Texas Mineral Resources and USA Rare Earth Announce Commencement of Colorado-Based Rare Earth and Critical Mineral Pilot Process Development Facility

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SIERRA BLANCA, Dec. 16, 2019 - Texas Mineral Resources Corp. (OTCQB: TMRC)

- Wheat Ridge, Colorado pilot plant expected to be operational within 90 days
- Process development facility will utilize proven continuous ion exchange/continuous ion chromatography (CIX/CIC) processing technology
- Round Top ore will be processed into fully separated individual high purity rare earths; lithium, technology metals and industrial minerals will also be produced from the polymetallic ore
- Strategy is to ultimately move the pilot plant to Texas and scale to full industrial capability
- Have commenced discussions with potential tolling customers currently being serviced in China due to lack of domestic American capability and capacity

Texas Mineral Resources Corp. (TMRC), an exploration company targeting the heavy rare earths and a variety of other technology metals and industrial minerals, and USA Rare Earth, LLC, its funding and development partner, are pleased to announce commencement of a pilot process development facility in Wheat Ridge, Colorado with the goal to separate and purify rare earth and other tech metals leached from ore from the partnership’s Round Top project, located just outside El Paso, Texas. The process development facility will incorporate test equipment, a dedicated CIX/CIC pilot plant and onsite analytical capability.

“The Denver area has long been the center of mineral technology for the United States and offers excellent infrastructure and support for the mining industry,” said Dan Gorski, CEO of TMRC and Round Top Project Manager for USA Rare Earth. “We look forward to being able to efficiently utilize the resources of such diverse institutions as the Colorado School of Mines, the United States Geological Survey (USGS) and other locally based private groups as our project advances.”

Working in conjunction with Inventure Renewables, Fenix NZ Limited, Resource Development Inc. and Pro Solv Consulting, the Colorado pilot plant is being designed to extract and purify multiple elements -- including the rare earths and scandium, lithium, hafnium, zirconium, gallium and beryllium, among others. This new plant will process leach solutions from the Round Top ore using state-of-the-art continuous ion exchange and continuous ion chromatography (CIX-CIC) to separate and purify up to a total of 26 different recoverable elements from the leach product of Roundtop ore.

Pini Althaus, CEO of USA Rare Earth, commented, “The Wheat Ridge pilot plant is the second piece of a 100%-U.S.-based rare earth oxide supply chain, drawing on feedstock from our Round Top heavy rare earth deposit in southwest Texas. Taken together, we believe Round Top and our pilot plant constitute essential links in restoring a domestic U.S. rare earth supply chain, extracting rare earths and processing them into individual REE oxides – without the material leaving the United States, thereby alleviating the current dependence on China for both raw materials and mineral processing. Aside from Round Top’s potential to supply material for U.S. defense as well as commercial applications, our initiative could reinvigorate advanced domestic technology manufacturing in the U.S. and provide companies currently doing business overseas with a viable alternative.”

CIX-CIC: A Historically Proven and Environmentally Friendly Process

The ion exchange-ion chromatographic methodology being employed could be a significant advancement of the processing method for rare earth elements, as well as numerous other technology and industrial minerals.

- Ion exchange was developed initially by the Manhattan Project in the 1940’s for refining the actinide series elements, using the more benign rare earth elements as a proxy in its development.
- The process subsequently was adapted to many high-volume industrial uses and came into its own with the advent of the “continuous” process in conjunction with its cost-effectiveness, simplicity of operation and versatility.
- Additionally, CIX-CIC has a small footprint, significantly reducing the amounts of reagents normally used in rare earth processing.
- The resins and eluent reagents used in the process are “off-the-shelf” items and are available from multiple suppliers.

Processing of Round Top Leach Solution

The pilot plant is being designed to continuously process the primary leach solution produced by irrigating the crushed ore from the Round Top deposit in Texas with dilute sulfuric acid to ultimately produce highly refined end products such as individual rare earth oxides, lithium hydroxide and various other metal oxides and sulfates.

The work at the new center will build upon previous applications of the CIX-CIC process that successfully demonstrated the ability to produce highly refined (99.999% purity) rare earth elements from the Round Top leach solution.

- Under a DoD Defense Logistics Agency (DLA) grant—using the CIX/CIC process—Round Top material was successfully processed into high-purity (99.99% or 99.999%) rare earths.
- Industry standard REE purity is typically 99.5%.

