

Client



Regulatory Bodies



Environmental Consultants



The untreated materials are shown in Figure 1 below.

Figure 1 – Untreated Materials



Site Background & History

The site is a former waste water treatment works located to the south east of New Stevenston. The site is being developed by Robertson Homes for residential use – the site is being marketed as Brannock Park.

Mason Evans Partnership was engaged by Robertson Homes as the Environmental Consultant.

The area is bounded by Loanhead Road and residential developments to the north, by the Brannock High School to the east, by the A723 to the west and by railway lines to the south.

An unnamed burn is located on the western and southern boundaries of the site – this is considered to be the prime receptor of concern.

A stockpile of excavated filter media remained on-site following the decommissioning of the water treatment works – this stockpile comprised of primarily stone material with associated soils – the stockpiled material was contaminated with metallic and hydrocarbon pollutants.

The client required the material to be treated for reuse on-site – the costs for offsite disposal were considered to be prohibitive. The intention was to reuse the material as sub-base (6F2) material for a car parking area – the material was considered to be suitable for this purpose due to the high stone content. The proposed re-deposition area is shown in Figure 2 below.

Figure 2 – Proposed Re-Deposition Area (Shown in Blue Colouration)



Envirotrear produced a Site Specific Working Plan outlining the site history, identified contamination issues, proposed remediation strategy & technical rationale, environmental protection measures required during the remediation works, conditions for reuse and validation protocols for the treatment element of the works.

The human health concerns were addressed by the proposed reuse of the treated material under a designated area of hardstanding (car parking area) – this was considered to be an effective pathway break for human health protection. The prime environmental concern was the protection of the water environment – this was confirmed by SEPA to be the underlying groundwater and the unnamed burn bordering the site (surface waters).

Remediation target criteria [RTC] were determined by Remedial Target Methodology modelling – RTC were determined for lead, benzo(a)pyrene and total petroleum hydrocarbons – the derived leachate target values were agreed with the regulatory bodies.

The SSWP was approved by North Lanarkshire Council and SEPA prior to commencement of the remediation works.

The proposed remediation strategy involved the use of E-Clay Stabilisation to treat the materials for the purpose intended.

Methodology

The works involved the treatment of the contaminated materials in batches of known volume. The treatment process involved mixing the contaminated soils with the E-Clay slurry and cement.

The treatment process utilising E-Clay Stabilisation is shown in Figure 3 below.

The treated materials were stockpiled pending validation as shown in Figure 4 below.

Figure 3 – Batch Treatment of Contaminated Materials



Figure 4 – Stockpiled Treated Materials



Validation

Representative samples were taken from the treated batches and combined to form composite samples for validation purposes. Following a suitable period of “curing” the composite samples were leach tested and compared with the designated leachate target criteria. All leachate values were compliant with the RTC. The treated material was therefore considered suitable for reuse on site as a substitute for imported fill.

Conclusions

Envirotrear were able to demonstrate through a Validation Report that the remediation strategy had been successfully implemented.

The prime driver for the remediation works was the protection of the water environment.