3 February 2023

Halleck Creek drilling extends rare earth zone by 50%

Assays show key magnetic rare earths comprise 27% of deposit

Highlights

- Assays confirm Total Rare Earth Oxide (TREO) values up to 8,359 parts per million (ppm).
- Mineralisation confirmed at depths of 150 metres, a 50% increase on previous drill assays.
- Significant intercepts include:
    - HC22-RM014 averages 3,958 ppm TREO over 148.5 metres
    - HC22-RM016 averages 3,495 ppm TREO over 148.5 metres
    - HC22-RM017 averages 3,922 ppm TREO over 132 metres
    - HC22-RM015 averages 4,394 ppm TREO over 120 metres
- Mineralisation remains open at depth.
- Initial assay results from 10 RC holes, twenty-eight more to come.
- Low levels of penalty elements thorium and uranium.

American Rare Earths (ASX:ARR | OTCQB:ARRNF | FSE:1BHA) announces assay results for 998 samples from 10 reverse circulation (RC) holes at the Halleck Creek Rare Earths projects in Wyoming. The 10 RC holes all reside in the Red Mountain project area at the Halleck Creek district. The assay results confirm enriched rare earth mineralisation to a depth of 150 metres and brings the company a step closer to defining a substantial maiden JORC resource.

ARR awaits the results for 8 additional holes in the Red Mountain project area and 20 holes in the Overton Mountain project area. ALS laboratories in Vancouver, British Columbia performed the analysis.

CEO and Managing Director Chris Gibbs said that the initial assay results confirm consistent rare earth mineralisation from surface to depths of 150 metres, an increase of 50%. “These are outstanding results as previous core drilling had confirmed mineralisation to only 100 metres. Just as importantly, mineralisation is open at depth. These results further enhance our belief that the Halleck Creek district is one of the largest, rare earth deposits on a global scale and shaping up to be a key strategic project for the United States.

“We are looking forward to receiving further drill assay results and in addition, updating the market on metallurgical test work also currently in progress.”

Assay Results

Preliminary assay results from 10 RC holes in the Red Mountain project area have an average TREO of 3,491 ppm using a cut-off of 1,500 ppm TREO, Table 1. Magnetic rare earth oxides (MREO) including the valuable Neodymium and Praseodymium comprise approximately 27% of the rare earths at Red Mountain, Figure 1. A tabulation of the assay results received to date are in Appendix B below.

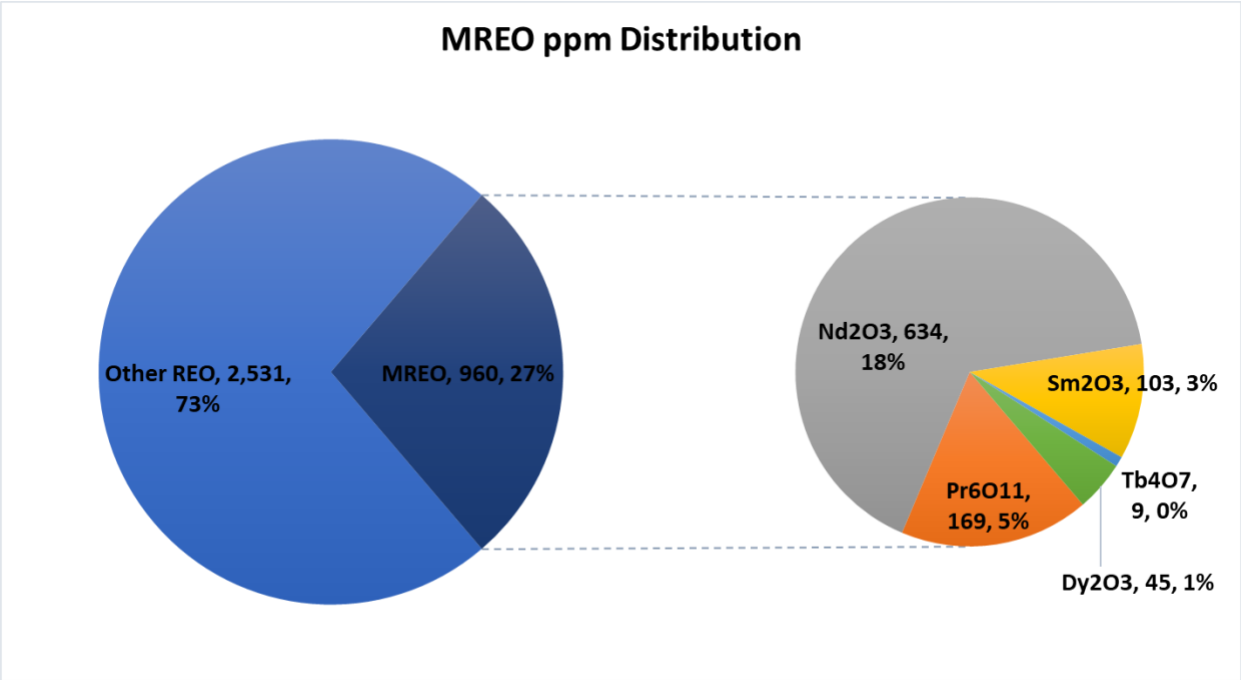
18 RC holes were drilled in the Red Mountain project area (Figure 3), and an additional 20 holes were drilled in the Overton Mountain project area between October and December 2022 (Figure 4).

Table 1 - Summary of Enriched RE Holes in ppm**

DHID	Sample Count	Total Thick (m)	TREO			MREO			LREO			HREO		
			Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
HC22-RM012	45	67.5	2,281	1,603	2,985	602	438	783	2,040	1,379	2,699	241	187	345
HC22-RM013	50	75.0	3,583	1,699	4,323	965	453	1,196	3,283	1,498	3,952	301	194	371
HC22-RM014	99	148.5	3,958	2,897	4,572	1,053	766	1,260	3,639	2,621	4,200	319	239	372
HC22-RM015*	80	120.0	4,394	1,972	5,762	1,216	560	1,596	3,942	1,666	5,084	452	230	678
HC22-RM016	99	148.5	3,495	1,890	4,246	954	497	1,174	3,106	1,686	3,782	389	204	464
HC22-RM017	88	132.0	3,922	1,903	5,969	1,092	607	1,705	3,382	1,334	5,129	540	357	984
HC22-RM018	34	51.0	2,203	1,499	4,639	692	450	1,342	1,806	1,212	4,182	397	274	604
HC22-RM019	63	94.5	3,071	1,597	8,784	866	464	2,321	2,722	1,310	8,335	349	215	730
HC22-RM020	8	12.0	3,602	1,592	8,359	983	446	2,307	3,162	1,367	7,466	439	225	893
HC22-RM021*	62	93.0	2,881	1,504	5,810	796	430	1,503	2,571	1,227	5,420	309	239	424
Totals	**628**	**942.0**	**3,491**	**1,499**	**8,784**	**960**	**430**	**2,321**	**3,112**	**1,212**	**8,335**	**379**	**187**	**984**

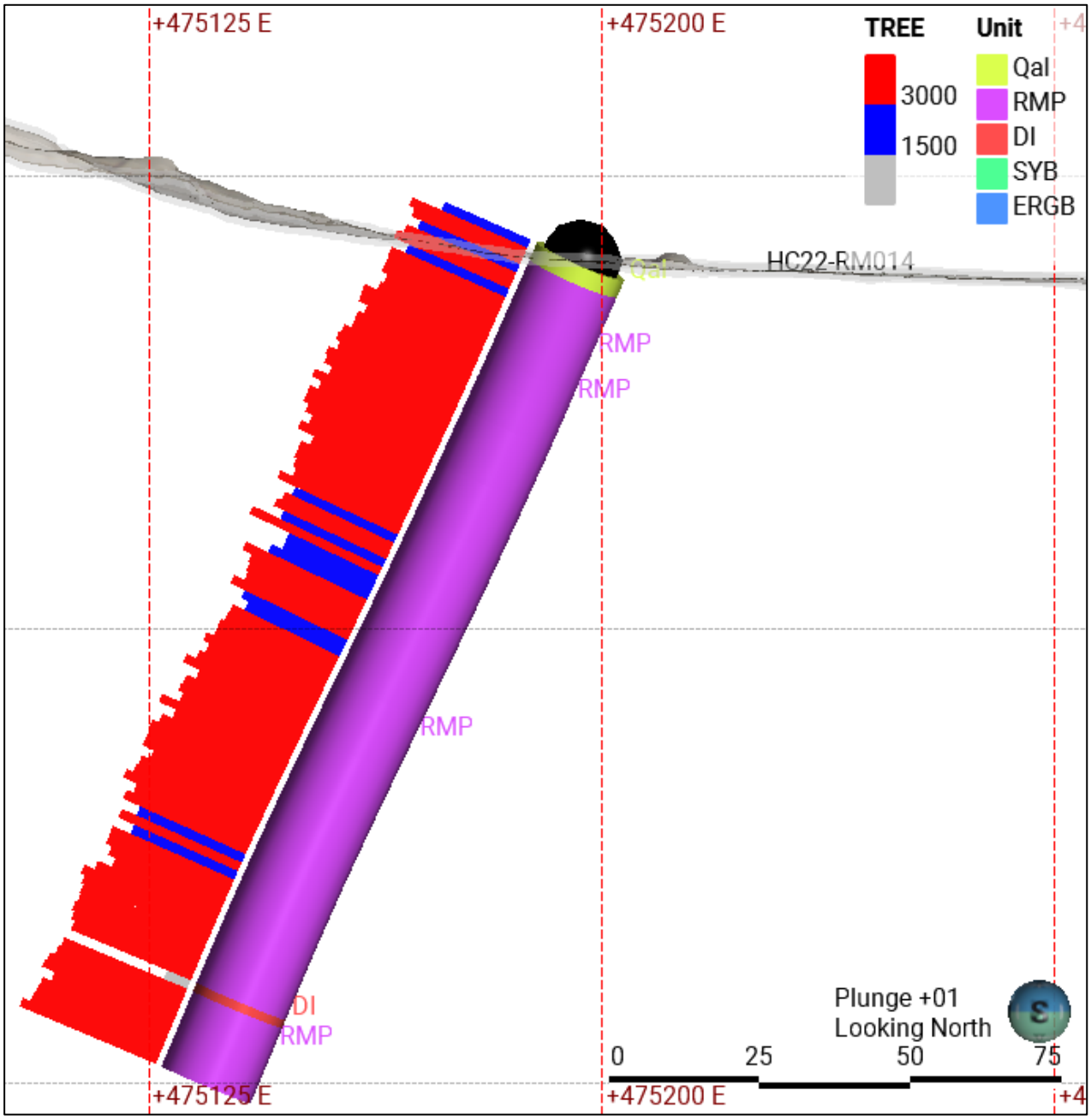
TREO: Total rare earth oxide, MREO: Magnetic rare earth oxide, LREO: Light rare earth oxide, HREO: heavy rare earth oxide
* Partial results for hole, **TREO 1,500ppm cut-off

Figure 1 - Distribution of Magnet Rare Earth Oxide Elements



The assay results demonstrate consistent rare earth mineralisation associated with clinopyroxene quartz monzonite (CQM) and fayalite monzonite (FM) rocks of the Red Mountain Pluton (RMP). As seen below in Figure 2, drill hole HC22-RM014 has an average TREO value of 3,958 ppm over an interval of 148.5 metres (487 feet).

Figure 2 – Drill hole HC22-RM014



Average values for the penalty elements of Thorium and Uranium remain very low, Table 2.

Table 2 Average Thorium Oxide and Uranium Oxide values in ppm

DHID	ThO2	UO2
HC22-RM012	45	6
HC22-RM013	74	8
HC22-RM014	81	8
HC22-RM015	81	9
HC22-RM016	64	9
HC22-RM017	62	9
HC22-RM018	23	6
HC22-RM019	44	6
HC22-RM020	61	10
HC22-RM021	42	5
Average	**61**	**8**

ARR will continue to compile and report assay data at Halleck Creek as it becomes available. Geological Models and Grade models are being created by Odessa Resources (Odessa) in Perth, Western Australia. ARR provided Odessa detailed geological logs, reports, topographic data, and preliminary geological domains for all holes at Halleck Creek. This data is being used for geological modelling for Halleck Creek. ARR will be providing assay data to Odessa as it becomes available. All this geological data will be used to define a maiden JORC resource estimate at Halleck Creek.

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

Mr Chris Gibbs
CEO & Managing Director

Competent Persons Statement:

The information in this document is based on company work performed in January 2023. This work was reviewed and approved for release by Mr Dwight Kinnes (Society of Mining Engineers #4063295RM) is employed by American Rare Earths and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 JORC Code. Mr Kinnes consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

About American Rare Earths:

One of the only ASX listed companies with exposure to the rapidly expanding US market, American Rare Earths is developing its 100% owned magnet metals projects, Halleck Creek in Wyoming, and La Paz in Arizona. Both have potential to be among the largest, rare earths deposits in North America. The company is concurrently evaluating other exploration opportunities while collaborating with US Government supported R&D to develop a sustainable domestic supply chain for the renewable future.