According to Anthony Marchese, TMRC Chairman, “we believe the pilot facility in Colorado is a significant advancement in the establishment of a long-sought U.S. critical mineral supply chain. Preliminary discussions with potential customers currently processing their materials in China are encouraging. The ion exchange-ion chromatographic methodology being deployed has been previously utilized by TMRC in the separation and purification of our rare earths for the Department of Defense, thus de-risking the basis for the pilot plant. The development of advanced processing methods is a necessary step in re-establishing a domestic supply of these strategic metals and end the United States dependency of China for both the supply and downstream methodology associated with them.”

The Texas Mineral Resource and USA Rare Earth Round Top NI 43-101 August 2019 PEA (Preliminary Economic Assessment) can be found here.

Highlights of the Round Top PEA Include:

- Net Present Value (NPV): $1.56 Billion at a 10% discount rate, pre-tax.
- Internal Rate of Return (IRR): 70%.
- Payback Period: 1.4 years.
- Capital Cost: $350.4 Million, including a complete on-site rare earth oxide (REO) and mineral separation plant, and a 25% contingency provision of $65.7 Million.
- Current Spot Market Pricing Assumptions: Yields 70% IRR.
- Mining Rate: 20,000 tonnes per day (TPD).
- All mineral processing at site: Deployment of continuous ion exchange and ion chromatography (CIX/CIC) processing to generate high purity individual rare earth oxides at the site as well as technology metals and industrial minerals.

- REO Production: Averaging 2,312 tonnes per year (TPY) total, including approximately 180 TPY of Neodymium (Nd) and 67 TPY of Praseodymium (Pr).
- New Lithium Resource: Estimated 9,800 TPY lithium carbonate production.
- Heap Leach Processing: Proven conventional method utilizing leach pads built to Texas Environmental Standards.
- PEA Mine Life: Mining and processing 146 million tonnes over a 20 year life, equivalent to only 13% of the total Measured, Indicated and Inferred Mineral Resource Estimate of 1.1 billion tonnes - implying mine life of 140 years.
- Direct Employment: 179 employees.
- Ease of Shipping Access: Only 3 miles north of Interstate Highway 10 and within 3 miles of a major railroad. 85 miles southeast of El Paso, Texas.
- Located on State Property: 6.25% Net Smelter Royalty (NSR) payable to Texas General Land Office (GLO).

Overview of the Round Top Project and PEA

The PEA was completed based on the Measured, Indicated and Inferred Resource Estimate Technical Report originally filed on June 22, 2012 by Texas Rare Earth Resources and updated with the publication of the August 2019 PEA. The resource was estimated by Gustavson Associates of Lakewood, Colorado. The resource incorporated into the current mine plan totals 364,000 measured and indicated tonnes and an additional 735,000 inferred tonnes of a combination of rare earth minerals, technology metals and industrial minerals. A summary of the operating assumptions and financial model for the project is as follows:

Item	Annual
Tonnes Mined/Processed[1]	7,300,000
	($million)
Life of Mine Total Revenue[2]	$8,440
Initial Capital Expenditure	$350
Life of Mine Sustaining Capital	$252
Total Before-Tax Cash Flow (undiscounted)	$5,021
Before-tax NPV @ 10%	$1,564.9
Before-tax IRR (%)	70%

1 “Tonnes” defined by metric system (1,000kg/2,205lbs)
2 Before Texas state royalty

Initial Capital Cost Estimate[3]

Item	
	($million)
Process Capital	$201.30
Infrastructure	$25.20
Pre-Production and Environmental	$27.85
Mine Development	$8.35
Indirects, EPCM	$22.00
Contingency (25%)	$65.70
Total Capital Cost	$350.40

3 Initial capital costs include all costs required to bring the facility to production, including full processing facilities. The ongoing life of mine sustaining capital costs are estimated to be $252M over the initial 20-year mine life.

Key Operating Statistics

	Base Case
Average Annual Revenue ($M/yr.)	$395.5
Average Revenue Per Tonne ($/T)	$54.18
Average Operating Cost ($/T)	$15.61
Average Operating Margin ($/T)	$38.58
Operating Margin (%)	71%

Operating Cost Estimate

Item	Average Unit Cost ($/tonne mined)
Mining	$2.67
Crushing and Conveying	$0.91
Heap Leach	$3.55
Recovery	$3.96
Rail Systems	$0.23
G&A	$1.78
Contingency (20%)	$2.50
Total Operating Cost	$15.61

