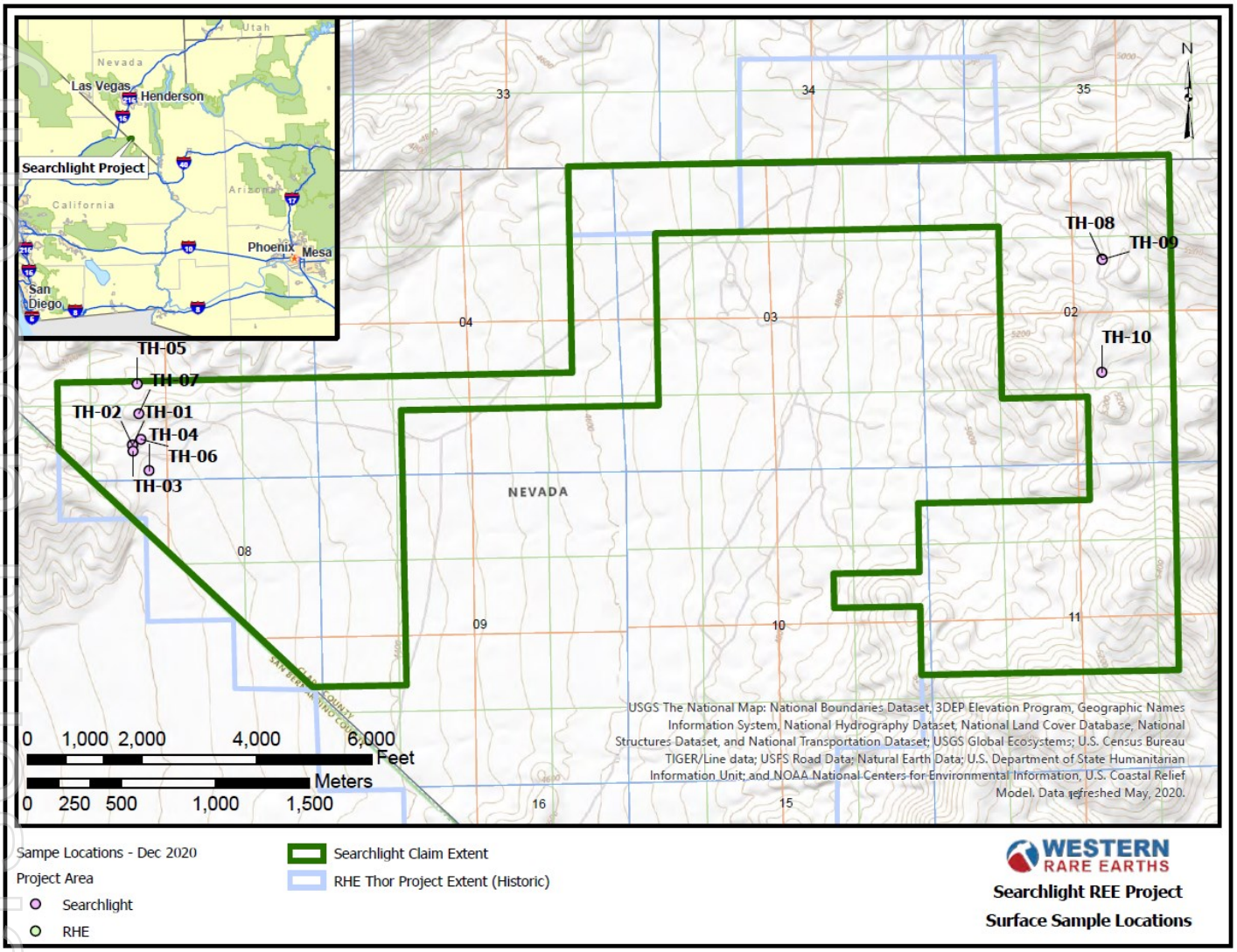
Sample Summary - Searchlight REE Project, Clark County, Nevada
Surface rock-chip sampling, December 2020, World Industrial Minerals

Sample ID	Date	East UTM NAD83	North UTM NAD83	Prospect area	Radioactivity (avg counts per second CPS)	Background CPS (est avg)	TREE (ppm)	HREE (ppm)	Magnet Metals (Nd, Pr, Dy, Tb) (ppm)	Sc (ppm)	Summary Description	Thin-sample REE minerals
TH-01	10-Dec-20	665006	3923918	"Unnamed"	1200	72	14800	940	3320	nd	Old trench exposure; 0.5 m chip sample across fractured granitic gneiss. Slightly altered.	monazite (3%)
TH-02	10-Dec-20	665004	3923917	"Unnamed"	450	72	330	90	20	20	Fine-grained mafic dike adjacent to sample TH-01 in old trench; 0.3 m thick	n/a
TH-03	10-Dec-20	665007	3923885	"Unnamed"	300	72	1200	60	220	nd	Fractured, slightly altered coarse-grained granitic gneiss in other old trench south of previous samples; minor slickensided surfaces, minor fault N20E. 0.4 m sample	n/a
TH-04	10-Dec-20	665092	3923782	"Unnamed"	160	72	570	30	120	nd	Float grab sample; hematite-stained granitic gneiss.	n/a
TH-05	10-Dec-20	665029	3924242	"Unnamed"	95	72	530	40	90	nd	Old road cut, poorly exposed , limonite-stained granitic gneiss.	n/a
TH-06	10-Dec-20	665049	3923948	"Unnamed"	75	72	310	10	40	nd	"typical" fresh gneissic granite; good exposure at road cut.	n/a
TH-07	10-Dec-20	665038	3924084	"Unnamed"	58	72	250	90	20	20	Dense, heavy, Fe-rich fine-grained mafic dike similar to sample TH-02; 0.5 m thick	n/a
TH-08	11-Dec-20	670161	3924906	"Ned"	125	90	220	20	40	nd	0.2 m zone with slightly elevated radiation in felsic gneiss with 5-10 mm quartz veinlets, strong Mn and Fe ox stain.	n/a
TH-09	11-Dec-20	670162	3924903	"Ned"	112	90	290	10	50	nd	Medium-grained qz-feld gneiss; character sample (grab); well-foliated.	n/a
TH-10	11-Dec-20	670160	3924304	"Ned"	88	74	440	40	50	nd	Small outcrop of coarse-grained hi-silica granite, only weakly foliated only; local patchy small pegmatitic zones.	n/a

