



KNOTWEED ERADICATION

**Specialist Weed Control &
Site Vegetation Clearance**

EXCAVATION REPORT FOR

URBAN REGEN

FORMER TETROSYL SITE

WALMERSLEY OLD ROAD

BURY

KNOTWEED ERADICATION

NEW INN FARM

DAWSON LANE

LEYLAND

PRESTON

PR25 5DB

TEL: 01772621013

FAX: 01772623658

info@knotweederadication.co.uk

www.knotweederadication.co.uk



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Inspected by	G Andrews & G Parry
Checked by	J Howard
Authorised by	G Andrews
Project	Former Tetrosyl Site
Report number	IWMP2172B

LIMITATIONS

Knotweed Eradication has prepared this report with reasonable skill, care and diligence and taking account of the contract terms and conditions and manpower and resources devoted to it in agreement with the client. Knotweed Eradication disclaims any responsibility to the client and others in respect of any matters outside the scope of the above.

This report has been prepared based on the information received during the timescale available and all potential contamination; constraints or liabilities associated with the site may not necessarily have been revealed. The report is only valid when it is used in its entirety.

This report is confidential to the client and Knotweed Eradication accepts no responsibility to third parties to whom the report, or any part thereof, is made known. Any such party using any information contained within the report does so at their own risk.

1. JAPANESE KNOTWEED REPORT

- 1.1 In February 2020 Knotweed Eradication was approached by Urban Regen regarding the possible treatment options of Japanese Knotweed within the proposed site at Former Tetrosyl site, Walmersley Old Road, Bury.
- 1.2 Site consists of the former head office and main works for Tetrosyl and contains a variety of industrial and commercial buildings together with large hard-standing car parking areas plus green, open spaces including mature trees, vegetation and a large watercourse.
- 1.3 Surrounding areas comprise of agricultural land to the north, east and residential dwellings to the south, west.
- 1.4 The site was inspected on 10th February 2020 outside of the expected growing season with no areas of visible knotweed being identified within the site. However, Knotweed was visible beyond the site boundary wall at the southern point of site in an area immediately adjacent site and Mill Road.
- 1.5 The client has advised that this area of knotweed is to be excavated in its entirety and placed within a burial cell created from CuTex geomembrane within a POS area in the northwest corner of the site. Himalayan Balsam is present in this area. The topsoil, which contains the balsam seeds from the area where the burial cell will be created, will be put to one side and be placed in the bottom of the cell prior to the knotweed-contaminated material along with the small quantity of Montbretia that is located a short distance from this area. The remaining balsam located adjacent the watercourse on site will be subject to a management programme where it will be then treated in-situ with appropriate non-persistent herbicide. Likewise, the Rhododendron that has been identified on site (within the woodland on the eastern side of the site) will be cut down to stump level and chipped as part of the devegetation works with the application of Eco-Plugs to the remaining stumps carried out within 48 hours of these works by Knotweed Eradication.
- 1.6 In April 2020 Urban Regen appointed Knotweed Eradication to act on their behalf with regards to the treatment of the knotweed within the site.
- 1.7 The area of knotweed that was located beyond the site wall was excavated under supervision and loaded into ADT for moving to a burial cell that had been created at the northern end of site adjacent an open area of POS. The cell was prepared prior to the excavation with a hole measuring approximately 20 x 12 m being dug to a depth of 2.0m. The cell was lined with CuTex geomembrane prior to any knotweed-impacted soil being moved and placed in the cell.
- 1.8 The soil was tipped and once the cell floor was getting full it was civilised with the excavator to compact and maximise space. This process was repeated with the remaining excavated and moved soil until the knotweed had been excavated fully.
- 1.9 The excavation was completed over two days once a remaining tree and other vegetation was removed from the affected area. The area was back-filled each day with hardcore so there wasn't an open hole left outside of the secure site.
- 1.10 The cell was completed and covered over with clean material to weight it down in preparation for final levels to be created.
- 1.11 Original JK areas have been marked on the attached plan (fig 1)
- 1.12 This report has been produced on the 2nd February 2021 to form a written and photographic record of actions carried out to date.
- 1.13 Further monitoring of the site is expected to be undertaken throughout the development period with any knotweed regrowth being dealt with via herbicide application.