Mineral Pricing and Marketing Considerations

	Tonnes per year produced	Spot Price Assumptions ($/kg)	Marketed/ Warehoused
REO			Marketed
Yttrium	1,720	$3.60	Marketed
Praseodymium	67	$54.50	Marketed
Neodymium	180	$44.00	Marketed
Samarium	66	$1.83	Marketed
Terbium	23	$575.50	Marketed
Dysprosium	206	$270.50	Marketed
Lutetium	47	$618.63	Marketed
Scandium	5	$1040.76	Marketed
Lanthanum[4]	130	$1.68	Warehoused
Cerium[4]	535	$1.90	Warehoused
Gadolinium[4]	65	$28.46	Warehoused
Holmium[4]	51	$58.59	Warehoused
Erbium[4]	212	$27.00	Warehoused
Thulium[4]	46	No Quote	Warehoused
Ytterbium[4]	368	$16.08	Warehoused
Technology Metals			
Lithium Carbonate	9,800	$13.75	Marketed
Uranium Oxide	77	$56.10	Marketed
Hafnium Oxide	38	$864.00	Marketed
Gallium Oxide	43	$162.00	Marketed
Beryllium Hydroxide	113	$220.00	Marketed
Zirconium Oxide	595	$15.12	Marketed
Thorium Oxide	1,239	No Quote	Warehoused

Industrial Minerals			
Aluminum Sulfate	202,253	$0.21	Marketed
Iron Sulfate	72,421	$0.10	Marketed
Magnesium Sulfate	12,779	$0.13	Marketed
Manganese Sulfate	4,966	$1.19	Marketed
Potassium Sulfate	50,267	$0.43	Marketed
Sodium Sulfate	30,416	$0.20	Marketed
NPV @ 10% Discount	$1,564.9M		

In developing rare earth pricing assumptions, Texas Mineral Resources utilized currently available spot prices of rare earth oxides, tech metals and industrial minerals derived from Asian Metal Pages July 2019 prices, Alibaba June 2019 prices and industry communication.
4 Certain rare earth oxides, although produced, will not be marketed for sale due to poor market conditions and are NOT included in the economics of the PEA. Instead they will be warehoused until such time as market conditions improve. The projected production reflects the results of previous work and was not reported in the PEA.

About Texas Mineral Resources Corp.

Texas Mineral Resources Corp.'s focus is to develop and commercialize its Round Top heavy rare earth and industrial minerals project located in Hudspeth County, Texas, 70 miles southeast of El Paso. Additionally, the Company plans on developing alternative sources of strategic minerals through the processing of coal waste and other related materials. The Company’s common stock trades on the OTCQB U.S. tier under the symbol “TMRC.”

About USA Rare Earth, LLC

USA Rare Earth, LLC has an option to earn up to an 80% interest in the Round Top rare earth and technical metals industrial minerals project located in Hudspeth County, Texas. Round Top hosts a large range of critical heavy rare earth elements, high-tech metals, including lithium, uranium and beryllium, and is among the lowest-cost rare earth projects in the world. The Round Top Deposit hosts 15 of the 17 rare earth elements, plus other high-value tech minerals (including lithium) and is well located to serve the US internal demand. Round Top contains 13 of the 35 minerals deemed “critical” by the Department of the Interior and contains critical elements required by the United States; both for national defense and industry. For more information about USA Rare Earth, visit www.usarareearth.com

About Inventure Renewables

Founded in 2007, Inventure helps agri-business, biofuel and now, mining-based companies find novel ways to turn waste products and by-products into value-added materials to increase overall profitability. The company has pioneered many processes toward these ends. Inventure holds 40+ patents and has recently successfully commercialized two "first of its kind" technologies, one of which replaces an inorganic acid-based process with the consumption of a green-house gas--carbon dioxide. Inventure Renewables is a wholly owned subsidiary of its holding company, Inventure International (Pte) Limited.

About Fenix NZ Limited

Fenix NZ Limited is a leading results-oriented chemical engineering company, specializing in minerals processing and metal recovery by implementing the design, development, construction and installation of hydrometallurgical circuits. Fenix have been involved in the testing, development and installation of Ion Exchange systems in numerous countries around the world. Fenix have laboratory, pilot and industrial experience in conventional fixed bed ion exchange, continuous ion exchange as well as chromatographic separations bringing knowledge and experience highly relevant to the Round Top Project.

