

Certified Reference Materials



Price Catalogue 2018



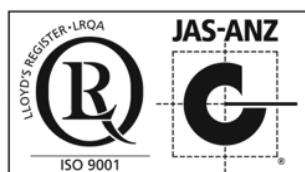
Blanks | Multi-Element Geochem | Gold, Gold-Copper & Gold-Silver | PGE
Copper-Nickel-PGE | Copper | Concentrates | Nickel Sulphide | Nickel Laterite
Broken Hill Type Zn-Pb-Ag | SEDEX Type Zn-Pb-Ag | VMS Type Zn-Pb-Cu-Ag-Au
Sedimentary Manganese | Graphite | Tin & Lithium | Tungsten Skarn | Magnetite
Iron | Sedimentary and Hydrothermal Uranium | REE-Nb Carbonatite (Supergene)

Ore Research & Exploration Pty Ltd has been producing gold, PGE, base metal and litho-geochem standards for the mining and analytical industries since 1988. These include both the OREAS® range of commercially available CRMs and matrix-matched CRMs for numerous projects and operations worldwide.

OREAS® CRMs provide quality assurance to your database by mitigating the risk of bad data passing undetected. Synthetic CRMs, where the key elements are freely liberated, won't test the completeness of the digestion process. Results may look acceptable with no failures for the synthetic CRM, yet systematic low biasing data for your field samples could pass undetected.

OREAS® CRMs have the advantage over synthetic CRMs in that they are made from naturally occurring ore and waste materials that can include gold occluded in silicates and key metals hosted in refractory minerals. During sample fusion and digestion the CRM will behave the same as your field samples. Unlike synthetically derived CRMs, OREAS® CRMs ensure the integrity of the analytical process and provide unrivalled confidence in your assay data.

Over the years ORE Pty Ltd has pioneered a number of technological advances that have enabled the production of CRMs from ore deposits to an unparalleled level of homogeneity. OREAS® standards were ranked the most homogeneous among five CRM manufacturers in a study published in the December 2015 edition of the EXPLORE Newsletter for geochemists.



ORE Pty Ltd is accredited to ISO 9001:2015 by Lloyd's Register Quality Assurance Ltd for its quality management system including development, manufacturing, certification and supply of CRMs.

Our Technology

All ore grade gold OREAS® CRMs are tested by instrumental neutron activation analysis (INAA) on 0.5-1.0g aliquots to confirm and quantify the absolute level of homogeneity. ORE Pty Ltd are the only manufacturers employing this stringent test and offer a guarantee of the homogeneity of gold (and PGE) in all OREAS® and custom CRMs irrespective of the presence of coarse gold in the source materials.

ORE Pty Ltd's latest innovation is the introduction of SuperCRMs® to the OREAS® range. SuperCRMs® feature certification of full analyte ICP-OES and ICP-MS suites by a range of digestion methods. Up to 180 analytes are characterised in a single CRM making them ideally suited as a control in ICP applications. With over 70 SuperCRMs® available from a range of over 200 OREAS® CRMs, there is every chance of a close match to the matrix of your field samples.

Matrix-Matched (Custom) CRMs

Matrix-matched CRMs are produced from customer supplied materials and prepared to the client's specifications in batch sizes from 50 to 5000kg, packaged in unit sizes from 5g to 200kg (\pm inert gas) and certified in a rigorous round robin program for the analytes of interest.

ORE Pty Ltd's clients include all major international mining houses (BHP Billiton, Vale, Anglo American, Rio Tinto, Glencore, Newmont, Barrick, Freeport, Gold Fields, Gold Corp, MMG, Newcrest, Harmony, etc.) and the major commercial laboratory groups (e.g. ALS, SGS, Bureau Veritas, Actlabs and Intertek).

The foundation of ORE Pty Ltd's success is built on a strong record of industry-leading innovation, a high level of repeat business from many loyal clients, word-of-mouth commendation within the global mining community and of course, world class certified reference materials of exceptional quality and customer service.

pXRF Kits

ORE Pty Ltd is proud to offer high quality pXRF kits at affordable prices. Eight thematic kits are available based on commodity and mineralisation style or you can design your own custom kit from a range of over 200 OREAS® CRMs. The tough storage cases used are dust, shock and water proof and offer superior protection for the pXRF cups under all field conditions. The cups are 32mm in diameter and fitted with 4 μ m polypropylene film to minimize signal attenuation of lighter elements. Please contact sales@ore.com.au for further details on the thematic kits.