2. JAPANESE KNOTWEED

- 2.1 Japanese knotweed is a non-native perennial plant, which originated in Japan and was brought into the United Kingdom in Victorian times as a decorative garden plant. It has subsequently 'escaped' into the wild and has spread extensively across the country. It is tolerant of a wide range of conditions and so is a very successful coloniser particularly of brownfield with made ground, unused dormant sites and un-maintained areas of open space. Railway and river corridors are particularly vulnerable as the plant is often left untreated with inaccessible areas and allowed to flourish.
- 2.2 The plant is an aggressive, persistent plant that is particularly invasive and can cause severe environmental damage. It is harmful to the natural habitats as it shades out the diversity of native plants and is a very poor environment for wildlife. Its reproduction in the UK is vegetative from a sterile female clone. Its method of reproduction is generally via underground stems (rhizome) although it regenerates readily from both rhizome and stem material and the smallest of viable stem or rhizome material (less than 1 gram) can regenerate successfully in both terrestrial and aquatic media.
- 2.3 The plant begins to grow in April from the base of the old 'crown' and any new underground rhizomes resulting from the previous season's growth, producing dark pink spiked shoots. By mid summer, in its mature growth state, Japanese knotweed forms dense leafy stands up to 3.5 metres tall. These persist into late September when the plant begins to lose its leaves. In the winter, during its dormant period, the leafless dry brown stems remain upright throughout the season. The cycle of growth begins again in following spring. The plant is very vigorous and is very difficult to eradicate as its roots (rhizomes) are extensive and can grow as much as 2.0 – 4.0 metres deep particularly in loose fill material. From the edges of existing stands rhizomes can rapidly grow outwards for as much as 7.0 metres in a single season given the right conditions and therefore it is capable of spreading extensively in a comparatively short timescale. The rhizomes can also spread beneath building structures and roads to colonise new areas that might be deemed cut off from existing stands.
- 2.4 Of particular concern in many situations is the damage, which could occur to constructed surfaces as the plant is capable of easily growing through hard surfaces, particularly tarmac and block paving and under building foundations if not treated effectively. It can also penetrate joints and cracks in brick and block walls and open up these areas to cause structural instability over time. There is also the potential for growth and infestation in soft areas where its future control may be limited if not impossible due to difficulties in access and for the plant to spread unchecked onto adjacent land to further colonise areas.
- 2.5 There are very few 10km squares found in a recent botanical survey of the UK (by the Botanical Society of the British Isles) in which Japanese knotweed is not now present. Its spread and consequential cost of removal is currently exponential. Regions such as the South West of England and Wales, where the plant thrives due to the wetter climate, are now suffering economically due to its spread. The Environment Agency believes it is a major environmental problem currently within the UK. There are no indigenous biological controls and although research in this area is ongoing it is likely to take several years before it is established that the controls are not detrimental to other British wildlife.

3. LEGAL STATUS

- 3.1 Material and soils containing Japanese knotweed are deemed contaminated and its treatment is controlled by legislation. In legal terms it is an offence under *the Wildlife and Countryside Act 1981(as amended)* to plant or otherwise cause the plant to grow in the wild. An offence under this Act may result in criminal prosecution. In addition, under *Section 34 of the Environmental Protection Act (1990)*, Japanese knotweed (stem and root and soil containing roots) is classed as ‘controlled waste’ and as such must be disposed of safely at a licensed landfill site according to the *Environmental Protection Act (Duty of Care) Regulations 1991*. Infringement can result in the Environment Agency taking enforcement action, which may result in an unlimited fine.
- 3.2 *The Rio Summit 1992, Convention on Biological Diversity, Article 8(h)* calls on participating nations to ‘prevent the introduction of, (to) control, or (to) eradicate those alien species which threaten ecosystems, habitats or species’.
- 3.3 Effective removal or control can be carried out by a competent contractor following good procedures and guidelines to contain the plant and prevent careless spreading during removal and disposal. On site burial of knotweed material whether stem parts or soil containing rhizomes may require a *Waste Management Licence* under *the Waste Management Licensing Regulations 1994* and the *Landfill Regulations 2002* depending on the engineering operations of on site work. Exemptions may be available as set out in Schedule 3 of the Regulations and will require registration with the Environment Agency. Disposal off site to landfill will require a Waste Transfer Certificate. Advice should be sought from the Environment Agency who have provided *The Knotweed Code of Practice (2006)* and who also issue appropriate licences/certificates for waste control. Treatment of knotweed by herbicide within 10 metres of a watercourse will require approval from the Environment Agency for the use of herbicide applied in or near a watercourse. An approved herbicide for such use must be specified and used.
- 3.4 Third parties may also be held liable for costs incurred from the spread of Japanese knotweed across adjacent landowner’s property or by re-using infested soil.
- 3.5 Other legislation relevant to the control of non-native invasive weeds includes the following.
- *Town and Country Planning Act 1990.*
 - *Highways Act 1980.*
 - *Water Resources Act 1991.*
 - *The Waste Management and Licensing Regulations 1994.*
 - *The Landfill (England and Wales) Regulations 2002.*
 - *The Control of Pesticides Regulations 1986 (under the Food and Environment Protection Act 1985).*
 - *The Control of Substances Hazardous to Health Regulations 2002 (COSHH)*