Table 2 Assay Values for Each Sample Site

–	Western Prospect Area							Northeast Prospect Area		
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Dy	150	nd	nd	nd	nd	nd	nd	nd	nd	nd
Er	30	nd	nd	nd	nd	nd	nd	nd	nd	nd
Gd	250	nd	10	nd	nd	10	nd	nd	nd	10
Ho	20	nd	nd	nd	nd	nd	nd	nd	nd	nd
Sm	380	nd	20	nd	nd	nd	nd	nd	nd	10
Tb	30	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tm	70	90	30	30	40	10	90	20	10	20
Yb	10	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total HREE's	**940**	**90**	**60**	**30**	**40**	**20**	**90**	**20**	**10**	**40**
La	3,280	40	310	140	130	70	40	60	10	110
Ce	6,900	60	590	270	260	160	80	120	200	210
Nd	2,430	nd	170	90	70	40	nd	20	50	50
Pr	710	20	50	30	20	nd	20	20	nd	nd
Total LREE"s	**13,320**	**120**	**1,120**	**530**	**480**	**270**	**140**	**180**	**260**	**370**
Y	540	20	20	10	10	30	20	20	20	30
Total REE +Y	**14,800**	**230**	**1,200**	**570**	**530**	**320**	**250**	**220**	**290**	**440**
Sc	nd	20	nd	nd	nd	nd	20	nd	nd	nd
Thorium	1,960	10	220	110	60	40	10	30	50	60
U	nd	500	nd	nd	100	nd	600	300	nd	nd
Magnetic Ele Nd,Pr,Dy,Tb	3,320	20	220	120	90	40	20	40	50	50

Figure 9-1 Sample Location Map



10. DRILLING

No drilling has been completed for the Searchlight Project.

11. SAMPLE PREPARATION ANALYSIS AND SECURITY

The Sampling program was completed over a three day period. All samples were secured with the geologist collecting the samples and delivered personally by the geologist to Hazen Laboratory in Golden Colorado.

Hazen holds analytical certifications from state regulatory agencies and from the US Environmental Protection Agency (EPA). We participate in performance evaluation studies to demonstrate competence in these areas of certification. Hazen maintains a large stock of standard reference materials from the National Institute of Standards and Technology (NIST), the Canada Centre for Mineral and Energy Technology (CANMET), the EPA and other sources.

There was no break in the chain of custody between sample collection and sample delivery. Hazen analyzed the samples by ICP methods per their 34 element standard analysis procedure. Results were reported in weight percent and were subsequently converted to ppm ($wt\%/10^4$=ppm) for inclusion in the report.

12. DATA VERIFICATION

WRE for this initial sampling program relied upon internal controls maintained by Hazen to ensure accuracy of data. The laboratory provides worldwide services to a very wide range of companies in the mining and mineral exploration industries.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

No mineral processing and testing was completed for this early stage project.

14. MINERAL RESOURCE ESTIMATES

No mineral resource estimates were completed for this early stage project.

15. MINERAL RESERVE ESTIMATES

Due to the early stage of exploration on this property, no mineral reserve estimates can be made for this property.

16. MINING METHODS

There are no mine plans yet developed for the Property.

17. RECOVERY METHODS

No recovery methods can be developed for the Property currently until more detailed metallurgical test work and studies are completed.

18. PROJECT INFRASTRUCTURE

Infrastructure on the property is minimal.

19. MARKET STUDIES AND CONTRACTS

There have been no marketing studies completed or contracts made. A general overview of the REE market and uses of REEs in industry is herein presented. Parts of the following discussion of rare metals are from the 2005 publication *"Extractive Metallurgy of Rare Earths" by C.K. Gupta and N. Krishnamurhy.*

Rare Earths is a term that characterizes a complex of chemically similar but individually diverse metallic elements that includes the following elements: Lanthanum (La), Cerium (Ce), Praseodymium (Pr), Neodymium (Nd), Promethium (Pm), Samarium (Sm), Europium (Eu), Gadolinium (Gd), Terbium (Tb), Dysprosium (Dy), Holium (Ho), Erbium (Er), Thulium (Tm), Ytterbium (Yb) and Lutetium (Lu). Scandium (Sc) and Yttrium (Y) share similar chemical properties and are often included in the rare earth family of elements. The rare earth elements are divided into two groups:

- The Light Rare Earth Elements (LREE) consisting of Ce, Pr, Nd, Pm, Sm, Eu and Gd.
- The Heavy Rare Earth Elements (HREE) consists of Tb, Dy, Ho, Er, Tm, Yb and Lu.

Despite their name, rare earths have a relatively high crustal abundance; however, economic concentrations of rare earths are scarce. With the exception of Promethium all rare earths occur in nature and commonly occur together in widely varying mixtures. Average crustal abundance ranges from 150-250ppm TREE (long et al, 2010). The separation of individual rare earths is challenging.

Rare earths production currently is overwhelmingly concentrated in western China which is the primary supplier of rare earths to the world markets. Lesser production comes from Australia and the United States.

