

Laboratory **Chemical Laboratory, Geological Survey of India, Central Region,
GSI Complex, Seminary Hills, Nagpur, Maharashtra**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7824**

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Validity **30.08.2018 to 29.08.2020**

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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CHEMICAL TESTING

I.	SOIL AND ROCK			
1.	Soil and Stream Sediment	SiO ₂	GSI/CL/NAG/SOP/01/ 1A/XRF Issue No. 01 Issue Date 30.04.2014	32 % to 89 %
		Al ₂ O ₃		2.8 % to 30 %
		Fe ₂ O ₃		1.5 % to 20 %
		TiO ₂		0.01 % to 4 %
		CaO		0.16 % to 9 %
		MgO		0.12 % to 5 %
		MnO		0.03 % to 1.5 %
		Na ₂ O		0.04 % to 4 %
		K ₂ O		0.13 % to 6 %
		P ₂ O ₅		0.03 % to 0.5 %
		Ba		50 mg/kg to 2000 mg/kg
		Co		2 mg/kg to 100 mg/kg
		Cr		20 mg/kg to 4300 mg/kg
		Cu		5 mg/kg to 1200 mg/kg
		Ga		6 mg/kg to 40 mg/kg
		Nb		5 mg/kg to 95 mg/kg
		Ni		5 mg/kg to 300 mg/kg
		Pb		10 mg/kg to 2700 mg/kg
		Rb		10 mg/kg to 500 mg/kg
		Sc		5 mg/kg to 30 mg/kg
		Sr		20 mg/kg to 400 mg/kg
Th	5 mg/kg to 70 mg/kg			
V	20 mg/kg to 250 mg/kg			
Y	10 mg/kg to 70 mg/kg			
Zn	70 mg/kg to 500 mg/kg			
Zr	30 mg/kg to 3800 mg/kg			
2.	Rock	SiO ₂	GSI/CL/NAG/SOP/02/ 2A/XRF Issue No. 01 Issue Date 30.04.2014	35 % to 90 %
		Al ₂ O ₃		0.5 % to 35 %
		Fe ₂ O ₃		0.5 % to 20 %

Jitendra B. Vispute
Convenor

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Program Manager

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		TiO ₂	GSI/CL/NAG/SOP/02/ 2A/XRF Issue No. 01 Issue Date 30.04.2014	0.1 % to 3 %
		CaO		0.3 % to 20 %
		MgO		0.1 % to 20 %
		MnO		0.04 % to 0.5 %
		Na ₂ O		0.05 % to 9 %
		K ₂ O		0.05 % to 16 %
		P ₂ O ₅		0.01 % to 2 %
		Ba		100 mg/kg to 1500 mg/kg
		Co		5 mg/kg to 120 mg/kg
		Cr		20 mg/kg to 1000 mg/kg
		Cu		5 mg/kg to 230 mg/kg
		Ga		5 mg/kg to 60 mg/kg
		Nb		5 mg/kg to 300 mg/kg
		Ni		10 mg/kg to 2500 mg/kg
		Pb		5 mg/kg to 150 mg/kg
		Rb		5 mg/kg to 3600 mg/kg
		Sc		10 mg/kg to 40 mg/kg
		Sr		8 mg/kg to 1400 mg/kg
		Th		5 mg/kg to 400 mg/kg
		V		20 mg/kg to 650 mg/kg
		Y	10 mg/kg to 450 mg/kg	
		Zn	20 mg/kg to 250 mg/kg	
		Zr	10 mg/kg to 1300 mg/kg	
3.	Rock, Soil & Stream Sediment	Be	GSI/CL/NAG/SOP/01/ 1B/ICPMS Issue No. 01 Issue Date 30.04.2014	1.0 mg/kg to 50 mg/kg
		Ge		0.4 mg/kg to 3 mg/kg
		Sn		1.5 mg/kg to 60 mg/kg
		Mo		0.5mg/kg to 70 mg/kg
		La		10 mg/kg to 200 mg/kg
		Ce		20 mg/kg to 500 mg/kg
		Pr		2 mg/kg to 70 mg/kg
		Nd		10 mg/kg to 60 mg/kg
		Eu		0.5 mg/kg to 5 mg/kg
		Sm		2 mg/kg 20 mg/kg
		Tb		0.2 mg/kg 5 mg/kg

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		Gd	GSI/CL/NAG/SOP/01/ 1B/ICPMS Issue No. 01 Issue Date 30.04.2014	2 mg/kg to 30 mg/kg
		Dy		2 mg/kg to 10 mg/kg
		Ho		0.5 mg/kg to 5 mg/kg
		Er		0.7 mg/kg to 20 mg/kg
		Tm		0.1 mg/kg to 10 mg/kg
		Yb		0.7 mg/kg to 50 mg/kg
		Lu		0.2 mg/kg to 20 mg/kg
		Hf		4 mg/kg to 70 mg/kg
		Ta		0.5 mg/kg to 300 mg/kg
		W		1 mg/kg to 100 mg/kg
		U		2 mg/kg to 100 mg/kg