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WORLDWIDE



**Alex Stewart
(International) Corporation**

35 years ago, Alex Stewart International was established in a small office above a Liverpool bakery, with just three clients on its books. Today, ASI has a truly global footprint and provides first-choice inspection, sampling and analysis services to a diversified metals and mining client base in more than 40 countries.



Celebrating 35 Years in Business

**Your Global Network of Inspection
& Analytical Laboratory Services**

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Safe hands in inspection and analysis services

Celebrating its 35th anniversary in 2013, Alex Stewart International (ASI) has just expanded its metal and mineral laboratory facilities at Aintree in Liverpool in the United Kingdom. *Copper Worldwide* reports exclusively here.

Since Alex Stewart International was founded in 1982, it has experienced major growth both in size and in the variety of services offered. The ASI network of laboratories provides ISO 9001, 14001 and 17025 accredited assaying and analytical services for base, minor and precious metals, including ores and concentrates, recycled scrap metal, metallurgical complex materials, geochemical, and through its diversity to agriculture, also soft commodities such as soya bean and grain.

Alex Stewart, Chairman and Founder of ASI, really cares about his clients. With the opening of the new state of the art Aintree Inspection and Analytical Laboratories in July 2013, with a staff of more than 50 people in the UK, cost-effective services can be delivered without compromising on quality or responsiveness. The ASI global network now spans 36 offices and 17 laboratories in over 35 countries.



Graham and Alex Stewart at the Aintree Inspection and Analytical Laboratories opening ceremony in July 2013.

This visit begins with a round table discussion with two generations of the Stewart family, since Alex's son Graham is the Managing Director of ASI. Indicative of their shared passions are the Liverpool Football Club shirts and other sports memorabilia on the walls of their Head Office in Aintree. This is reflected in the upbeat and welcoming nature of all staff, personified by Stephen Russell, ASI's Commercial Executive, who gave Editor Chris Holding a guided tour of the new facilities.

Leading edge analysis

Upon arrival, samples are booked in by Paul Jones who coordinates Sample Entry. Samples received are matched to the instructions provided



The electrolysis area in full operation (Inset: During electrolysis the copper deposits from the test solution onto a platinum mesh).

by the client. Jackie Riddell, Administration Supervisor, and Jade Cole who also works in Assay Administration, ensure that samples are always accompanied by their test sheet and all required results are obtained by their due dates.

Many samples take a first step to the X-Ray Fluorescence Spectrometer Laboratory. A fluorescence scan determines principal and trace element levels and this indicates the best methodology to employ later. The ISO certified sampling methods used by ASI guarantee homogeneous, representative samples every time. In the Balance Room, Paula Connolly will weigh out precise amounts of sample material for chemical analysis.



Accurate sample weighing in the Balance Room is managed by Paula Connolly.

The Wet Chemistry laboratory, with its sample preparation area and copper electrolysis (A and B samples) area, is an impressive sight. There are



The Wet Chemistry Laboratory layout viewed from the upstairs landing area, with the state of the art fume extraction system in the background.

eight fume cupboards in the sample preparation area, as acid solutions are in use. Qualified chemists utilise state of the art equipment to deliver the most precise and prompt results. In the electrolysis area, copper ions from the prepared solution deposit onto a platinum mesh acting as a cathode.

The Instrument Room contains two ICP-OES (Inductively Coupled Plasma - Optical Emission Spectroscopy) machines for multi-elemental ppm results. An Atomic Absorption Spectrometer (AAS) measures low levels of elements, whilst high precision Titrator Units determine silver, chlorine, fluorine and ferro-alloys.

Nearby there is the Fire Assay Laboratory, and three more fume cupboards, where sample flux is put into pots by Sean Maloney for precious metal analysis using Fire Assay and Muffle furnaces. Here copper concentrates are assayed for copper, silver and gold content. A separate Furnace Room is also operated for the lead based fluxes which come in.