Bastnaesite (Ce, LA, PR)(CO_3)F, monazite((Ce,La…)PO_4) and xenotime (YPO_4) are the most commercially significant rare earth minerals but not exclusively. Allanite hosted rare earths deposits are a small but potentially significant contributor to the world's supply of rare earths [Authors' Comment].The rare earth component of each mineral may vary greatly from location to location. Collectively, the rare earth elements, due to their particular properties: electrical, chemical and physical, are irreplaceable in modern high technology applications. Principal uses of rare earth elements in compounds and metallic forms include petroleum, cracking catalysts, automotive catalytic converters, polishing agents, protective glasses, high temperature, high strength ceramics, anti-corrosive coatings, permanent magnets, MRI tomographic applications and as additives in specialty metals and superalloys.

Rare earth metal pricing is market dependent, but China, by controlling or threatening to control supply, has the ability to influence prices. Users are in most cases dependent upon the particular characteristics of one or more rare earth metals to achieve manufacturing objectives and their flexibility is often limited to substituting one rare earth for another.

Purity of metal, which is difficult to achieve, is almost always a critical issue in determining the price paid by the end-user. There is no widely accepted and readily accessed marketplace; i.e. consumers and suppliers negotiate individually under confidential arrangements.

Executive Order 13817 was signed December 20, 2017 designating rare earths as “Critical Minerals” for the United States which would potentially merit special assistance and protection from adverse international market developments. In December 2019, the US Army announced that it will fund rare earth processing plants for weapons development.

20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL IMPACT

This is an early stage exploration project and as such no environmental studies or permitting have been undertaken. The social impact of the project is currently unknown. Historically this region has had gold, silver and base metals exploration, development and mining since the early 1900's.

21. CAPITAL AND OPERATING COSTS

No capital and operating costs have been addressed because of the early stage of exploration on the Property.

22. ECONOMIC ANALYSIS

No economic analyses have been completed for this early stage project.

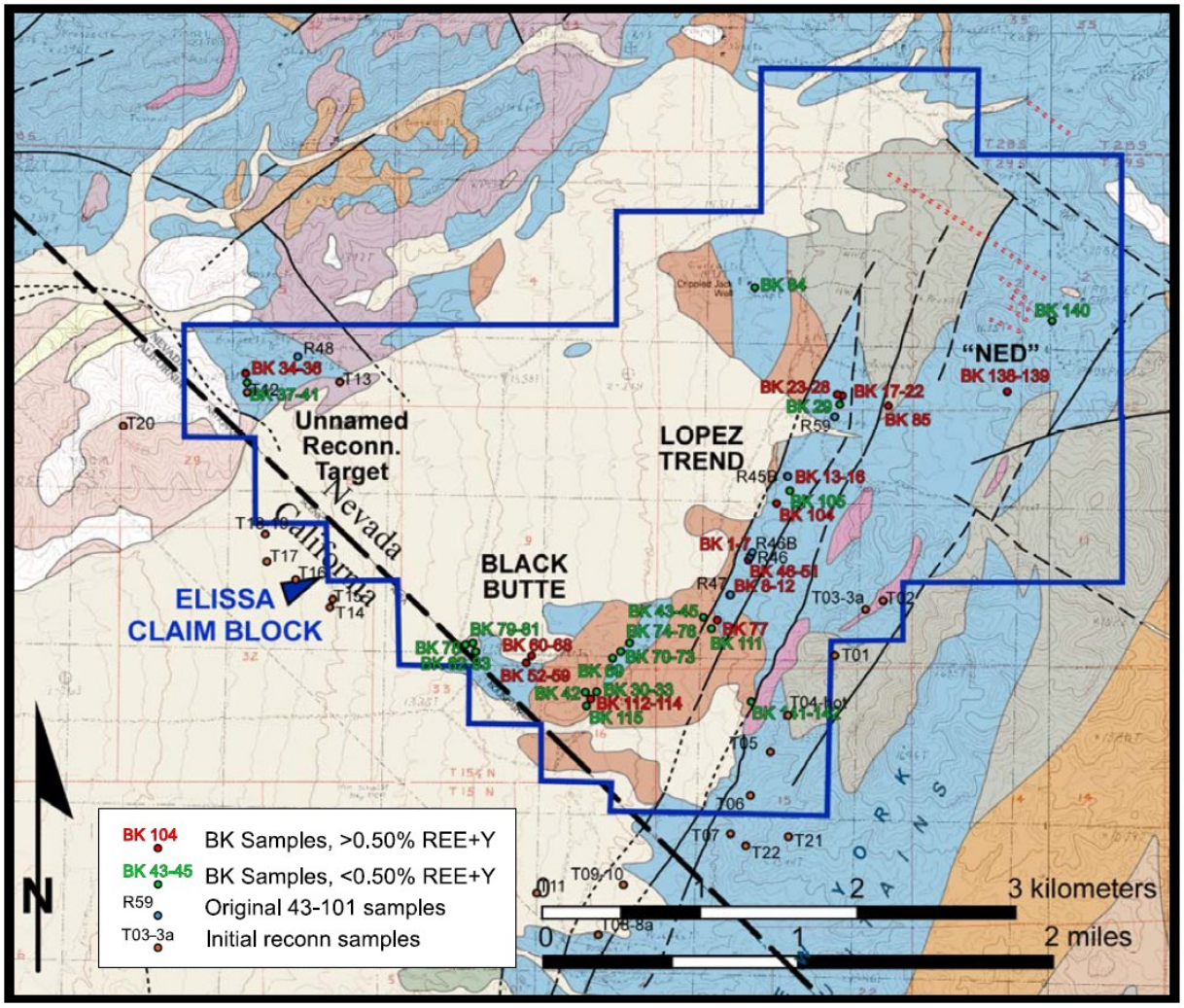
23. ADJACENT PROPERTIES

There is an adjacent property controlled by Red Hill Energy that has had exploration for rare earths historically. Elissa Resources, a former owner of what became the Red Hill Energy Property completed sampling on the property and published findings in a 2010 NI-43-101 Report (referenced in this report). A subsequent Press Release discussed results from a drilling program that was completed after the NI 43-101 Report was written. The Company delineated the following four separate widely spaced sites of sampling as shown in the following Table. The map following the table shows some of the assay results listed on the Table but many samples shown on the map as anomalous in REE's do not have corresponding assay values listed anywhere in the NI 43-101 Report.

