

# COMPANY PROFILE



Company Reg. No. 2012/215027/07

<b>COMPANY NAME:</b>	COREMET SERVICES (PTY) LTD
<b>ESTABLISHED DATE:</b>	3 December 2012
<b>VISION:</b>	To maximise mineral resource value extraction
<b>MISSION:</b>	CoreMet is a <b>caring</b> company that will be the market leader within the ultra-fine mineral processing field with our superior technologies and <b>innovative</b> solutions by utilising our workforce for maximum value extraction from the mineral resource of our client.
<b>VALUES:</b>	Accountability Caring Honesty Innovative
<b>PHYSICAL ADDRESS PER LOCATION:</b>	Unit 4   Gateway Landing   70 Banghoek Crescent   N4 Gateway Industrial Park   Pretoria   0081
<b>WEBSITE URL:</b>	<a href="http://www.coremet.co.za">www.coremet.co.za</a>
<b>CONTACT DETAILS:</b>	<b>Willie Hefer - Managing Director</b> Mobile: 082 650-0105 E-mail: <a href="mailto:willie.hefer@coremet.co.za">willie.hefer@coremet.co.za</a>  <b>Albert Venter - Technical Director</b> Mobile: 072 844 5325 E-mail: <a href="mailto:albert.venter@coremet.co.za">albert.venter@coremet.co.za</a>
<b>PRODUCT RANGE:</b>	Multi Gravity Separator (MGS) Multi High Frequency Screens (Virto) Crushing & Screening (PilotCrushTec) Dense Medium Separation (DMS) Ultra-High Dense Medium Separation (UHDMS) Ultra-Fine Dense Medium Separation (UFDMS) Modular Ultra Fine Mineral Plant (Tin, Iron ore, Tantalum, Chrome)

<p><b>DESCRIPTION OF SERVICES:</b></p>	<p><b><u>Metallurgical Concept, Definitive Feasibility (DFS) &amp; CPR Studies</u></b>                  The focus is on both green and brown field projects to enable the client with a full metallurgical scope of test work, design of the process flowsheets and selection of technologies that is incorporated within a full financial business model that include all operational and capital costing for the valuation (NPV) of projects.</p> <p><b><u>Metallurgical Ore Characterisation</u></b>                  This process is to obtain core information of the ore or mineral type. The data information can be classified into three groups:</p> <p><b>Quantitative analysis</b>                  Material mass                  Material volume</p> <p><b>Qualitative analysis</b>                  Densitometric analysis (density of particles)                  Sieve analysis (Size of particles)                  Chemical analysis (XRF, ICP)                  Mineralogical analysis (QEM, XRD)</p> <p><b>Basis of ore or mineral separation</b>                  Size &amp; shape (screening analysis)                  Gravity (water based like MGS or spirals)                  Density (medium based like DMS)</p> <p><b><u>Metallurgical Test Programme Design &amp; Execution</u></b>                  CoreMet has a very strong ability to define, develop, execute and report on any metallurgical test work of study programme. CoreMet believe to have our client involved from the start of the study to:</p> <ul style="list-style-type: none"> <li>Define the test work scoping with client</li> <li>Test work proposal approved by client</li> <li>Test work execution to generate needed information like mass splits, recoveries, grades</li> <li>Technical report</li> <li>Project schedule management</li> <li>Project cost reconciliation</li> </ul> <p><b><u>Process Engineering Design &amp; Technology Selection</u></b>                  CoreMet can offer our clients a full process engineering solution that include the latest technology:</p> <p><b>Process design</b>                  Process flow sheet (PFD)                  Piping &amp; Instrumentation (P&amp;ID)                  Mass balance                  Water balance                  Equipment lists &amp; data sheets                  Modular concept plant design</p> <p><b>Mechanical</b>                  Finalised plant block plan in line with the PFDs and existing plant infrastructure.</p>
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Develop specifications and criteria in support of equipment procurement.  
Vendor interface integration of certified vender data (CVD).  
Integration with process engineering to update the equipment lists.  
Development of detailed 3D CAD plant models.  
Platework general arrangement drawings for fabrication.  
Mechanical general arrangement drawings for construction purposes.