Figure 3 - Red Mountain Drill Hole Locations

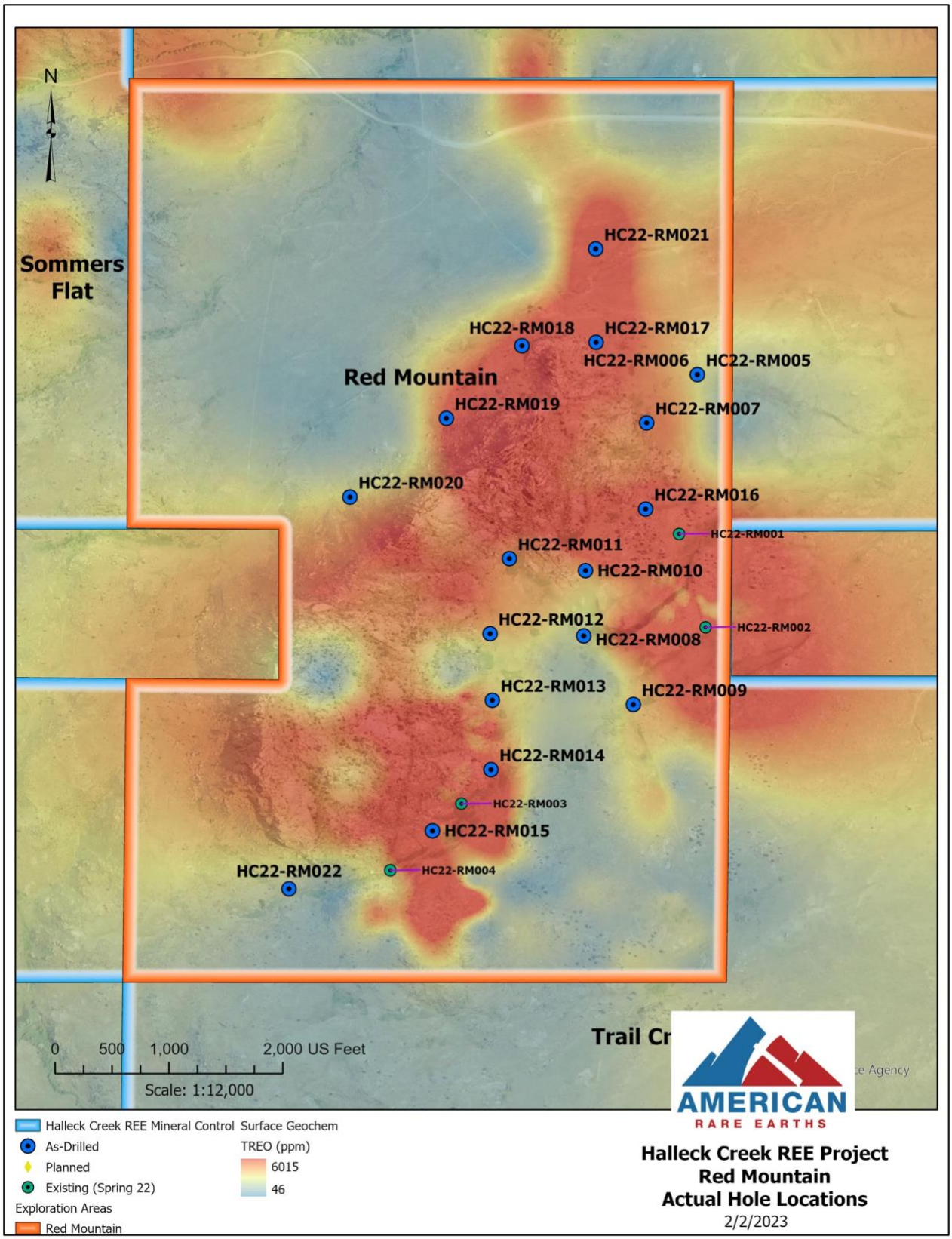
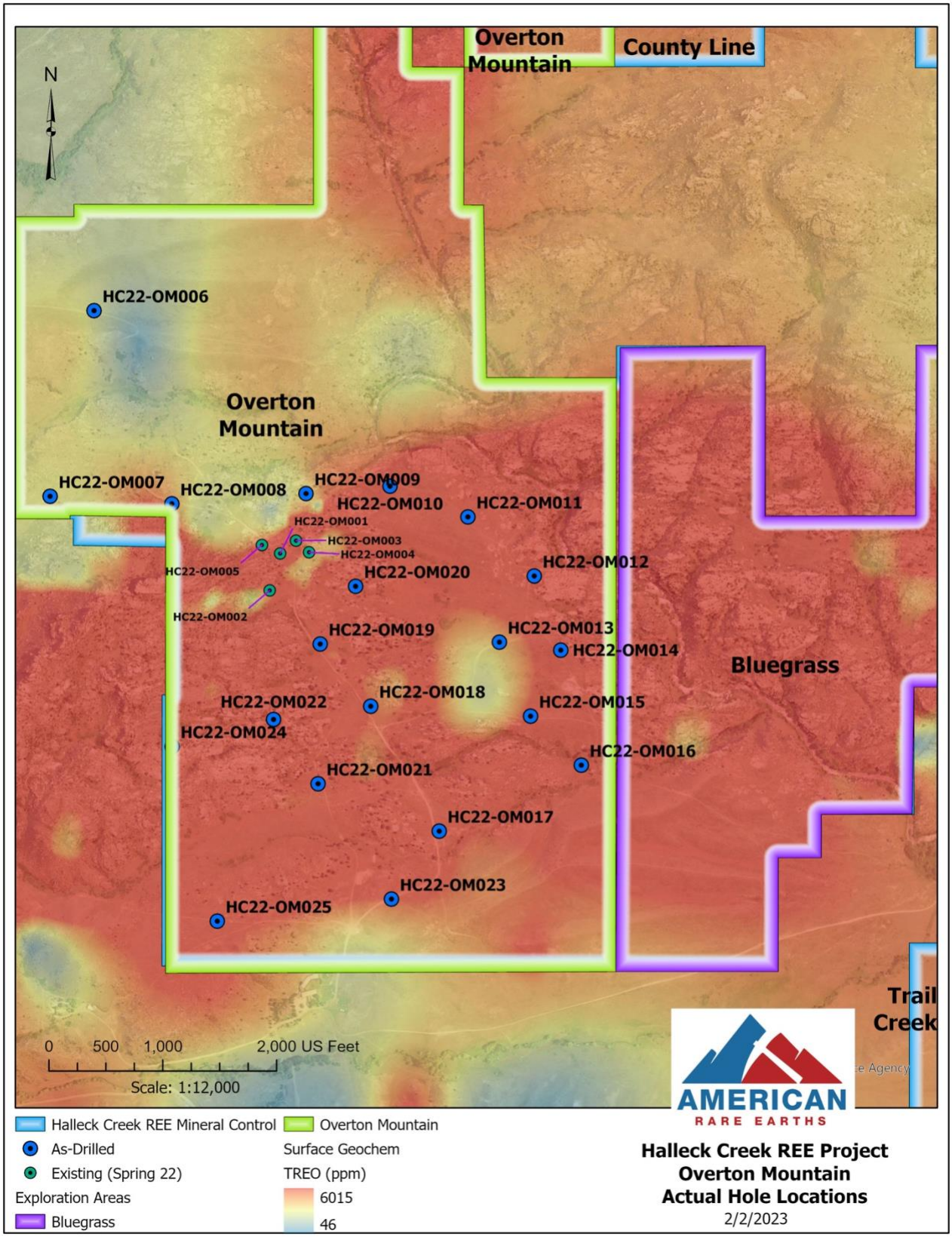
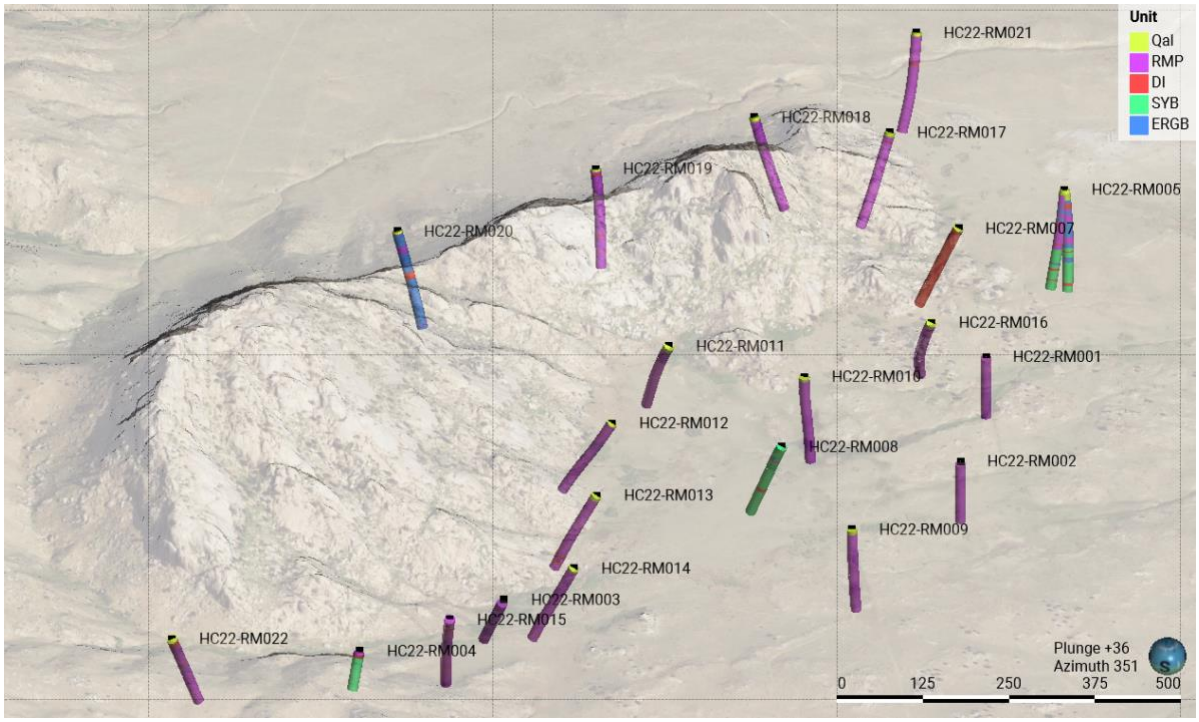


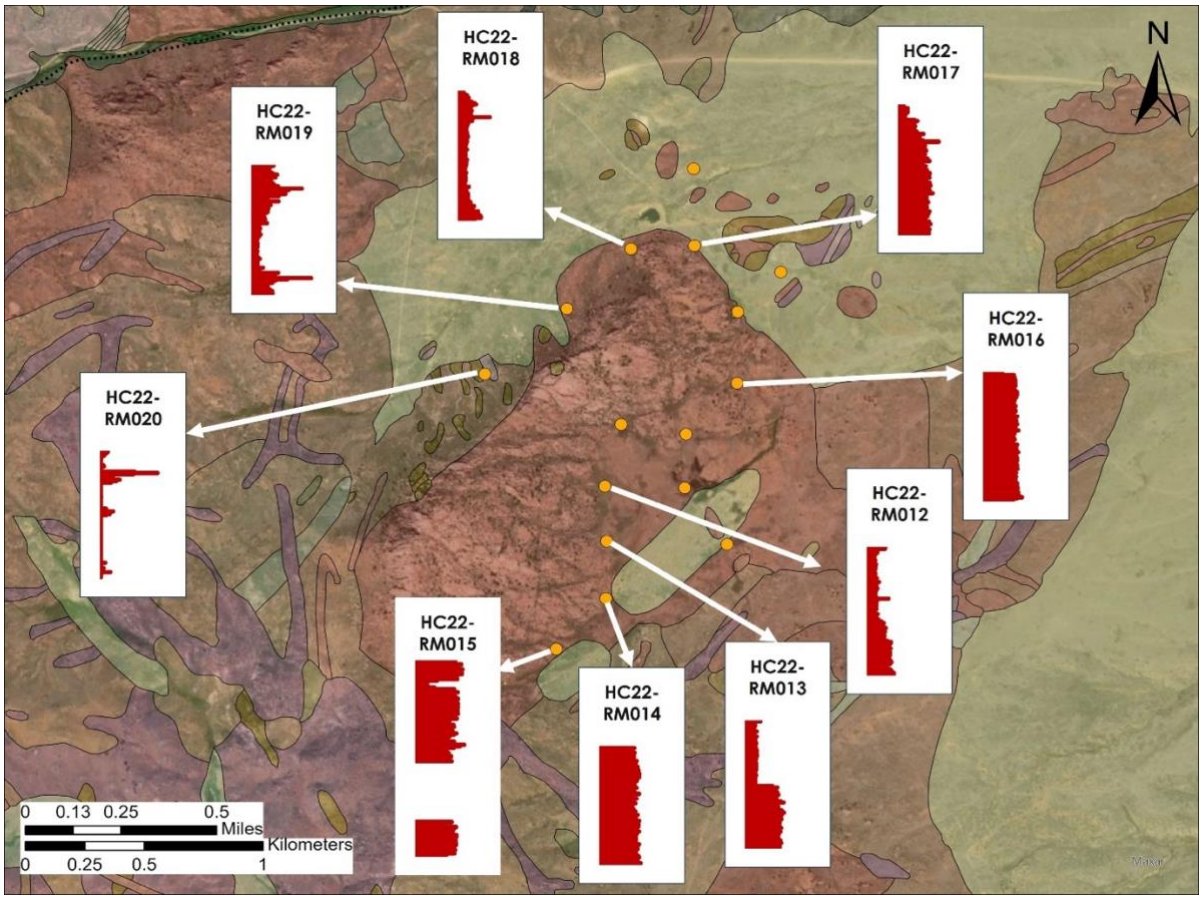
Figure 4 - Overton Mountain Drill Hole Locations



Red Mountain Area Drill Holes



Red Mountain Area Strip Logs



Appendix – JORC Table 1

JORC Code, 2012 Edition – Table 1 Halleck Creek Exploration Area		
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 downhole gamma sondes, handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*	ARR drilled 38 reverse circulation (RC) holes across the Halleck Creek Resource Claim area. All holes were approximately 150 meters (492.13 feet) deep. With the exception of HC22-RM015 which went to a depth of 175.5 meters (576 feet). Chip samples were collected at 1.5 meter continuous intervals via rotary splitter. In March and April 2022, ARR drilled nine HQ-sized core holes across the Halleck Creek Resource claim area. All holes were approximately 350 ft (100 meters) with the exception of one hole which was terminated at 194 ft. Total drilled length of 3,008 ft (917 m). Rock core was divided into sample lengths of 5 ft (1.52 m) long and at key lithological breaks. An additional 71 surface rock samples were collected on claim areas east of the Overton Mountain study area. A total of 513 surface rock samples exist at the Halleck Creek. Surface rock samples collected by ARR are logged, photographed and located using handheld GPS units. As part of reverse circulation (RC) exploration drilling at Halleck Creek. ARR collected XRF readings on RC chip samples. Elements included in XRF measurements include: Lanthanum, Cerium, Neodymium, and Praseodymium. ARR collected three XRF readings on each sample, then averaged the readings. Readings are performed at 25-meter intervals down each drill hole. These values

		are considered to be qualitative in natures and provide only rough indications of grade.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Core recoveries and RQDs were calculated by ARR field geologists.
	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.	Reverse circulation rock chip samples were collected at 1.5-meter continuous intervals via rotary splitter. For each interval chip samples were placed in labelled sample bags weighing between 1-2kg. A 0.5-1kg sample was collected for reserve analysis and logging. Chip samples were also placed into chip trays with 20 slots for logging and XRF analysis. Rock core samples 5 ft (1.52 m) long are being fillet cut. The fillet cuts are being pulverised and sampled for 60 elements including rare earth elements using ICP-MS and industry standards. A select number of samples are additionally being assayed for whole rock geochemistry. American Assay Labs in Sparks, NV is performed the analyses.
		RC chip samples were sent to ALS labs in Twin Falls, ID for preparation and forwarded on to ALS labs in Vancouver, BC for ICP-MS 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 another type, whether the core is oriented and if so, by what method, etc.).*	A Schraam T-450 reverse circulation drill rig was used to drill all 38 RC drill holes. A continuous rotary sample splitter was used to collect the RC samples at 1.5m intervals.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	A continuous rotary sample splitter was used to collect the RC samples at 1.5m intervals. All RC samples were visually logged by ARR geologists. Drill core was collected in lengths 1.5 meters. Samples at 25m intervals were photos and analysed using an Olympus Vanta handheld XRF analyser in triplicate. Lanthanum, Cerium, Neodymium, and Praseodymium were analysed.
	Measures are taken to maximise sample recovery and ensure the representative nature of the samples.	Reverse circulation rock chip samples were collected at 1.5-meter continuous intervals via rotary splitter. For each interval chip samples were placed in labelled sample bags weighing between 1-2kg. A 0.5-1kg sample was collected for reserve analysis and logging. Chip samples were also placed into chip trays with 20 slots for logging and XRF analysis. All core and associated samples were immediately placed in core boxes.
	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.	Recoveries were very high in competent rock. No loss or gain of grade or grade bias related to recovery
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.*	All RC samples were visually logged by ARR geologists from chip trays using 10x binocular microscopes. Samples at 25m intervals were photos and analysed using an Olympus Vanta handheld XRF analyser in triplicate. Lanthanum, Cerium, Neodymium, and Praseodymium were analysed.