The sample BK-36 listed as a reconnaissance sample collected from an area on the Red Hill property known as the "Unnamed Reconnaissance Target" was subsequently dropped by Red Hill Energy during the period between 2011 and 2018 of low REE prices. This Unnamed Target area is now within the ARR Searchlight Project claim block

Thor Project Samples >1% REE+Y

	LIGHT REE (ppm)						HEAVY REE (PPM)								Total REE+Y		
	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	ppm	%	Th
LOPEZ TREND																		
R 46B	23,500	48,500	4,940	18,100	3,010	22.80	2,230	272.0	1060	142.0	275.0	27.00	121.0	13.70	3,830	106,044	10.60%	14,500
BK-20	7,570	16,800	1,840	7,180	1,490	17.60	1,220	172.0	841	136.0	324.0	37.20	194.0	24.30	3,583	41,431	4.14%	5,200
BK-17	7,270	16,200	1,750	6,830	1,400	17.00	1,160	158.0	753	120.0	287.0	32.80	169.0	21.60	3,212	39,380	3.94%	5,050
BK-01	8,020	16,700	1,730	6,340	1,120	8.75	848	105.0	414	56.1	113.0	11.40	52.7	6.58	1,536	37,062	3.71%	4,890
T-4	7,310	14,800	1,520	5,160	769	5.98	471	48.3	187	25.6	50.7	5.20	24.2	3.01	661	31,041	3.10%	4,780
T-6	6,740	14,100	1,460	5,380	927	7.67	662	71.0	286	38.5	71.8	7.44	35.1	4.25	960	30,751	3.08%	3,940
R 45B	6,890	14,000	1,390	4,910	712	5.71	453	43.5	163	21.9	42.3	4.26	20.8	2.60	545	29,204	2.92%	3,980
R 46	6,130	12,800	1,330	4,890	855	7.12	626	67.5	272	35.7	69.1	7.09	33.4	4.14	938	28,065	2.81%	3,750
BK-25	4,310	10,100	1,090	4,370	933	11.00	827	115.0	585	100.0	256.0	33.20	187.0	25.90	2,530	25,473	2.55%	2,620
BK-13	4,290	9,480	995	3,600	615	7.79	411	44.5	179	26.1	56.3	6.36	34.4	4.72	655	20,405	2.04%	3,090
R 47	4,695	9,580	1,030	3,700	417	0.00	305	28.0	115	0.0	0.0	0.00	6.0	0.00	120	19,996	2.00%	1,622
BK-22	3,230	7,330	805	3,190	687	9.55	611	84.6	417	69.7	167.0	19.80	104.0	13.50	1,898	18,636	1.86%	2,090
BK-26	2,970	6,800	748	2,970	627	8.90	542	73.3	367	62.2	152.0	19.40	110.0	15.10	1,576	17,041	1.70%	1,850
BK-24	2,730	6,300	691	2,760	587	8.09	513	71.0	357	60.0	148.0	18.60	104.0	14.20	1,636	15,998	1.60%	1,710
BK-02	3,380	6,920	712	2,720	442	4.64	327	36.3	149	21.3	44.6	4.47	21.6	2.73	561	15,347	1.53%	2,110
BK-08	2,910	6,170	630	2,350	313	3.37	195	18.1	71.2	10.3	22.8	2.60	14.7	2.16	262	12,975	1.30%	2,590
BK-48	2,770	5,560	562	2,120	342	4.17	257	29.8	129	19.0	39.7	4.35	21.6	2.70	474	12,335	1.23%	1,620
BLACK BUTTE																		
BK-63	2,910	5,640	549	2,000	280	4.16	193	22.0	85.5	10.8	21.8	2.21	10.3	1.34	287	12,017	1.20%	1,700
BK-114	2,464	5,239	376	1,591	255	0.02	147	0.1	107	4.0	46.1	0.00	36.8	8.35	469	10,743	1.07%	1,756
"NED"																		
BK-85	2,982	6,584	686	2,630	608	0.00	395	50.0	224	0.0	59.0	0.00	0.0	0.00	730	14,948	1.49%	1,890
BK-139	2,850	6,110	641	2,530	477	9.09	374	47.0	204	28.8	54.9	5.44	24.5	3.08	660	14,019	1.40%	1,860
RECONNAISSANCE																		
BK-36	2,960	6,270	635	2,370	346	2.70	251	28.9	126	17.9	33.0	2.70	10.5	1.17	424	13,479	1.35%	1,810



Drilling was mostly completed in the Lopez Trend with one hole drilled in the Ned area with the following results. Note that drill hole coordinates are listed but have not been plotted for insertion in this report.