BLANK CRMs (PULPS)	5
BLANK CHIP CRMs (NOMINAL MINUS 6 MM)	5
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Product Description	CRM Code	Metal Concentration	Unit Size (grams)	Unit Price (AUD)
BLANK CRMs (pulps)				
Quartz oxide matrix blank (multi-element)	<u>OREAS 21e*</u>	Au <1ppb Cu Ni Pb Zn all <10ppm	10 / 60 / 1000	\$1.94 / \$3.50 / \$58.23
Quartz primary matrix blank (multi-element)	<u>OREAS 22e*</u>	Au <1ppb Cu Ni Pb Zn all <10ppm	10 / 60 / 1000	\$1.94 / \$3.50 / \$58.23
Basalt lithogeochem blank	<u>OREAS 24c**</u>	Au <1ppb Cu 48.6ppm Ni 138ppm	10 / 60 / 1000	\$1.94 / \$3.50 / \$58.23
Granodiorite matrix blank (multi-element)	<u>OREAS 23a*</u>	Au 3ppb; Cu 42ppm; Ni 41ppm; Pb 21ppm	10	\$1.94
Granodiorite lithogoechem (FA, full ICP suites, AR, 4A, Fus-ICP, Fus-XRF, etc)	<u>OREAS 24b**</u>	Au <3ppb Cu 38.0ppm Pb 23.1ppm	10 / 60 / 1000	\$3.00 / \$9.35 / \$155.00
Soil lithogeochem blank	<u>OREAS 25a**</u>	Au <2ppb Cu 33.9ppm Pb 25.2ppm	10 / 60 / 1000	\$3.00 / \$9.35 / \$155.00
BLANK CHIP CRMs (nominal minus 6 mm)				
Basalt chip lithogeochem blank	<u>OREAS 26b*</u>	Au <1ppb Cu 44ppm FeO 10.35%	1kg	\$31.20
Basalt chip lithogeochem blank	<u>OREAS C26c*</u>	Au <2ppb Cu 45.9ppm Fe 7.95%	500g / 1kg / 20kg / 200kg	\$12.50 / \$21.30 / \$400.00 / \$3000.00
Rhyodacite chip lithogeochem blank	<u>OREAS 27b*</u>	Au <1ppb Cu 5.6ppm Pb 26ppm	500g / 20kg / 200kg	\$12.50 / \$400.00 / \$3000.00
Rhyodacite chip lithogeochem blank	<u>OREAS C27c*</u>	Au <2ppb Cu 7.49ppm Pb 27.9ppm	500g / 1kg / 20kg / 200kg	\$12.50 / \$21.30 / \$400.00 / \$3000.00
MULTI-ELEMENT GEOCHEM CRMs (pulps)				
Anomalous ferruginous soil (FA, full ICP scans, AR, 4A, Fus-ICP, Fus-XRF, etc)	<u>OREAS 45d**</u>	Au 23ppb; Pd 35ppb; Pt 48ppb; Cu 371ppm; Ni 231ppm; Cr 549ppm	10 / 60 / 500	\$3.00 / \$9.35 / \$77.50
Anomalous ferruginous soil (FA, full ICP scans, AR, 4A, Fus-ICP, Fus-XRF, etc)	<u>OREAS 45e**</u>	Au 53ppb; Pd 75ppb; Pt 110ppb; Cu 780ppm; Ni 454ppm; Cr 979ppm	10 / 60 / 500	\$3.00 / \$9.35 / \$77.50
GOLD, GOLD-COPPER & GOLD-SILVER CRMs (pulps)				
Copper ore (argillaceous sandstones)	<u>OREAS 903**</u>	Aqua Regia Au <5ppb; Cu 0.652%; CuSol 0.434%	10 / 60 / 1000	\$3.00 / \$9.35 / \$155.00

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Anomalous gold (lateritic)	<u>OREAS H1*</u>	Au 12ppb Cu 28ppm	60 / 500	\$5.34 / \$44.50
Anomalous gold (Carlin style)	<u>OREAS 260*</u>	Au 16ppb Fire Assay Au 14ppb Aqua Regia Cu 46.5ppm Aqua Regia	60 / 500	\$5.34 / \$44.50
Copper ore (argillaceous sandstones)	<u>OREAS 904**</u>	Au 45ppb Cu 0.612% CuSol 0.519%	10 / 60	\$3.00 / \$9.35
Anomalous gold (lateritic)	<u>OREAS H5*</u>	Au 47ppb Cu 99ppm	60 / 500	\$5.34 / \$44.50
Copper-gold bearing oxide (oxidised VMS / weathered rhyodacite)	<u>OREAS 906**</u>	Au 49ppb Cu 0.310% CuSol 0.259%	10 / 60 / 500	\$3.45 / \$9.35 / \$77.50
Anomalous gold (Carlin style)	<u>OREAS 261*</u>	Au 49ppb Fire Assay Au 41ppb Aqua Regia Cu 64ppm Aqua Regia	60 / 500	\$5.34 / \$44.50
Copper-gold bearing (quartz monzonite porphyry)	<u>OREAS 151b*</u>	Au 65ppb Cu 0.182%	60 / 500	\$7.35 / \$61.00
Low level gold (Carlin style)	<u>OREAS 262*</u>	Au 99ppb Fire Assay Cu 118ppm Aqua Regia Co 26.9ppm Aqua Regia	60 / 500	\$5.34 / \$44.50
Copper-gold bearing oxide (oxidised VMS / weathered rhyodacite)	<u>OREAS 907**</u>	Au 100ppb Cu 0.638% CuSol 0.533%	10 / 60 / 500	\$3.45 / \$9.35 / \$77.50
Copper-gold bearing (quartz monzonite porphyry)	<u>OREAS 152b*</u>	Au 132ppb Cu 0.375%	60 / 500	\$7.35 / \$61.00
Iron oxide copper-gold bearing (IOCG felsic volcanic breccia)	<u>OREAS 520***^</u>	Au 176ppb Cu 0.293% Co 203ppm	10 / 60 / 100 / 500	\$3.45 / \$9.35 / \$15.58 / \$77.50
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	<u>OREAS 908**</u>	Au 187ppb; Cu 1.26%; CuSol 1.06%	10 / 60 / 500	\$3.45 / \$9.35 / \$77.50
Gold-copper ore (IOCG felsic volcanic breccia)	<u>OREAS 59a^</u>	Au 191ppb; Cu 0.344%; Fe 17.9%; Mo 80ppm; Co 743ppm	50	\$7.35
Silver-copper-gold ore (rhyodacite)	<u>OREAS 600**</u>	Au 200ppb Ag 24.8ppm Cu 482ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00
Low level gold (Carlin style)	<u>OREAS 263*</u>	Au 214ppb Fire Assay Au 166ppb Aqua Regia Cu 87ppm Aqua Regia	60 / 500	\$5.34 / \$44.50
Copper-gold-molybdenum ore (quartz monzonite porphyry)	<u>OREAS 501c**</u>	Au 221ppb Cu 0.276% Mo 97ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00