### **Electrical**

Electrical engineering deliverables include the following:

Load list.

Single line diagrams.

Cable schedules.

Racking schedules including bill of quantities (BOQ).

Termination schedules.

Typical schematics.

Substation and motor control centre (MCC) general arrangement drawings.

### **Instrumentation**

The control and instrumentation scope of work will include the development of piping and instrumentation diagrams (P&IDs) as well as a control philosophy in support of the plant control strategy.

An instrument list will be developed together with instrument data sheets in support of the procurement process.

### **Civil**

The civil engineering includes the following:

Foundation design and layout drawings including rebar and bending schedules in support of the 3D plant layouts and structural designs;

Concrete slab designs and drawings including rebar and bending schedules.

### **Structural**

The structural engineering includes the following:

Structural steel 3D models for analysis.

Processing plant structures and access platform.

Steel structures in support of the plant layouts and based on certified vender data received from equipment suppliers.

Static and dynamic load assessments of structures based on CVD data

Platework designs based on empty and full load conditions.

Structural steel general arrangement (GA) drawings.

### **Plant Optimisation & Due-diligence Programs**

CoreMet has a very strong ability to define, develop, execute and report on any optimisation projects specified below:

#### **Software programs (Mine Intellect)**

To develop and manage metallurgical plant standards to improve mechanical utilisation and plant efficiencies.

#### **Plant quality assurance & control programs**

To stabilise process control & product specifications.

#### **Plant commissioning or plant audits**

To reach design capacities, maintain production throughputs and qualities and increase product recoveries.

	<p><b>Mine value chain audit</b> Audits or assurance engagements provide our client or stakeholder with an overview regarding the metallurgical integration within the mining value chain to ensure optimal production through put and to unlock more potential product value for our client.</p> <p><b><u>Equipment performance testing and modelling</u></b> Equipment performance testing and modelling enable CoreMet with the understanding of equipment efficiencies and the opportunities for equipment optimisation to increase plant throughput like: Crushers Grinding mills Cyclones (water &amp; DMS) Screens De-watering (thickeners &amp; filters)</p> <p><b><u>Plant Operations</u></b> CoreMet offer our clients fit for purpose modular plants in commodities like chrome, iron ore, coal, heavy minerals and heavy metal minerals (tin, tungsten and tantalum). CoreMet also offer our client the option to de-risk the project to offer a full capital operational turnkey BOOM or BOOT contract option.</p>
<p><b>HEALTH &amp; SAFETY:</b></p>	<p>CoreMet Mineral Processing is focused on providing quality consulting services, mineral processing equipment, modular plants, operational support and operational management to the mining industry. At CoreMet we care for the health and safety of our people and clients, the environment, associated communities and natural resources by focussing on sustainable development in all our activities. CoreMet Mineral Processing is committed to:</p> <ul style="list-style-type: none"> <li>Safety and health of all employees, contractors, clients and clients' employees;</li> <li>Complying with relevant legal and other requirements;</li> <li>Continual engagement with clients to ensure compliance with clients' SHEQ requirements;</li> <li>Continually striving to reduce process and plant impacts on the environment;</li> <li>Ensuring that all work is performed at a high quality to the benefit of all stakeholders;</li> </ul>

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<b>CLIENT PORTFOLIO:</b>	Glencore CoalToll Exxaro Ferro Globe Tronox LDE TransHex Bond Equipment EnviroServe SJT MetMin DTE Projects Afrimat African Rainbow Minerals Anglo Sylvania AlphaMin Siyanda Bakgatla Platinum Tantalex Lithium FireRing Minerals ArcelorMittal South Africa Arcadia Minerals (Orange River Pegmatite)
<b>PARTNERS:</b>	Gravity Mining Virto Group Obsideo Consulting PilotCushTec VBKOM

## COREMET MINERAL PROCESSING CONTACT TEAM DETAILS:

WILLIE HEFER - Managing Director



- Wide range of experience in business management, plant operations and metallurgical process development.
- Professional project management background
- Honours degree in Metallurgy, Diploma in Chemical Engineering, Management Development Program (MDP) certificate & Professional Project Management (PPM) Certificate