4. POSSIBLE CONTROL OPTIONS

4.1 Control of Japanese knotweed is usually carried out by manual or chemical methods or a combination of both. Herbicide treatment is labour intensive and there is no 'quick fix' effective herbicide as they may have to be continued for a number of years before effective total control is achieved. The 'dig and dump' approach is generally very effective but is not a sustainable approach and can incur high costs when disposing of plant or soil contaminated with Japanese knotweed rhizomes if taken to a licensed landfill site in accordance with current guidelines. In some instances it is impractical to use machinery for excavation such as where knotweed is located within the root zone of trees. Similarly access and feasible use of machines may be impossible due to ground conditions or severe slopes. Control of the knotweed and the prevention of its spread by herbicide treatment on 'dormant' sites are essential where future excavation and disposal to landfill in the longer term is considered a possibility. Whatever control method is used, the effective eradication of the plant's rhizome system is essential if lasting control of Japanese knotweed is to be achieved.

4.2 Options

4.2.1 Chemical and Manual Control

4.2.1.1 Chemical treatment of the plant is the most commonly used method followed by a pulling and/or cutting and mowing regime. However, it may take several years, depending on the herbicide used and frequency of the seasonal treatments, to fully eradicate the plant even with treatment carried out every year to the re-growth of the plant. However, certain herbicide treatment, which is carried out persistently over the season to any new emerging shoots using translocated total and residual herbicides, have given good results in a 3 year period.

4.2.1.2 Where development footprints of buildings, car parks, paths and drives do not conflict with areas of knotweed it should be possible to leave the plant in situ in order that it can be treated over time by herbicide application. Care must be taken that access to the stands for spraying will be possible and that it will not limit the planting of new landscapes which could be affected by the herbicide spraying.

4.2.2 Excavation

4.2.2.1 Where situations require a much more rapid treatment of control in order for the site to be developed in the short term it is recommended that a programme of cutting and burning of the top growth and deep and extensive digging to remove the rhizomes is carried out. Removal of excavated material is often to landfill sites but the material can be stocked piled in controlled areas elsewhere if space is available on site for future herbicide treatment. Alternatively, it can be spread in areas of proposed public soft landscaping, again for in situ herbicide treatment. A rigorous management regime needs to be put in place if this approach is to be successful.

4.2.3 Combined Treatment

- 4.2.3.1 Where sufficient space exists on site a combined treatment can be used which in many instances has proved to be very effective. The method involves the spraying of the plant with a non-selective herbicide followed by removal and stockpiling of the top 300mm of soil containing the knotweed 'crowns' and majority of rhizomes. The exposed ground is then cultivated to a depth of 500mm and the excavated material re-spread over the cultivated area. This process stimulates the rhizomes to produce a higher ratio of stem ratio to below ground rhizomes, which renders the plant more vulnerable to herbicide treatment. Subsequent herbicide treatment has, in some instances, been observed to eradicate the knotweed after two herbicide applications, which may be performed within the same growing season. If work commences late in the season when the plant is dying back for its dormant period, digging can be carried out during the winter months without an initial pre-treatment with herbicide, and re-growth treated during the spring and summer. However, this is dependant on the timing of operations and offers no outright guarantees of total eradication in a single year.

4.2.4 Root Barriers

- 4.2.4.1 Where treatment of any kind is not feasible, particularly where Japanese knotweed is located off site in the ownership of others but adjacent to development areas, the use of polyethylene root barriers can be effective. These can be purchased as proprietary products and inserted into narrow trenches along boundaries or foundation lines to prevent knotweed rhizomes growing in a specific direction. The use of concrete as a barrier can also prove extremely effective providing care is taken where any joints occur.