	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	RC samples and logging is quantitative in nature. Chip samples are stored in secure sample trays. Chip samples were photographed and 25m intervals.
	The total length and percentage of the relevant intersections logged.	All RC samples were visually logged by ARR geologists for each 1.5-meter continuous sample. All drill core was visually logged, measured, and photographed by ARR geologists. Drill core was collected in lengths (runs) of 5 feet (1.52m). ARR geologists calculated recoveries for each core run. ARR geologists logged lithology, various types of alteration and mineralisation, fractures, fracture conditions, and RQD.
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.	Samples varied between wet and dry. The course crystalline nature of the deposit minimizes adverse effects of wet samples. Samples were rotary split during drilling and sample collection.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	RC samples were from Pulverize split of up to 250 g to better than 85 % passing minus 75 microns.
	Quality control procedures adopted for all sub-sampling stages to maximise the representivity of samples.	ARR submitted CRM sample blanks, CRM standard REE samples from CND Labs and duplicate samples for analysis. Blank samples were added one for every 10 core samples, REE samples were added one for every 25 core samples, and Duplicate samples were added one per every 25 core samples.

	Measures are taken to ensure that the sampling is representative of the in situ material collected, including, for instance, results for field duplicate/second-half sampling.	A continuous rotary sample splitter was used to segregate three samples per 1.5m inerval.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Allanite is generally well distributed across the core and the sample sizes are representative of the fine grain size of the Allanite.
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.*	ALS uses a 5-acid digestion and 48 elements by lithium borate fusion and ICP-MS. For quantitative results of all elements, including those encapsulated in resistive minerals
	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.	Samples at 25m intervals were photos and analysed using an Olympus Vanta handheld XRF analyser in triplicate. Lanthanum, Cerium, Neodymium, and Praseodymium were analysed. Simple average values of three XRF readings were calculated. No downhole geophysical tools used in the drilling program.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	For the RC drilling, ARR submitted CRM sample blanks, CRM standard REE samples from CND Labs and duplicate samples for analysis. CRM and Blank samples were inserted alternately at 20 sample intervals. Internal laboratory blanks and standards will additionally be inserted during analysis.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	RC chip samples have not yet been verified by independent personnel.
	The use of twinned holes.	No twinned holes were used.

	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Data entry was performed by ARR personnel and checked by ARR geologists. All field logs were scanned and uploaded to company file servers. All photographs of the core were also uploaded to the file server daily. Drilling data will be imported into the DHDB drill hole database. All scanned documents are cross-referenced and directly available from the database. Assay data for the RC drilling was received electronically from ALS. Digital copies of the final data are cross-referenced in DHDB. The spreadsheets of data from ALS are imported directly into DHDB.
	Discuss any adjustment to assay data.	Oxide values are calculated in the database using the molar mass of the element and the oxide
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.*	RC drill holes have been located using handheld GPS units. Final surveys of hole locations will be performed by professional surveyors.
	Specification of the grid system used.	The grid system used to compile data was NAD83 Zone 13N.
	Quality and adequacy of topographic control.	Topography control is +/- 10 ft (3 m).
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	Both randomly spaced and localised clustering of drillholes.
	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.	The drill hole data is at a sufficient spacing to determine a mineral resource or reserve. However, until all assay results of the RC drilling have been received, verified and modeled, no resources or reserves are being reported for the Halleck creek area.
	Whether sample compositing has been applied.	Each sample is the result of assaying a 1.5m interval. Composite assay values have not been calculated or applied.
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.*	All the RC holes were drilled at 65 degree angles using azimuth toward the primary rock formation.

	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.	
Sample security	*The measures are taken to ensure sample security.*	All RC chip samples were collected from the drill rigs and stored in a secured, locked facility. Sample pallets were shipped weekly, by bonded carrier, directly to ALS labs in Twin Falls, ID. Chains of custody were maintained at all times. All rock samples were in the direct control of company geologists until dispatched to ALS Labs.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No external audits or reviews have been conducted to date. However, 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.*	AREL acquired 5 unpatented federal lode claims on BLM US Federal Land totalling 71.6 acres (29 has) from Zenith Minerals Ltd. in 2021. 67 unpatented federal lode claims were staked by ARR that totalled 1193.3 acres (482 ha) in summer 2021. AREL staked 182 unpatented federal lode claims in March 2022 covering an area of approximately 3,088 acres (1,250 ha). AREL staked 118 unpatented federal lode claims in November 2022 covering an area of approximately 2,113 acres (855 ha). As of December 31, 2022, AREL controlled 367 unpatented federal lode claims and 4 Wyoming State mineral licenses covering 8,165 acres (3,304 ha).
	The security of the tenure held at the time of reporting and 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 ($11,880.00) is payable to the BLM. To maintain the State leases minimum rental payments of $1/acre for 1-5 years; $2/acre for 6-10 years; and $3/acre if held for 10 years or longer.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Prior to sampling by WIM on behalf of Blackfire Minerals and Zenith Minerals there was no previous sampling by any other groups within the ARR claim and Wyoming State Lease blocks.
Geology	*Deposit type, geological setting and style of mineralisation.*	The REE's occur within Allanite which occurs as a variable constituent of the Red Mountain Pluton. The occurrence can be characterised as a disseminated type rare earth deposit.
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:*	FTE DRILLING USA INC. of Mount Uniacke, Nova Scotia used a Schraam T-450 track mounted rig to drill 38 reverse circulation drill holes. Drill hole depths for 327 holes was 150m and one hole at 175.5m.

		Authentic Drilling from Kiowa, Colorado used both a track mounted and ATV mounted core rig to drill nine HQ diameter core holes. From March to April 2022, ARR drilled nine core holes across the Halleck Creek claim area. Drill holes ranged in depth from 194 to 352.5 ft with a total drilled length of 3,008 ft (917 m).
	easting and northing of the drill hole collar	All relevant information for this section can be found in Table 1 of the report entitled "Summary of Maiden Exploration Drilling at the Halleck Creek Project Area", May 2022. A preliminary summary of the Halleck Creek RC program can be found in the ASX release dated January 20, 2023.
	elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	
	dip and azimuth of the hole	
	downhole 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 has been excluded
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.*	Average Grade values were cut at minimum of TREO 1,500 ppm.
	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.	Assays are representative of 1.5m sample intervals for RC chips. Core samples were collected every 1.52m.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	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 unknown and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	The geometry of the mineralisation with respect to drill hole angle is not yet known. Vertical holes represent true depth and angled holes represent down-hole length.

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 Figures in ASX Release "Halleck Creek Drilling Update" dated 24 November 2022.
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 practised to avoid misleading reporting of Exploration Results.*	The latest exploration results reported in "Mapping and Surface Sampling Summary at the Halleck Creek Project Area: April 2022 A preliminary summary of the Halleck Creek RC program can be found in the ASX release dated January 20, 2023.
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 with areas of localised fracturing. The rock shows significant iron staining and deep weathering. Microscopic description: In hand specimen the samples represent light colored, fairly coarse-grained granitic rock composed of visible secondary iron oxide, amphibole, opaques, clear quartz and pink to white colored feldspar. All of the specimens show moderate to strong weathering and fracturing. Allanite content is variable from trace to 2%. Rare Earths are found within the Allanite. Historical metallurgical testing consisted of concentrating the Allanite by both gravity and magnetic separation. The current program employs sequential high gradient magnetic separation and flotation to produce a concentrate suitable for downstream rare earth elements extraction.
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).*	Further drilling, mapping and sampling is planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Additional drilling is planned in new exploration areas and to increase resource confidence levels.

Appendix B – Preliminary Assay Results – Converted to Oxides

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM012	2050	227	543	1823	364	947	90	364	58	115	9	42	5	26	5	12	2	10	1	20	43	5
HC22-RM012	2018	221	530	1797	378	918	90	355	56	114	11	39	5	24	5	11	1	10	1	25	43	5
HC22-RM012	2400	345	632	2055	443	1029	104	408	71	187	10	56	8	41	7	19	2	13	2	27	43	6
HC22-RM012	1634	255	469	1379	269	677	72	306	55	133	10	42	6	30	5	14	2	11	2	39	28	5
HC22-RM012	1866	233	501	1633	340	824	83	332	54	119	10	40	5	27	5	13	2	10	2	33	36	5
HC22-RM012	1849	230	500	1619	337	813	84	331	54	119	10	40	5	26	5	12	2	10	1	35	40	7
HC22-RM012	1603	220	438	1383	283	692	71	288	49	114	9	38	5	25	5	12	2	9	1	29	39	8
HC22-RM012	1763	237	490	1526	310	759	79	323	55	122	10	41	5	28	5	13	2	9	2	31	33	6
HC22-RM012	2086	232	569	1854	383	934	95	381	61	117	11	43	5	27	5	12	2	9	1	32	44	6
HC22-RM012	1991	237	548	1754	362	876	91	366	59	119	11	43	5	27	5	13	2	10	2	34	43	6
HC22-RM012	1751	221	481	1530	313	767	79	320	51	113	11	38	5	26	5	12	1	9	1	28	34	5
HC22-RM012	1995	217	535	1778	394	878	95	355	56	111	11	37	5	24	4	11	2	10	2	27	38	5
HC22-RM012	1742	204	465	1538	337	764	82	306	49	102	11	36	5	23	4	11	1	9	2	27	34	5
HC22-RM012	1757	206	479	1551	335	765	82	316	53	104	11	36	5	23	4	11	1	9	2	27	35	5
HC22-RM012	1958	217	524	1741	380	867	94	346	54	108	12	38	5	25	5	11	1	10	2	29	40	5
HC22-RM012	1899	224	509	1675	362	834	89	336	54	111	12	40	5	25	5	12	2	10	2	29	37	5
HC22-RM012	1930	222	526	1708	368	845	92	346	57	109	12	40	5	26	5	11	2	10	2	27	38	5
HC22-RM012	1891	224	514	1667	366	817	90	339	55	112	12	40	5	25	5	12	1	10	2	30	37	5
HC22-RM012	2295	235	610	2060	476	1007	109	404	64	116	12	43	6	27	5	12	2	10	2	31	46	5
HC22-RM012	2693	234	672	2459	618	1201	125	449	66	115	12	44	5	27	5	12	2	10	2	26	52	5
HC22-RM012	2610	246	665	2364	590	1144	121	441	68	122	12	45	6	29	5	12	2	11	2	28	49	5
HC22-RM012	2532	241	652	2291	565	1108	118	433	67	119	12	45	6	28	5	12	2	10	2	28	49	6
HC22-RM012	2221	221	580	2000	454	996	106	386	58	111	12	41	5	25	5	11	1	9	1	24	42	6
HC22-RM012	2475	234	631	2241	551	1091	115	419	65	118	12	42	5	27	5	11	2	10	2	26	44	6
HC22-RM012	2610	256	676	2354	579	1134	121	450	70	128	12	48	6	29	5	13	2	11	2	27	47	5
HC22-RM012	2191	240	589	1951	430	966	104	390	61	121	10	43	6	28	5	12	2	11	2	26	47	9
HC22-RM012	2432	236	644	2196	509	1077	116	428	66	115	12	44	6	28	5	12	2	10	2	26	48	6
HC22-RM012	2605	249	679	2356	576	1135	121	454	70	122	12	48	6	28	5	13	2	11	2	29	50	6
HC22-RM012	2595	266	681	2329	562	1124	121	449	73	129	12	51	7	31	6	14	2	12	2	30	50	8
HC22-RM012	2570	241	665	2329	577	1120	120	443	69	121	12	44	6	27	5	12	2	10	2	25	48	5
HC22-RM012	2474	242	644	2232	543	1079	116	426	68	121	12	44	6	28	5	12	2	10	2	25	47	6
HC22-RM012	2474	220	637	2254	559	1088	116	426	65	108	12	42	5	25	4	11	1	10	2	19	48	5

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM012	2512	224	645	2288	564	1109	118	432	65	109	12	44	5	25	5	11	1	10	2	22	51	5
HC22-RM012	2604	273	682	2331	563	1125	121	450	72	133	12	52	7	32	6	14	2	13	2	29	49	6
HC22-RM012	2690	250	686	2440	609	1180	125	457	69	122	12	48	6	29	5	13	2	11	2	24	53	6
HC22-RM012	2730	271	709	2459	593	1195	128	467	76	131	13	53	7	31	6	14	2	12	2	26	55	6
HC22-RM012	2575	242	664	2333	573	1130	120	441	69	116	13	48	6	28	5	12	2	10	2	23	53	6
HC22-RM012	2289	198	612	2091	477	1029	112	412	61	99	11	37	5	22	4	10	1	8	1	14	46	6
HC22-RM012	2144	187	567	1957	448	966	103	384	56	96	11	34	4	20	4	9	1	7	1	12	41	5
HC22-RM012	2202	228	583	1974	442	981	105	384	62	110	12	44	5	27	5	11	2	10	2	20	45	5
HC22-RM012	2533	279	669	2254	528	1096	117	440	73	140	12	52	7	32	6	14	2	12	2	25	49	5
HC22-RM012	2675	290	707	2385	573	1145	123	467	77	145	13	55	7	33	6	14	2	13	2	25	51	5
HC22-RM012	2747	283	714	2464	606	1185	127	470	76	140	13	53	7	34	6	14	2	12	2	27	52	5
HC22-RM012	2977	278	770	2699	660	1308	138	511	82	137	12	54	7	32	6	14	2	12	2	28	57	5
HC22-RM012	2985	295	783	2690	661	1290	140	516	83	141	13	60	8	36	6	15	2	12	2	28	60	6
HC22-RM013	1720	222	473	1498	308	748	79	309	54	112	10	39	5	26	5	11	2	10	2	27	34	5
HC22-RM013	2990	246	749	2744	671	1357	135	504	77	125	9	46	6	27	5	13	2	11	2	33	55	8
HC22-RM013	3581	287	913	3294	799	1621	164	615	95	141	12	58	7	32	6	15	2	12	2	38	63	7
HC22-RM013	3158	271	817	2887	677	1431	144	549	86	133	11	54	7	31	5	14	2	12	2	34	57	7
HC22-RM013	3447	300	894	3147	754	1542	157	600	94	143	13	62	8	35	6	16	2	13	2	37	67	8
HC22-RM013	3428	295	882	3133	745	1548	158	590	92	141	12	61	7	35	6	16	2	13	2	36	68	8
HC22-RM013	3595	314	933	3281	785	1609	165	624	98	148	13	66	8	38	6	17	2	14	2	38	74	7
HC22-RM013	3506	298	904	3208	761	1585	161	605	96	145	12	60	7	35	6	16	2	13	2	35	67	7
HC22-RM013	3687	306	955	3381	806	1664	170	643	98	147	12	64	8	36	6	16	2	13	2	38	71	8
HC22-RM013	3443	291	881	3152	754	1560	158	589	91	137	12	61	8	35	6	15	2	13	2	36	70	7
HC22-RM013	3452	295	889	3157	752	1560	158	594	93	139	12	62	8	36	6	15	2	13	2	37	68	7
HC22-RM013	3498	278	952	3220	758	1548	174	647	93	137	12	56	7	31	6	14	2	11	2	20	69	7
HC22-RM013	3441	281	944	3160	732	1523	171	644	90	140	12	55	7	32	6	14	2	11	2	22	70	7
HC22-RM013	3973	327	1087	3646	855	1750	196	736	109	164	12	65	8	38	7	16	2	13	2	24	83	9
HC22-RM013	4283	339	1175	3944	923	1892	214	801	114	172	12	68	8	38	7	17	2	13	2	25	88	8
HC22-RM013	3447	288	946	3159	724	1529	172	640	94	143	12	57	7	33	6	14	2	12	2	23	69	7
HC22-RM013	3533	292	969	3241	740	1572	177	657	95	147	12	57	7	33	6	15	2	11	2	19	70	7
HC22-RM013	3676	275	998	3401	790	1652	183	680	96	135	11	55	7	32	6	14	2	11	2	18	76	7
HC22-RM013	3678	299	1009	3379	783	1628	183	685	100	149	12	60	7	34	6	15	2	12	2	23	75	6
HC22-RM013	3371	322	947	3049	685	1462	167	637	98	166	11	60	8	37	7	16	2	13	2	23	66	7
HC22-RM013	4049	347	1125	3702	851	1775	201	764	111	174	12	70	9	40	7	17	2	14	2	28	82	7