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ALBERT VENTER - Technical Director



- Wide range of experience in metallurgical process development and plant operation for different minerals and ores
- Technology experience and understanding of most mineral processing technologies
- Master's degrees in Metallurgy and Mineral Resource Management

## CoreMet Mineral Processing (Pty) Ltd Study Reference List



Year	Study Name	Client	Project Description	Project Value
2016	Feasibility Study	Rainbow Rare Earths	Feasibility Study	R 250 000
2016	Elbe Copper Plant OME Study	Metanza - Onroads	Plant study in support of Mining Licence Application	R 200 000
2016	Grooteeluk GG8 Fines Circuit Desktop Study	Exxaro	Desktop study investigating the debottlenecking of the Fines Circuit	R 9 500 000
2016	Gakara Rare Earths Minerals Project	Rainbow Rare Earths	Turn Key Green Fields Project - Mineral Processing Plant in Burundi	R 23 339 913
2016	Heuningkranz Mining Concept Study	Anglo American Kumba	Technical study in support of the Mining Right Application	R 12 500 000 000
2017	GG8 Fines Interim Bypass System Implementation Project	Exxaro	Detail Design and Engineering Support	R 5 500 000
2017	Grooteeluk GG8 Fines Circuit Implementation Study	Exxaro	Detail Design and Engineering Support	R 15 000 000
2018	Tharisa Boom Stacker Design	Tharisa	Boom Stacker costing study	R 5 598 000
2018	Firestone PE Feasibility Study	Firestone	Port Elizabeth Expansion Project - Definitive Feasibility Study	R 1 450 000 000
2018	Houtkraal Mining Project	Tronox	Pre feasibility study - Project includes 2.2km overland conveyor as well as 2.2km dual carry conveyor, a tailings handling and disposal facility and ancillary materials handling	R 73 811 907
2019	Black Chrome Plant	SAIL	Design review of SP1 chrome plant - Steelpoort	R 168 265
2019	Black Chrome Plant	SAIL	Engineering and drawing office support services	R 245 000
2019	Slag breaking study	Tronox	Technical and costing study of the slag breaking optimisation process to minimise fines generation	R 6 176 000
2019	MGS Ultra Fines Chrome Recovery Plant	CoreMet	Detail design of 50tph plant	R 56 000 000
2020	Primary Concentrating Plant for additional inland strand deposit	MSR	Feasibility study of the additional primary concentrator required for the new deposit and the integration thereof with the existing SCP circuit	R 950 000
2020	Mineral Separation Plant for Tormin Minerals Sands Expansion Project	MSR	Feasibility study of a new MSP plant to magnetically separate the garnet and ilmenite	R 345 000
2021	Fairbreeze Rehabilitation Infrastructure	Tronox	Concept study to identify and assess various options of mixing the required percentage fines material with the back filling during rehabilitation as required by the Mondri agreement	R 5 000 000
2021	Additional Slag Crane	Tronox	Concept study of additional metals crane in the smelter complex with the focus on increasing the overall availability	R 22 500 000
2021	Additional Metal Crane	Tronox	Concept study of additional metals crane in the smelter complex with the focus on increasing the overall availability	R 45 000 000
2021	Sand back filling system	Tronox	Concept study to investigate the upgrading of the tailings back filling from an open ended system to stacking by means of skid mounted stacking cyclones	R 10 500 000
2021	Automation of Limestone Dosing PH Control	Tronox	Concept study of system upgrade to automate the limestone dosing with the focus on better pH control which will result in optimised usage and ultimately reduced downtime	R 2 250 000
2021	Namakwa Sands Brandsebaai Trash Removal Study	Tronox	Concept study of PCP West and SCP circuit upgrades to remove the garnet from the circuit more effectively with the focus on increasing rutile recovery	R 554 400 000
2021	Namakwa Sands Fire System Design	Tronox	Concept study of the fire design for Brandsebaai, MSP and the Smelter	R 25 000 000
2021	Black Chrome Plant	Sail	Assessment of plant and spirals circuit upgrade with the focus on producing foundry grade and met grade concentrates	R 4 500 000
2021	Valley Of Waves - Gate mechanism study	Sub Interational	Dynamic modelling of the as-built gates for each of the 10 gates that are used to generate the waves	R 2 250 000
2022	Tantalum Processing Plant Project	Arcadia Minerals	Feasibility study and detail design for the Tantalum processing plant	R 132 000 000
2022	Lithium Dump Plant Project - Phase1 & 2	Tantalex	Metallurgical study and technology selection for the Lithium processing plant	R 4 102 000