				Length		Coordinates (meters)		Intervals sampled	Length sampled	
Drill Hole #	Area	Azimuth	Angle	feet	meters	east	north	from - to (feet)	feet	meters
TR-12-001	T	110	-45	291	89	668,165	3,922,852	92.9 - 130.4	38	11.4
TR-12-002	T	135	-45	352	107	668,165	3,922,852	92.9 - 162.0	69	21.1
TR-12-003	T	135	-70	317	97	668,165	3,922,852	156.0 - 193.0	37	11.3
TR-12-004	T	70	-45	362	110	668,165	3,922,852	*Not Sampled*		
TR-12-005	T	110	-80	391	119	668,165	3,922,852	*Not Sampled*		
TR-12-006	T	160	-70	452	138	668,165	3,922,852	*Not Sampled*		
TR-12-007	O	110	-45	331	101	668,739	3,923,883	44.7 - 66.4	21.7	6.6
								186.0 - 213.5	27.5	8.4
TR-12-008	O	110	-70	400	122	668,739	3,923,883	66.6 - 93.4	26.8	8.2
TR-12-009	O	*vert.*	-90	534	163	668,739	3,923,883	42.9 - 50.4	7.5	2.3
								76.3 - 111.8	35.5	10.8
TR-12-10	P	110	-45	332	101	668,756	3,923,931	*Not Sampled*		
TR-12-11	P	*vert.*	-90	583	178	668,756	3,923,931	63.7 - 149.3	85.6	26.1
TR-12-12	R	70	-45	384	117	668,813	3,924,069	*Not Sampled*		
TR-12-13	R	110	-45	308	94	668,813	3,924,069	170.5 - 192.3	21.8	6.6
TR-12-14	N	110	-45	291	89	668,719	3,923,836	*Not Sampled*		
TR-12-15	N	*vert.*	-90	541	165	668,719	3,923,836	*Not Sampled*		
TR-12-16	P	290	-70	601	183	668,756	3,923,931	300.9 - 344.9	44	13.4
								573.5 - 599.3	25.8	7.9
								161.5 - 263.9	102.4	31.2
TR-12-17	O	110	-45	397	121	668,676	3,923,900	294.2 - 313.7	19.5	5.9
								168.7 - 177.5	8.8	2.7
								187.0 - 196.1	9.1	2.8
ND-12-01	NED	*vert.*	-90	120	37	669,844	3,923,914	*Not Sampled*		
ND-12-02	NED	340	-50	132	40	669,844	3,923,914	*Not Sampled*		
ND-12-03	NED	*vert.*	-90	21	6	669,846	3,923,914	0 - 10.3	10.3	3.1
ND-12-04	NED	60	-45	111	34	669,829	3,923,916	*Not Sampled*		
				7,251	**2,210**				**590**	**180**

Drill Hole #	from (ft.)	to (ft.)	Mineralization ≥ 0.10% TREO length (ft)	length (m)	% TREO	% of HREO in TREO	Comments
TR-12-002	138.0	142.0	4.0	1.2	0.11	11.9%	*South Zone*
TR-12-003	181.0	182.5	1.5	0.5	0.32	5.9%	*South Zone*
TR-12-007	44.7	66.4	21.7	6.6	0.12	10.1%	*Upper Zone*
		includes:	2.0	0.6	0.38	10.3%	
	186.0	213.5	27.5	8.4	0.17	4.3%	*Lower Zone*
		includes:	1.2	0.4	0.97	3.1%	
TR-12-008	66.6	93.4	26.8	8.2	0.57	14.5%	*Upper Zone*
		includes:	*2.4*	0.7	0.57	10.6%	
			1.4	0.4	**1.77**	17.1%	
TR-12-009	42.9	50.4	7.5	2.3	0.29	18.5%	*Upper Zone*
		includes:	1.7	0.5	0.83	18.5%	
	79.8	111.8	32.0	9.8	**1.05**	14.9%	*Upper Zone*
		includes:	16.5	5.0	**1.82**	15.0%	
			6.0	1.8	**3.28**	15.1%	
TR-12-011	63.7	117.0	53.3	16.2	0.21	17.1%	*Upper Zone*
		includes:	1.4	0.4	**0.96**	15.5%	
			2.0	0.6	0.48	18.3%	
			1.1	0.3	**1.04**	15.3%	
	124.6	145.5	20.8	6.3	0.24	13.6%	*Lower Zone*
		includes:	2.8	0.9	**0.95**	13.0%	
TR-12-16	300.9	307.8	6.9	2.1	0.10	6.1%	*Upper Zone*
	584.2	586.7	2.5	0.8	0.02	3.1%	*Lower Zone*
TR-12-17	298.2	303.7	5.5	1.7	0.19	4.1%	*Upper Zone*
ND-12-03	0.0	5.0	5.0	1.5	**1.04**	11.3%	*NED*

24. OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information that has not already been included in this report.

25. INTERPRETATION AND CONCLUSIONS

The Searchlight Rare Earths Project is unique in that it contains high grade values of heavy rare earths in addition to high grades of elements used to make high intensity magnets. Heavy REE deposits are rare and critical for the Green Energy Economy. Development of a high value HREE resource on the Searchlight Property is possible with a carefully planned, properly executed exploration program.

The following is concluded:

- Radiation detection instruments are useful in locating the REE because of the associated radioactive thorium.
- Sampling and mapping completed to date indicates that these are structurally controlled vein hosted apatite-monazite deposit(s).
- Due to extensive shallow alluvial cover over much of the property, potential exists for the occurrence of other high REE grade veins in these covered areas. On the adjacent Red Hill Energy property this also appears to be the case; several mineralized structures have been discovered to date.
- Additional more detailed mapping and sampling and trenching in the shallow alluvium are likely to delineate more REE rich structures.
- Scandium also occurs on the property in two locations that assayed 20ppm in both locations.