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM013	4139	356	1153	3783	894	1787	208	780	114	179	12	71	9	42	7	18	2	14	2	29	85	7
HC22-RM013	4323	371	1196	3952	915	1892	217	809	119	189	13	73	9	42	8	18	2	15	2	24	86	8
HC22-RM013	4083	340	1126	3743	870	1793	204	764	112	173	12	67	8	38	7	17	2	14	2	23	80	7
HC22-RM013	4041	326	1114	3715	860	1787	203	756	109	163	12	65	8	38	7	16	2	13	2	23	81	7
HC22-RM013	3497	288	959	3209	735	1554	172	654	94	142	13	58	7	32	6	14	2	12	2	19	69	6
HC22-RM013	3477	289	941	3188	733	1554	171	638	92	144	12	57	7	33	6	15	2	11	2	20	68	6
HC22-RM013	4043	325	1094	3718	857	1812	201	742	106	164	13	64	8	37	6	16	2	13	2	23	79	7
HC22-RM013	3811	302	1031	3509	813	1707	190	700	99	150	12	61	7	35	6	15	2	12	2	22	77	8
HC22-RM013	3832	312	1028	3520	822	1714	190	693	101	153	13	64	8	36	6	16	2	12	2	21	78	7
HC22-RM013	3836	305	1044	3531	834	1695	192	707	103	152	12	62	8	34	6	15	2	12	2	20	78	8
HC22-RM013	3701	302	999	3399	801	1640	185	674	99	152	12	60	7	34	6	15	2	12	2	22	75	7
HC22-RM013	2563	231	687	2332	543	1133	125	464	67	118	8	43	5	26	5	12	2	10	2	16	70	14
HC22-RM013	3881	318	1047	3563	828	1732	193	708	102	161	12	63	8	36	6	15	2	13	2	20	80	8
HC22-RM013	4015	316	1090	3699	873	1781	199	741	105	156	13	65	8	37	6	15	2	12	2	21	83	8
HC22-RM013	3462	291	943	3171	733	1535	171	639	93	145	12	58	7	33	6	15	2	11	2	24	69	7
HC22-RM013	3837	315	1046	3522	831	1689	191	711	100	156	13	62	8	36	7	16	2	13	2	22	79	7
HC22-RM013	3942	308	1069	3634	858	1750	197	727	102	153	13	62	8	35	6	15	2	12	2	21	81	8
HC22-RM013	3496	279	943	3217	760	1554	175	638	90	136	12	56	7	33	6	14	2	11	2	17	76	8
HC22-RM013	3749	313	1008	3436	812	1658	186	680	100	160	12	61	7	35	6	15	2	13	2	20	79	7
HC22-RM013	2672	249	722	2423	557	1178	132	484	72	128	8	47	6	28	5	12	2	11	2	13	74	13
HC22-RM013	1699	194	453	1505	334	744	82	296	49	107	5	32	4	22	4	10	1	8	1	8	91	23
HC22-RM013	3689	323	1004	3366	785	1621	182	679	99	165	12	62	8	36	7	16	2	13	2	21	83	9
HC22-RM013	3395	303	925	3092	704	1505	169	622	92	154	12	58	7	35	6	15	2	12	2	20	72	7
HC22-RM013	3936	323	1068	3613	840	1750	195	724	104	161	13	64	8	37	7	16	2	13	2	22	81	8
HC22-RM013	3967	317	1075	3650	850	1769	198	729	104	158	13	64	8	36	6	16	2	12	2	18	84	9
HC22-RM013	4027	311	1053	3716	887	1818	200	708	103	157	12	62	7	35	6	15	2	13	2	19	81	7
HC22-RM013	3641	330	981	3311	766	1609	182	656	98	168	12	64	8	37	7	17	2	13	2	21	73	7
HC22-RM013	3569	310	958	3259	766	1578	179	639	97	156	12	61	8	35	6	15	2	13	2	19	71	8
HC22-RM013	3895	320	1034	3575	836	1750	192	693	104	160	12	64	8	37	7	15	2	13	2	22	78	8
HC22-RM014	2897	276	782	2621	606	1271	144	519	81	140	10	53	7	31	6	14	2	11	2	13	60	6
HC22-RM014	3873	313	1050	3560	853	1701	197	703	106	156	11	66	8	36	6	14	2	12	2	14	72	7
HC22-RM014	3672	302	976	3370	803	1634	185	651	97	149	11	62	8	35	6	15	2	12	2	14	77	12
HC22-RM014	3346	281	894	3065	719	1492	169	595	90	138	12	57	7	33	6	13	2	11	2	12	69	7
HC22-RM014	3685	306	982	3379	794	1646	183	657	99	149	12	65	8	35	6	15	2	12	2	14	74	11

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM014	3891	312	1039	3579	840	1744	195	694	106	152	12	67	8	36	6	15	2	12	2	14	81	11
HC22-RM014	3392	282	907	3110	737	1505	171	605	92	137	11	60	7	32	6	14	2	11	2	12	71	8
HC22-RM014	3835	315	1036	3520	828	1701	194	691	106	154	12	67	8	37	6	15	2	12	2	14	76	9
HC22-RM014	3808	310	1023	3498	819	1701	191	682	105	150	12	66	8	37	6	15	2	12	2	13	79	9
HC22-RM014	3816	313	1023	3503	835	1689	190	687	102	153	12	67	8	36	6	15	2	12	2	14	81	8
HC22-RM014	3615	309	965	3306	787	1597	181	643	98	156	11	62	8	35	6	15	2	12	2	12	77	9
HC22-RM014	3717	301	998	3416	815	1646	185	668	102	145	12	65	8	35	6	14	2	12	2	14	76	7
HC22-RM014	4131	333	1108	3798	902	1836	207	741	112	163	12	71	9	39	7	15	2	13	2	12	84	9
HC22-RM014	4100	347	1101	3753	878	1824	205	730	116	171	12	74	9	41	7	16	2	13	2	13	81	11
HC22-RM014	3804	318	1021	3486	822	1689	190	680	105	154	12	69	8	38	6	15	2	12	2	13	79	9
HC22-RM014	3984	336	1067	3648	860	1769	198	709	112	167	11	71	9	39	7	15	2	13	2	14	89	10
HC22-RM014	3972	336	1064	3636	857	1763	199	708	109	168	11	69	9	39	7	16	2	13	2	14	88	8
HC22-RM014	4211	329	1133	3882	910	1886	211	760	115	160	12	71	9	38	7	16	2	12	2	18	89	8
HC22-RM014	4271	333	1154	3938	916	1916	213	776	117	161	12	73	9	39	7	15	2	13	2	15	94	8
HC22-RM014	4113	318	1105	3795	892	1843	207	742	111	156	12	68	8	37	6	15	2	12	2	15	87	8
HC22-RM014	4375	343	1174	4032	935	1972	221	786	118	167	12	75	9	40	7	16	2	13	2	16	93	9
HC22-RM014	4291	350	1146	3941	929	1916	215	766	115	172	13	73	9	41	7	17	2	14	2	13	90	8
HC22-RM014	4027	343	1098	3684	860	1775	202	736	111	168	12	73	9	40	7	16	2	14	2	15	85	8
HC22-RM014	4459	344	1194	4115	998	1972	225	801	119	168	13	74	9	40	7	16	2	13	2	18	98	7
HC22-RM014	4138	334	1106	3804	891	1855	206	741	111	162	11	73	9	39	7	16	2	13	2	14	86	7
HC22-RM014	4388	352	1178	4036	956	1953	222	786	119	173	13	75	9	42	7	16	2	13	2	14	90	8
HC22-RM014	4388	353	1187	4035	939	1959	221	794	122	173	12	76	9	41	7	17	2	14	2	13	94	8
HC22-RM014	4187	331	1122	3856	932	1849	211	751	113	161	13	72	8	39	7	15	2	12	2	15	90	7
HC22-RM014	3941	320	1057	3621	853	1757	196	707	108	154	12	70	8	38	7	15	2	12	2	13	80	7
HC22-RM014	4180	327	1115	3853	912	1873	211	745	112	158	12	72	9	38	6	15	2	13	2	14	84	7
HC22-RM014	3641	305	933	3336	796	1652	170	617	101	146	12	65	8	37	6	15	2	12	2	21	71	8
HC22-RM014	3920	326	1017	3594	855	1769	184	673	113	155	13	71	8	39	7	16	2	13	2	21	74	7
HC22-RM014	3904	315	1004	3589	855	1775	182	668	109	154	12	67	8	37	6	15	2	12	2	22	73	7
HC22-RM014	3837	324	998	3513	829	1732	180	661	111	159	12	68	8	38	6	16	2	13	2	21	73	8
HC22-RM014	3720	321	957	3399	805	1683	174	630	107	157	12	67	8	38	6	16	2	13	2	22	68	7
HC22-RM014	4118	351	1066	3767	884	1867	193	706	117	175	12	72	9	41	7	17	2	14	2	25	79	8
HC22-RM014	3488	302	895	3186	763	1572	163	590	98	146	12	63	8	36	6	15	2	12	2	21	68	8
HC22-RM014	3714	304	943	3410	828	1683	174	624	101	144	13	66	8	36	6	15	2	12	2	24	73	7
HC22-RM014	3853	307	982	3546	851	1757	181	652	105	146	13	67	8	36	6	15	2	12	2	23	75	6

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM014	3495	276	889	3219	778	1591	164	591	95	133	12	59	7	32	5	13	2	11	2	20	68	6
HC22-RM014	4417	335	1127	4082	982	2021	208	752	119	164	13	72	9	39	6	16	2	12	2	25	81	6
HC22-RM014	3065	250	782	2815	674	1394	142	519	86	121	10	53	6	29	5	12	2	10	2	19	55	5
HC22-RM014	3032	239	766	2793	673	1388	141	511	80	114	12	51	6	28	5	11	1	10	1	20	58	5
HC22-RM014	3388	255	859	3133	755	1554	159	574	91	124	12	53	6	29	5	12	2	10	2	22	67	7
HC22-RM014	4144	306	1050	3838	923	1910	196	698	111	142	13	69	8	37	6	15	2	12	2	24	84	8
HC22-RM014	3828	284	965	3544	862	1757	180	642	103	136	12	61	7	33	6	14	2	11	2	21	74	7
HC22-RM014	3747	284	949	3463	829	1726	176	632	100	135	12	61	7	34	6	14	2	11	2	22	76	7
HC22-RM014	3680	273	927	3407	824	1695	173	618	97	128	12	60	7	32	5	14	2	11	2	21	76	7
HC22-RM014	4018	307	1012	3711	894	1849	190	673	105	145	13	67	8	36	6	15	2	13	2	22	79	6
HC22-RM014	3527	302	900	3225	776	1591	164	596	98	148	13	62	7	35	6	15	2	12	2	23	67	9
HC22-RM014	3271	269	827	3002	721	1492	152	547	90	128	13	57	7	31	5	13	2	11	2	21	64	6
HC22-RM014	3655	274	924	3381	812	1683	173	616	97	132	13	58	7	31	5	13	2	11	2	21	71	7
HC22-RM014	3686	290	933	3396	821	1683	174	619	99	138	13	62	7	34	6	14	2	12	2	23	74	8
HC22-RM014	3802	316	966	3486	833	1732	178	639	104	152	13	68	8	37	6	15	2	13	2	25	79	9
HC22-RM014	3782	321	947	3461	840	1720	176	624	101	158	12	66	8	38	6	16	2	13	2	23	75	7
HC22-RM014	4007	315	1017	3692	883	1836	188	677	108	154	13	67	8	36	6	15	2	12	2	24	77	7
HC22-RM014	3777	306	954	3471	830	1732	176	631	102	145	13	66	8	37	6	15	2	12	2	23	78	7
HC22-RM014	3957	321	1004	3636	878	1800	185	667	106	153	14	70	8	38	6	16	2	12	2	24	80	6
HC22-RM014	4269	354	1090	3915	935	1941	201	720	118	170	14	77	9	42	7	17	2	14	2	27	85	8
HC22-RM014	3700	295	937	3405	813	1695	173	623	101	147	11	62	7	33	6	14	2	11	2	23	67	6
HC22-RM014	3993	311	1007	3682	883	1836	188	668	107	149	13	68	8	36	6	15	2	12	2	23	81	7
HC22-RM014	4036	318	1029	3718	891	1843	190	684	110	157	12	68	8	37	6	14	2	12	2	24	80	7
HC22-RM014	3861	310	1056	3551	821	1720	190	715	105	150	12	65	8	38	6	15	2	12	2	9	84	8
HC22-RM014	4417	343	1200	4074	941	1984	218	814	117	167	13	73	9	42	6	16	2	13	2	10	94	8
HC22-RM014	3832	316	1051	3516	828	1683	187	715	103	154	12	66	8	38	6	16	2	12	2	12	86	11
HC22-RM014	4146	332	1136	3814	891	1836	204	773	110	161	13	71	8	41	6	16	2	12	2	12	86	7
HC22-RM014	4355	341	1194	4014	936	1935	213	814	116	164	13	73	9	42	7	16	2	13	2	12	91	9
HC22-RM014	4303	331	1178	3972	903	1941	212	801	115	158	12	72	9	41	6	16	2	13	2	15	89	9
HC22-RM014	4299	337	1183	3962	925	1904	212	807	114	163	12	73	9	41	6	16	2	13	2	11	90	8
HC22-RM014	3918	327	1076	3591	831	1732	191	729	108	159	12	69	9	39	6	16	2	13	2	11	83	9
HC22-RM014	4176	333	1152	3843	892	1849	207	781	114	160	13	71	9	41	6	16	2	13	2	9	88	9
HC22-RM014	4215	329	1151	3886	904	1879	207	785	111	159	12	71	9	39	6	16	2	13	2	9	95	10
HC22-RM014	4415	346	1215	4069	958	1947	218	827	119	167	13	74	9	42	7	17	2	13	2	10	91	9