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Year	Project Name	Client	Project Description	Project Value
2017	GG8 Coal Plant Fines Dewatering Upgrade	Exxaro	Detail Design of GG8 Fines Circuit Upgrade incl Construction Support	R 14 239 229
2017	Construction and Erection of Thickener	MPTeq / Lanxess	Construction of concrete foundations and erection of thickener for MPTeq at the Lanxess mine	R 1 635 823
2017	Gakara Rare Earth Project	Rainbow Rare Earth Minerals	Lump Sum Turn Key Project in Burundi Africa	R 23 150 000
2017	Lanxess Spirals Plant Project	Lanxess	Expansion and optimisation of existing chrome spirals plant	R 5 250 000
2017	Ferrochrome Jig Project	Glencore	Construction of ferrochrome recovery jig project	R 4 850 000
2018	Khanye Coal Project	Canyon Coal	Design, Construct and Commission of 400tph Coal Washing Plant	R 179 000 000
2018	Salene Chrome Project	Salene	Detailed Design of Salene Chrome Processing Plant	R 96 222 000
2018	RADOS Sorter Plant Detail Design	RADOS	Detail Design of RADOS Sorter Plant - Zambia	R 11 500 000
2019	Modular Gold Plant Detail Design	Afriventures	Detail Design of 20tph Gold Concentratpr	R 13 500 000
2019	UMM Processing Plant	Tronox	Project Management of the recommissioning of the Unattritioned Mags Mineral Plant	R 9 500 000
2019	Degrit Optimisation Project - PCP West	Tronox	Detail Design and Implementation management of the degrit optimisation project at PCP West	R 7 250 000
2019	Palabora Mining Company Smelter Upgrade	PMC	Mechanical Engineering Support during Smelter Project Implementation	R 1 450 000
2019	Houtkraal Mining Project	Tronox	Detail Design and Implementation support. Project includes 2.2km overland conveyor as well as 2.2km dual carry conveyor, a tailings handling and disposal facility and ancillary materials handling	R 73 811 907
2019	Black Chrome Plant	SAIL	Detail design of SP2 chrome plant - Steelpoort	R 19 350 000
2020	Smelter Flux Feed System	PMC	Detail design of new flux feed system for feeding fines and coarse flux streams intermittantly into the smelter	R 7 250 000
2020	Bisie Mine: Ultra Fines Tin Recovery Project	Alphamin	Detail design of recovery plant with MGS technology and integration thereof into the existing tin plant	R 51 060 950
2021	Tormin Inland Strand Mineral Sands Expansion Project	MSR	Detail design of the additional slimes circuit for the in-land mineral sands deposit	R 65 000 000
2021	Trunk 3 relocation project	Tronox	Detail design of conveyor modifications and new infrastructure to support the mineral sands mining activities progressing further east	R 12 500 000
2021	East Plant screening project	Tronox	Detail design and support during implementation of a new screening plant to screen out the coarse particals from the East mine at the feed to the SCP	R 31 400 000
2021	GG8 Filter Deficit Project	Exxaro	Detail design and support during implementation of retrofitting a filter press with ancillary equipment into the structure currently housing three hyperbaric filters. The project include the assessment and possible upgrade of the downstream conveyors and transfer points.	R 4 500 000
2022	-1mm Fine Gravity Plant Project	AMSA	Design of fine processing plant as a turnkey solution to process the -1mm material	R 37 500 000
2022	Mpama Mine: Ultra Fines Tin Recovery Project	Alphamin	Detail design of recovery plant with MGS technology and integration thereof into the existing tin plant	R 110 000 000