5. EXCAVATION PHOTOS



Pic 1- JK area before



Pic 2 – JK area during excavation



Pic 3 – Jk area Excavated



Pic 4 – JK area completed



Pic 5 – Burial cell covered in Cutex



Pic 6 – Burial cell covered in clean soil prior to completion of finished surface levels (+ 1.0m minimum)

5.1 Conclusion

- 5.1.1 Excavation of knotweed material was undertaken by Urban Regen on the 1st and 2nd October 2020 under supervision by Knotweed Eradication with the contaminated material being placed into a burial cell and covered with CuTex geomembrane.
- 5.1.2 Depth of excavation for the area was 0.7 to 1.4m deep.
- 5.1.3 Continued monitoring of site will be undertaken as part of ongoing maintenance prior to the commencement of a five year warranty period.

6. HEALTH AND SAFETY

6.1 *Relevant health and safety legislation must be observed in the UK. The relevant regulations are outlined in The UK Pesticide Guide produced annually.*

6.2 *The legislation relevant to the use of herbicides is: -*

- *The Control of Substances Hazardous to Health Regulations (COSHH) 2002. All operatives must comply with the regulations and wear protective clothing and observe a strict code of hygiene of washing hands before drinking and eating.*
- *The Control of Pesticides Regulations 1986 under the Food and Environment Protection Act (FEPA) 1995.*
- *Pesticides: Code of Practice 1990 (Published by MAFF/HSE).*

6.3 Health and Safety Guidelines

- All operatives must hold a Certificate of Competence for herbicide application (NPTC) or be under the direct supervision of qualified operative prior to commencing a spraying programme.
- All operatives must act responsibly in the storage and handling of the herbicide. The disposal of the herbicide and empty containers must be carried out by operatives in a responsible way. Any spillage must be guarded against and if occurring shall be dealt with and cleaned up. All operatives must carry a basic first aid kit.
- The area of work should be protected from the general public during the treatment and use of the herbicide.
- The use of herbicides should be carried out in compliance with the product label instructions.
- Advice on herbicide application should be sought from a BASIS qualified advisor

7 HERBICIDES

Product	Mapp	Areas of Use
Round up Pro Vantage	15534	Hard surfaces, Amenity vegetation, Forestry, in or near water, Stem injection.
Garlon Ultra (under Stewardship)	16211	Industrial sites, Motorway embankments, Rail embankments, Cemeteries, Grass land of no agricultural interests.
Synero (under stewardship)	14708	Industrial sites, Motorway embankments, Rail embankments, central reservations, Power stations.
Blaster Pro	15752	Amenity Grassland.

7.1 All contractors must be able to supply the following in relation to herbicide treatment or excavation of knotweed.

- Specific method statement for treatment including risk assessments.
- Supervision of Japanese knotweed removal.
- Certification of disposal facilities
- COSHH for herbicides used.
- Certificates for operatives using and handling herbicides.
- Personal protective equipment for operatives using herbicides.
- Third party insurance for all works.

8. WARRANTY PERIOD

8.1 Following completion of the treatment programme, a 5 year warranty period will commence during which time continued monitoring of the site will be undertaken with any reoccurrence of knotweed within the locations specified in this report being treated at no additional cost to the client or subsequent plot owner, subject to the attached terms and conditions.

9 REFERENCES

The Knotweed Code of Practice (2006)

The Environment Agency.

Available to download: www.environment-agency.gov.uk

Child, L. and Wade, M. (2000) *The Japanese knotweed Manual*

Packard Publishing Limited, Chichester.

Nature Conservation

www.nationaltrust.org.uk/environronment/htm/nat_con/_fspapers/fs_plant01

Japanese Knotweed Control Forum

www.ex.ac.uk/knotweed



Fig 1. Original JK location

- Site Boundary
- Rhizome Buffer Zone
- JK Within site
- JK Beyond site
- Rhododendron
- Himalayan Balsam
- Giant Hogweed
- Other as identified within report



New Inn Farm, Dawson Lane, Leyland PR25 5DB
www.knotweederadication.co.uk
info@knotweederadication.co.uk

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 Scale: NTS