The extensive laboratory facilities are complemented by a suite of integral modern first floor offices. The first door on the landing here is Chief Chemist Desmond McMillan, who co-designed the overall laboratory together with Graham Stewart. Next is Adrian Mullany, Laboratory Manager for Metals, who handles day to day operations. The next office is the Inspections Administration Office, the operations hub from which Alex Stewart coordinates its global inspection companies to supervise cargo loading and discharge to ensure that cargo meets contractual obligations.

Finally, the most important office for the business is the one where Lorraine and Christine are based looking after client accounts.

Reasons to invest

Inspection and analysis costs are minor compared to the commercial value of a commodity, but peace of mind is priceless. At ASI, traditional assaying methods are combined with the latest technology, enabling the analysis of nearly 80 elements of the periodic table to a high degree of precision, while ensuring clients receive results in the minimum time.

Maintaining sector-leading competence is a cornerstone of the ASI philosophy. It is not surprising that services to governmental clients, such as Audit of mineral and hydrocarbon producers, Certification of mineral exports, and Control of minerals in transit, have seen rapid expansion in recent years. Alex Stewart's Mineral



Dave Harper, Inspections and Analysis Manager, on the left with Tom Dykhuizen, Inspections Supervisor hard at work in the Inspections Administration Office.

and Hydrocarbon Auditing Program assists governments in determining the amount of royalties and taxes due from the companies operating in the country, and in the environmental preservation of the extraction areas via environmental impact and contamination auditing. The Mineral Export Certification Program determines the correct quality and quantity of mineral exports for duty and taxation purposes.

For minerals in transit, at inspection stations at border control points, ASI inspects minerals on arrival, seals bags and containers, verifies weight limits on trucks, performs radioactivity checks on the minerals, and issues high-security transit certificates identifying each vehicle and its cargo.

For minerals destined for refineries that are later re-exported, ASI carries out the above border checks and transmits vehicle data to its refining plant inspectors. They weigh and sample minerals on arrival, and use ASI in-country laboratories to determine the valuable element quantities in each shipment. To reconcile inputs and outputs, the refined product for re-exportation is also weighed, sampled and analysed to confirm that no extraneous products have been added.

Dedicated to quality

The Commercial Services range includes Environmental services and Geochemical analysis through its Geo-lab in Mendoza Argentina, who also design custom made sample preparation laboratories, mobile and static for remote mining exploration locations anywhere in South America.

ASI offers both online quotation requests and online tracking. For metals and minerals, the firm offers the highest quality dedicated service for the inspection, weighing, sampling and precision analysis of minerals, ores and metals to the metal

industry, mining companies, traders, metal producers and refiners, governments, banks and financial institutions, and the general public.

In addition to accurate weights, good delivery is a key factor in meeting LME contractual obligations. Strategically located inspection operations cover all major loading and discharge ports and refineries for base and non-ferrous metals including all leading South American, Asia Pacific and European ports. Inspection Risk Management is an ASI inspections service at both load port and discharge port that ensures cargo is optimally protected. ASI inspectors are present throughout loading and discharge. They can also assess vessels for shipworthiness.



Solutions awaiting and undergoing testing.

Complete geochemical and commercial analytical services for the mining industry include fire assay with AAS or gravimetric finish, trace metal analysis and multi-element analysis using XRF, ICP-OES or AAS, carbon sulphur analysis, gravity flotation, cyanidation, amalgamation, heap leach and bottle roll testing and performance of acid rock drainage studies. In house expertise allows the company to design, install, commission and staff sample preparation facilities or full analytical laboratories at production, mine and exploration sites worldwide.

Environmental services include advising and testing on contaminated land surveys, environmental care plans and licences, pollution risk assessment, soil survey and clean up, and waste management. ASI environmental laboratories working to ISO standards are experienced in providing certification to organic and non-organic chemical parameters for mining research projects.

Other services include quantity and quality certification for non-ferrous and electronic scrap including ISRI and GOST, and precious metals analytical, sampling and inspection services include concentrates, electronic scrap and PGM.

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The ASI Liverpool Wet Chemistry Laboratory fume cupboard array.