26. RECOMMENDATIONS

The following near term activities are recommended:

- Conduct more detailed mapping and sampling to better delineate REE and scandium trenching/drilling targets.
- Complete a ground/drone radiation survey within the alluvial covered areas to delineate trenching/drilling targets.
- Pending above results, permit a trenching program under the less –than-5 acre NOI permitting process.
- If trenching is successful, reclaim trenches and permit a less-than-5 acre NOI drilling program.

27. REFERENCES

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28. CERTIFICATE OF QUALIFICATION

CERTIFICATION OF QUALIFICATIONS

JAMES R. GUILINGER (AUTHOR)

CONSULTING GEOLOGIST

WORLD INDUSTRIAL MINERALS LLC

I, JAMES R. GUILINGER, Qualified Professional Member (QP) #01260280RM of the Society Of Mining Engineers (SME), HEREBY CERTIFY THAT:

1. I am currently employed as a consulting geologist with World Industrial Minerals LLC, PO Box 130, Arvada, Colorado, USA 80004.

2. I am a graduate of the University of Colorado, with a B.A. degree in Geology (1973), I have been practicing my profession since 1974.

3. I am a member of the Society Of Mining Engineers (SME) RM, number 01260280 RM.

4. From 1974 to present I have been actively employed in various capacities in the mining industry in numerous locations in North America, Asia, Europe and the Middle East.

5. I am the Author of the Technical Report titled dated April 11, 2021 with an effective date of May 14, 2021 (the "Technical Report) and accept professional responsibility for all sections of this report except as stipulated in Item 3 "Reliance on Other Experts" in regards to environmental issues, permitting, Resource Estimation and land status.

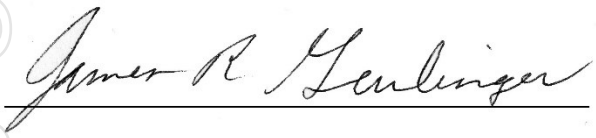
6. I have had extensive prior involvement working in rare earths and on rare earths properties similar to Searchlight since the mid 1980's in various capacities as an employee of mining companies and as a consulting geologist.

7. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, The Technical Report Contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

8. I am independent of ARR.

9. I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and publication by them, including publication of this Technical Report in the public company files on their websites accessible by the public.

DATED in Arvada, Colorado, USA this 1st day of June, 2021.



James Guilinger RM01260280

APPENDIX A: JORC TABLE 1

JORC Code, 2012 Edition – Table 1 Searchlight Rare Earths Project

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *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.*	• Individual grab rock samples and were collected by hand at the surface, from in-situ outcrops. • Grab samples are believed to be representative of the outcrops they came from • 1-2kg rock samples were collected by a geologist, samples were broken using a hammer from outcrop. Rock samples were crushed in the laboratory and then pulverized before analysis.
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, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• No drilling
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• No Drilling

Criteria	JORC Code explanation	Commentary
Logging	• *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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Rock samples were geologically described and photographed. • No logging
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• No Drilling • Samples were analyzed at Hazen Laboratories in Golden Colorado, the samples were crushed, pulverized and assayed by ICP-ME MS81 for REE • ~2kg of rock was crushed and pulverized and a subsample was taken in the laboratory and sent for analysis. • Grab sampling was selective based upon geological observations. • Each sample was 1kg to 2kg in weight which is appropriate to test for grain size of material.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *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.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The samples were crushed and assayed for 34 elements by fusion ICP-MS. The procedure will report near total results. • No geophysical tools used in the sampling program. • Internal laboratory standards were analysed with rock samples.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Consulting company personnel have observed and collected the assayed samples. • No Drilling • Field data were all recorded in field notebooks and sample record books and then entered into a digital database. • No Adjustments were made.
Location of data points	• *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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Sample location is based on GPS coordinates +/- 5m accuracy. • The grid system used to compile data was NAD83 Zone 12N. • Topography control is +/- 10m
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *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.* • *Whether sample compositing has been applied.*	• Both randomly spaced surface chip sampling • The data alone will not be used to estimate mineral resource or ore reserve • None
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *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.*	• Rock samples were taken of selected outcrops that were considered representative of varying rock types. • No drilling
Sample security	• *The measures taken to ensure sample security.*	• Samples were kept in numbered bags until delivered to the laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Sampling techniques are consistent with industry standards.

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	• *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.*	Western Rare Earths Project Acquisition –81 Unpatented mining claims on BLM US Federal Land totalling approx. 1620 acres were staked in the Searchlight Project Area. The claims are 100% owned by WRE (100% owned ARR subsidiary).
	• *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.*	No impediments to holding the claims exist. To maintain the claims an annual holding fee of $165/claim ($13,365) is payable to The BLM.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Sampling in the region was completed by Elissa Resources Ltd on adjacent mining claims controlled by Red Hill Energy.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The deposit is within veins/veinlets in pre Cambrian granites/gneisses. REE elements are hosted in monazite, and apatite which is found in veins and veinlets within the granites/gneisses.
Drill hole Information	• *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:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole*	• No Drilling

Criteria	JORC Code explanation	Commentary
	○ *down hole length and interception depth* ○ *hole length.* • *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.*	
Data aggregation methods	• *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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No high-grade cutting • No aggregation used • No metal equivalents used
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• No Drilling • No Drilling • No Drilling
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.*	• See maps in body of Report discussing "claims staked" and "sample locations"
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.*	• Total REE's range in samples: 14,800 – 220ppm; HREE's: 940-20ppm See Figures in report for sample site locations and assay values.
Other substantive	• *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*	In hand specimen this rock is a red colored, hard and dense granite/gneiss with areas of localized fracturing and crude banding. The rock shows significant iron staining.