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Gold bearing oxide (weathered greenstone)	<u>OREAS 250*</u>	Au 309ppb Cu 44.7ppm	60 / 500	\$5.34 / \$44.50
Copper-gold ore (quartz monzonite porphyry)	<u>OREAS 153b*</u>	Au 313ppb Cu 0.678%	60 / 500	\$7.35 / \$61.00
Gold bearing (greenstone-hosted orogenic lode)	<u>OREAS 217*</u>	Au FA 338ppb Au AR 333ppb	60 / 1000	\$5.34 / \$89.00
Iron oxide copper-gold ore (IOCG felsic volcanic breccia)	<u>OREAS 521**^</u>	Au 376ppb Cu 0.607% Co 386ppm	10 / 60 / 100	\$3.45 / \$9.35 / \$15.58
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	<u>OREAS 905**</u>	Au 391ppb Cu 0.153% CuSol 0.127%	10 / 60 / 500	\$3.45 / \$9.35 / \$77.50
Copper-gold-molybdenum ore (quartz monzonite porphyry)	<u>OREAS 502c**</u>	Au 488ppb Cu 0.783% Mo 226ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00
Copper-gold-molybdenum ore (quartz monzonite porphyry)	<u>OREAS 502b**</u>	Au 495ppb Cu 0.773% Mo 238ppm	10	\$3.00
Gold oxide ore (weathered greenstone)	<u>OREAS 251*</u>	Au 0.504ppm Cu 47.5ppm	60 / 500	\$5.34 / \$44.50
Gold bearing (greenstone-hosted orogenic lode)	<u>OREAS 218*</u>	Au FA 0.531ppm Au AR 0.524ppm	60 / 1000	\$5.34 / \$89.00
Iron oxide copper-gold ore (IOCG felsic volcanic breccia)	<u>OREAS 522**^</u>	Au 0.574ppm Cu 0.916% Co 550ppm	10 / 60 / 100	\$3.45 / \$9.35 / \$15.58
Gold bearing oxide (weathered greenstone)	<u>OREAS 252*</u>	Au 0.674ppm Cu 49.4ppm	60 / 500	\$5.34 / \$44.50
Copper-gold-molybdenum ore (quartz monzonite porphyry)	<u>OREAS 503b**</u>	Au 0.695ppm Cu 0.531% Mo 319ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00
Copper-gold-molybdenum ore (quartz monzonite porphyry)	<u>OREAS 503c**</u>	Au 0.698ppm Cu 0.538% Mo 318ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00
Gold bearing (metasediments/basalt)	<u>OREAS 202*</u>	Au 0.752ppm	60 / 1000	\$5.34 / \$89.00
Silver-copper-gold ore (rhyodacite)	<u>OREAS 601**</u>	Au 0.780ppm Ag 49.2ppm Cu 0.101%	10 / 60 / 100 / 1000	\$3.00 / \$7.35 / \$12.25 / \$122.00
Gold-copper ore (IOCG felsic volcanic breccia)	<u>OREAS 59d*^</u>	Au 0.801ppm Cu 1.47% Fe 26.8% Mo 310ppm Co 899ppm	50	\$7.35

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Gold bearing (greenstone-hosted orogenic lode)	<u>OREAS 220*</u>	Au FA 0.866ppm Au AR 0.853ppm	60 / 1000	\$5.34 / \$89.00
Iron oxide copper-gold ore (IOCG felsic volcanic breccia)	<u>OREAS 523***^</u>	Au 1.04ppm Cu 1.72% Co 728ppm	10 / 60 / 100	\$3.45 / \$9.35 / \$15.58
Gold bearing (greenstone-hosted orogenic lode)	<u>OREAS 221*</u>	Au FA 1.06ppm Au AR 1.04ppm	60 / 1000	\$5.34 / \$89.00
Gold bearing (greenstone-hosted orogenic lode)	<u>OREAS 222*</u>	Au FA 1.22ppm Au AR 1.21ppm	60 / 1000	\$5.34 / \$89.00
Gold oxide ore (weathered greenstone/scoria)	<u>OREAS 253*</u>	Au FA 1.22ppm Au AR 1.22ppm	60 / 500	\$5.34 / \$44.50
Silver-copper-gold ore (rhyodacite)	<u>OREAS 604***^</u>	Au 1.43ppm Ag 488ppm Cu 2.16%	10 / 60	\$3.00 / \$7.35
Iron oxide copper-gold ore (IOCG felsic volcanic breccia)	<u>OREAS 524***^</u>	Au 1.54ppm Cu 2.53% Co 728ppm	10 / 60 / 100	\$3.45 / \$9.35 / \$15.58
Gold ore (metasediments/basalt)	<u>OREAS 15d</u>	Au 1.56ppm	1000	\$89.00
Gold ore (metasediments/basalt)	<u>OREAS 209*</u>	Au 1.58ppm	60 / 1000	\$5.34 / \$89.00
Copper-gold-molybdenum ore (quartz monzonite porphyry)	<u>OREAS 504b**</u>	Au 1.61ppm Cu 1.11% Mo 499ppm	10 / 60 / 500	\$3.00 / \$7.35 / \$61.00
Silver-copper-gold ore (rhyodacite)	<u>OREAS 605***^</u>	Au 1.67ppm Ag 965ppm Cu 5.02%	10 / 60	\$3.00 / \$7.35
Gold bearing (greenstone-hosted orogenic lode)	<u>OREAS 223*</u>	Au FA 1.78ppm Au AR 1.77ppm	60 / 1000	\$5.34 / \$89.00
Silver-copper-gold ore (rhyodacite)	<u>OREAS 602***^</u>	Au 1.95ppm Ag 120ppm Cu 0.515%	10 / 60	\$3.00 / \$7.35
Gold bearing (greenstone-hosted orogenic lode)	<u>OREAS 224*</u>	Au FA 2.15ppm Au AR 2.14ppm	60 / 1000	\$5.34 / \$89.00
Gold ore (metasediments/basalt)	<u>OREAS 206</u>	Au 2.197ppm	100	\$8.90
Gold-silver ore (epithermal meta-andesite)	<u>OREAS 60c*</u>	Au 2.47ppm Ag 4.87ppm	60 / 500	\$5.34 / \$44.50
Gold-silver ore (epithermal meta-andesite)	<u>OREAS 60d**</u>	Au 2.47ppm Ag 4.57ppm	60 / 500	\$7.35 / \$61.00