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM014	3946	319	1089	3627	840	1744	194	741	108	156	12	68	8	38	6	15	2	12	2	12	82	9
HC22-RM014	4164	351	1148	3813	880	1836	204	778	115	172	12	74	9	42	7	17	2	14	2	12	89	9
HC22-RM014	3571	317	988	3254	734	1578	175	667	100	155	12	66	8	38	6	16	2	12	2	10	80	8
HC22-RM014	4058	339	1124	3719	864	1781	198	763	113	164	12	72	9	41	7	17	2	13	2	14	84	9
HC22-RM014	3512	299	953	3213	739	1566	170	645	93	144	12	61	8	37	6	15	2	12	2	10	71	8
HC22-RM014	4091	329	1123	3762	868	1818	202	764	110	160	12	71	8	39	6	16	2	13	2	10	84	8
HC22-RM014	4081	342	1117	3739	866	1806	199	757	111	166	13	71	9	41	7	18	2	13	2	11	83	9
HC22-RM014	3879	326	1059	3553	823	1720	191	715	104	157	12	70	8	41	6	16	2	12	2	10	77	9
HC22-RM014	3619	303	980	3316	783	1597	176	664	96	147	12	63	8	36	6	15	2	12	2	10	79	12
HC22-RM014	4085	314	1098	3771	889	1830	198	749	105	152	12	67	8	38	6	15	2	12	2	10	81	9
HC22-RM014	4414	327	1190	4087	966	1978	217	811	115	158	13	71	8	39	6	16	2	12	2	11	88	9
HC22-RM014	4287	331	1153	3956	941	1910	208	785	112	161	13	71	8	40	6	16	2	12	2	10	85	10
HC22-RM014	4210	339	1138	3871	915	1867	205	773	111	168	12	70	8	41	6	17	2	13	2	10	87	10
HC22-RM014	4172	339	1140	3833	900	1843	205	773	112	166	12	71	9	41	6	17	2	13	2	12	82	9
HC22-RM014	4236	334	1145	3902	921	1886	207	777	111	161	13	71	9	41	6	16	2	13	2	14	83	9
HC22-RM014	4142	327	1128	3815	900	1836	203	766	110	157	13	70	9	40	6	16	2	12	2	13	82	9
HC22-RM014	4017	324	1086	3693	867	1787	196	736	107	159	12	68	8	39	6	16	2	12	2	11	80	9
HC22-RM014	4109	326	1116	3783	903	1812	201	757	110	156	13	70	8	40	6	16	2	13	2	9	86	9
HC22-RM014	4183	339	1135	3844	909	1849	204	771	111	166	13	70	9	40	7	17	2	13	2	10	86	8
HC22-RM014	4335	336	1173	3999	915	1959	214	792	119	164	12	72	9	39	7	16	2	13	2	14	88	9
HC22-RM014	4412	339	1201	4073	936	1984	219	813	121	166	12	72	9	39	7	17	2	13	2	12	91	9
HC22-RM014	3976	321	1076	3655	844	1781	196	723	111	157	12	66	8	38	7	16	2	13	2	10	82	9
HC22-RM014	4255	332	1163	3923	922	1886	213	783	119	161	12	71	9	39	7	16	2	13	2	9	87	8
HC22-RM014	4277	349	1172	3928	902	1904	213	790	119	172	13	73	9	41	7	17	2	13	2	12	88	9
HC22-RM014	4322	350	1193	3972	907	1922	216	806	121	171	13	74	9	41	7	17	2	14	2	11	90	8
HC22-RM014	4572	372	1260	4200	973	2021	230	850	126	180	13	80	10	44	8	18	2	15	2	13	94	8
HC22-RM015	4726	501	1335	4225	950	2015	230	886	144	254	14	97	13	62	11	26	3	18	3	6	82	9
HC22-RM015	4581	498	1306	4083	902	1947	228	863	143	259	13	94	13	59	11	25	3	18	3	5	82	8
HC22-RM015	5426	572	1530	4854	1091	2316	268	1014	165	295	14	110	14	69	12	30	4	21	3	4	97	10
HC22-RM015	2698	283	759	2415	524	1172	132	504	83	146	7	54	7	33	6	15	2	11	2	3	73	8
HC22-RM015	5012	494	1410	4518	1026	2156	249	935	152	246	14	100	13	61	11	25	3	18	3	4	90	10
HC22-RM015	5570	541	1575	5029	1127	2408	279	1046	169	270	15	110	14	67	12	27	3	20	3	3	93	10
HC22-RM015	5450	569	1554	4881	1108	2303	271	1031	168	288	15	112	15	69	12	30	4	21	3	4	90	9
HC22-RM015	5474	553	1550	4921	1102	2352	272	1025	170	277	15	111	15	68	12	28	4	20	3	5	95	10

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM015	5483	567	1534	4916	1109	2358	269	1018	162	288	15	111	15	70	12	29	4	20	3	4	94	11
HC22-RM015	4290	461	1197	3829	868	1830	211	792	128	239	12	87	11	55	10	24	3	17	3	3	80	13
HC22-RM015	4916	532	1379	4384	982	2101	241	910	150	276	14	101	13	65	11	27	3	19	3	6	86	11
HC22-RM015	4949	477	1368	4472	1018	2156	244	911	143	241	13	96	13	57	10	24	3	17	3	7	90	9
HC22-RM015	2566	367	738	2199	456	1056	123	479	85	196	10	62	8	43	8	20	3	15	2	30	48	8
HC22-RM015	2277	230	619	2047	449	1009	110	416	63	120	10	39	5	25	5	12	2	10	2	19	48	8
HC22-RM015	4594	316	1255	4278	1004	2064	234	854	122	149	13	72	8	37	6	15	2	12	2	8	86	9
HC22-RM015	4637	335	1278	4302	985	2088	233	870	126	157	14	75	9	40	7	16	2	13	2	7	84	8
HC22-RM015	5002	405	1397	4597	1030	2230	251	942	144	192	14	91	11	49	8	19	3	15	3	8	90	9
HC22-RM015	4112	407	1148	3705	824	1793	199	763	126	203	12	86	11	49	9	19	2	14	2	6	74	8
HC22-RM015	4645	517	1326	4128	908	1972	227	875	146	259	14	104	14	64	12	26	3	18	3	6	80	9
HC22-RM015	4839	536	1370	4303	962	2051	238	904	148	273	14	105	14	66	12	27	3	19	3	4	86	10
HC22-RM015	5075	550	1439	4525	1006	2162	251	949	157	282	14	107	14	68	12	28	3	19	3	5	91	11
HC22-RM015	4926	538	1380	4388	993	2094	242	909	150	279	14	102	14	65	12	27	3	19	3	4	86	12
HC22-RM015	4857	543	1370	4314	964	2058	240	905	147	284	14	102	13	65	12	28	3	19	3	5	83	9
HC22-RM015	5068	548	1418	4520	1020	2162	249	935	154	283	14	104	14	66	12	29	3	20	3	4	88	10
HC22-RM015	4852	515	1352	4337	985	2076	237	892	147	263	14	99	13	63	11	27	3	19	3	5	84	10
HC22-RM015	5044	531	1383	4513	1046	2162	248	907	150	270	14	106	14	64	12	26	3	19	3	4	86	12
HC22-RM015	4578	498	1252	4080	939	1959	224	820	138	258	14	96	12	58	11	25	3	18	3	4	79	12
HC22-RM015	5005	530	1381	4475	1040	2131	246	909	149	270	14	106	13	64	11	27	3	19	3	5	88	12
HC22-RM015	4557	483	1247	4074	950	1947	224	819	134	246	13	96	12	58	10	24	3	18	3	5	81	9
HC22-RM015	5073	532	1436	4541	1017	2168	249	954	153	268	14	106	13	67	11	27	3	20	3	4	88	9
HC22-RM015	3048	354	856	2694	582	1308	147	565	92	181	10	67	9	43	8	18	2	14	2	5	71	17
HC22-RM015	4678	501	1321	4177	934	1996	228	879	140	251	15	98	12	62	11	26	3	20	3	5	80	10
HC22-RM015	4924	501	1384	4423	1012	2101	240	924	146	250	14	102	12	62	10	26	3	19	3	4	84	9
HC22-RM015	4034	422	1092	3612	849	1732	198	718	115	213	13	83	11	50	9	21	3	16	3	5	72	10
HC22-RM015	3998	445	1096	3553	826	1695	195	718	119	230	13	83	11	53	9	23	3	17	3	6	68	8
HC22-RM015	3029	449	851	2580	572	1220	144	545	99	239	12	78	10	53	10	24	3	17	3	4	50	8
HC22-RM015	4540	508	1245	4032	919	1941	221	815	136	262	13	99	13	60	11	26	3	18	3	3	79	10
HC22-RM015	4569	472	1236	4097	951	1978	225	813	130	243	14	91	12	56	10	23	3	17	3	4	79	9
HC22-RM015	4333	506	1181	3827	894	1824	209	771	129	264	13	95	12	60	11	27	3	18	3	4	74	10
HC22-RM015	4113	477	1115	3636	846	1744	198	724	124	248	13	89	12	57	10	24	3	18	3	5	72	8
HC22-RM015	4436	492	1208	3944	915	1892	214	790	133	255	13	93	12	59	11	25	3	18	3	5	77	10
HC22-RM015	4861	534	1323	4327	992	2088	234	870	143	277	14	104	13	63	11	27	3	19	3	5	83	9

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM015	4561	495	1238	4066	934	1965	222	809	136	253	14	96	12	59	11	26	3	18	3	3	80	9
HC22-RM015	4018	408	1083	3610	847	1738	196	714	115	208	13	78	10	48	9	21	3	16	2	4	75	8
HC22-RM015	3600	386	966	3214	742	1560	174	635	103	199	13	72	9	45	8	20	3	15	2	4	65	8
HC22-RM015	3472	367	936	3105	721	1499	168	616	101	188	13	71	9	42	8	19	2	13	2	2	62	7
HC22-RM015	4581	496	1240	4085	943	1972	224	813	133	257	13	95	12	58	11	25	3	19	3	5	83	9
HC22-RM015	3920	472	1059	3448	778	1677	188	688	117	248	13	87	11	55	10	24	3	18	3	5	68	9
HC22-RM015	5762	678	1596	5084	1149	2438	283	1039	175	349	15	133	17	82	15	35	4	24	4	6	110	13
HC22-RM015	5246	585	1446	4661	1058	2242	259	942	160	301	14	116	15	70	12	29	4	21	3	5	98	12
HC22-RM015	4562	525	1265	4037	926	1922	223	826	140	273	11	103	13	63	11	27	3	18	3	5	91	13
HC22-RM015	3151	382	849	2769	629	1345	150	551	94	199	10	71	9	45	8	21	2	15	2	4	65	11
HC22-RM015	3721	439	1011	3282	749	1585	178	656	114	224	12	84	11	52	10	23	3	17	3	7	63	8
HC22-RM015	3976	462	1083	3514	796	1701	192	703	122	239	12	88	11	55	10	24	3	17	3	8	72	9
HC22-RM015	3760	442	1026	3318	753	1603	182	666	114	229	11	84	11	53	9	23	3	16	3	3	70	9
HC22-RM015	4277	465	1160	3812	871	1849	208	757	127	236	13	91	12	56	10	24	3	17	3	6	81	10
HC22-RM015	3968	388	1062	3580	830	1744	196	698	112	197	12	78	10	46	8	19	2	14	2	5	77	8
HC22-RM015	4068	429	1093	3639	836	1769	198	718	118	224	11	82	10	49	9	22	3	16	3	3	82	11
HC22-RM015	4320	448	1164	3872	911	1861	210	764	126	227	13	89	11	53	10	22	3	17	3	7	85	11
HC22-RM015	4296	378	1174	3918	901	1898	207	793	119	186	13	79	9	46	8	19	2	14	2	10	83	8
HC22-RM015	1972	303	560	1669	352	800	91	362	64	162	9	49	7	36	6	17	2	13	2	28	42	6
HC22-RM015	2886	341	805	2545	554	1235	137	534	85	178	11	60	8	41	7	18	2	14	2	21	52	7
HC22-RM015	4828	413	1310	4415	1036	2131	236	881	131	206	12	85	11	51	8	21	2	15	2	12	102	7
HC22-RM015	1979	313	572	1666	347	791	90	372	66	162	11	53	7	37	7	18	2	14	2	32	36	5
HC22-RM015	4484	341	1212	4143	972	2008	220	827	116	167	12	72	8	41	7	17	2	13	2	10	86	6
HC22-RM015	4406	355	1200	4051	938	1965	214	816	118	175	12	74	9	43	7	18	2	13	2	8	97	9
HC22-RM015	4422	364	1207	4058	951	1953	213	822	119	179	13	77	9	44	7	18	2	13	2	10	87	8
HC22-RM015	4856	408	1350	4448	1029	2131	239	913	136	199	13	88	10	52	8	19	2	15	2	8	94	7
HC22-RM015	4895	406	1352	4489	1036	2162	240	916	135	197	13	88	11	50	8	20	2	15	2	8	94	7
HC22-RM015	4715	396	1297	4319	993	2088	230	876	132	192	13	86	10	49	8	20	2	14	2	7	97	8
HC22-RM015	4771	412	1305	4359	1003	2113	231	879	133	202	13	87	11	51	8	20	3	15	2	9	99	8
HC22-RM015	4793	418	1327	4375	1017	2094	233	896	135	203	13	90	11	52	8	21	3	15	2	8	92	9
HC22-RM015	4844	430	1340	4414	1014	2125	236	902	137	210	13	91	11	54	9	21	3	16	2	8	92	9
HC22-RM015	4830	433	1339	4397	998	2125	234	903	137	213	13	91	11	54	9	21	3	16	2	9	90	9
HC22-RM015	4615	425	1286	4190	965	2002	223	867	133	208	13	90	11	52	9	21	3	16	2	9	85	8
HC22-RM015	4641	428	1302	4213	955	2021	227	870	140	209	14	90	11	54	9	21	3	15	2	7	86	7