Criteria	JORC Code explanation	Commentary
exploration data	*method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Microscopic Description: *Major Mineralogy: Quartz 30% Sericite 22% Plagioclase 18% Calcite 12%* *Goethite/Hematite 12% Monazite 3% Chlorite 3%* *Trace Mineralogy: Rutile, Mn oxide, Leucoxene, Zircon, Calcite,*
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).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Further mapping and sampling is planned leading to drill targets.

Note that Sections 3 and 4 are not relevant for any reporting for this early stage exploration Project

APPENDIX B: CLAIM LISTING

Western Rare Earths
Searchlight Heavy Rare Earths Project

Serial Number	Claim Name	Location	Status	Date Filed
NV105228498	T-80	NV	Filed	4-Mar-21
NV105228494	T-76	NV	Filed	4-Mar-21
NV105228493	T-75	NV	Filed	4-Mar-21
NV105228492	T-74	NV	Filed	4-Mar-21
NV105228497	T-79	NV	Filed	4-Mar-21
NV105228496	T-78	NV	Filed	4-Mar-21
NV105228495	T-77	NV	Filed	4-Mar-21
NV105228491	T-73	NV	Filed	4-Mar-21
NV105228490	T-72	NV	Filed	4-Mar-21
NV105228489	T-71	NV	Filed	4-Mar-21
NV105228488	T-70	NV	Filed	4-Mar-21
NV105228487	T-69	NV	Filed	4-Mar-21
NV105228486	T-68	NV	Filed	4-Mar-21
NV105228485	T-67	NV	Filed	4-Mar-21
NV105228484	T-66	NV	Filed	4-Mar-21
NV105228483	T-65	NV	Filed	4-Mar-21
NV105228482	T-64	NV	Filed	4-Mar-21
NV105228481	T-63	NV	Filed	4-Mar-21
NV105228480	T-62	NV	Filed	4-Mar-21
NV105228479	T-61	NV	Filed	4-Mar-21
NV105228478	T-60	NV	Filed	4-Mar-21
NV105228477	T-59	NV	Filed	4-Mar-21
NV105228476	T-58	NV	Filed	4-Mar-21
NV105228475	T-57	NV	Filed	4-Mar-21
NV105228474	T-56	NV	Filed	4-Mar-21
NV105228472	T-54	NV	Filed	4-Mar-21
NV105228471	T-53	NV	Filed	4-Mar-21
NV105228469	T-51	NV	Filed	4-Mar-21
NV105228473	T-56	NV	Filed	4-Mar-21
NV105228470	T-52	NV	Filed	4-Mar-21
NV105228468	T-50	NV	Filed	4-Mar-21
NV105228467	T-49	NV	Filed	4-Mar-21
NV105228464	T-46	NV	Filed	4-Mar-21
NV105228459	T-41	NV	Filed	4-Mar-21
NV105228458	T-40	NV	Filed	4-Mar-21
NV105228466	T-48	NV	Filed	4-Mar-21

NV105228465	T-47	NV	Filed	4-Mar-21
NV105228463	T-45	NV	Filed	4-Mar-21
NV105228462	T-44	NV	Filed	4-Mar-21
NV105228461	T-43	NV	Filed	4-Mar-21
NV105228460	T-42	NV	Filed	4-Mar-21
NV105228457	T-39	NV	Filed	4-Mar-21
NV105228456	T-38	NV	Filed	4-Mar-21
NV105228455	T-37	NV	Filed	4-Mar-21
NV105228454	T-36	NV	Filed	4-Mar-21
NV105228453	T-35	NV	Filed	4-Mar-21
NV105228452	T-34	NV	Filed	4-Mar-21
NV105228451	T-33	NV	Filed	4-Mar-21
NV105228449	T-31	NV	Filed	4-Mar-21
NV105228450	T-32	NV	Filed	4-Mar-21
NV105228448	T-30	NV	Filed	4-Mar-21
NV105228447	T-29	NV	Filed	4-Mar-21
NV105228446	T-28	NV	Filed	4-Mar-21
NV105228445	T-27	NV	Filed	4-Mar-21
NV105228442	T-24	NV	Filed	4-Mar-21
NV105228440	T-22	NV	Filed	4-Mar-21
NV105228444	T-26	NV	Filed	4-Mar-21
NV105228443	T-25	NV	Filed	4-Mar-21
NV105228441	T-23	NV	Filed	4-Mar-21
NV105228439	T-21	NV	Filed	4-Mar-21
NV105228438	T-20	NV	Filed	4-Mar-21
NV105228436	T-18	NV	Filed	4-Mar-21
NV105228437	T-19	NV	Filed	4-Mar-21
NV105228435	T-17	NV	Filed	4-Mar-21
NV105228434	T-16	NV	Filed	4-Mar-21
NV105228433	T-15	NV	Filed	4-Mar-21
NV105228432	T-14	NV	Filed	4-Mar-21
NV105228431	T-13	NV	Filed	4-Mar-21
NV105228430	T-12	NV	Filed	4-Mar-21
NV105228429	T-11	NV	Filed	4-Mar-21
NV105228428	T-10	NV	Filed	4-Mar-21
NV105228427	T-9	NV	Filed	4-Mar-21
NV105228426	T-8	NV	Filed	4-Mar-21
NV105228424	T-6	NV	Filed	4-Mar-21
NV105228425	T-7	NV	Filed	4-Mar-21
NV105228423	T-5	NV	Filed	4-Mar-21
NV105228422	T-4	NV	Filed	4-Mar-21
NV105228421	T-3	NV	Filed	4-Mar-21

NV105228420	T-2	NV	Filed	4-Mar-21
NV105228419	T-1	NV	Filed	4-Mar-21

APPENDIX C: ASSAY RESULTS

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Lab Control ID: 20M03351
Received: Dec 18, 2020
Reported: Jan 06, 2021
Purchase Order No.
THOR