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Gold oxide ore (weathered greenstone/scoria)	<u>OREAS 254*</u>	Au FA 2.55ppm Au AR 2.50ppm	60 / 1000	\$5.34 / \$89.00
Gold ore (greenstone-hosted orogenic lode)	<u>OREAS 214</u>	Au FA 3.03ppm Au AR 2.92ppm	60 / 100 500	\$5.34 / \$8.90 / \$44.50
Gold ore (greenstone-hosted orogenic lode)	<u>OREAS 215</u>	Au FA 3.54ppm Au AR 3.41ppm	60 / 100 500	\$5.34 / \$8.90 / \$44.50
Gold oxide ore (weathered greenstone/scoria)	<u>OREAS 255*</u>	Au FA 4.08ppm Au AR 4.01ppm	60 / 500	\$5.34 / \$44.50
Gold-silver ore (epithermal meta-andesite) Replacement available November 2017: OREAS 61f	<u>OREAS 61e*</u>	Au 4.43ppm Ag 5.27ppm	60 / 500	\$5.34 / \$44.50
Gold-silver ore (epithermal meta-andesite)	<u>OREAS 61f**</u>	Au 4.60ppm Ag 3.64ppm	60 / 500	\$7.35 / \$61.00
Silver-copper-gold ore (rhyodacite)	<u>OREAS 603**^</u>	Au 5.18ppm Ag 284ppm Cu 1.00%	10 / 60 / 100 / 500	\$3.00 / \$7.35 / \$12.25 / \$61.00
Gold ore (metasediments/basalt)	<u>OREAS 210*^</u>	Au 5.49ppm	60	\$5.34
Gold ore (greenstone-hosted orogenic lode)	<u>OREAS 216</u>	Au FA 6.66ppm Au AR 6.53ppm	60 / 100 500	\$5.34 / \$8.90 / \$44.50
Gold oxide ore (weathered greenstone/scoria)	<u>OREAS 256*</u>	Au FA 7.66ppm Au AR 7.54ppm	60 / 500	\$5.34 / \$44.50
Gold ore (greenstone-hosted orogenic lode)	<u>OREAS 228*</u>	Au FA 8.73ppm Au AR 8.72ppm	60 / 500	\$5.34 / \$44.50
Gold-silver ore (epithermal meta-andesite)	<u>OREAS 62f**</u>	Au 9.71ppm Ag 5.47ppm	60 / 500	\$7.35 / \$61.00
Gold ore (greenstone-hosted orogenic lode)	<u>OREAS 229*</u>	Au FA 12.11ppm Au AR 11.75ppm	60 / 500	\$5.34 / \$44.50
Gold oxide ore (weathered greenstone)	<u>OREAS 257*</u>	Au FA 14.18ppm Au AR 13.96ppm	60 / 500	\$5.34 / \$44.50
PGE CRMs (pulps)				
Dishaba PGE ore in a dolerite matrix	<u>OREAS 681**^</u>	Au 51ppb Pd 243ppb Pt 526ppb	60 / 500	\$11.70 / \$95.00

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Dishaba PGE ore in a dolerite matrix	<u>OREAS 682</u> **^	Au 74ppb Pd 444ppb Pt 868ppb	60 / 500	\$11.70 / \$95.00
Dishaba PGE ore in a dolerite matrix	<u>OREAS 683</u> **^	Au 207ppb Pd 853ppb Pt 1760ppb	60 / 500	\$11.70 / \$95.00
Dishaba PGE ore in a dolerite matrix	<u>OREAS 684</u> **^	Au 0.248ppm Pd 1.72ppm Pt 3.87ppm	60 / 500	\$11.70 / \$95.00
<u>COPPER-NICKEL-PGE CRMs (pulp)</u>				
Gabbronorite (disseminated sulphides)	<u>OREAS 13b</u> *	Cu 2327ppm Ni 2247ppm Pt 197ppb Pd 131ppb Au 211ppb	10 / 60	\$3.00 / \$9.35
Dishaba PGE ore with copper-nickel ore added in a dolerite matrix	<u>OREAS 680</u> **^	Cu 0.904% Ni 2.15% Pt 405ppb Pd 218ppb Au 161ppb	60 / 500	\$11.70 / \$95.00
Magmatic massive sulphide	<u>OREAS 14P</u> **^	Cu 0.997% Ni 2.10% Pt 97ppb Pd 149ppb Au 51ppb	10 / 60 / 100	\$3.00 / \$7.48 / \$11.58
<u>GOLD CHIP CRMs (-3mm)</u>				
Gold ore (greywacke)	<u>OREAS 6Ca</u>	Au 1.48ppm	500	\$33.20
Gold ore (greywacke)	<u>OREAS 7Ca</u>	Au 2.54ppm	500	\$33.20
<u>COPPER CRMs (pulp)</u>				
Barren shale/siliceous dolomite	<u>OREAS 160</u> *	Cu 13ppm	10	\$3.00
Cu-bearing siltstone	<u>OREAS 920</u> **	Cu 112ppm	10 / 500	\$3.45 / \$172.50
Cu-bearing siltstone	<u>OREAS 91</u> *	Cu 265ppm	10	\$3.00
Cu-bearing siltstone	<u>OREAS 921</u> **	Cu 274ppm	10 / 1000	\$3.45 / \$345.00
Silver-copper-gold ore (rhyodacite)	<u>OREAS 600</u> **	Cu 482ppm Au 200ppb Ag 24.8ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00