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM015	4710	426	1315	4284	975	2058	230	886	135	208	14	90	11	53	9	21	3	15	2	7	88	9
HC22-RM015	4501	427	1248	4074	931	1959	219	836	129	211	14	88	11	53	9	21	3	15	2	7	84	9
HC22-RM015	4619	437	1302	4182	950	1996	224	876	136	215	14	91	11	55	9	21	3	16	2	7	87	9
HC22-RM015	3665	366	1016	3299	753	1585	176	680	105	182	10	75	9	46	7	19	2	14	2	6	80	15
HC22-RM016	2152	253	600	1899	412	923	100	398	66	132	9	45	6	30	5	13	2	10	1	10	44	5
HC22-RM016	3389	392	953	2997	651	1449	160	637	100	206	12	70	9	47	8	20	3	15	2	8	68	6
HC22-RM016	3254	391	919	2863	623	1376	155	611	98	203	12	70	9	46	8	21	3	16	3	10	64	6
HC22-RM016	3473	408	974	3065	665	1486	164	644	106	210	13	73	10	50	9	22	3	16	2	8	69	7
HC22-RM016	3377	405	943	2972	645	1443	161	622	101	213	13	70	9	50	8	21	3	16	2	8	64	11
HC22-RM016	3494	412	979	3082	670	1492	166	651	103	216	13	72	10	49	8	22	3	16	3	8	67	9
HC22-RM016	3280	391	920	2889	627	1400	155	608	99	200	13	70	9	49	8	21	3	16	2	7	62	9
HC22-RM016	3512	375	976	3137	692	1523	171	649	102	189	13	71	9	45	8	20	3	15	2	7	68	7
HC22-RM016	2844	330	793	2514	543	1226	135	525	85	171	10	59	8	40	7	17	2	14	2	7	57	6
HC22-RM016	3555	400	992	3155	697	1523	171	660	104	208	12	71	9	48	9	22	3	16	2	8	68	8
HC22-RM016	3356	416	935	2940	644	1419	159	618	100	224	12	69	9	49	8	22	3	17	3	8	62	15
HC22-RM016	3339	398	931	2941	643	1425	159	614	100	208	13	69	9	49	8	21	3	16	2	7	62	12
HC22-RM016	3442	406	952	3036	650	1492	163	628	103	216	13	68	9	49	8	22	3	16	2	8	63	9
HC22-RM016	3421	416	945	3005	645	1474	160	625	101	220	13	71	10	49	9	22	3	16	3	8	63	10
HC22-RM016	3694	437	1016	3257	706	1597	173	672	109	235	13	72	10	52	9	23	3	17	3	7	68	15
HC22-RM016	3664	432	1017	3232	692	1585	172	674	109	229	13	74	10	52	9	23	3	17	2	10	68	11
HC22-RM016	3736	411	1031	3325	714	1640	178	686	107	217	13	70	10	50	9	21	3	16	2	9	70	8
HC22-RM016	3653	416	1004	3237	695	1597	172	667	106	221	13	71	10	49	9	22	3	16	2	8	67	10
HC22-RM016	3657	408	1007	3249	697	1603	172	671	106	218	13	70	9	49	8	21	3	15	2	7	67	8
HC22-RM016	3502	393	970	3109	667	1529	166	643	104	207	13	69	9	48	8	20	2	15	2	6	65	9
HC22-RM016	3469	376	956	3093	668	1523	164	637	101	198	13	66	9	45	8	19	2	14	2	8	63	9
HC22-RM016	3427	375	943	3052	651	1511	161	631	98	199	12	66	9	44	8	19	2	14	2	6	62	9
HC22-RM016	3381	393	933	2988	643	1468	159	619	99	209	13	68	9	47	8	20	2	15	2	9	61	10
HC22-RM016	3367	381	918	2986	642	1480	158	607	99	201	13	65	9	45	8	20	3	15	2	10	60	9
HC22-RM016	3148	353	864	2795	604	1376	149	576	90	189	12	60	8	41	7	18	2	14	2	9	58	9
HC22-RM016	3559	394	976	3165	678	1566	167	650	104	209	13	67	9	46	8	21	3	16	2	6	64	10
HC22-RM016	2934	340	802	2594	556	1284	138	530	86	182	10	57	8	40	7	18	2	14	2	6	61	13
HC22-RM016	3186	373	872	2813	600	1394	149	576	94	199	11	63	9	44	8	20	2	15	2	8	62	10
HC22-RM016	3515	397	968	3118	672	1535	167	640	104	210	13	67	9	48	8	21	3	16	2	10	67	9
HC22-RM016	3555	398	971	3157	678	1566	167	642	104	211	12	68	9	49	8	21	3	15	2	6	69	12

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM016	3406	399	942	3007	647	1474	162	623	101	213	13	68	9	47	8	21	3	15	2	7	65	9
HC22-RM016	3212	382	887	2830	604	1394	150	587	95	205	12	64	9	46	8	19	2	15	2	7	61	10
HC22-RM016	3377	382	928	2995	647	1474	158	614	102	203	12	65	9	45	8	20	2	16	2	6	63	10
HC22-RM016	3725	424	1020	3301	713	1628	175	677	108	226	13	72	10	50	8	22	3	17	3	7	68	9
HC22-RM016	3405	396	940	3009	645	1480	160	623	101	211	12	69	9	47	8	20	3	15	2	9	63	10
HC22-RM016	3571	395	983	3176	683	1566	169	654	104	210	13	68	9	47	8	21	2	15	2	8	65	9
HC22-RM016	3585	404	990	3181	684	1566	169	657	105	211	13	71	10	49	8	21	3	16	2	10	67	10
HC22-RM016	3587	401	981	3186	690	1572	170	651	103	213	13	69	9	48	8	21	3	15	2	6	65	8
HC22-RM016	3609	403	992	3206	694	1578	170	658	106	213	13	69	10	48	8	21	3	16	2	9	66	9
HC22-RM016	3723	419	1025	3304	719	1621	176	681	107	221	13	73	10	51	9	21	3	16	2	7	68	9
HC22-RM016	3592	409	989	3183	680	1572	169	654	108	215	13	71	9	49	8	22	3	16	3	9	64	9
HC22-RM016	3408	387	935	3021	650	1492	159	622	98	203	13	66	9	47	8	20	3	16	2	8	64	9
HC22-RM016	3540	403	969	3137	690	1535	166	642	104	214	13	69	9	48	8	21	3	16	2	8	64	9
HC22-RM016	3535	406	969	3129	676	1542	167	643	101	216	13	69	9	49	8	21	3	16	2	8	65	9
HC22-RM016	3854	437	1057	3417	739	1683	180	701	114	232	13	75	10	52	9	23	3	17	3	7	69	9
HC22-RM016	3345	399	917	2946	630	1456	158	602	100	213	13	67	9	48	8	21	3	15	2	8	59	8
HC22-RM016	3446	414	951	3032	654	1486	162	629	101	218	13	71	10	49	9	22	3	17	2	5	65	10
HC22-RM016	3377	398	889	2979	692	1456	152	577	102	201	13	73	10	48	9	22	3	17	2	19	61	7
HC22-RM016	3221	395	844	2826	658	1382	143	548	95	196	13	74	10	48	9	22	3	17	3	18	61	7
HC22-RM016	3099	341	811	2758	647	1351	140	527	93	169	12	65	9	42	8	18	2	14	2	19	58	6
HC22-RM016	3378	381	885	2997	695	1474	152	577	99	187	13	74	10	47	8	21	3	16	2	18	66	7
HC22-RM016	3439	372	904	3067	719	1499	155	594	100	185	13	72	10	45	8	20	2	15	2	19	64	6
HC22-RM016	3271	336	877	2935	664	1443	152	583	93	168	13	63	8	41	7	18	2	14	2	11	63	7
HC22-RM016	3238	342	867	2896	667	1413	152	573	91	169	14	65	9	42	7	18	2	14	2	12	63	8
HC22-RM016	3333	350	901	2983	678	1456	156	598	95	177	13	64	9	43	7	19	2	14	2	11	63	8
HC22-RM016	3740	401	1006	3339	752	1640	174	665	108	204	13	73	10	49	9	22	3	16	2	12	69	12
HC22-RM016	3481	383	935	3098	702	1517	161	616	102	194	13	71	9	47	8	21	3	15	2	12	62	7
HC22-RM016	3615	388	969	3227	744	1572	170	639	102	198	13	71	10	48	8	20	3	15	2	11	65	8
HC22-RM016	3607	396	965	3211	744	1560	167	637	103	201	14	72	10	48	9	21	3	16	2	12	64	7
HC22-RM016	3448	393	923	3055	691	1499	157	607	101	201	13	70	10	48	9	21	3	16	2	10	60	7
HC22-RM016	3711	390	994	3321	745	1640	173	656	107	199	13	71	10	48	8	21	3	15	2	11	65	8
HC22-RM016	3862	400	1032	3462	794	1695	180	684	109	204	14	72	10	49	9	21	3	16	2	11	66	8
HC22-RM016	3646	379	981	3267	745	1597	170	651	104	192	13	70	9	47	8	20	3	15	2	10	63	7
HC22-RM016	3649	385	972	3264	752	1597	169	643	103	195	13	71	10	47	8	20	3	16	2	10	63	8

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM016	3569	377	956	3192	733	1560	166	632	101	190	13	69	9	48	8	20	3	15	2	9	62	7
HC22-RM016	3663	389	984	3274	751	1597	171	650	105	198	13	71	10	48	8	21	3	15	2	9	64	7
HC22-RM016	3731	383	1001	3348	769	1634	174	663	108	196	13	70	9	47	8	20	3	15	2	10	63	8
HC22-RM016	3718	392	998	3326	765	1621	174	660	106	199	13	72	10	48	9	21	3	15	2	9	65	8
HC22-RM016	3662	387	987	3275	737	1609	170	652	107	196	13	71	10	48	8	21	3	15	2	9	63	7
HC22-RM016	3567	367	946	3200	711	1597	164	626	102	187	13	68	9	45	8	19	2	14	2	10	60	7
HC22-RM016	3613	381	963	3232	734	1591	167	638	102	194	13	70	9	47	8	20	3	15	2	7	62	7
HC22-RM016	3706	389	995	3317	740	1640	172	658	107	199	13	71	10	48	8	20	3	15	2	9	63	7
HC22-RM016	3661	383	985	3278	740	1609	170	653	106	194	13	72	9	47	8	20	3	15	2	9	64	8
HC22-RM016	3707	387	990	3320	760	1628	174	652	106	196	13	72	10	48	8	20	3	15	2	9	66	8
HC22-RM016	3786	394	1018	3392	761	1671	175	675	110	201	13	72	10	48	8	21	3	16	2	9	66	7
HC22-RM016	3528	373	950	3155	718	1542	163	629	103	189	13	69	9	46	8	20	2	15	2	8	63	7
HC22-RM016	3531	387	956	3144	710	1535	164	630	105	196	13	71	10	47	9	21	3	15	2	9	64	8
HC22-RM016	3571	376	956	3195	734	1560	167	631	103	192	13	69	9	46	8	20	2	15	2	9	63	7
HC22-RM016	3523	378	951	3145	701	1548	163	630	103	193	13	69	9	46	8	20	3	15	2	9	64	8
HC22-RM016	3497	370	939	3127	707	1535	164	621	100	187	13	68	9	45	8	20	3	15	2	9	63	8
HC22-RM016	3583	385	969	3198	714	1572	167	640	105	196	13	70	10	47	8	21	3	15	2	8	64	8
HC22-RM016	3556	386	956	3170	710	1560	164	633	103	197	13	71	9	47	8	21	3	15	2	10	63	8
HC22-RM016	3554	378	955	3176	710	1566	166	630	104	193	12	69	9	46	8	21	3	15	2	8	64	8
HC22-RM016	3545	366	964	3179	721	1548	166	640	104	185	12	68	9	45	8	20	2	15	2	8	65	8
HC22-RM016	1890	204	497	1686	378	840	86	328	54	107	6	36	5	24	4	11	1	9	1	6	75	14
HC22-RM016	3734	374	1003	3360	766	1646	175	667	106	191	12	69	9	46	8	20	2	15	2	8	72	7
HC22-RM016	3318	381	883	2937	688	1419	154	575	101	201	11	68	9	44	8	20	3	15	2	8	65	9
HC22-RM016	3728	434	1040	3294	749	1566	181	685	113	231	13	77	10	51	9	22	3	16	2	6	65	8
HC22-RM016	3569	413	997	3156	707	1511	172	658	108	215	12	74	10	49	9	22	3	16	3	6	66	9
HC22-RM016	3805	419	1046	3386	759	1640	183	692	112	221	13	76	10	49	9	21	3	15	2	6	66	8
HC22-RM016	3682	393	1016	3289	751	1578	178	671	111	206	12	71	10	46	8	20	3	15	2	7	64	9
HC22-RM016	3410	335	945	3075	685	1492	167	631	100	174	12	63	8	39	7	16	2	12	2	5	61	7
HC22-RM016	3878	460	1090	3418	772	1621	187	720	118	243	14	81	11	54	10	23	3	18	3	7	68	11
HC22-RM016	3607	374	997	3233	735	1554	175	665	104	196	12	69	9	44	8	19	2	13	2	6	63	7
HC22-RM016	3885	416	1075	3469	789	1664	189	713	114	220	12	75	10	49	9	21	3	15	2	6	67	8
HC22-RM016	3691	435	1027	3256	738	1554	178	675	111	228	13	78	11	52	9	22	3	16	3	6	66	8
HC22-RM016	4246	464	1174	3782	862	1812	205	774	129	244	14	83	11	55	10	24	3	17	3	7	75	9
HC22-RM016	3627	445	1008	3182	721	1517	174	659	111	236	13	78	11	53	9	23	3	16	3	7	61	8

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM016	3301	394	916	2907	665	1382	158	601	101	207	13	70	9	47	8	20	3	15	2	6	58	7
HC22-RM017	2426	678	797	1748	258	787	105	484	114	378	13	100	14	80	15	38	5	30	5	44	20	8
HC22-RM017	2842	723	937	2119	334	951	125	577	132	400	13	110	16	87	15	40	5	32	5	49	26	12
HC22-RM017	2506	599	787	1907	317	888	108	484	110	330	12	91	13	72	13	33	4	27	4	32	28	8
HC22-RM017	2454	580	771	1874	315	873	107	472	107	317	12	88	13	72	13	31	4	26	4	30	29	8
HC22-RM017	2370	600	745	1770	290	821	101	453	105	329	12	91	13	73	13	34	4	27	4	29	30	10
HC22-RM017	2491	640	780	1851	303	862	106	470	110	349	11	97	14	80	15	36	5	29	4	26	31	10
HC22-RM017	2447	621	766	1826	301	848	103	468	106	347	12	93	14	75	13	33	4	26	4	20	27	8
HC22-RM017	1903	569	607	1334	197	612	77	357	91	314	11	83	13	69	13	32	4	26	4	20	20	8
HC22-RM017	2247	676	729	1571	235	706	92	429	109	372	12	100	15	84	15	38	5	30	5	25	22	8
HC22-RM017	2708	745	866	1963	313	894	113	517	126	408	12	114	17	93	17	42	5	32	5	22	29	9
HC22-RM017	2314	711	744	1603	237	725	94	434	113	399	11	104	16	87	16	39	5	30	4	22	25	9
HC22-RM017	3741	930	1160	2811	517	1271	157	700	166	516	13	144	21	116	21	51	6	37	5	14	47	14
HC22-RM017	2734	777	870	1957	306	895	113	513	130	436	10	118	17	97	17	43	5	30	4	12	49	17
HC22-RM017	3216	984	1041	2232	332	1004	130	607	159	551	13	147	22	123	22	55	7	39	5	13	37	14
HC22-RM017	2908	898	955	2010	293	891	118	560	148	509	13	131	20	109	20	50	6	35	5	12	32	20
HC22-RM017	3649	499	1016	3150	702	1505	166	659	118	263	14	85	12	61	11	27	3	20	3	6	61	11
HC22-RM017	5969	840	1705	5129	1093	2451	274	1113	198	456	16	145	19	101	18	43	5	32	5	10	89	17
HC22-RM017	3023	975	999	2048	296	897	122	579	154	545	14	143	22	122	22	55	7	39	6	15	33	15
HC22-RM017	3564	479	981	3085	693	1480	162	636	114	257	13	80	11	58	10	25	3	19	3	5	58	10
HC22-RM017	3961	532	1097	3429	780	1628	182	711	128	283	15	92	12	64	11	27	3	22	3	7	64	10
HC22-RM017	3930	520	1089	3410	758	1640	179	707	126	270	15	93	12	65	11	27	3	21	3	6	65	9
HC22-RM017	3852	473	1071	3379	762	1615	178	703	121	249	14	83	11	58	10	24	3	18	3	6	63	8
HC22-RM017	4028	481	1116	3547	803	1695	187	736	126	259	14	82	11	56	10	24	3	19	3	5	61	7
HC22-RM017	4128	519	1132	3609	810	1744	189	736	130	268	16	93	13	64	11	27	3	21	3	7	70	10
HC22-RM017	3960	507	1091	3453	785	1652	181	711	124	264	15	90	12	63	11	26	3	20	3	7	67	9
HC22-RM017	3854	493	1070	3361	760	1603	178	698	122	258	14	87	12	60	10	26	3	20	3	6	68	10
HC22-RM017	3948	492	1059	3456	781	1689	181	684	121	250	14	90	12	61	11	27	3	21	3	6	71	10
HC22-RM017	3283	434	886	2849	645	1382	149	570	103	221	12	79	11	53	9	24	3	19	3	6	71	13
HC22-RM017	3847	472	1034	3375	776	1634	176	670	119	246	14	83	12	57	10	25	3	19	3	6	65	8
HC22-RM017	4305	533	1153	3772	855	1843	198	744	132	272	15	96	13	66	12	30	4	22	3	4	72	8
HC22-RM017	4093	499	1086	3594	820	1763	186	702	123	252	15	91	12	63	11	28	3	21	3	5	69	9
HC22-RM017	4596	545	1230	4051	932	1972	212	798	137	273	16	103	14	69	12	29	4	22	3	5	82	10
HC22-RM017	2856	357	759	2499	565	1228	129	489	88	181	12	65	9	44	8	19	2	15	2	5	57	9