Customer ID: 01383Z
Account ID: Z00487

Jim Guilinger
World Industrial Minerals
6374 South Xanadu Way
Centennial, CO 80111

ANALYTICAL REPORT

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ICP Analysis
Wt %

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-001	TH-01	8.93	<0.001	1.33	0.690	0.01	0.015	0.003
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-001	TH-01	<0.001	3.47	0.025	0.003	0.002	3.51	0.328
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-001	TH-01	<0.0005	0.446	0.027	2.16	0.003	0.243	0.45
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-001	TH-01	0.071	<0.001	28.3	0.038	<0.01	0.003	0.196
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-001	TH-01	0.578	0.007	<0.01	0.054	0.001	0.054	

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-002	TH-02	7.68	<0.001	6.80	0.006	0.04	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-002	TH-02	<0.001	6.79	<0.001	0.002	<0.001	2.38	0.004
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-002	TH-02	<0.0005	2.84	0.137	0.51	<0.002	<0.001	0.30
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-002	TH-02	0.002	0.002	20.0	<0.001	<0.01	<0.001	0.001
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-002	TH-02	0.812	0.009	0.05	0.002	<0.001	0.016	

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-003	TH-03	6.89	<0.001	2.01	0.059	0.02	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-003	TH-03	<0.001	1.54	0.001	0.001	<0.001	4.46	0.031
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-003	TH-03	<0.0005	0.280	0.019	1.52	<0.002	0.017	0.25
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-003	TH-03	0.005	<0.001	33.4	0.002	<0.01	<0.001	0.022
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-003	TH-03	0.222	0.003	<0.01	0.002	<0.001	0.030	

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ICP Analysis
Wt %

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-004	TH-04	9.82	<0.001	0.71	0.027	<0.01	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-004	TH-04	<0.001	1.44	<0.001	<0.001	<0.001	6.74	0.014
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-004	TH-04	<0.0005	0.142	0.008	2.78	<0.002	0.009	0.21
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-004	TH-04	0.003	<0.001	29.7	<0.001	<0.01	<0.001	0.011
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-004	TH-04	0.227	0.003	<0.01	0.001	<0.001	0.021	

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-005	TH-05	9.77	<0.001	1.74	0.026	<0.01	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-005	TH-05	<0.001	2.20	<0.001	0.002	<0.001	6.02	0.013
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-005	TH-05	<0.0005	0.406	0.014	2.53	<0.002	0.007	0.25
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-005	TH-05	0.002	<0.001	27.6	<0.001	<0.01	<0.001	0.006
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-005	TH-05	0.327	0.004	0.01	0.001	<0.001	0.042	

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-006	TH-06	7.15	<0.001	0.45	0.016	0.02	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-006	TH-06	<0.001	1.17	0.001	0.001	<0.001	4.13	0.007
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-006	TH-06	<0.0005	0.096	0.016	2.15	<0.002	0.004	0.35
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-006	TH-06	<0.001	<0.001	34.2	<0.001	<0.01	<0.001	0.004
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-006	TH-06	0.115	0.001	<0.01	0.003	<0.001	0.019	

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ICP Analysis
Wt %

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-007	TH-07	7.02	<0.001	7.03	0.008	0.01	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-007	TH-07	<0.001	8.20	<0.001	0.003	<0.001	3.24	0.004
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-007	TH-07	<0.0005	2.92	0.127	0.23	<0.002	<0.001	0.42
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-007	TH-07	0.002	0.002	18.4	<0.001	<0.01	<0.001	0.001
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-007	TH-07	0.781	0.009	0.06	0.002	<0.001	0.006	

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-008	TH-08	5.57	<0.001	0.21	0.012	0.02	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-008	TH-08	<0.001	4.12	<0.001	<0.001	<0.001	3.36	0.006
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-008	TH-08	<0.0005	0.257	1.78	0.25	<0.002	0.002	0.47
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-008	TH-08	0.002	<0.001	33.9	<0.001	<0.01	<0.001	0.003
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-008	TH-08	0.173	0.002	0.03	0.002	<0.001	0.015	

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-009	TH-09	7.27	<0.001	0.17	0.020	0.02	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-009	TH-09	<0.001	1.24	<0.001	0.002	<0.001	5.08	0.01
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-009	TH-09	<0.0005	0.167	0.332	0.92	<0.002	0.005	0.42
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-009	TH-09	<0.001	<0.001	33.5	<0.001	<0.01	<0.001	0.005
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	
20M03351-009	TH-09	0.108	0.001	<0.01	0.002	<0.001	0.020	

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THOR

Customer ID: 01383Z
Account ID: Z00487

ANALYTICAL REPORT

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World Industrial Minerals

ICP Analysis
Wt %

Sample ID	Client ID	Al	Be	Ca	Ce	Cr	Dy	Er
20M03351-010	TH-10	7.80	<0.001	0.29	0.021	0.02	<0.001	<0.001
Sample ID	**Client ID**	**Eu**	**Fe**	**Gd**	**Hf**	**Ho**	**K**	**La**
20M03351-010	TH-10	<0.001	1.41	0.001	0.003	<0.001	4.35	0.011
Sample ID	**Client ID**	**Lu**	**Mg**	**Mn**	**Na**	**Nb**	**Nd**	**P**
20M03351-010	TH-10	<0.0005	0.096	0.033	2.04	<0.002	0.005	0.48
Sample ID	**Client ID**	**Pr**	**Sc**	**Si**	**Sm**	**Ta**	**Tb**	**Th**
20M03351-010	TH-10	<0.001	<0.001	34.3	0.001	<0.01	<0.001	0.006
Sample ID	**Client ID**	**Ti**	**Tm**	**U**	**Y**	**Yb**	**Zr**	