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Silver-copper-gold ore (rhyodacite)	<u>OREAS 601</u> **	Cu 0.101% Au 0.780ppm Ag 49.2ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	<u>OREAS 905</u> **	Cu 0.153% CuSol 0.127% Au 391ppb	10 / 60 / 500	\$3.45 / \$9.35 / \$77.50
Massive sulphide low grade ore breccia	<u>OREAS 110</u> *^	Cu 0.160%	10	\$3.00
Copper ore (sediment-hosted)	<u>OREAS 922</u> **	Cu 0.212%	10 / 1000	\$3.45 / \$345.00
Copper-gold-molybdenum ore (quartz monzonite porphyry)	<u>OREAS 501c</u> **	Cu 0.276% Au 221ppb Mo 97ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00
Copper low grade ore argillaceous sandstone	<u>OREAS 902</u> **	Cu 0.301% Cu-Sol 0.111%	10 / 1000	\$3.00 / \$155.00
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	<u>OREAS 906</u> **	Cu 0.310% CuSol 0.259% Au 49ppb	10 / 60 / 500	\$3.45 / \$9.35 / \$77.50
Cu sulphide low grade ore (sediment-hosted)	<u>OREAS 161</u> *^	Cu 0.400%	10	\$3.00
Copper ore (sediment-hosted)	<u>OREAS 923</u> **	Cu 0.423%	10 / 1000	\$3.45 / \$345.00
Copper ore (sediment-hosted)	<u>OREAS 924</u> **	Cu 0.512%	10 / 500	\$3.45 / \$172.50
Silver-copper-gold ore (rhyodacite)	<u>OREAS 602</u> ***^	Cu 0.515% Au 1.95ppm Ag 120ppm	10 / 60	\$3.00 / \$7.35
Copper-gold-molybdenum ore (quartz monzonite porphyry)	<u>OREAS 503c</u> **	Cu 0.538% Au 0.698ppm Mo 318ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00
Copper (gold) ore argillaceous sandstones	<u>OREAS 904</u> **	Cu 0.612% Au 45ppb	10 / 60 / 500	\$3.00 / \$9.35 / \$77.50
Copper ore (sediment-hosted)	<u>OREAS 925</u> **	Cu 0.615%	10 / 1000	\$3.45 / \$345.00
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	<u>OREAS 907</u> **	Cu 0.638% CuSol 0.533% Au 100ppb	10 / 60 / 500	\$3.45 / \$9.35 / \$77.50
Copper ore argillaceous sandstones	<u>OREAS 903</u> **	Cu 0.652% Cu-Sol 0.434%	10 / 60 / 1000	\$3.00 / \$9.35 / \$155.00

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Product Description	CRM Code	Metal Concentration	Unit Size (grams)	Unit Price (AUD)
Cu sulphide ore (sed-hosted)	OREAS 162 ^{*^}	Cu 0.761%	10	\$3.00
Copper-gold-molybdenum ore (quartz monzonite porphyry)	OREAS 502c ^{**}	Cu 0.783% Au 488ppb Mo 226ppm	10 / 60 / 1000	\$3.00 / \$7.35 / \$122.00
Copper ore (sediment-hosted)	OREAS 926 ^{**}	Cu 0.813%	10 / 1000	\$3.45 / \$345.00
Silver-copper-gold ore (rhyodacite)	OREAS 603 ^{***^}	Cu 1.00% Au 5.18ppm Ag 284ppm	10 / 60	\$3.00 / \$7.35
Cu sulphide ore (sed-hosted)	OREAS 927 ^{**}	Cu 1.08%	10 / 1000	\$3.45 / \$345.00
Copper-gold oxide ore (oxidised VMS / weathered rhyodacite)	OREAS 908 ^{**}	Cu 1.26% CuSol 1.06% Au 187ppb	10 / 60 / 500	\$3.45 / \$9.35 / \$77.50
Cu sulphide ore (sed-hosted)	OREAS 928 [*]	Cu 1.53%	10 / 1000	\$3.45 / \$345.00
Cu sulphide ore (sed-hosted)	OREAS 163 ^{*^}	Cu 1.71%	10	\$3.00
Cu sulphide ore (sed-hosted)	OREAS 929 [*]	Cu 2.00%	10 / 1000	\$3.45 / \$345.00
Silver-copper-gold ore (rhyodacite)	OREAS 604 ^{***^}	Cu 2.16% Au 1.43ppm Ag 488ppm	10 / 60	\$3.00 / \$7.35
Cu sulphide ore (sed-hosted)	OREAS 164 ^{*^}	Cu 2.22%	10	\$3.00
Massive sulphide ore breccia	OREAS 111 ^{*^}	Cu 2.30%	10	\$3.00
Massive sulphide ore breccia	OREAS 111b ^{*^}	Cu 2.44%	10	\$3.00
Cu sulphide ore (sed-hosted)	OREAS 930 ^{*^}	Cu 2.52%	10	\$3.45
Cu sulphide ore (sed-hosted)	OREAS 165 ^{*^}	Cu 3.21%	10	\$3.00
Cu sulphide ore (sed-hosted)	OREAS 931 ^{*^}	Cu 3.82%	10	\$3.45
Cu sulphide ore (sed-hosted)	OREAS 96 ^{*^}	Cu 3.93%	10	\$3.00

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Product Description	CRM Code	Metal Concentration	Unit Size (grams)	Unit Price (AUD)
Silver-copper-gold ore (rhyodacite)	<u>OREAS 605</u> **^	Cu 5.02% Au 1.67ppm Ag 965ppm	10 / 60	\$3.00 / \$7.35
Massive sulphide ore breccia	<u>OREAS 112</u> **^	Cu 5.13%	10	\$3.00
Cu sulphide ore (sed-hosted)	<u>OREAS 932</u> **^	Cu 6.13%	10	\$3.45
Cu sulphide ore (sed-hosted)	<u>OREAS 97</u> **^	Cu 6.31%	10	\$3.00
High grade copper ore	<u>OREAS 933</u> **^	Cu 8.37%	10	\$3.45
Cu sulphide ore (sed-hosted)	<u>OREAS 166</u> **^	Cu 8.75%	10	\$3.00
High grade copper ore	<u>OREAS 934</u> **^	Cu 9.59%	10	\$3.45
High grade copper ore	<u>OREAS 935</u> **^	Cu 12.6%	10	\$3.45
Massive sulphide ore breccia	<u>OREAS 113</u> **^	Cu 13.3%	10	\$3.00
Cu sulphide ore (sed-hosted)	<u>OREAS 98</u> **^	Cu 14.8%	10	\$3.00
CONCENTRATE CRMs (pulpes)				
Copper-gold-silver sulphide concentrate	<u>OREAS 990</u> **^	Cu 16.87% Ag 1765ppm Au 76.11ppm	60	\$27.00
Copper-gold-silver sulphide concentrate	<u>OREAS 991</u> **^	Cu 20.66% Ag 48.14ppm Au 47.04ppm	50	\$22.50
Copper-silver sulphide concentrate	<u>OREAS 99b</u> **^	Cu 28.90% Ag 81.1ppm	10	\$4.57
Copper sulphide refinery product	<u>OREAS 992</u> **^	Cu 43.90% S 36.97%	10	\$4.57
Zinc sulphide concentrate	<u>OREAS 350</u> **^	Zn 44.12% Pb 8.22% Ag 96.6ppm	10	\$4.57
Zinc sulphide concentrate	<u>OREAS 351</u> **^	Zn 46.97% Pb 3.85% Ag 120ppm	10	\$4.57