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM017	3594	428	965	3166	731	1535	164	625	111	213	14	81	11	54	9	23	3	18	2	6	68	7
HC22-RM017	3531	431	946	3100	707	1511	163	609	110	220	14	78	11	53	9	23	3	18	2	6	62	8
HC22-RM017	4065	489	1084	3576	822	1744	187	702	121	246	16	90	12	62	11	26	3	20	3	5	70	8
HC22-RM017	3973	462	1058	3511	797	1726	182	687	119	230	16	87	12	58	10	25	3	18	3	5	68	7
HC22-RM017	4012	466	1079	3546	815	1720	185	704	122	240	14	85	11	57	10	25	3	18	3	5	65	7
HC22-RM017	4274	499	1140	3775	873	1836	198	738	130	255	15	91	12	62	11	27	3	20	3	6	68	7
HC22-RM017	3937	480	1060	3457	785	1683	182	687	120	246	15	87	12	59	10	26	3	19	3	6	65	8
HC22-RM017	4638	523	1243	4115	945	2002	216	811	141	274	15	94	12	63	11	27	3	21	3	4	70	7
HC22-RM017	4670	531	1236	4139	946	2033	217	801	142	277	15	97	13	63	11	28	3	21	3	5	71	8
HC22-RM017	4533	512	1207	4021	918	1972	211	784	136	263	15	94	13	63	11	27	3	20	3	5	71	9
HC22-RM017	4549	510	1210	4039	929	1972	211	790	137	273	15	89	12	60	10	26	3	19	3	5	65	7
HC22-RM017	4592	519	1229	4073	942	1978	212	800	141	274	14	91	13	63	11	27	3	20	3	7	67	7
HC22-RM017	3680	443	989	3237	741	1572	169	644	111	230	13	78	11	54	9	24	3	18	3	9	57	7
HC22-RM017	4157	442	1099	3715	850	1830	193	720	122	231	13	80	11	53	9	23	3	17	2	7	65	7
HC22-RM017	4137	427	1098	3710	861	1812	193	722	122	224	13	77	10	51	9	22	3	16	2	6	63	6
HC22-RM017	4673	487	1250	4186	961	2045	222	819	139	255	14	89	12	58	10	25	3	18	3	5	71	7
HC22-RM017	4555	538	1226	4017	924	1947	212	793	141	276	15	98	13	67	11	30	4	21	3	6	72	7
HC22-RM017	4778	517	1272	4261	989	2076	224	829	143	268	15	94	13	63	11	27	3	20	3	6	74	7
HC22-RM017	4588	533	1221	4055	923	1990	211	794	137	272	16	99	13	66	11	28	3	22	3	6	76	7
HC22-RM017	4179	479	1122	3700	848	1800	195	729	128	250	14	85	11	59	10	25	3	19	3	6	65	7
HC22-RM017	4316	495	1148	3821	890	1855	198	749	129	253	15	90	12	60	11	27	3	21	3	6	71	9
HC22-RM017	4659	508	1238	4151	949	2039	216	808	139	257	15	96	13	62	11	28	3	20	3	7	79	9
HC22-RM017	4591	499	1225	4092	952	1990	214	799	137	250	15	96	13	62	11	26	3	20	3	6	79	8
HC22-RM017	5074	553	1353	4521	1047	2205	236	882	151	276	16	106	14	70	12	29	4	23	3	4	88	9
HC22-RM017	3923	413	1041	3510	817	1714	184	680	115	203	16	80	10	52	9	22	3	16	2	6	69	7
HC22-RM017	4190	397	1096	3793	881	1873	196	721	122	204	14	75	10	47	8	20	2	15	2	6	69	7
HC22-RM017	3506	374	938	3132	719	1529	164	614	106	192	14	68	9	45	8	19	2	15	2	6	59	7
HC22-RM017	4197	470	1153	3727	877	1763	216	753	118	246	15	86	11	55	9	24	3	18	3	5	73	10
HC22-RM017	3933	480	1085	3453	793	1640	201	706	113	259	14	83	11	54	10	24	3	19	3	4	66	9
HC22-RM017	4263	495	1169	3768	868	1800	218	762	120	263	15	88	12	57	10	25	3	19	3	2	71	9
HC22-RM017	4465	519	1233	3946	917	1867	230	802	130	278	15	93	12	59	11	26	3	19	3	3	73	9
HC22-RM017	4265	509	1181	3756	877	1769	219	766	125	272	15	89	12	59	10	26	3	20	3	2	71	9
HC22-RM017	3878	494	1074	3384	765	1615	196	692	116	264	14	86	12	58	10	25	3	19	3	3	63	8
HC22-RM017	4017	501	1120	3516	814	1652	204	724	122	270	14	87	12	58	10	25	3	19	3	3	66	9

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM017	4256	555	1201	3701	828	1750	218	773	132	297	15	97	13	65	11	29	4	21	3	2	73	11
HC22-RM017	3822	466	1075	3356	761	1585	198	695	117	250	15	81	11	54	9	23	3	17	3	2	66	9
HC22-RM017	4047	501	1130	3546	822	1664	207	732	121	267	15	87	12	58	10	26	3	20	3	2	67	10
HC22-RM017	4597	511	1280	4086	936	1941	240	835	134	272	16	92	12	59	10	25	3	19	3	1	76	9
HC22-RM017	4529	535	1266	3994	911	1892	235	822	134	288	15	93	13	62	11	27	3	20	3	0	74	10
HC22-RM017	4410	526	1231	3884	907	1818	227	802	130	284	15	91	12	60	10	28	3	20	3	4	70	9
HC22-RM017	3934	490	1109	3444	769	1634	204	716	121	263	15	83	12	56	10	25	3	20	3	2	62	8
HC22-RM017	4340	528	1215	3812	884	1787	221	791	129	284	15	91	13	61	11	27	3	20	3	2	69	9
HC22-RM017	4050	507	1131	3543	812	1671	206	732	122	273	14	88	12	59	10	26	3	19	3	3	66	12
HC22-RM017	4021	509	1112	3512	813	1658	206	714	121	274	14	88	12	59	10	26	3	20	3	4	67	8
HC22-RM017	4105	521	1146	3584	820	1689	211	741	123	282	15	90	12	59	11	26	3	20	3	2	67	9
HC22-RM017	4541	509	1257	4032	935	1910	233	823	131	272	15	92	12	58	10	25	3	19	3	4	75	9
HC22-RM017	4608	518	1267	4090	961	1935	236	828	130	276	14	93	13	60	10	26	3	20	3	4	75	10
HC22-RM017	4783	535	1323	4248	1003	1996	245	864	140	284	15	98	13	61	11	27	3	20	3	3	76	10
HC22-RM017	4385	512	1206	3873	909	1830	223	781	130	274	14	90	12	60	10	26	3	20	3	5	69	9
HC22-RM017	4022	473	1112	3549	831	1671	204	728	115	255	13	82	11	54	10	24	3	18	3	3	62	8
HC22-RM017	4275	473	1173	3802	894	1800	222	764	122	253	14	84	11	54	9	24	3	18	3	3	67	9
HC22-RM017	4585	511	1271	4074	958	1916	235	832	133	276	14	88	12	59	10	26	3	20	3	2	71	9
HC22-RM017	4253	489	1176	3764	881	1775	219	769	120	264	14	84	12	56	10	25	3	18	3	3	66	8
HC22-RM017	4475	503	1227	3972	935	1879	230	801	127	274	14	86	12	57	10	25	3	19	3	2	69	9
HC22-RM017	4551	509	1261	4042	948	1904	236	823	131	272	15	90	12	59	10	25	3	20	3	4	70	10
HC22-RM018	1602	283	503	1319	259	593	83	324	60	149	17	45	6	30	5	15	2	12	2	8	17	4
HC22-RM018	1507	277	470	1230	228	569	75	299	59	140	18	46	6	31	6	14	2	12	2	11	15	5
HC22-RM018	2003	408	655	1595	266	730	100	416	83	215	15	66	9	47	9	22	3	19	3	34	19	6
HC22-RM018	2422	487	803	1935	327	873	124	510	101	257	16	83	11	57	10	26	3	21	3	19	25	8
HC22-RM018	2646	464	833	2182	398	1015	134	533	102	244	16	79	10	54	10	25	3	20	3	16	25	6
HC22-RM018	2111	423	680	1688	294	771	106	432	85	225	15	68	9	48	9	23	3	20	3	24	24	9
HC22-RM018	1878	407	619	1471	240	668	94	390	79	214	16	64	9	47	9	22	3	20	3	52	13	5
HC22-RM018	2020	409	675	1611	263	730	103	430	85	213	16	67	9	48	9	22	3	19	3	34	17	6
HC22-RM018	1885	397	624	1488	244	676	96	392	80	208	14	65	9	47	9	21	3	18	3	41	15	4
HC22-RM018	1784	368	582	1416	240	645	90	369	72	196	11	59	8	43	8	20	3	17	3	28	29	9
HC22-RM018	1918	391	609	1527	267	705	95	384	76	206	17	62	9	45	8	21	3	17	3	13	23	7
HC22-RM018	1979	274	578	1705	351	814	101	376	63	142	11	46	6	32	6	15	2	12	2	8	57	14
HC22-RM018	4639	457	1342	4182	877	2027	253	895	130	230	21	85	11	53	10	23	3	18	3	11	65	7

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM018	2172	404	662	1768	327	835	108	418	80	213	17	64	9	47	9	22	3	17	3	10	29	6
HC22-RM018	1821	346	557	1475	277	688	90	352	68	184	17	53	7	40	7	19	2	15	2	11	22	6
HC22-RM018	2057	328	584	1729	365	824	101	372	67	172	18	50	7	37	7	18	2	15	2	11	22	5
HC22-RM018	1583	307	489	1276	246	581	77	311	61	166	17	45	6	34	6	16	2	13	2	23	14	4
HC22-RM018	1509	297	459	1212	210	585	70	287	60	148	16	49	7	35	7	17	2	14	2	15	14	4
HC22-RM018	1499	282	450	1217	213	593	69	283	59	142	15	47	6	33	6	16	2	13	2	14	15	5
HC22-RM018	1629	313	509	1316	225	626	76	322	67	158	15	54	7	37	7	17	2	14	2	13	13	5
HC22-RM018	1819	362	586	1457	234	689	85	372	77	180	13	66	9	43	8	20	3	17	3	19	15	7
HC22-RM018	1771	344	587	1427	223	667	85	373	79	166	14	67	8	42	8	19	2	15	3	19	14	5
HC22-RM018	1967	371	645	1596	257	748	94	411	86	184	14	70	9	45	8	20	3	15	3	21	15	4
HC22-RM018	2362	447	768	1915	304	910	115	484	102	222	13	85	11	56	10	25	3	19	3	26	19	5
HC22-RM018	1849	347	587	1502	251	716	88	371	76	171	14	64	9	43	8	19	2	15	2	23	16	4
HC22-RM018	2079	352	644	1727	298	838	100	409	82	174	13	67	9	44	8	19	2	14	2	15	23	6
HC22-RM018	2187	369	681	1818	325	867	107	432	87	185	12	69	9	46	8	20	3	15	2	19	25	7
HC22-RM018	2942	536	943	2406	406	1137	143	598	122	272	12	100	13	67	12	30	4	23	3	27	26	6
HC22-RM018	2222	398	687	1824	314	882	105	436	87	199	14	72	10	49	9	22	3	17	3	19	24	6
HC22-RM018	2564	492	821	2072	341	983	123	518	107	251	13	89	12	61	11	28	3	21	3	32	24	6
HC22-RM018	3275	588	1057	2687	478	1241	159	673	136	296	13	112	15	74	13	33	4	24	4	37	25	6
HC22-RM018	3393	540	1013	2853	575	1345	161	647	125	273	12	102	13	67	12	30	4	23	4	36	31	7
HC22-RM018	3351	604	1068	2747	490	1278	161	679	139	311	13	112	15	74	13	33	4	25	4	41	27	7
HC22-RM018	2471	436	770	2035	347	981	118	492	97	222	11	80	10	53	10	25	3	19	3	44	21	5
HC22-RM019	3279	285	839	2994	704	1492	155	559	84	136	12	58	7	34	6	15	2	13	2	14	55	5
HC22-RM019	2818	253	754	2565	604	1241	146	505	69	131	12	44	6	28	5	12	2	11	2	13	58	8
HC22-RM019	2671	269	724	2402	548	1165	134	485	70	142	13	45	6	29	5	13	2	12	2	18	48	6
HC22-RM019	2445	279	681	2166	496	1026	123	453	68	148	12	46	6	31	5	14	2	13	2	21	39	5
HC22-RM019	2543	245	681	2298	537	1112	128	458	63	129	10	42	5	27	5	12	2	11	2	17	56	11
HC22-RM019	2873	254	765	2619	629	1259	150	512	69	135	10	43	6	28	5	12	2	11	2	14	62	15
HC22-RM019	3153	318	862	2835	665	1351	166	569	84	166	14	55	7	36	6	16	2	14	2	18	51	5
HC22-RM019	3763	348	1014	3415	814	1634	199	673	95	183	14	62	8	39	7	16	2	15	2	17	60	6
HC22-RM019	3424	342	934	3082	715	1480	180	618	89	177	15	61	8	39	7	17	2	14	2	17	56	5
HC22-RM019	3571	338	978	3233	747	1554	187	653	92	175	15	61	8	38	7	16	2	14	2	17	58	5
HC22-RM019	2854	322	789	2532	579	1207	148	520	78	171	15	53	7	36	6	16	2	14	2	15	43	5
HC22-RM019	2866	340	788	2526	575	1209	147	517	78	180	14	56	8	38	7	17	2	15	3	17	41	5
HC22-RM019	2803	320	778	2483	559	1189	143	513	79	170	15	52	7	36	6	16	2	14	2	17	41	4

