



2012

Chris & Nigel Present Study Findings Internationally

The study findings are presented at the Denver X-Ray Conference, USA.

1st July 2011

Official Launch Day as Portable XRF Services (PXRFS).

••• First iteration of hire fleet is complete.

PXRFS Undertakes a

Significant Evaluation of

portable XRF Instruments

instrument ability to continually

provide consistent results on the

same certified reference material.

The study focuses on precision and

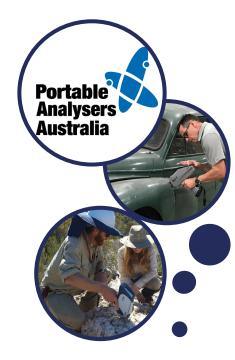
accuracy on individual portable XRF

When setting up the hiring fleet it quickly became apparent that referring to each individual XRF's serial number was difficult remember. This was how the PXRFS instrument naming conventino was established.

Olympus Delta's (and eventually VANTA's) named after male Australian actors. Nitons: female Australian actresses. Bruker S1 TITAN's: male Australian singers. Bruker TRACER 5's; female Australian singers.

















2019

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in peer reviewed journal Geochemistry: Exploration, Environment, Analysis, under title, "Performance Comparison of portable XRF Instruments."

Purchase of first SWIR/NIR instrument :..

HHAG Established :..:

PXRFS establish sister company Healthy Homes and Gardens (HHAG) targeting the domestic markets.



PXRFS becoming first Australian Authorised Application Solution Centre. Chris & Nigel are trained on all aspects of Bruker's spectral instrumentation.

> This then expands into PXRFS earning distributorship of Bruker instruments, becoming the Official Australian Sales Partner.



PAA establishes as a sales branch to PXRFS.

PXRFS Custom Calibrations :...

Chris creates standout custom calibration "Li Index" designed to target lithium for pXRF. This skillset evolved from training by Bruker and resulted in PXRFS offering matrix matched custom calibrations on Bruker instruments.

Caesium Calibration

Pioneer Resources engages PXRFS to develop a caesium calibration to capitalise on rare opportunity following their exploration period where caesium was intesected.

PXRFS acquire portable Raman system : . . : - the Bruker BRAVO Raman. •

Sinclair Caesium Deposit Discovery:

LCT pegmatite minerals.

PXRFS caesium calibration contributes to discovery of Sinclair Caesium Deposit.

This is an incredible discovery as there were previously only 3 caesium mines globally.

The Bruker BRAVO Raman had a spin off project

Initially this was based on data from Sinclair, which

was then expanded by generous access to private

and public mineral collections across Perth.

to the 2018 Deposit Scale Evaluatio to develop an onboard mineral library for the identification of

PXRFS acquire portable FTIR ... system - Bruker ALPHA II.

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Deposit Scale Evalutation ...:

PXRFS staff spend roughly 3 * months analysing 8000 drill hole samples and 2000 grade control samples from the Sinclair Deposit at the Pioneer Kalgoorlie base is carried out using Raman, FTIR, SWIR and pXRF technologies.

2018

PXRFS acquire the micro-XRF -

PAA Absorbed into PXRFS:

Bruker M4 TORNADO.

PSS Grows Online Presence ...:

PSS launch new website, YouTube channel Professor Spectrum. & Raman resource website georaman.com.

Portable Raman & Discovery:

Pioneer Resources utilising PSS LCT pegmatite library on the portable Bruker BRAVO Raman, announcing discovery of spodumene at Cade in June 2019.

NOVEMBER ...

PSS acquire :

the Bruker M4

TORNADO PLUS.

: Micro-XRF Website

Following the launch of PSS analytical service in January, microxrf.com.au launches as a resource website for those wanting to learn more about micro-XRF technology.

SEPTEMBER

: : PSS Online Store Launched

Clients can book in analytical and instrument related services such as training, hire out instruments & purchase accessories.

PXRFS changes names to PSS

Portable XRF Services changes name to Portable Spectral Services reflecting growth of spectral technology and services offered.

: PSS Launches into Canadian market