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Lead sulphide concentrate	<u>OREAS 352</u> [^]	Pb 58.14% Zn 2.21% Ag 9.43ppm	10	\$4.57
Nickel-cobalt sulphide refinery product	<u>OREAS 78</u> [^]	Co 23.74% Ni 25.79% S 28.61%	10	\$4.57
<u>NICKEL SULPHIDE CRMs (pulps)</u>				
Komatiite altered ultramafic	<u>OREAS 70b</u> ^{**^}	Ni 0.218%	10	\$3.45
Komatiite-hosted nickel sulphide ore	<u>OREAS 72b</u> ^{***^}	Ni 0.686%	10	\$3.45
Komatiite-hosted nickel sulphide ore	<u>OREAS 73b</u> ^{***^}	Ni 1.48%	10	\$3.45
Komatiite-hosted nickel sulphide ore	<u>OREAS 74a</u> ^{*^}	Ni 3.14%	10	\$3.00
Komatiite-hosted nickel sulphide ore	<u>OREAS 74b</u> ^{**^}	Ni 3.38%	10	\$3.45
Komatiite-hosted nickel sulphide ore	<u>OREAS 75a</u> ^{*^}	Ni 5.11%	10	\$3.00
Komatiite-hosted nickel sulphide ore	<u>OREAS 75b</u> ^{***^}	Ni 5.29%	10	\$3.45
Komatiite-hosted nickel sulphide ore	<u>OREAS 76a</u> ^{*^}	Ni 7.29%	10	\$3.00
Komatiite-hosted nickel sulphide ore	<u>OREAS 76b</u> ^{**^}	Ni 7.62%	10	\$3.45
Komatiite-hosted nickel sulphide ore	<u>OREAS 77a</u> ^{*^}	Ni 10.71%	10	\$3.00
Komatiite-hosted nickel sulphide ore	<u>OREAS 77b</u> ^{***^}	Ni 11.30%	10	\$3.45
<u>NICKEL LATERITE CRMs (pulps)</u>				
Transitional (saprolite-limonite) ore	<u>OREAS 180</u> [*]	Ni 3093ppm Co 244ppm Sc 41.5ppm	10 / 1000	\$3.20 / \$240.00
Transitional (saprolite-limonite) ore	<u>OREAS 181</u> [*]	Ni 5123ppm Co 541ppm Sc 38.2ppm	10 / 1000	\$3.20 / \$240.00

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Product Description	CRM Code	Metal Concentration	Unit Size (grams)	Unit Price (AUD)
Transitional (saprolite-limonite) ore	<u>OREAS 182*</u>	Ni 0.707% Co 728ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 183*</u>	Ni 0.995% Co 225ppm	10 / 1000	\$3.00 / \$220.00
Transitional (saprolite-limonite) ore	<u>OREAS 184*</u>	Ni 1.02% Co 903ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 185*</u>	Ni 1.14% Co 388ppm	10 / 1000	\$3.00 / \$220.00
Transitional (saprolite-limonite) ore	<u>OREAS 186*</u>	Ni 1.23% Co 692ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 187*</u>	Ni 1.37% Co 636ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 189*</u>	Ni 1.48% Co 326ppm	10 / 1000	\$3.00 / \$220.00
Transitional (saprolite-limonite) ore	<u>OREAS 190*</u>	Ni 1.64% Co 889ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 191*</u>	Ni 1.75% Co 665ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 192*</u>	Ni 1.77% Co 404ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 193*</u>	Ni 1.93% Co 495ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 194*</u>	Ni 2.13% Co 428ppm	10 / 1000	\$3.00 / \$220.00
Saprolitic ore	<u>OREAS 195*</u>	Ni 2.94% Co 477ppm	10 / 1000	\$3.00 / \$220.00
Lateritic scandium (nickel-cobalt) ore	<u>OREAS 197*</u>	Sc 203ppm Co 331ppm Ni 524ppm	10 / 1000	\$3.20 / \$240.00
Lateritic scandium (nickel-cobalt) ore	<u>OREAS 198*</u>	Sc 401ppm Co 807ppm Ni 688ppm	10 / 1000	\$3.20 / \$240.00
Lateritic scandium (nickel-cobalt) ore	<u>OREAS 199*</u>	Sc 591ppm Co 557ppm Ni 995ppm	10 / 1000	\$3.20 / \$240.00