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM019	2997	355	826	2642	599	1265	152	541	85	189	15	59	8	40	7	18	2	15	2	16	44	6
HC22-RM019	3178	361	875	2817	646	1345	164	573	89	192	16	60	8	41	7	18	2	15	2	16	46	5
HC22-RM019	3378	407	955	2971	652	1419	175	626	99	215	17	70	9	46	8	20	3	16	3	15	48	5
HC22-RM019	3955	459	1144	3496	758	1658	205	755	120	244	17	80	11	53	9	22	3	17	3	14	56	6
HC22-RM019	3943	486	1166	3457	726	1634	202	773	122	253	18	88	12	57	10	24	3	18	3	15	56	6
HC22-RM019	7413	730	2109	6683	1484	3194	389	1405	211	378	21	141	18	86	15	35	5	27	4	11	103	11
HC22-RM019	5507	657	1650	4850	1034	2260	288	1100	168	345	22	119	16	78	13	32	4	24	4	7	71	10
HC22-RM019	4998	605	1462	4393	930	2088	254	969	152	316	21	109	14	73	12	30	4	23	3	7	66	9
HC22-RM019	4968	631	1482	4337	905	2039	256	982	155	331	21	113	15	74	13	32	4	24	4	7	65	10
HC22-RM019	5028	616	1488	4412	948	2064	261	983	156	324	21	110	15	73	13	30	4	23	3	8	65	9
HC22-RM019	3728	478	1107	3250	699	1511	195	728	117	255	15	83	11	56	10	23	3	19	3	13	61	13
HC22-RM019	4053	638	1256	3415	674	1572	210	818	141	352	17	105	14	73	13	32	4	24	4	26	44	7
HC22-RM019	2414	415	737	1999	405	914	121	472	87	224	15	66	9	48	9	21	3	17	3	38	26	6
HC22-RM019	1864	353	574	1511	292	693	91	365	70	194	14	53	8	40	7	18	2	15	2	38	17	4
HC22-RM019	1974	332	584	1642	339	763	97	376	67	180	14	50	7	37	7	17	2	15	3	48	20	3
HC22-RM019	4003	382	1108	3621	833	1732	210	743	103	199	14	67	9	43	8	19	3	17	3	46	55	4
HC22-RM019	2393	381	708	2012	415	941	119	457	80	204	15	60	8	44	8	19	3	17	3	46	25	5
HC22-RM019	1980	362	602	1618	324	741	97	385	71	197	14	55	8	41	7	18	3	16	3	42	18	4
HC22-RM019	2858	419	829	2439	516	1151	144	538	90	227	14	66	9	48	9	21	3	19	3	38	33	5
HC22-RM019	2090	372	627	1718	346	795	103	400	74	204	13	56	8	42	8	19	3	16	3	27	22	5
HC22-RM019	2523	470	773	2053	393	951	125	493	91	260	12	72	10	54	10	25	3	21	3	49	25	5
HC22-RM019	2500	399	729	2101	442	984	123	471	81	218	13	62	9	45	8	20	3	18	3	32	31	6
HC22-RM019	2318	356	681	1962	418	911	116	441	76	194	12	56	8	40	7	19	2	15	3	23	32	7
HC22-RM019	2443	382	717	2061	433	962	123	464	79	209	12	59	8	43	8	20	3	17	3	27	31	9
HC22-RM019	2282	338	659	1944	427	902	114	429	72	182	12	53	7	37	7	19	2	16	3	18	30	8
HC22-RM019	1661	231	464	1430	314	681	81	304	50	124	12	35	5	24	5	12	2	10	2	18	21	4
HC22-RM019	1790	224	492	1566	364	739	89	323	51	118	11	35	5	24	4	12	2	11	2	21	25	4
HC22-RM019	1907	304	559	1603	338	746	94	363	62	166	12	46	6	34	6	16	2	14	2	29	23	5
HC22-RM019	1846	243	511	1603	362	762	91	335	53	128	12	38	5	27	5	13	2	11	2	23	23	3
HC22-RM019	2030	238	540	1792	426	857	99	356	54	124	13	38	5	26	5	12	2	11	2	20	26	4
HC22-RM019	1766	256	492	1510	339	712	86	320	53	138	12	39	5	28	5	13	2	12	2	25	20	3
HC22-RM019	1597	287	474	1310	276	597	78	304	55	155	11	43	6	31	6	15	2	15	3	40	16	3
HC22-RM019	2297	279	635	2018	462	957	117	418	64	148	12	45	6	30	6	15	2	13	2	28	33	6
HC22-RM019	1750	224	509	1526	320	727	87	336	56	114	13	36	5	25	4	12	2	11	2	8	20	6

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM019	3961	277	1062	3684	854	1806	203	717	104	135	13	55	6	32	5	14	2	13	2	11	58	5
HC22-RM019	1825	217	522	1608	340	775	92	345	56	112	11	35	5	24	4	11	2	11	2	9	20	4
HC22-RM019	1914	236	542	1678	365	802	95	357	59	122	12	39	5	26	5	12	2	11	2	17	23	4
HC22-RM019	3511	323	965	3188	707	1560	178	646	97	161	12	61	7	37	7	17	2	16	3	19	52	5
HC22-RM019	8784	449	2321	8335	2011	4066	458	1592	208	211	16	104	11	52	8	22	3	19	3	22	147	8
HC22-RM019	5331	351	1413	4980	1196	2420	271	960	133	170	13	74	8	41	7	18	2	16	2	18	85	5
HC22-RM019	3572	283	976	3289	756	1597	181	657	98	139	12	55	7	33	6	14	2	13	2	17	57	4
HC22-RM019	3206	274	867	2932	659	1443	161	582	87	137	12	52	6	31	5	14	2	13	2	16	50	4
HC22-RM019	1829	215	510	1614	346	786	89	336	57	111	10	35	4	24	4	12	2	11	2	15	26	3
HC22-RM019	2420	276	689	2144	454	1038	120	455	77	145	11	46	6	31	5	15	2	13	2	12	32	4
HC22-RM019	2149	239	614	1910	408	920	107	408	67	119	12	42	5	27	5	13	2	12	2	12	30	3
HC22-RM019	2510	247	703	2263	496	1097	126	471	73	123	11	46	5	28	5	13	2	12	2	17	37	4
HC22-RM019	2722	261	752	2461	542	1203	137	502	77	131	11	47	6	30	5	14	2	13	2	16	42	4
HC22-RM019	3065	255	844	2810	625	1376	156	567	86	125	12	49	6	29	5	13	2	12	2	15	47	4
HC22-RM019	3014	256	819	2758	609	1364	150	551	84	128	14	47	6	28	5	12	2	12	2	15	45	4
HC22-RM019	3152	255	874	2897	651	1406	163	587	90	128	13	48	6	28	5	12	2	11	2	10	48	4
HC22-RM020	4991	570	1341	4421	1043	2119	243	864	152	293	11	108	14	68	12	32	4	24	4	7	92	12
HC22-RM020	8359	893	2307	7466	1753	3538	441	1475	259	447	19	178	22	110	19	49	6	37	6	6	127	19
HC22-RM020	4854	635	1327	4219	975	2008	231	847	158	329	14	115	15	76	13	36	4	28	5	10	79	18
HC22-RM020	1903	265	518	1638	358	798	90	331	61	142	7	43	6	30	5	15	2	13	2	9	34	5
HC22-RM020	2842	356	752	2486	589	1193	135	485	84	186	11	60	8	40	7	20	3	18	3	17	50	8
HC22-RM020	2364	320	664	2044	422	1004	106	440	72	163	11	53	7	39	7	18	2	17	3	22	36	5
HC22-RM020	1592	225	446	1367	273	681	70	293	50	115	6	37	5	28	5	13	2	12	2	13	25	4
HC22-RM020	1908	251	509	1657	353	830	84	336	54	138	4	38	5	30	5	14	2	13	2	11	46	9
HC22-RM021	3758	296	1018	3462	783	1701	204	682	92	148	13	59	7	33	6	14	2	12	2	13	61	5
HC22-RM021	4678	359	1274	4319	971	2125	246	862	115	173	16	75	9	42	7	17	2	15	3	12	73	6
HC22-RM021	3725	309	1012	3416	763	1683	197	680	93	153	14	61	7	35	6	15	2	14	2	11	61	7
HC22-RM021	4339	356	1198	3983	889	1947	233	804	110	173	15	74	9	42	7	17	2	15	2	11	69	6
HC22-RM021	3836	333	1050	3503	779	1720	205	701	98	166	14	66	8	38	7	16	2	14	2	10	62	6
HC22-RM021	4325	362	1180	3963	892	1941	228	791	111	179	15	73	8	42	7	17	2	16	3	9	72	7
HC22-RM021	4385	350	1197	4035	903	1984	233	804	111	170	15	72	8	41	7	17	2	15	3	12	72	6
HC22-RM021	4359	345	1197	4014	900	1965	234	806	109	168	15	71	8	40	7	17	2	15	2	9	74	7
HC22-RM021	4529	349	1234	4180	936	2058	244	830	112	171	15	72	8	40	7	17	2	15	2	10	73	6
HC22-RM021	4235	330	1155	3905	881	1916	226	778	104	160	15	68	8	39	6	16	2	14	2	8	68	6

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM021	4117	342	1126	3775	853	1843	220	756	103	172	15	66	8	39	7	17	2	14	2	10	68	7
HC22-RM021	4726	355	1272	4371	986	2162	249	860	114	172	17	74	8	41	7	17	2	15	2	11	74	6
HC22-RM021	3938	311	1058	3627	819	1793	213	706	96	153	14	63	7	36	6	15	2	13	2	10	63	6
HC22-RM021	2312	284	653	2028	420	993	119	428	68	148	14	48	6	32	6	14	2	12	2	12	34	6
HC22-RM021	2819	424	838	2395	473	1140	149	542	91	225	15	70	9	47	9	23	3	20	3	26	31	6
HC22-RM021	1725	368	543	1357	246	618	85	342	66	197	12	58	8	42	8	20	3	17	3	36	25	8
HC22-RM021	2073	417	654	1656	279	780	95	416	86	227	12	65	9	48	9	22	3	19	3	46	20	5
HC22-RM021	2262	374	671	1888	357	910	106	432	83	203	11	59	8	42	8	20	3	17	3	52	26	5
HC22-RM021	2441	372	711	2069	401	1006	113	461	88	205	9	59	8	41	8	20	3	16	3	64	24	4
HC22-RM021	1830	361	556	1469	259	704	83	351	72	192	11	57	8	42	8	20	3	17	3	59	16	4
HC22-RM021	2079	280	568	1799	375	892	95	371	66	151	11	44	6	30	6	15	2	13	2	32	25	4
HC22-RM021	1504	277	430	1227	239	595	67	272	54	147	11	43	6	31	6	16	2	13	2	36	22	5
HC22-RM021	1696	352	524	1344	228	640	76	330	70	189	12	55	8	40	7	19	3	16	3	63	14	3
HC22-RM021	1637	350	520	1287	212	604	74	325	72	189	11	55	8	41	8	19	2	15	2	58	20	6
HC22-RM021	1884	354	565	1530	283	730	86	359	72	190	12	56	8	40	7	19	3	16	3	50	25	8
HC22-RM021	2247	321	629	1926	394	946	104	408	74	170	13	52	7	36	7	17	2	15	2	55	24	4
HC22-RM021	1605	279	468	1326	250	645	73	299	59	149	12	43	6	31	6	15	2	13	2	42	18	5
HC22-RM021	1752	259	486	1493	304	737	80	315	57	135	14	42	6	28	5	14	2	11	2	18	22	4
HC22-RM021	1785	278	504	1507	305	735	81	327	59	145	14	45	6	31	6	15	2	12	2	20	24	5
HC22-RM021	2206	373	633	1833	355	895	100	405	78	202	12	59	8	42	8	20	3	16	3	48	26	4
HC22-RM021	1690	273	479	1417	277	698	76	308	58	142	13	44	6	31	6	15	2	12	2	28	21	5
HC22-RM021	1578	239	438	1339	272	661	71	283	52	121	14	39	5	27	5	13	2	11	2	22	21	4
HC22-RM021	4149	327	1068	3822	925	1873	194	722	108	165	13	65	8	36	6	17	2	13	2	16	61	5
HC22-RM021	3523	321	916	3202	763	1566	162	615	96	164	13	61	7	36	6	16	2	14	2	14	56	7
HC22-RM021	4117	347	1068	3770	915	1836	192	716	111	168	15	70	9	40	7	18	2	15	3	15	67	6
HC22-RM021	2931	276	761	2655	629	1302	135	507	82	141	13	50	6	31	5	14	2	12	2	13	44	4
HC22-RM021	1651	253	462	1398	286	684	74	296	58	129	14	42	6	28	5	14	2	11	2	11	23	4
HC22-RM021	5810	390	1503	5420	1319	2653	277	1025	146	187	16	84	10	45	8	19	2	16	3	15	95	7
HC22-RM021	2995	284	784	2711	651	1314	138	524	84	144	14	52	6	32	6	14	2	12	2	12	44	4
HC22-RM021	1728	262	483	1466	294	724	78	311	59	136	14	42	6	29	5	14	2	12	2	11	26	5
HC22-RM021	2879	304	759	2575	604	1253	131	503	84	156	14	55	7	34	6	15	2	13	2	12	43	5
HC22-RM021	2280	298	625	1982	415	983	105	407	72	150	15	52	7	34	6	16	2	14	2	12	34	4
HC22-RM021	1532	243	458	1289	269	595	71	301	53	121	15	40	5	28	5	13	2	12	2	8	19	4
HC22-RM021	1748	247	511	1501	323	700	82	338	58	123	14	43	5	28	5	13	2	12	2	9	24	4

DHID	TREO	HREO	MREO	LREO	La2O3	Ce2O3	Pr6O11	Nd2O3	Sm2O3	Y2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Sc2O3	ThO2	UO2
HC22-RM021	2650	283	745	2367	534	1126	127	503	77	139	15	53	6	32	6	14	2	14	2	7	39	5
HC22-RM021	2498	262	702	2236	505	1065	120	472	74	130	14	48	6	30	5	13	2	12	2	5	38	5
HC22-RM021	2170	266	626	1904	420	894	102	419	69	133	14	47	6	30	5	14	2	13	2	8	31	5
HC22-RM021	2197	281	637	1916	413	904	104	423	72	140	15	50	6	32	6	14	2	14	2	9	30	4
HC22-RM021	2687	285	750	2402	547	1144	128	506	77	142	14	53	6	33	6	14	2	13	2	8	38	4
HC22-RM021	2695	284	746	2411	547	1156	128	502	78	141	14	53	6	32	6	14	2	14	2	8	38	5
HC22-RM021	2685	257	740	2428	561	1162	127	503	75	123	15	50	6	29	5	13	2	12	2	8	38	4
HC22-RM021	2761	244	746	2517	582	1221	131	510	73	118	14	47	5	27	5	12	2	12	2	8	38	4
HC22-RM021	5180	384	1403	4796	1173	2273	253	967	130	180	21	81	9	44	7	18	3	18	3	12	76	6
HC22-RM021	3109	258	835	2851	686	1364	149	574	78	125	14	51	6	28	5	13	2	12	2	8	45	5
HC22-RM021	2692	242	727	2450	570	1185	129	496	70	120	12	45	5	27	5	12	2	12	2	8	45	7
HC22-RM021	3670	303	997	3367	809	1603	176	684	95	148	14	60	7	35	6	15	2	14	2	12	53	5
HC22-RM021	3209	291	872	2918	692	1394	153	595	84	142	15	56	6	34	6	14	2	14	2	11	47	4
HC22-RM021	2721	273	754	2448	559	1173	130	509	77	133	15	52	6	32	5	13	2	13	2	7	40	5
HC22-RM021	2605	274	729	2331	527	1113	124	492	75	133	14	52	6	32	6	14	2	13	2	10	40	5
HC22-RM021	2498	256	695	2242	513	1069	118	471	71	128	13	46	6	29	5	13	2	12	2	7	38	6
HC22-RM021	2909	271	799	2638	606	1271	140	539	82	133	13	52	6	32	5	13	2	13	2	7	42	4
HC22-RM021	2243	271	635	1972	436	938	106	425	67	136	14	48	6	31	5	14	2	13	2	8	30	4