About RDI

Resource Development Inc. (RDI) is a metallurgical laboratory established in 1990, that provides

high-quality, cost-effective, and timely technical services to *the international mining industry.* RDI accomplishes cost-effective solutions by prescribing a systematic approach to project management through effective utilization of our professional and technical staff, state-of-the-art laboratory facilities, and a network of associates. RDI has significant experience concerning metallurgical testing and process development for the beneficiation of a wide variety of metals, including rare earth elements.

About Pro Solv Consulting

Pro Solv Consulting, LLC provides consulting services in the areas of due diligence, process development, troubleshooting/optimization of process plants, Capex/Opex estimates and project management to mining companies worldwide. Dr. Deepak Malhotra, Principal, has over 47 years of experience in the mining industry and had worked on sulfide, industrial and rare earth minerals.

Cautionary Note to Investors

The United States Securities and Exchange Commission ("SEC") limits disclosure for U.S. reporting purposes to mineral deposits that a company can economically and legally extract or produce. This press release uses certain terms that comply with reporting standards in Canada and certain estimates are made in accordance with Canadian National Instrument NI 43-101 ("NI 43-101") and the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") - CIM Definition Standards on Mineral Resources and Mineral Reserves, adopted by the CIM Council, as amended (the "CIM Standards"). NI 43-101 is a rule developed by the Canadian Securities Administrators that establishes standards for all public disclosures an issuer makes of scientific and technical information concerning mineral projects. This press release uses the terms "resource," "measured and indicated mineral resource," and "inferred mineral resource." We advise U.S. investors that while these terms are defined in accordance with NI 43-101 such terms are not recognized under the SEC's Industry Guide 7 and are normally not permitted to be used in reports and registration statements filed with the SEC. Mineral resources in these categories have a great amount of uncertainty as to their economic and legal feasibility. "Inferred resources" have a great amount of uncertainty as to their existence and, under Canadian regulations, cannot form the basis of a pre-feasibility or feasibility study, except in limited circumstances. The SEC normally only permits issuers to report mineralization that does not constitute SEC Industry Guide 7 compliant "reserves" as in-place tonnage and grade without reference to unit measures. Under SEC Industry Guide 7 standards, a "final" or "bankable" feasibility study is required to report reserves, the three-year historical average price is used in any reserve or cash flow analysis to designate reserves and all necessary permits and government approvals must be filed with the appropriate governmental authority. The PEA is not a definitive feasibility study and our Round Top project currently does not contain any known proven or probable ore reserves under SEC Industry Guide 7 reporting standards. The results of the PEA disclosed in this press release are preliminary in nature and include inferred mineral resources that are considered speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves and there is no certainty that the results of the PEA will be realized. U.S. investors are urged to carefully review our filings with the SEC. You can review and obtain copies of these filings at http://www.sec.gov/edgar. Investors are cautioned not to assume that any defined resource will ever be converted into SEC Industry Guide 7 compliant reserves.

Forward-Looking Statements

This press release contains forward-looking statements, including, but not limited to, statements regarding the potential development of the Round Top project, estimates and projections regarding the economic feasibility of the Round Top project from the update PEA, including the financial information from the PEA statement in this press release, including, NPV, IRR, payback period, capital cost, pricing assumptions, mining rate, average recoveries, oxide production amounts and methodologies, mine life, employment requirements, resource amounts and grades, projected revenues, initial capital costs, life of mine sustaining capital, cash flow projections, capital and operating cost estimates and projections, and sensitivity analysis, inclusion of uranium in future economic analyses, the potential to render high purity oxides, the Round Top facility generating critical technology oxides, and other such statements. When used in this press release, the words “potential,” “indicate,” “expect,” “intend,” “could,” “strategy,” “hopes,” “believe,” “may,” “will,” “if, “anticipate,” and similar expressions are intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by such statements. Such factors include, among others, uncertainty of mineralized material and

mineral resource estimates, risks to projected and estimated economics not reflecting actual economic results due to the uncertainty of mining processes, potential non-uniform sections of mineralized material, potential mining hazards and accidents, changes in equipment and labor costs, changes in projected REE prices and demand, competition in the REE industry, risks related to project development determinations, the inherently hazardous nature of mining-related activities, potential effects on the Company's operations of environmental regulations, risks due to legal proceedings, liquidity risks and risks related to uncertainty of being able to raise capital on favorable terms or at all, as well as those factors discussed under the heading "Risk Factors" in the Company's latest Annual Report on Form 10-K as filed on November 27, 2019 and other documents filed with the SEC. Except as required by law, the Company assumes no obligation to publicly update any forward-looking statements.

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