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Product Description	CRM Code	Metal Concentration	Unit Size (grams)	Unit Price (AUD)
<u>Zn-Pb-Ag CRMs (pulpes) – Broken Hill Type</u>				
Zinc sulphide ore (meta-sediment/sulphide)	<u>OREAS 36</u> *^	Zn 4.19% Ag 10.17ppm Pb 0.579%	10	\$4.25
Zinc sulphide ore (meta-sediment/sulphide)	<u>OREAS 37</u> *^	Zn 6.26% Ag 5.19ppm Pb 0.615%	10	\$4.25
Zinc sulphide ore (meta-sediment/sulphide)	<u>OREAS 38</u> *^	Zn 10.06% Ag 5.49ppm Pb 0.592%	10	\$4.25
<u>Zn-Pb-Ag CRMs (pulpes) – SEDEX Type</u>				
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	<u>OREAS 130</u> *^	Ag 6.57ppm Pb 0.13% Zn 1.71%	10	\$3.90
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	<u>OREAS 135</u> *^	Ag 55.7ppm Pb 1.70% Zn 2.80%	10	\$3.90
Zn-Pb-Ag sulphide ore (carbonate siltstone)	<u>OREAS 131b</u> *^	Ag 33.3ppm Pb 1.88% Zn 3.04%	10	\$4.25
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	<u>OREAS 136</u> *^	Ag 151ppm Pb 4.76% Zn 3.63%	10	\$3.90
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	<u>OREAS 137</u> *^	Ag 25.9ppm Pb 0.673% Zn 4.92%	10	\$3.90
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	<u>OREAS 138</u> *^	Ag 45.2ppm Pb 1.23% Zn 8.19%	10	\$3.90
Zn-Pb-Ag sulphide ore (carbonate siltstone)	<u>OREAS 133a</u> *^	Ag 100ppm Pb 4.90% Zn 10.9%	10	\$4.25
Zn-Pb-Ag sulphide ore (carbonate siltstone)	<u>OREAS 133b</u> *^	Ag 104ppm Pb 5.06% Zn 11.3%	10	\$4.25
Zn-Pb-Ag sulphide ore (sulphidic graphitic slate)	<u>OREAS 139</u> *^	Ag 76.7ppm Pb 2.21% Zn 13.63%	10	\$3.90
Zn-Pb-Ag sulphide ore (carbonate siltstone)	<u>OREAS 134a</u> *^	Ag 201ppm Pb 12.8% Zn 17.3%	10	\$4.25
Zn-Pb-Ag sulphide ore (carbonate siltstone)	<u>OREAS 134b</u> *^	Ag 209ppm Pb 13.4% Zn 18.0%	10	\$4.25

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Zn-Pb-Cu-Ag-Au CRMs (pulpes) – VMS Type				
Zn-Pb-Cu-Ag-Au sulphide mine tailings (rhyolitic volcanoclastic sediments)	<u>OREAS 630</u> ^{***^}	Ag 10.5ppm; Pb 0.272%; Zn 0.54%; Cu 0.0386%; Au 0.259ppm	60	\$11.70
Zn-Pb-Cu-Ag-Au sulphide ore (rhyodacite)	<u>OREAS 620</u> ^{***^}	Ag 38.5ppm; Pb 0.774%; Zn 3.15%; Cu 0.173%; Au 0.685ppm	10 / 60	\$3.90 / \$11.70
Zn-Pb-Cu-Ag-Au sulphide ore (rhyodacite)	<u>OREAS 621</u> ^{***^}	Ag 69ppm; Pb 1.36%; Zn 5.22%; Cu 0.363%; Au 1.25ppm	10 / 60	\$3.90 / \$11.70
Zn-Pb-Cu-Ag-Au sulphide ore (rhyodacite)	<u>OREAS 622</u> ^{***^}	Ag 102ppm; Pb 2.21%; Zn 10.24%; Cu 0.486%; Au 1.85ppm	10 / 60	\$3.90 / \$11.70
Zn-Pb-Cu-Ag-Au sulphide ore (rhyodacite)	<u>OREAS 623</u> ^{***^}	Ag 20.4ppm; Pb 0.250%; Zn 1.03%; Cu 1.73%; Au 0.827ppm	10 / 60	\$3.90 / \$11.70
Zn-Pb-Cu-Ag-Au sulphide ore (rhyodacite)	<u>OREAS 624</u> ^{***^}	Ag 45.3ppm; Pb 0.624%; Zn 2.40%; Cu 3.10%; Au 1.16ppm	10 / 60	\$3.90 / \$11.70
MANGANESE CRMs (pulpes) – Sedimentary				
Manganiferous sedimentary	<u>OREAS 171</u> [*]	Mn 35.10%	10 / 1000	\$3.00 / \$300.00
Manganiferous sedimentary	<u>OREAS 172</u> [*]	Mn 42.75%	10 / 1000	\$3.00 / \$300.00
Manganiferous sedimentary	<u>OREAS 170a</u> [*]	Mn 45.06%	10 / 1000	\$3.00 / \$300.00
Manganiferous sedimentary	<u>OREAS 170b</u> [*]	Mn 46.06%	10 / 1000	\$3.00 / \$300.00
GRAPHITE CRMs (pulpes)				
Crystalline vein with granodiorite	<u>OREAS 722</u>	TGC 2.03%	10 / 500	\$3.90 / \$150.00
Crystalline vein with granodiorite	<u>OREAS 723</u>	TGC 5.87%	10 / 500	\$3.90 / \$150.00
Crystalline vein with granodiorite	<u>OREAS 724</u>	TGC 12.06%	10 / 500	\$3.90 / \$150.00
Crystalline vein with granodiorite	<u>OREAS 725</u>	TGC 24.52%	10 / 500	\$3.90 / \$150.00

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<u>TIN & LITHIUM CRMs (pulpes)</u>				
Pegmatite ore	<u>OREAS 147*</u>	Li 0.227% Nb 0.115% Sn 1755ppm	10 / 1000	\$3.90 / \$300.00
Pegmatite ore	<u>OREAS 148*</u>	Li 0.476% Nb 0.168% Sn 1157ppm	10 / 1000	\$3.90 / \$300.00
Pegmatite ore	<u>OREAS 149*</u>	Li 1.03% Nb 0.626% Sn 3286ppm	10 / 1000	\$3.90 / \$300.00
Sn laterite ore	<u>OREAS 140*</u>	Sn 1755ppm	10 / 500	\$3.00 / \$150.00
Sn laterite ore	<u>OREAS 141*</u>	Sn 6061ppm	10 / 500	\$3.00 / \$150.00
Sn laterite ore	<u>OREAS 142*</u>	Sn 1.04%	10 / 500	\$3.00 / \$150.00
<u>TUNGSTEN CRMs (pulpes) – Skarn</u>				
Skarn tungsten magnetite ore	<u>OREAS 700**</u>	W 1.13% Au 0.506ppm Cu 0.202%	10 / 60 / 500	\$3.45 / \$10.75 / \$89.59
High grade skarn tungsten magnetite ore	<u>OREAS 701**</u>	W 2.43% Au 1.11ppm Cu 0.491%	10 / 60 / 500	\$3.45 / \$10.75 / \$89.59
<u>MAGNETITE CRMs (pulpes)</u>				
Skarn tungsten magnetite ore (with Au-Cu-W mineralisation)	<u>OREAS 700**</u>	Tot Fe 16.06% FeO 12.07% DTR (MassRec) 11.28% Satmagan Fe ₃ O ₄ 10.91%	10 / 60 / 1000	\$3.45 / \$10.75 / \$179.18
High grade skarn tungsten magnetite ore (with Au-Cu-W mineralisation)	<u>OREAS 701**</u>	Tot Fe 23.98% FeO 17.35% DTR (MassRec) 20.80% Satmagan Fe ₃ O ₄ 17.95%	10 / 60 / 500	\$3.45 / \$10.75 / \$89.59
<u>IRON CRMs (pulpes)</u>				
Hematite ore (BIF-hosted)	<u>OREAS 401*</u>	Fe 45.63% SiO ₂ 24.88% P 0.105%	10 / 1000	\$3.00 / \$300.00
Hematite ore (BIF-hosted)	<u>OREAS 402*</u>	Fe 48.41% SiO ₂ 19.77% P 0.119%	10 / 1000	\$3.00 / \$300.00

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Hematite ore (BIF-hosted)	<u>OREAS 403*</u>	Fe 52.31% SiO2 13.67% P 0.123%	10 / 1000	\$3.00 / \$300.00
Hematite ore (BIF-hosted)	<u>OREAS 404*</u>	Fe 55.14% SiO2 7.88% P 0.151%	10 / 1000	\$3.00 / \$300.00
Hematite ore (BIF-hosted)	<u>OREAS 405*</u>	Fe 58.02% SiO2 8.37% P 0.111%	10 / 1000	\$3.00 / \$300.00
Hematite ore (BIF-hosted)	<u>OREAS 406*</u>	Fe 61.44% SiO2 7.96% P 0.085%	10 / 1000	\$3.00 / \$300.00
Hematite ore (supergene)	<u>OREAS 40*</u>	Fe 66.72% SiO2 4.64% P 0.004%	10 / 1000	\$3.00 / \$300.00
URANIUM CRMs (pulpes) – Sedimentary and Hydrothermal				
U bearing sandstone	<u>OREAS 120**</u>	U 40.5ppm	10 / 1000	\$3.72 / \$372.00
U bearing haematitic breccia	<u>OREAS 100a*</u>	U 135ppm	10 / 500	\$3.72 / \$186.00
U ore (sandstone hosted)	<u>OREAS 121**</u>	U 215ppm	10 / 1000	\$3.72 / \$372.00
U ore haematitic breccia	<u>OREAS 101b*</u>	U 396ppm	10 / 500	\$3.72 / \$186.00
U ore haematitic breccia	<u>OREAS 101a*</u>	U 422ppm	10 / 500	\$3.72 / \$186.00
U ore (sandstone hosted)	<u>OREAS 122**</u>	U 423ppm	10 / 1000	\$3.72 / \$372.00
U ore haematitic breccia	<u>OREAS 102a*</u>	U 662ppm	10 / 500	\$3.72 / \$186.00
U ore (sandstone hosted)	<u>OREAS 123**</u>	U 858ppm	10 / 1000	\$3.72 / \$372.00
U ore granitoids & gneisses	<u>OREAS 106*</u>	U 1143ppm; Th 644ppm	30	\$8.57
U ore (sandstone hosted)	<u>OREAS 124**</u>	U 1845ppm	10 / 1000	\$3.72 / \$372.00

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<u>REE-Nb CRMs (pulp) – Carbonatite (supergene)</u>				
REE-Nb laterite ore	<u>OREAS 460</u> **	Nb 711ppm; La 1347ppm Ce 1813ppm; Nd 791ppm Pr 244ppm; Sm 107ppm Zr 472ppm	10 / 1000	\$4.50 / \$330.00
REE-Nb laterite ore	<u>OREAS 461</u> **	Nb 1343ppm; La 2644ppm Ce 3510ppm; Nd 1638ppm Pr 491ppm; Sm 220ppm Zr 613ppm	10 / 1000	\$4.50 / \$330.00
REE-Nb laterite ore	<u>OREAS 462</u> **	Nb 1452ppm; La 3798ppm Ce 4951ppm; Nd 2551 Pr 739ppm; Sm 369ppm Zr 598ppm	10 / 1000	\$4.50 / \$330.00
REE-Nb laterite ore	<u>OREAS 463</u> **	Nb 1524ppm; La 4967ppm Ce 0.659%; Nd 3706ppm Pr 1004ppm; Sm 538ppm Zr 576ppm	10 / 1000	\$4.50 / \$330.00
REE-Nb laterite ore	<u>OREAS 464</u> **	Nb 1917ppm; La 1.17% Ce 1.53%; Nd 0.994% Pr 2578ppm; Sm 1498ppm Zr 462ppm	10 / 1000	\$4.50 / \$330.00
REE-Nb laterite ore	<u>OREAS 465</u> **	Nb 4759ppm; La 2.40% Ce 3.98%; Nd 1.18% Pr 3772ppm; Sm 1360ppm Zr 1806ppm	10 / 1000	\$4.50 / \$330.00

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All prices are quoted in Australian Dollars (AUD) and exclude Goods and Services Tax (GST).
GST is only applicable to Australian customers.

Limited quantities of discontinued OREAS CRMs may be available including:
OREAS 50c, 72a, 73a, 90, 92, 95, 99, 104 and 105.
Please contact graham@explorationgeochem.com for more information.

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